New Zealand's Tax Reforms and 'Tax Sheltering' Behaviour

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Abstract

This paper examines two episodes of tax reform in New Zealand to evaluate the extent of tax sheltering in New Zealand. Tax sheltering refers to activities undertaken by taxpayers to earn income in forms that allow this income to be 'sheltered' (legally or illegally) from the tax that would normally apply in the absence of such activities. Identifying the nature and extent of tax sheltering behaviour is, however, not straightforward given incentives to hide it and the high resource cost of comprehensive taxpayer auditing. As a result, researchers are often reduced to identifying 'traces' (indirect and imprecise indicators) of sheltering activity.

This paper examines a variety of variables that can be expected to reveal such traces of sheltering activity related to the 'legal form' (corporate, personal, trust, etc.) by which income is earned and taxed. Two substantive reforms to income taxation in New Zealand, in 2000 and 2010, generated two pre- and post-reform tax regimes that allow examination of the issue. The tax regime changes gave rise to different hypothesised effects on 'legal-form' tax sheltering that the analysis seeks to exploit.

The results provide strong support for those hypotheses. Firstly, tax changes in 2000 created an incentive for individual taxpayers to reduce their personal taxable income (when they paid the top personal rate), and to shift income towards corporate and trust entities. The evidence is consistent with these predictions. Secondly, reforms in 2010, removed the trust route to tax sheltering and reduced incentives and opportunities to earn income via some, but not all, types of corporate 'arrangement'. Pre- and post-2010 evidence confirms both that the use of trusts declined, and that the most tax-favoured corporate arrangements increased in use after 2010.

Key words: tax sheltering; New Zealand income tax; tax policy; trust taxation; corporate taxation

JEL classification: H26, H30, H24, H25

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1. Introduction

Tax sheltering refers to activities undertaken by taxpayers to earn income in forms or locations that allow this income to be 'sheltered' (legally or illegally) from the tax that would normally apply in the absence of such activities. It can take many forms of which sheltering income in overseas 'tax havens' is perhaps the most widely cited. However, for most New Zealand individuals and companies, tax sheltering within New Zealand is likely to be the most prevalent, given the dominance of small closely-held companies in New Zealand. Within that context there are numerous devises that taxpayers might use to minimise their tax burdens, which are subject to regular Inland Revenue Department (IRD) investigation and legislation. This paper is concerned with a specific type of tax sheltering – that achieved by earning or shifting income in ways that exploit legislated tax schedule differences between individuals, companies and trusts. This is referred to as tax sheltering via the 'legal form' of income; it is unrelated to whether the sheltering activity is considered legal or illegal, or somewhere in between.

In the past decade, concerns have been expressed about tax sheltering activities in New Zealand by two 'Tax Working Group' (TWG) reviews of the tax system. The first in 2009-10, was initiated by Treasury and IRD officials and organised by Victoria University of Wellington, under the chairmanship of Professor Bob Buckle, Pro-Vice Chancellor for Commerce. The second, set up by the Labour-led government in 2018, was chaired by Sir Michael Cullen, a former Labour Minister of Finance.[1]

The Cullen Review's major driving force was perceived unfairness of the 2018 tax system and tax-induced distortions to behaviour. Central to the Review Group's concerns was whether introducing a comprehensive capital gains tax in New Zealand could improve fairness and prevent individuals and entities from tax sheltering via untaxed capital gains instead of earning other, taxable, forms of income.

A decade earlier, the Buckle Review agenda had also been motivated by perceptions of tax-induced distortions and unfairness. In their case the major concern arose from differences in tax rates that applied to income earned through different personal, corporate and trust income legal forms in New Zealand. In particular, in 2009, the top personal marginal income tax rate was 39%, while the trustee and corporate rates were 33% and 30% respectively.[2] The Buckle Review also acknowledged that the absence of a comprehensive capital gains tax, and

[1] To avoid confusion over these two TWGs, they are referred to below by the dates of their final reports, as the Buckle Review (2010) and the Cullen Review (2019). Overlaps in membership involved just one person (Geoff Nightingale), though one Cullen Review member (Robin Oliver) had been an IR supporting official for the Buckle Review.

[2] Beneficiaries in receipt of trust income were taxed at their personal marginal income tax rate. Hence, a top marginal rate taxpayer would be taxed at 39%. The income tax advantages from trusts therefore only applied to trustees. In addition, prior to the Buckle Review, top personal tax rate payers earning investment income through a 'Portfolio Investment Entities' (PIEs) were taxed at the corporate rate; hence lower than the top tax rate applicable to other taxable income sources; see Table 1. Chamberlain and Littlewood (2010) provides a comprehensive description and evaluation of tax rates on 'collective investments' such as PIEs.

especially taxation of gains on property assets, were major weaknesses in the presence of non-aligned tax rates.

On 'fairness' aspects, numerous previous papers have sought to measure the extent of income or wealth inequality in New Zealand, and the impact of the tax system on those.[3] This paper focuses instead on evidence of tax sheltering that has received much less attention, and the extent to which tax sheltering was affected by the 2000 and 2010 income tax reforms.

Before proceeding, two aspects of tests for, or evidence on, tax sheltering are worth noting. Firstly, as the literature on the economics of tax evasion has emphasised, by its nature taxpayers prefer to hide this activity from external scrutiny, so that attempts to establish reliable evidence are often reduced to seeking 'traces' of tax avoiding behaviours. This inevitably means that the evidence is indirect and imprecise, often to an unknown degree; see Slemrod and Weber (2012), and Cabral *et al.* (2020) for general and New Zealand specific discussions respectively.

Secondly, anti-avoidance actions are sometimes compared to squeezing a balloon: where pushing in one part of the balloon merely leads to the (unchanged amount of) air inside pushing the balloon out elsewhere. This analogy, if accurate, implies that behavioural responses to anti-avoidance or anti-sheltering legislation are likely to include new avoidance vehicles replacing old vehicles when legislation renders the latter irrelevant. Seeking evidence of tax sheltering should therefore be aware of the likelihood of evolving arrangements over time.[4]

To examine tax sheltering behaviour, this paper first considers how sheltering via legal form could be expected to respond to changes in the New Zealand tax regime since the late 1990s, a period that has been associated at various times with alignment and non-alignment of key tax rates applied to different income sources. In then considers evidence that reveals 'traces' of tax sheltering behaviour following the 2000 and 2010 Budget tax reforms. Finally, in view of the evidence, the paper asks: what tax reforms could be introduced to reduce tax sheltering?[5]

2. Tax Rate Misalignment and Tax Sheltering

New Zealand's income tax policy from the major tax reforms of the mid-1980s until 2000 was based on two important elements. Firstly, setting tax rates as low as feasible (for given revenue and equity objectives) on as broad a tax base as sensible (to maximise efficiency of

[3] Though no *objective* evidence can assess the Cullen Review's claims of tax system 'unfairness', some evidence on inequality (but labelled 'fairness') was summarised for the 2019 TWG in NZTWG (2018a).

[4] The evolving nature of tax shifting behaviour in response to actual or anticipated tax reforms was examined more generally by Feldstein (1976). He argued that, other things equal, the extent and nature of tax reform should recognise the impacts on behaviour generated by uncertainty over future tax reform directions. However, as Feldstein acknowledges, enacting or announcing tax reforms with a delayed future date can improve welfare by reducing tax-favoured (e.g. sheltering) behaviours in advance of the anticipated reform.

[5] New Zealand also allows some tax preferences for specific 'look through companies' (LTCs) and 'qualifying companies' (QCs) including provisions for income earned overseas. Mainly due to a lack of available data, examining these is beyond the scope of the current paper. New Zealand Inland Revenue Department (2015) provides an extensive discussion of the use of LTCs and QCs, including their foreign dimensions, to shelter income from tax. In general, shifting income to/from overseas is influenced by international differences in either average corporate tax rates or statutory rates depending on the form of sheltering activity.

revenue collection).[6] This is the essence of New Zealand's 'broad base, low rate' (BBLR) approach to income taxation which aims to make tax as 'neutral' as possible – that is to minimise the distortions to economic activity from that which would take place in the absence of tax.

Secondly, neutrality was facilitated by aligning tax rates on different legal forms of income (wages and salaries; interest, rental and trust income; company profits, etc.) to minimise the opportunities for tax sheltering achieved via restructuring income towards lower-taxed sources. In New Zealand, this involved setting the top personal, company and trust tax rates at a common 33% from 1989 until the 2000 reforms. This latter aspect was inevitably imperfect since, while the company tax rate was aligned with the top personal tax rate, taxpayers in lower personal income tax brackets were taxed preferentially compared to earning their income through a company, though imputation allowed tax credits against other income for lower rate taxpayers.

The non-taxation of capital gains also meant that this form of personal income could be earned tax-free.[7] However, capital gains earned through companies were effectively taxed at the corporate rate via the company tax schedule and, with a dividend imputation regime, no further tax at the personal level was required to ensure neutrality. Nevertheless, capital gains earned by individuals or through trusts could avoid tax altogether.

Thus, by aligning tax rates levied on income earned through different legal forms the New Zealand tax system prior to 2000 substantially reduced opportunities for sheltering incomes from tax through changing or re-characterising its source, for example, via incorporation or use of trusts.[8] The subsequent 'misalignment' of tax rates from a common rate of 33% followed the increase in the top personal rate from 33% to 39% in 2001 and subsequent fall in the corporate rate to 30% in 2008; see Table 1.

The Buckle Review suggested that this misalignment was a major source of unfairness and inefficiency from diversion or sheltering of income to reduce the tax liabilities of some taxpayers. In response, the Buckle Review made several recommendations, many of which formed part of the wide-ranging reforms introduced in the 2010 Budget. Those Budget reforms did not include complete alignment of the top personal, corporate and trust tax rates. However, they did establish a substantial move in that direction; the top personal rate was reduced from

[6] Broadening the base by, for example, denying all deductions against gross income would be inconsistent with tax neutrality where these deductions represent legitimate economic costs of earning that income.

[7] New Zealand's tax law allows for the taxation of capital gains under certain circumstances, but in practice most taxpayers' capital gains remain (legally) untaxed. There are various additional issues associated with achieving neutrality with respect to capital gain, versus other, income sources which are not pursued here. For example, it is well-established that when nominal, as opposed to real, capital incomes (such as interest income and capital gains) are taxed at the same statutory rate as nominal labour incomes (the usual case in NZ and elsewhere), the *effective* tax rate on capital income can be much larger than that on labour income in the presence of even modest price inflation.

[8] There are various legitimate reasons for taxpayers to earn income in alternative legal forms, such as the limited financial liability offered by incorporation, or the ability to ring-fence assets for family members' education or charities. Ideally, tax should distort those choices as little as possible, by taxing them similarly. Fairness in the form of horizontal equity (treating similar taxpayers similarly) is often seen as relevant to this case.

38% to 33% and aligned with the trust tax rate, while the corporate rate was reduced to 28%.[9] This left a difference of 5 percentage points (pps) from the new top personal rate of 33%, compared with a 9 pps difference in 2009.

Table 1 Differences (percentage points) in Income Tax Rates by Legal form[#]

	1989-2000	2001-06	2007-08	2009	2010	2011-18[*]
Top personal tax rate	*33*	*39*	*39*	*39*	*38*	*33*
Difference from top personal tax rate:						
Corporate tax rate	0	-6	-6	-9	-8	-5
Trust tax rate	0	-6	-6	-6	-5	0
Top PIE tax rate			-6	-9	-8	-5

Notes: [#] Years shown refer to tax years; e.g. '2009' refers to the tax year ending in March 2009. [*] 2011 was a 'composite' year for personal income tax rates since the new rates applied from October 2010.

3. How do New Zealand's Misaligned Tax Rates Compare?

Like New Zealand, most other OECD countries' personal marginal income tax rates demonstrate progression, while company tax regimes often generally have one marginal 'flat' tax rate, or a small number, set independently of the personal tax regime. However, unlike New Zealand, most OECD countries, set their company tax rates much lower than the top rate of personal income tax, thus creating an incentive for top rate taxpayers to earn income through companies provided the difference is not subsequently taxed (for example, where it is passed on in dividends and taxed at personal rates).[10] Conversely, low-rate personal income taxpayers may pay higher rates of tax if they earn income through a company – an especially relevant consideration for low-earning family members within small family businesses (except where imputation regimes provide off-setting tax credits to lower earners).

Given the inevitable trade-off between setting higher personal income taxes to achieve redistribution, but lower corporate tax rates to encourage the location or amount of company investment, many OECD countries have sought to live with this contradiction by setting up complex rules around the characterisation of different forms of income that minimise 'leakages' to the company tax regime.

Figure 1 shows that New Zealand (along with several other countries) has adopted a quite different approach. In 2018, New Zealand's 5 pps difference between the top personal and company tax rates was the joint lowest (with Mexico) in the OECD. Other OECD countries,

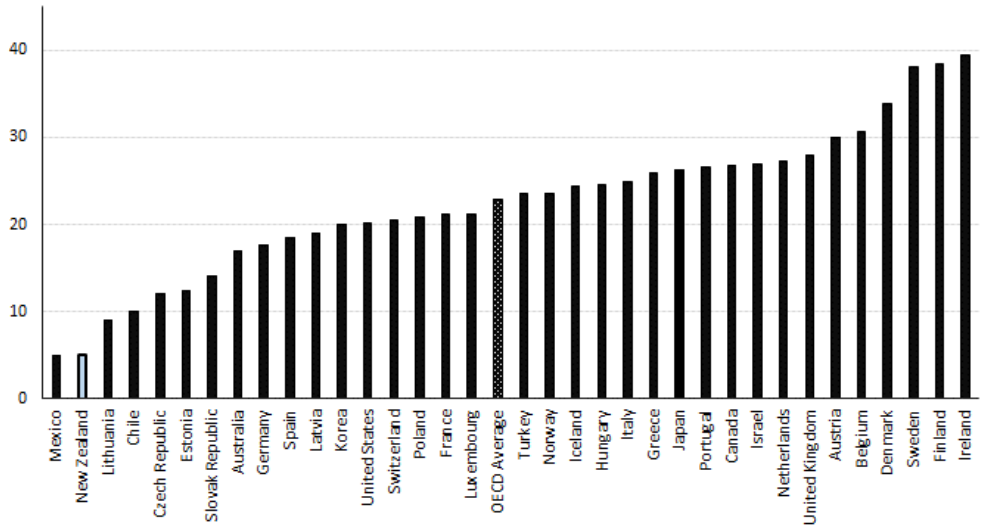
[9] The top personal tax rate had been reduced from 39% to 38% in the first (May 2009) Budget after the National government took office in November 2008, applying to the 2009/10 tax year.

[10] An imputation system is one mechanism used whereby, the difference between the corporate tax paid on dividends before distribution is 'imputed' (credited) to the personal taxpayer, with the difference between the corporate and personal tax liability paid on distribution. Most OECD countries, unlike Australia and New Zealand, currently use a 'classical' company tax system whereby personal tax on corporate income received (such as dividends) is additional to any company tax paid; hence 'double taxed'.

by contrast, typically had between a 15 to 30 pps difference in those rates with some, such as Ireland, having a corporate rate almost 40 pps below the top personal rate.

As a result, as outlined in section 5, it has been argued that New Zealand has less need for complex 'protective' (e.g. anti-avoidance) measures to prevent income shifting across legal forms that face different tax rates. However, evidence in section 4 suggests that, despite the small non-aligned tax rate differences in New Zealand, substantial re-characterisation of income for tax purposes appears to have occurred after the 2000 reforms that generated a 6 to 9 pps difference, and persisted in somewhat different forms following the 2010 reforms that reduced that difference to 5 pps.

Figure 1 Top Personal and Corporate Tax Rate Differences, 2018
(percentage points)



Source: Data from OECD.Stat

4. Tax Sheltering Evidence for New Zealand

The data in Table 1 highlight that, following the alignment episode, 1989-2000, from 2001 to 2009 there were tax incentives, ranging from 6 to 9 percent of taxable income for top personal tax rate payers to earn income through either trusts or companies (and Portfolio Investment Entities, PIEs, when these were introduced in 2007). From 2011, this was amended such that the tax incentive for trusts was removed but a 5 percent of taxable income incentive remained for income obtained through companies or PIEs. This suggest that, over 2001-09, we might expect income to be diverted from the personal tax regime towards companies and trusts, whereas after 2010, trust use would be curtailed, with diverted income occurring primarily through companies, especially 'closely-held companies' – where self-employed owners typically have no or few employees outside family members.[11]

[11] Statistics New Zealand's business demographic data record that across around 550,000 business enterprises in 2019, for example, 71% had zero employees and a further 18% had only 1 to 5 employees; see Table 4.

This section first explores evidence on behaviour changes following the 2000 reform, then considers how responses differed before and after 2010. While this evidence does not formally establish statistical causality, which would require a much more sophisticated and data-intensive econometric approach, by examining pre- and post-reform patterns it does provide strong indirect evidence for or against tax sheltering behaviour.[12]

One of the difficulties facing analysis of this issue is that data are often not available or not comparable. Thus, for example, much publicly accessible Inland Revenue (IR) and Statistics New Zealand (SNZ) data that are reasonably comparable across years are only available from 2000. Similar, but different, data prior to 2000 (such as IRD data on personal incomes) are available only from 1994. For companies, IRD data report firms submitting the company tax return, IR4, while SNZ report survey-based 'business demographic statistics' (BDS) data.

For trusts, BDS decomposes this category into 'trusts & estates' and 'charitable trusts' as separate categories for 2000-19, while IR data on trusts refers to IR6 trust tax returns for 2006-18. Despite this lack of concordance between the various series, by comparing the different data sources it is possible (subject to some caveats) to assess how far the growth of companies, trusts and personal taxpayers since 1994 supports the above hypotheses.

We begin by first considering evidence for individual taxpayers, then companies, and finally turn to trusts. There are two questions of primary interest. (1) Were the 2000 reforms associated with increased use of companies and trusts as encouraged by the tax incentives? (ii) Was tax sheltering evident between the 2000 and 2010 reforms, reduced or eliminated thereafter, especially with respect to trusts given the realignment of the trust and top personal tax rates?

4.1 Growth of Personal Incomes

Figure 2 shows the annual average growth rates in numbers of individual (personal) income taxpayers from 1994 to 2018, by income band. Panel A decomposes total personal taxpayers into those in the two lowest income tax brackets (<$38K; K = thousand), the third bracket ($38-60K) and those in selected income groups above $60K.[13] Of course, prior to 2000 all incomes above $38K were subject to a common (33%) marginal tax rate.

Panel A shows that during 1994-99 the income growth rates of each group tended to be higher for higher income groups (and was especially high for those earning over $1 million).[14] However, the opposite pattern is observed for 1999-2007 for those with annual incomes above $100,000, with incomes over $1 million growing the least. This evidence is suggestive of a strong tendency for much slower growth of number of taxpayers with more highly taxed incomes declaring those incomes under the personal income tax schedule after the reform.

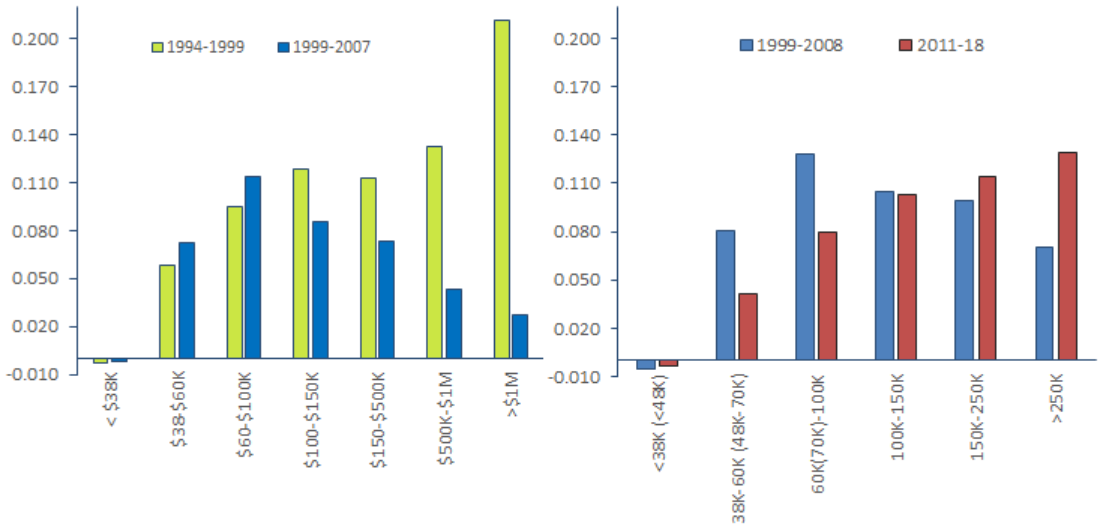
[12] While temporal precedence *per se* is rarely a reliable basis for assigning causality, regression discontinuity analysis (RDA) that compares pre- and post-event outcomes can provide causality insights. Unfortunately, while pre- and post-reform situations are compared here, the data are too limited to pursue formal RDA.

[13] Evidence in Panel A is from TWG (2010). This decomposed incomes into the bands shown but is not available in publicly released IR data, which does not decompose income bands above $250K.

[14] As shown by Creedy and Gemmell (2019), these growth rates, like those shown in Panel B for 2011-18, should not be interpreted as 'the rich getting richer' since they relate to different cross-sections of taxpayers, as distinct from longitudinal data that track the same taxpayers over time.

Given the increased marginal tax rate to 39% for those earning incomes over $60,000, the 'pattern reversal' in Panel B might have been expected above $60,000 rather than $100,000. However, several factors would constrain this. Firstly, there are likely to be fixed costs of setting up tax sheltering devices, such as trusts, while the financial gains are relatively small for those with income above, but close to, $60,000.

Figure 2 Growth of Number of Taxpayers by Personal Income Tax Band, 1994-2018



Source: Data from Inland Revenue

Secondly, for higher earners seeking to reduce their personal tax liability after 2000 (for example, by income sharing with partners or seeking lower-taxed legal forms), the marginal gains from reducing personal incomes to less than $60,000 are small compared to locating just above it. That is, movement towards, and 'income bunching' around, the $60,000 threshold is to be expected but not necessarily with all incomes below $60,000. Alinaghi *et al.* (2019, 2020) provide rigorous evidence supporting this tax-induced bunching behaviour.[15]

Of course, it could be that economic conditions or other non-tax-related factors generated slower growth after 2000 among individuals who previously earned incomes above $100,000, and this cannot be ruled out as an explanation behind the data in Panel A. However, this occurred in conjunction with personal income taxpayers as a whole increasing during 1999-2007 at twice the annual rate of taxpayer growth over 1994-99, and with total personal taxable income growing slightly faster in 1999-2007 (5.2% p.a. against 4.1% p.a. in 1994-99).

The tax-related argument is reinforced by the data after the 2010 reforms when the top personal-corporate tax rate difference was reduced from 9 pps in 2009 to 5 pp from 2011. Panel B shows a slightly different income group decomposition due to data availability. It also excludes 2008-10 to avoid results being influenced by the immediate aftermath of the global

[15] Alinaghi et al. (2020), for example, find strong evidence that couples – who likely income-share – were more likely to respond to the higher marginal tax rate by locating both above and below the $60,000 (later, $70,000) tax threshold.

financial crisis (GFC).[16] The Figure confirms that the pattern observed before the 2000 reforms is broadly re-asserted after 2010. That is, for 2011-18, income growth across the income groups again demonstrates higher average taxable income growth among higher income groups, unlike the 1999-2008 period.

These results provide *prima face* evidence to support the view that personal taxable incomes of top rate taxpayers grew noticeably slower during the period when those taxpayers were subject to a marginal tax rate of 39%, compared to when the rate was lower, at 33%, and aligned with, or was closer to alignment with, the company tax rate. Rough estimates of possible effects on tax revenue from these reductions in personal incomes are presented in the Appendix.

4.2 Growth in Personal, Corporate and Trust Taxpayers

This sub-section looks for traces of evidence of the income-switching effects of tax rate misalignment associated with the tax reforms. It examines the increases in personal (IR3), corporate (IR4) and trust (IR6) taxpayers before and after the 2000 and 2010 tax reforms. It then considers how differences across time in the *shares* of individuals, companies and trusts in total taxpayers varied around the reform years.

Combining various company data sources for similar, but not identical, periods yields the growth rates in numbers of taxpayers by type shown in Table 2, and the annual values of the (logarithm of the) number of companies and trusts from 1994 to 2018 in Figure 3. These are based on Inland Revenue's company income tax data and SNZ's 'Limited Liability Company' (LLCs) category. The table shows growth rates over 1994-99, 2001-08 and 2011-17. These reflect the periods either side of the 2000 and 2010 reforms, and again omit the Global Financial Crisis (GFC) years, 2008-10.

Although company data for 1994-99 are only available from the IRD source, it can be seen from the growth rates in Table 2 and the trends in Figure 3 that, due to increased incorporation rates after 2000, the number of companies increased much faster over 2001-08 (9.3% p.a.) compared with 1994-99 (5.0% p.a.).[17] Following the 2010 reforms, company growth in both IRD and SNZ sources declined substantially in 2011-17 compared with 2001-08 and even becoming negative based on IR4 company tax returns.[18]

Though the growth rate of trust numbers is similar before and after the 2000 reform (only available for IRD data), there is evidence in Figure 3 of a significant increase in 2001 immediately following the reform that favoured use of this option, and significantly reduced

[16] In Panel B the income groups are defined to align with the different tax thresholds ($48K and $70K instead of $38K and $60K) for the relevant tax years before and after 2008. Results are similar if $38K and $60K thresholds are used throughout.

[17] Figure 3 shows values of the logarithm *of* the number of entities, so that the rate of growth can be inferred from the slope of each profile between any two years.

[18] The 2008-09 GFC and 2010-11 Christchurch earthquakes could also have had some persistent effects on observed company growth rates during 2011-17 compared to 2001-2008, for example via business failures and insolvencies. This suggests some caution in treating the changes as purely tax-induced. Using data on business insolvencies, Hall and McDermott (2019) find some increases in company insolvencies following New Zealand's business cycle peak in early 2008, but also find evidence of significant increases in corporate insolvencies in 2012 and 2014.

growth rates for trusts after 2010 when the tax incentive was removed. As shown in sub-section 4.3, the behaviour of income earned through trusts shows much stronger and persistent responses to both the 2000 and 2010 reforms. Figure 3 also confirms that, after strong growth in trust numbers to 2008, the profile becomes relatively flat or declining, especially after 2010.

Table 2 Growth in Numbers of Taxpayers by Entity and Type, 1992-2019 (% p.a.)

Data source: IRD*	1994-99	2001-08	2011-17
Companies	5.0	9.3	-0.8
Trusts	7.0	7.0	0.8
Individuals	0.9	2.1	1.7
Partnerships		-3.1	-3.1
Data source: SNZ		**2001-08**	**2011-17**
Limited liability companies		7.9	2.8
Trusts & estates		12.0	2.9
Individual proprietorships		-0.6	1.7
Partnerships		-3.3	-2.4
	Change in share (percentage points per year)		
Data source: IRD*	1994-99	2001-08	2011-17
Individuals	-0.39	-0.71	0.26
Companies	0.20	0.52	-0.23
Trusts	0.20	0.19	-0.03

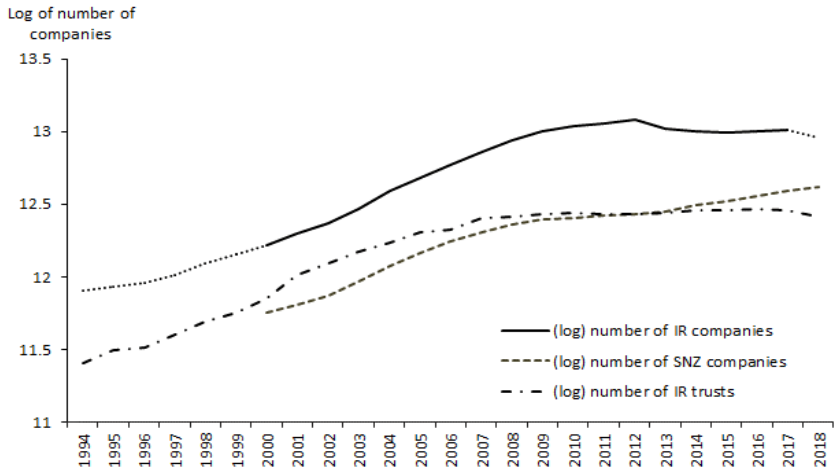
Note: * Data for 'active customers by entity' (i.e. excludes registered but inactive entities).
Source: Data from Inland Revenue, Statistics New Zealand

Examining whether personal taxpayers switched towards trusts and company taxation is complicated by the fact that 'individual' (IR3) taxpayers in IRD data include employees as well as the (smaller numbers of) self-employed. Hence, IRD data in Table 2 show that the growth of individual taxpayers was higher in 2001-08 than in 1994-99, in part reflecting the much stronger growth of employment in the latter period.[19] However, IRD data on (unincorporated) partnerships and SNZ data on both sole proprietors and partnerships in Table 2 each confirm declines in these taxpayer categories over 2001-08 and, less so, over 2011-17.

When the shares of these taxpayer categories in total taxpayers are considered in Figures 4 and 5, the changes over 1994 to 2018 are quite dramatic. For example, the IRD categories in Figure 4 reveal that the share of individual taxpayers fell from a high of 92% in 1994 to a low of 84% in 2010-11 before rising again to over 85% in 2017. The company tax share largely mirrors this, peaking at 11% in 2011 before declining to 2017, with the trust tax share rising over 1994 to 2010, then flat-lining or declining slightly to 2017. Notably, for companies (less so for trusts) these changes in trend around 2010-11 coincide with the relevant income tax rate changes described earlier, rather than with the GFC in 2008-10.

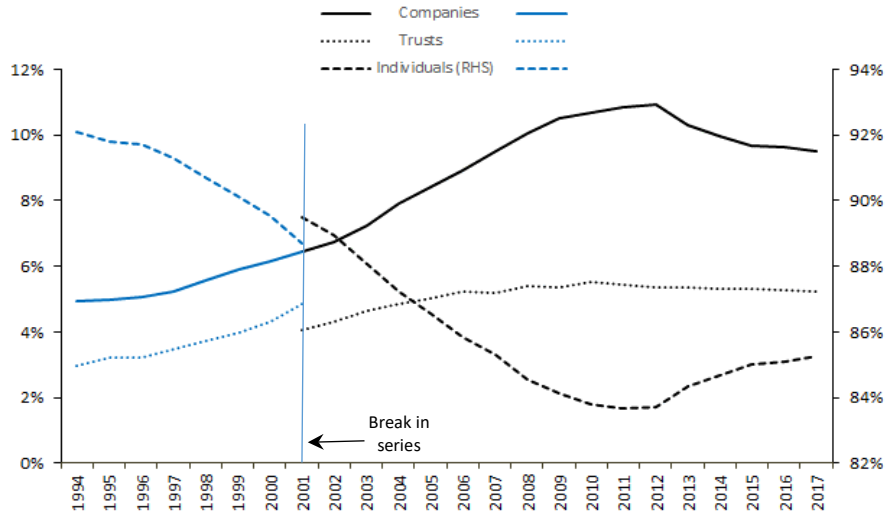
[19] SNZ data show that the employment rate averaged 68.6 over 1994-99 and 71.7 over 2001-08, reaching a peak of 73% in 2007. See http://archive.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-social-indicators/Home/Labour%20market/employment.aspx

Figure 3 Company & Trust Growth, 1992-2018



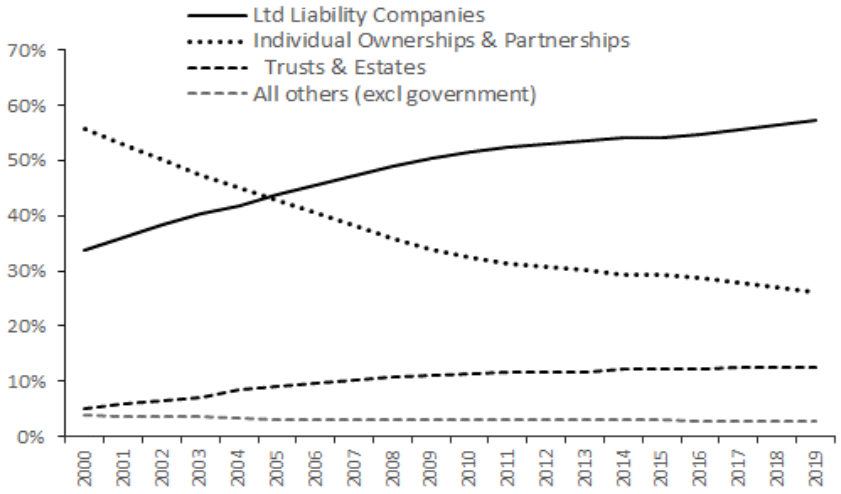
Note: The 'dotted' line segments for IR companies indicate extrapolation using different data sources.
Source: Data from Inland Revenue, Statistics New Zealand

Figure 4 IRD Taxpayers by Type, 1994-17 (percent of total)



Source: Data from Inland Revenue

Figure 5 SNZ Businesses by Type, 2000-19 (percent of total)



Source: Data from Statistics New Zealand

4.3 Responses of Taxable Incomes

The extent of tax sheltering depends, not just on the numbers of taxpayers using sheltering devices, but on the amount of income diverted through them. Trends in company taxable income are not helpful for this purpose since the newly incorporated companies were typically small, making limited contributions to the total taxable income of the sector.[20] However, examining the growth of trust taxable income sheds further light on tax sheltering.

Trust income may be paid to beneficiaries or trustees; the former are taxed at their marginal (personal) income tax rate, whereas the latter are taxed at the trust tax rate (33% during the years examined here) and hence benefit from the tax rate non-alignment during 2001-10. Three panels in Figure 6 show: (i) the annual growth rates of IR6 trust numbers, (ii) the (log of) trustee and beneficiary incomes, and (iii) the share of trustee income in total trust income. By using logarithms in (ii) profile slopes measure the growth rates of each income type.

The top panel of Figure 6 confirms earlier data on trust growth and highlights the especially large increases in 2000 and 2001 (10% and 15%), as the new non-aligned top personal tax rate took effect. It also indicates that trust growth almost completely dried up from 2011. Indeed total IR6 trust numbers in 2018 were around the same level as a decade earlier.

Panel (ii) shows that both trustee and beneficiary income growth fluctuated from year to year over 1994-2000. However, from 2001 to 2010, trustee income grew much more rapidly, as expected if tax sheltering was occurring. From 2011, however, with the tax incentive removed, the two income forms again grew at similar rates.[21]

A rough estimate of potential tax revenue loss from this trust tax sheltering option between 2002 (when post-reform trustee income began to grow much faster than beneficiary income) and 2010 is given in the Appendix. There it is assumed that in the absence of the tax change both income types would have grown at the same annual rate over 2002-11. This enables the lost revenue associated with the 6 percentage points difference in tax rates can be estimated. Using the taxable income data underlying panel (ii), and the two tax rates, it is shown that a common taxable income growth rate for beneficiary and trustee incomes would have yielded $34.178 billion in trust tax revenue over those 10 years. Using actual trust incomes, tax revenue over that period is estimated at $33.075 billion. That is, estimated actual trust tax revenue is about $1.1 billion less than in the counterfactual 'equal income growth' case.

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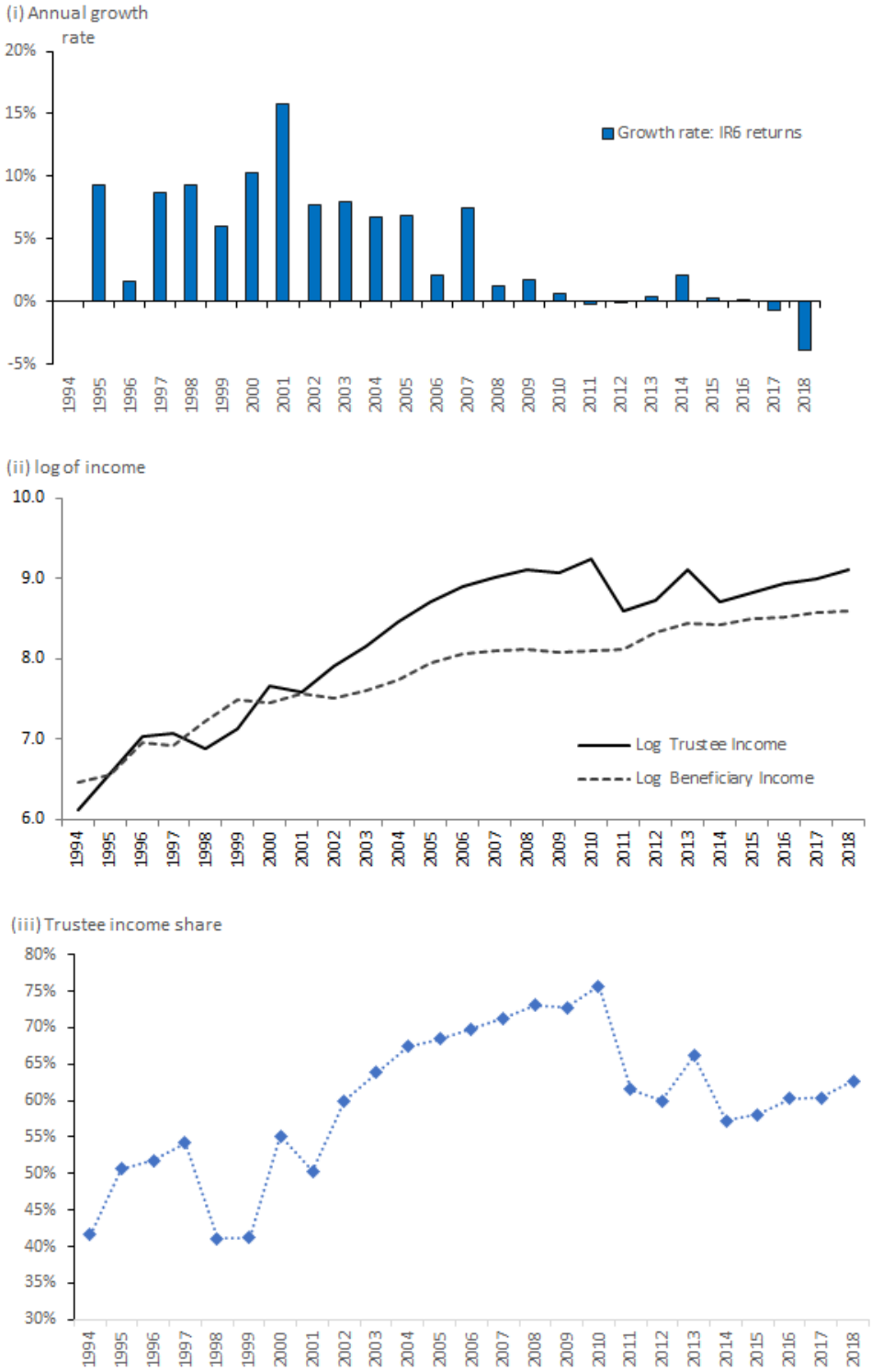
[20] Taxable income growth rates for IR4 companies during the three periods shown in Table 2 suggest similar average growth rates of total taxable income at 8-9% per year.

[21] Inland Revenue provide more information on the patterns in Panel (ii) as follows. '*Much of the growth of trustee income between 2001 and 2010 was in the form of imputed dividends. The 2010/11 (labelled 2011 on the graph) drop in trustee income corresponds to a decline in dividend payments. ... The company tax rate dropped from 33c to 30c in the 2008/09 year and from 30c to 28c in the 2011/12 year. In both cases, companies could attach imputation credits to dividends with reference to the higher preceding company tax rates for an additional two years. For this reason, part of the drop in 2010/11 and in 2013/14 trustee income will have been due to firms making adjustments after having high dividend pay-outs in the preceding year.*' See https://www.ird.govt.nz/about-us/tax-statistics/revenue-refunds/trusts-ir6.

Figure 6 Growth of Trust Numbers and Incomes, 1994-2018



Source: Data from Inland Revenue

The dramatic post-2000 effect on the share of trustee (in total trust) income can be seen in panel (iii). The share of trustee income rose from around 50% in 2001 to 75% by 2010. Thereafter, when there was no longer a tax advantage for trustees, the share dropped back to around 60% on average. In addition, the large drop in the trustee income share to 40% in 1998 and 1999 from 55% in 1997 likely reflects attempts to 'bring forward' beneficiary income by

some trust owners to ensure that affected beneficiaries received their income before beneficiaries' top tax rate was raised in the 2001 tax year.[22]

4.4 Was Tax Sheltering Eliminated after 2010?

Notwithstanding the acknowledged difficulties identifying 'traces' of tax sheltering, the previous evidence on personal, corporate and trust taxpayer behaviour is consistent with a tax sheltering motivation. The evidence before and after 2010, for example, suggests that after 2010 there was considerably less use of trusts, recovery in the growth rates of personal incomes for those in the top tax bracket, and a decline in the relative numbers of company (IR4) taxpayers among total (IR3, IR4, IR6) taxpayers.

A natural question to ask is whether the 2010 reforms succeeded in rendering the legal form by which income is earned largely irrelevant for tax purposes? As mentioned above the trust and top personal rates were aligned after 2010 thereby eliminating this sheltering incentive. The top personal-corporate tax rate difference at 5 percentage points was only 1 percentage point below the difference from 2001 to 2008, but almost half the 2009 difference. Perhaps this would be sufficient to discourage tax-motivated use of companies? Nevertheless, if the 'balloon' illustration described in the Introduction is appropriate, then it might be expected that taxpayers would search for other tax sheltering opportunities after 2010, when previous options are removed or rendered less valuable.

Section 5 examines the policy advice associated with the 2010 tax reforms; in particular, advice around the merits of 'protection measures' to prevent or inhibit post-reform tax sheltering. The remainder of this section considers evidence of post-2010 responses. This seems to confirm greater use of alternative options to shelter income from tax. Unsurprisingly, consistent with the changed incentives, these largely involved greater use of mechanisms specific to the corporate legal form.

Of the myriad documents available on the NZTWG website, two interesting but largely overlooked papers, NZTWG (2018b, 2018c), provide advice from officials to the Group regarding tax sheltering behaviour. Thus, for example, NZTWG (2018c, p.1) reports that 'IRD audit staff have recently encountered a variety of arrangements that, in their opinion, allow taxpayers to avoid the intended taxation of dividends on the distribution of income or assets from companies to their shareholders'.

The tax advantages of incorporation for small self-employed businesses noted earlier take several forms. For example, if income is earned and retained within the company, then realised some time later via capital gains (e.g. via the sale price of the company) the company income is effectively transferred to the individual owners without facing any additional personal

[22] The increase in the top personal tax rate in the 2000-01 tax year was announced in December 1999, but was also part of Labour's election manifesto in the run-up to the 1999 general election. The large increase in the trustee share of trust income in 2000 (i.e. before the 39% tax rate was applicable) in Panel (iii) likely reflects attempts to switch income legitimately towards trustees (at no tax cost) before the 2000-01 changes took effect.

taxation. However, if company income is transferred to owners in the form of dividends, in principle these are taxed at the owner's personal marginal tax rate, less any imputation credits for company tax already paid. In practice, therefore, tax can be sheltered if income can be transferred to owners, or they can otherwise gain access to the income, without incurring the additional personal taxation of dividends or capital gains.[23]

Further, company structures involving capital gains and/or shareholder loans can be used to escape all taxation; see NZTWG (2018c, pp. 2-3). Thus, either the full 33% tax, or the additional 5% (33-28%) can be avoided or delayed. Such 'dividend stripping' practices have recently been identified by Inland Revenue as 'an emerging issue' (NZTWG, 2018c, p. 4). These issues are likely to be especially acute for small, closely-held businesses where ownership can be transferred, or loans arranged, among closely related individuals.

Table 3 below, from NZTWG (2018b), illustrates how the tax treatment of company dividends differs between three different options: (i) 'dividend avoidance' by which dividends are channelled to individual shareholder-owners using tax-exempt vehicles (discussed below); (ii) payment via a trust; and (iii) when dividend payment is direct to the individual with associated imputation credits.

Table 3 Tax Benefit Relative to Full Personal Taxation

2000 tax rates[§]		
A.	No deferral	10 year deferral[**]
Dividend avoidance	10%[*]	13%
Trust	10%	13%
Imputation	0%	3%
2011 tax rates		
B.	No deferral	10 year deferral
Dividend avoidance	7%	10%
Trust	0%	2%
Imputation	0%	2%
39% (personal, trust) & 28% (corporate) tax rates		
C.	No deferral	10 year deferral
Dividend avoidance	18%	24%
Trust	0%	5%
Imputation	0%	5%

Notes: [*] $100 of income earned directly, paid tax of $39, for a net income of $61. Income that was only subject to the company tax rate paid $33 of tax, for net income of $67. 10% = (67-61)/61. [§] NZTWG (2018b) refers to these as '1999 rates' but the 39% rate became applicable from the 2000-01 tax year. [**] The interest rate used here by NZTWG (2018b) to calculate deferral tax gains is not stated but appears to be 2.5%.

Source: NZTWG (2018b, p. 13).

[23] NZTWG (2018c) documents how deferral of dividend payment or capital gains yield tax 'deferral benefits' to the taxpayer.

Two periods are shown: immediate payment (no deferral) and 10-year deferral where the taxpayer benefits from the net present value gains arising from delayed payment of the tax. The benefit from reduced tax rates associated with the three options are shown for the 2000 tax rates regime when the top personal (corporate) rate was 39% (33%) and the 2011 tax rates of 33% (28%). The table also shows the effects of raising the top personal rate back to 39%.

Comparing panels A and B confirms that (i) imputation ensures zero or small tax benefits (from deferral), but 10-13% gains from the other two options. These were eliminated or reduced further (to 2%) for trusts and imputation by the 2010 reforms. However, dividend avoidance schemes could still deliver a 7-10% tax advantage (and more if deferred beyond 10 years). Panel C shows that these advantages would be substantially increased if the top personal rate returned to 39%, generating an 18-24% tax benefit.

The results in Table 3 suggest that differences in the tax treatment of dividends after 2010 provided the biggest tax sheltering opportunity, compared to trusts or payment of imputed dividends. Two pieces of evidence, in Figures 7 and 8, suggest that this sheltering option was increasingly used after 2010.

Figure 7 shows the aggregate annual closing balance of closely-held firms' imputation credit accounts (ICAs) for 2004-16.[24] These balances rise to the extent that closely-held companies hold taxable income within the company rather than pay income to shareholders. The data are split into 'qualifying' and 'non-qualifying' balances, the two categories referring to whether the payments would qualify for imputation credits or not.

While the two balances behave similarly over 2004 to 2007, they diverged from 2008 and especially from 2011 onwards, when non-qualifying ICA balances increased rapidly, while qualifying ICAs decline or plateau. This suggests a move towards greater retention of funds within these closely-held companies rather than payment of imputed dividends after the corporate rate fell from 33% to 30% in 2008. The trend is then substantially exacerbated from 2011 to 2016 when (a) the corporate tax rate (and thus the rate of imputation) fell again to 28%; and (b) the 'trust route' to gaining tax benefits was removed.

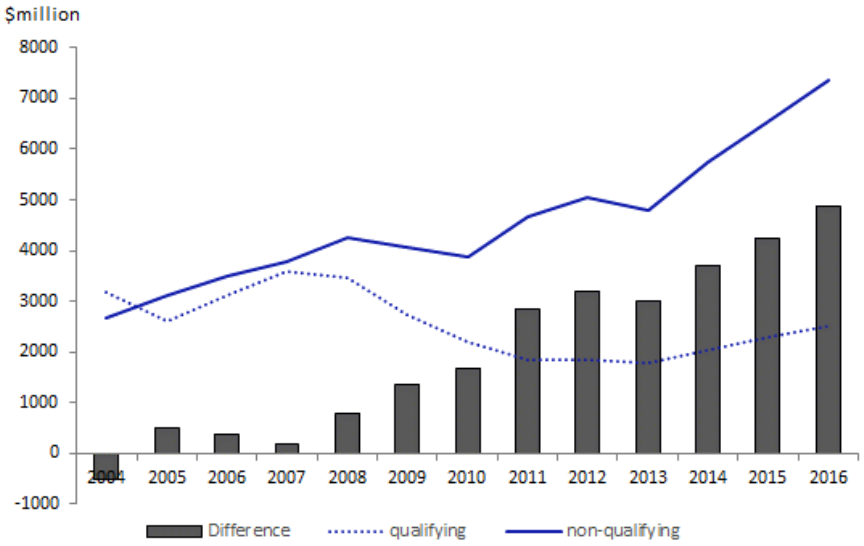
An alternative tax sheltering option for closely-held companies is the use of company-shareholder loans. That is, a company may make a loan to a shareholder-owner, thereby enabling the shareholder to access company income without this being treated for tax purposes as 'personal income', unlike when dividends are paid.

These are legal practices but presume that the loan will be repaid to the company at a future date. If loans are repaid there is some deferral tax benefit for the shareholder, and to the extent that loans are not repaid there is a permanent tax gain to the shareholder. Given the large number of such small firms in New Zealand, it is likely to be difficult for IRD to monitor, via audits etc., these loans over extended periods, to check whether and when they are repaid.

[24] The data cover a sub-set of closely-held companies for which IRD could identify suitable data.

Figure 8 shows the stock of shareholder current account debits for such closely-held companies, effectively capturing the amount of net borrowing by shareholder-owners from their companies. The increase in borrowing in non-qualifying accounts was dramatic in 2011 and 2012, and was perpetuated thereafter. The total stock of current account debits rose from $8.6 billion in 2010 to $15.9 billion in 2011 and $20.5 billion in 2012.

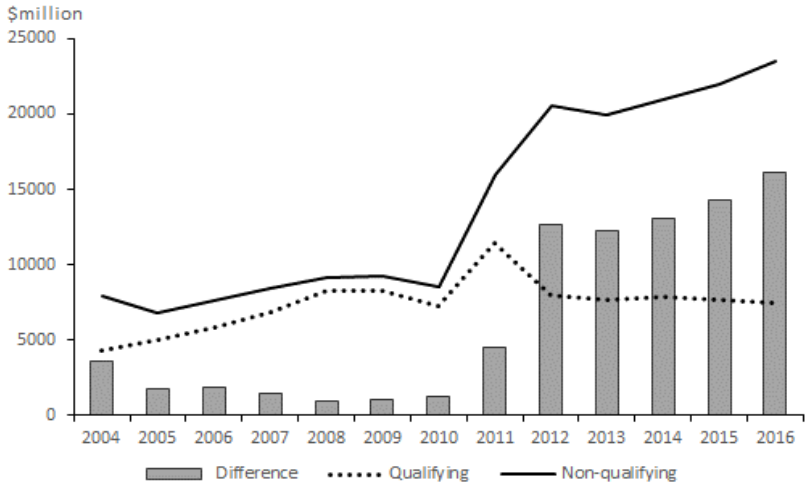
Figure 7 Imputation Credit Account (ICA) Closing Balances, 2004-16



(IRD-Identified Closely-Held Companies)

Source: NZTWG (2018b, p.10)

Figure 8 Stock of Shareholder Current Account Debits, 2004-16



Source: NZTWG (2018b, p.11)

These data in Figures 7 and 8 therefore suggest strongly that after the 2010 reforms largely removed the tax advantages of earning income through trusts, various company dividend avoidance routes were pursued. These were the most tax-advantaged options post-2010 to enable small business owners to avoid personal taxation on their incomes, even though the personal-corporate tax rate difference of 5 percentage points was substantially lower than the

9 percentage point difference prior to 2010. It would seem that the balloon analogy does indeed apply here.

4.5 Tax Sheltering Gains

Section 4.3 offered an estimate of the tax sheltering gains associated with increased trust use after 2000. This sub-section provides a rough upper-bound estimate of the 'lost' tax sheltering revenue from the dividend tax avoidance depicted in Figures 7 and 8. Details of the calculations are in the Appendix.

An estimate based on ICA use is obtained as follows. Firstly, assume that the average (positive) difference in qualifying and non-qualifying ICA closing balances observed over the three years 2005-07 had been maintained thereafter. This is $352 million. Secondly, treat observed qualifying/non-qualifying differences in later years, greater than $352 million as due to the tax incentives following the corporate tax rate cut in 2008 (9 pps) and the personal and corporate tax rate cuts in 2010 (5 pps).[25] Applying this approach yields an estimate of total avoided taxation via ICAs over 2008-16 of $1.232 billion, or $137 million per year on average.

An equivalent rough upper-bound estimate of the lost tax revenue from loan-related sheltering can be obtained using a similar approach. Firstly assume that all of the increase in current account debits from 2011-16, above the average observed over 2008-10 of $1.081 billion (which remained stable over those three years) was due to the tax incentive. This incentive is the 5 pps tax rate difference between what the tax paid at the company level and the tax that would be paid had this personal tax sheltering route not been followed. It can be shown that the data underlying Figure 8 generate an estimate of $3.316 billion 'lost' tax revenue over 2011-16, or $553 million per year on average.

These revenue loss estimates of several billion dollars, together with those for trust revenue losses estimated earlier, are small but not trivial when compared with 2019 actual revenue totals for individual and corporate taxes of $39 billion and $15 billion respectively.

5. Does New Zealand Require Tax 'Protection Measures'?

5.1 Official Policy Advice

The 'traces' of evidence in section 4 suggest that the regime of substantially non-aligned tax rates between 2000 and 2010 was associated with increased tax sheltering activity, which was reduced and/or diverted to other forms after the 2010 reforms. An interesting question to consider, therefore, is: how did tax policy advice at the time of the Buckle Review/Budget 2010 and the Cullen Review consider this tax sheltering behaviour, and how to minimise it?

The 2010 Buckle Review weighed up the arguments over aligning the top personal, corporate, and trust tax rates at 30%.[26] Since the corporate rate at the time was 30%, and no

[25] Of course, over 2008-11 other avoidance vehicles such as trusts were also being used. Hence the ICA option was likely used less over 2008-10 than after 2010, despite the larger tax rate difference during 2008-10.
[26] Alignment at 30% had also been the manifesto ambition of the then Minister of Revenue, Hon. Peter Dunne's United Future party at the 2008 election. In a March 2009 speech to the International Fiscal

convincing argument was presented for increasing it, alignment required an unusually low top personal rate by international standards. The main alternative options were an aligned top personal and trust tax rate between the 38% rate in 2009 and 30%, with (i) a 30% corporate tax rate, or (ii) a corporate rate below 30%. Thus, in all scenarios the top personal and trust tax rates would be realigned as they had been prior to the 2000 changes.

TWG (2010, p.65) reported that 'most members of the TWG consider that the top personal, trust and company rates should be aligned. If at any time this is no longer feasible due for example to global pressures causing the company rate to reduce, at the very least the trust, top personal tax rate and top rates for PIEs and other widely-held savings vehicles need to be aligned to address integrity, efficiency and fairness concerns'.[27] While TWG (2010) reveals the (majority or consensus) tax policy advice of its disparate membership, potentially more interesting is the advice to the government by tax policy officials between the Buckle Review's publication in January 2010, and the Minister of Finance's Budget in May that year.

Official advice documents released after the Budget, such as NZT-IR (2010a,b), reveal some differences of views regarding the need for 'protective measures' to combat potential tax sheltering. For example, NZT-IR (2010a, p.2) includes the following:

> '*Inland Revenue officials consider that, provided the trust and top personal tax rates are aligned at 33%, a cut in the company tax rate to 28% would not require special integrity protection measures. … The Treasury considers that while consulting on the two questions together may be helpful, the Government also has the option of announcing a company tax reduction in the Budget with a direction for integrity measures to be consulted on post-Budget*'.

The Treasury seems to have had particular misgivings regarding the integrity of a post-Budget non-aligned system. NZT-IR (2010a, 'Recommended action (d)') notes:

> '*Inland Revenue considers that the company rate could be reduced to 28% before requiring new integrity protection measures, but that the Treasury considers that a cut below 30% may require integrity measures.*'

Later in the same document, possible post-Budget personal-corporate tax rate differences and integrity measures were elaborated:

> '*A divergence of three percentage points appears sustainable. As the divergence in tax rates increases beyond three percentage points, pressure will increase. It is a matter of judgement how much divergence is sustainable without requiring complex rules to buttress the personal income tax system*' (NZT-IR, 2010a, para.28).

Further:

Association, Dunne stated '*I have long advocated a 30/30/30 alignment of these [personal/corporate/trust] rates as a simple solution to problems such as individuals using companies and trusts to shelter personal income. I am therefore pleased that alignment of these rates, as a medium-term goal, occupies an important place in the new tax policy programme*'; see http://taxpolicy.ird.govt.nz/news/2009-03-20-govt-announces-tax-policy-work-programme.

[27] This statement obscures the fact that a significant minority of the Group, and Treasury officials, did not consider alignment of the top personal and corporate rates at 30% feasible or required.

'*The Treasury notes that for many years the difference between the personal and company tax rates was six percentage points. This difference prompted significant behavioural change, with more income retained in closely held companies which did not distribute dividends. Even if a five percentage-point difference does not alter the after-tax return enough to impose large economic efficiency costs, it does undermine the integrity of the tax system if it appears people can earn large amounts of income which can be taxed at lower levels than the personal income tax rate. The Treasury considers that some integrity measures may be needed even if the difference between the personal and company tax rates is five percentage points*' (NZT-IR, 2010a, para.33).

These excerpts demonstrate that, although opinions differed somewhat between Treasury and IRD officials, there was a clear view that a personal-corporate tax rate difference greater than 3 percentage points may require further integrity or 'revenue protection' measures.[28] It also seems clear from the evidence in section 4 that the 5 percentage point difference that eventuated, with limited additional protective measures, was indeed vulnerable to tax sheltering, principally via corporate dividend avoidance.

5.2 Policy Responses

How could policy respond in the light of recent evidence? Papers presented to the Cullen Review by Treasury and IRD officials explicitly addressed this question, laying out a number of options; see NZTWG (2018b,c). These include:

(i) Changes to technical anti-avoidance rules to outlaw dividend avoidance.
(ii) Changes to deferral rules for closely-held companies such that dividends face personal tax rates when earned in the company rather than when distributed to shareholders.
(iii) Tax shareholder loans of closely-held companies as 'dividend equivalents'.
(iv) Taxation of capital gains by trusts and companies at the personal shareholder level using personal marginal tax rates (net of any imputation credits).
(v) Changes to the taxation of closely-held companies that treat them the same as unincorporated partnerships and sole proprietorships for tax purposes.

It is beyond the scope of this paper to examine each of those options in detail. But it may be mentioned that each of (i) to (iii) essentially involve forms of anti-avoidance legislation. Defining 'dividend-equivalent' arrangements, for example, or distinguishing a commercially sensible, from a tax-motivated, shareholder-company loan, are likely to be problematic. While legislating to disallow obvious and specific tax avoidance schemes always makes sense, applied more broadly this approach risks simply generating a 'balloon effect' unless all novel sheltering responses are predicted and eliminated in advance. The experience of various other countries with larger personal-corporate tax rate differences is that this becomes an on-going game of 'cat and mouse' that is resource intensive and, at best, successful for short periods.

[28] Nevertheless, NZT-IR (2010a, para.32) reports that: 'On balance, and based on our analysis Inland Revenue Officials consider that a tax rate differential of up to five percentage points would be sustainable without additional integrity protection measures'.

Option (iv), the introduction of a capital gains tax (CGT) at the shareholder/individual level, was one of the key motivations for, and recommendations of, the Cullen Review. However, the government was not prepared to adopt the recommendations. Wider arguments over the (de)merits of a CGT are complex and range well beyond concerns with tax sheltering. However, there can be little doubt that a broad-based CGT would deal with a number of the sheltering concerns examined here.

This leaves option (v) as perhaps the most viable prospect to reduce tax sheltering via corporate arrangements, especially dividend avoidance. This option would allow small companies to retain many of the commercial benefits of incorporation (such as limited legal liability) while denying the tax advantages. Table 4, based on SNZ's business demographic survey data for 2019, shows that as well as businesses in general in New Zealand being dominated by those with zero, or less than five, employees (71% and 89% respectively), this also holds for incorporated (limited liability) businesses.

Table 4 Business Entities by Type and Employee Size, 2019 (%)

	No. of	No. of employees		
Business type:	entities	0	< 5	< 10
Individual Proprietorship	88,017	91	99	100
Partnership	54,543	83	97	98
Limited Liability Company	312,879	60	85	91
Trust/Estate	69,180	94	99	99
All Businesses*	546,735	71	89	94

Note: * Business types not shown include cooperative companies, joint ventures, charitable trusts, societies & associations, government-owned entities and 'other'.

Source: Data from Statistics New Zealand

For that group, 60% have no employees at all, with 85% having fewer than five (which includes paid family members). Indeed, the number of limited liability companies with zero employees, at over 187,000, substantially exceeded the total number of sole proprietorships and partnerships (around 125,000). This tends to suggest that many of those incorporated self-employed businesses may be little different from those sole proprietorships or partnerships. Owners-shareholders of such closely-held companies could potentially be taxed instead directly via the personal tax schedule. With all profits taxed at personal marginal tax rates, there would be no incentive to minimise dividend pay-out, and no tax benefits from accumulating income within the company to be realised later as capital gains.

6. Conclusions

Major tax debates in New Zealand over the last two decades have revolved around the merits of aligning tax rates applied to different legal forms and types of income. At various times tax rates for personal, corporate and trust-sourced incomes have been aligned and non-aligned, while tax rates applied to different types of capital income (bank interest and various other investment returns including capital gains) have also differed.

During periods of non-aligned tax rates, uncertainty has remained over any resulting tax sheltering activity. This uncertainty applies to both its extent and the need for additional revenue protection measures to minimise it. This paper has sought to bring together 'traces' of

evidence that can shed light on the extent of tax sheltering. This involved examining data on changes over time in predicted 'response variables' (such as the numbers of different taxpayer types and taxable incomes) that occurred in association with the different tax sheltering incentives arising from tax regimes in New Zealand since the 1990s.

The paper also examined publicly available, but rarely consulted, documents that reveal official tax policy advice to the Government on these issues. These provide interesting insights both into official perceptions of the extent and type of tax sheltering, and the merits of legislating to deal with it.

The evidence here has been limited to examining changes in variables across tax regimes that embody different incentives towards tax sheltering in general and/or specific types of sheltering. Nevertheless, that evidence points strongly to various key 'response variables' demonstrating patterns consistent with tax sheltering hypotheses. In particular, the behaviour of the numbers and incomes of different taxpayer types after the 2000 reforms removed tax rate alignment is consistent with the expected increase in tax sheltering activity. This is supported by evidence after 2010 when some of those sheltering incentives were removed, and others became more prominent as a consequence.

Estimating the amount of tax revenue potentially 'lost' via various tax sheltering schemes is mostly impossible without access to detailed taxpayer data, or because a reliable counterfactual cannot be obtained , such as the counterfactual growth rate of company numbers over extended periods, associated with various tax and other reforms). However, rough estimates for some specific dividend avoidance schemes and trust use were attempted and these suggest potentially several billions of dollars of 'lost' revenue associated with recent use of company- and trust-related schemes that avoid additional personal-level tax.

On policy advice, the uncertainty around the time of Budget 2010 over the need for further revenue protection measures with a 5 percentage point personal-corporate tax rate difference, seems to be resolved by subsequent evidence. The increased use of specific dividend avoidance measures after 2010 suggests that the financial gains from even a 5 pps difference are being pursued by many tax-minimising taxpayers. These sheltering practices (when tax rates are non-aligned) are not easily resolved, but there now seems to be a strong case for further attempts. This paper has suggested that, as long as a capital gains tax is 'off the table', removing the tax-privileges of small closely-held companies relative to their sole-ownership/partnership equivalents is probably the reform most worthy of serious consideration.

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Appendix Estimating Tax Revenue Losses from Tax Sheltering, 2000-03

Sheltering from Personal Tax, 2001-03

Section 4 argued that there was clear evidence of reductions in (the growth of) taxable incomes among taxpayers in the new top income tax bracket (39% tax rate above $60,000) following the 2000 tax reform that raised the rate from 33%. Estimating the extent of tax revenues lost, or raised instead via other tax schedules, as a result of this reform is not straightforward and is best attempted with individual taxpayer data. However, rough estimates are possible based on more aggregated taxpayer data, at least for the years adjacent to the 2000 reforms.

Previous studies of taxable income responses associated with the 2000 reform have noted two aspects. Firstly, the tendency for taxable incomes to fall among higher income groups (with associated switching to trust incomes). Secondly, for some inter-temporal shifting of that income from the immediate post-reform years to the 2000 tax year, when the top tax rate was 33%; see, for example, Claus *et al.* (2012), Carey *et al.* (2015). Thus, the 1999 tax year provides a better pre-reform benchmark for revenue comparisons.

To estimate revenue losses, Appendix Table A1 show total taxable incomes and numbers of taxpayers over 1999-2003, while Appendix Table A2 shows the shares of various taxpayer income groups. This second table highlights the evidence that while the share of taxpayers with incomes less than $100k remained roughly constant over 1999-2003, at 98%, the shares of the three income sub-groups above $100k in the total taxpayers above $100k (shown in the lowest 4 rows of the table), varied noticeably over those years.

In particular, the proportion of taxpayers with the highest incomes rose from 1999 to 2000, but fell back dramatically from 2001. The former shift (in 2000) represent the inter-temporal switching of income to the year before the top marginal tax rate increased, while the reverse patter occurs in 2001-03 as the highest income earners sought to reduce their taxable personal incomes. To obtain an estimate of the counterfactual numbers of taxpayers in each income group, had the 2000 reforms not raised to top tax rate, Table A1 assumes that the proportions of taxpayers in the income groups above $100k would have remained at their 1999 values during 2000-03 (shown in bold). This assumption seems reasonable for the first few years after reform but, of course, over a longer period general increases in taxable incomes due to nominal income growth would tend to move a higher fraction of taxpayers into higher income groups (since tax thresholds remained unadjusted). This may lie behind the fall in the fraction of taxpayers with incomes below $38k, over 1999-2003, which is approximately mirrored by an increased share for the $38-$60k income group in Table A2.

This assumption successfully captures both the expected tendency for taxpayer numbers in the two top groups (>150k) to be larger in the actual case in 2000 compared to the counterfactual (due to inter-temporal switching to avoid the 39% tax rate from 2001), but vice versa for 2001-03 (due to attempts to minimise the impact of the 39% tax rate once it applies).

Table A1 Taxable Income and Taxpayers by Income Group

Income group	Taxable incomes ($ million)				
	1999	**2000**	**2001**	**2002**	**2003**
<$38k	35,183	35,493	36,191	36,536	37,055
$38-$60k	15,885	16,650	18,750	20,582	22,222
$60-$100k	8,987	9,299	10,554	12,136	12,942
$100-$150k	3,777	4,056	3,686	4,153	4,395
$150-$250k	2,526	3,234	2,550	2,840	2,982
>$250k	3,823	7,097	2,353	2,983	3,151
Total >$60k	19,113	23,685	19,144	22,111	23,470
Total >$100k	10,126	14,387	8,589	9,976	10,528
Income group	Numbers of Taxpayers				
< $38k	2,284,980	2,293,950	2,311,570	2,303,580	2,305,870
$38-$60k	342,080	357,910	399,190	437,180	470,710
$60-$100k	120,830	125,230	143,530	164,810	176,970
$100-$150k	31,640	34,010	30,850	34,800	36,820
$150-$250k	13,510	17,300	13,770	15,220	15,910
>$250k	7,550	11,020	5,470	6,600	6,800
Total >$60k	173,530	187,560	193,620	221,430	236,500
Total >$100k	52,700	62,330	50,090	56,620	59,530
	Actual	*Counterfactual* Numbers of Taxpayers			
	1999	**2000**	**2001**	**2002**	**2003**
$100-$150k	31,640	*37,422*	*30,073*	*33,993*	*35,741*
$150-$250k	13,510	*15,979*	*12,841*	*14,515*	*15,261*
>$250k	7,550	*8,930*	*7,176*	*8,112*	*8,528*
Total >$100k	52,700	*62,330*	*50,090*	*56,620*	*59,530*

Note: k = thousand.

Table A2 Shares of Total Taxpayers by Income Group

Income group	Share of Total Taxpayers				
	1999	**2000**	**2001**	**2002**	**2003**
<$38k	0.816	0.808	0.796	0.778	0.765
$38-$60k	0.122	0.126	0.137	0.148	0.156
$60-$100k	0.043	0.044	0.049	0.056	0.059
$100-$150k	**0.011**	0.012	0.011	0.012	0.012
$150-$250k	**0.005**	0.006	0.005	0.005	0.005
>$250k	**0.003**	0.004	0.002	0.002	0.002
Total <$60k	0.938	0.934	0.933	0.925	0.922
Total <$100k	0.981	0.978	0.983	0.981	0.980
Share of Taxpayers (in Total Taxpayers with taxable income >$100k)					
$100-$150k	**0.600**	0.546	0.616	0.615	0.619
$150-$250k	**0.256**	0.278	0.275	0.269	0.267
>$250k	**0.143**	0.177	0.109	0.117	0.114
Total >$100k	1.00	1.00	1.00	1.00	1.00

Note: k = thousand.

Together with estimates of average taxable income within each income group (from the data in Tables A1 and A2), it is possible to obtain estimates of counterfactual taxable income (TI) for each income group (above $100k). By using *actual* average TI in the calculation, this effectively assumes that the taxable income levels of those taxpayers shifting income groups in response to the tax rate change are representative of the group they leave, and they become representative (in terms of average TI) of the group they move into. Thus, for example, average income in the group of taxpayers with 1999 income in the range $150k-$250k was approximately $187k, while the equivalent for the $100k-$150k group was $120k. Thus taxpayers switching between those groups are assumed to relinquish/acquire these income (per capita) levels *on average*.

Table A3 shows how tax sheltering estimates are derived from the counterfactual and actual taxable income data. It should be noted that by assuming for the $60k-$100k group that 'actual equals counterfactual' taxable incomes, these data potentially under-estimate tax sheltering to the extent that some actual income in this group would have been in the >$100k group in the absence of the tax reform.

Table A3 Estimates of Personal Income Tax Sheltering

Income group*	Counterfactual Taxable Income ($ million)			
	2000	**2001**	**2002**	**2003**
$100-$150k	4,462	3,593	4,056	4,266
$150-$250k	2,987	2,378	2,709	2,861
>$250k	5,751	3,087	3,666	3,952
Counterfactual Total TI >$100k	13,200	9,058	10,431	11,079
Actual Total TI >$100k	14,387	8,589	9,976	10,528
Difference:	**1,186**	**-469**	**-455**	**-551**
	Sheltered Tax ($ million)			
Sheltered tax @ 6 pps	71	-28	-27	-33
Sheltered tax @ 39 pps	463	-183	-178	-215
Total tax paid ($M)§	16,836	16,491	17,780	18,654
Total tax paid by TI > $100k ($M)	4,428	2,912	3,396	3,586
As percent total tax paid:	Sheltered Tax (%)			
Sheltered tax @ 6 pps	**0.4**	**-0.2**	**-0.2**	**-0.2**
Sheltered tax @ 39 pps	**2.7**	**-1.1**	**-1.0**	**-1.2**
As percent total tax paid (TI > $100k):				
Sheltered tax @ 6 pps	**1.6**	**-1.0**	**-0.8**	**-0.9**
Sheltered tax @ 39 pps	**10.5**	**-6.3**	**-5.2**	**-6.0**

Note: * k = thousand. § Data on tax paid from Inland Revenue's 'taxable income distribution' data.
Source: Author's calculations using data from Inland Revenue at https://www.ird.govt.nz/about-us/tax-statistics/revenue-refunds/income-distribution.

It can be seen in Table A3 that an additional $1,186 million of taxable income is estimated to have been declared in 2000 (than without the top tax rate rise), while annual taxable income reductions of between $455 and $551 million are estimated for 2001-03. The lower half of the table reports the 'lost' tax based on two alternative assumptions: (i) that all of the shifted income is taxed at 33% instead of 39% (a 6 pps difference); or (ii) that all of the shifted income avoids all tax (a 39 pps difference). The 6 pps assumption could reflect income shifting into

the 33% tax bracket immediately below $60k, and/or shifting to corporate and trust entities which also faced a 33% rate.

For the 6 pps and 39pps cases, it can be seen that, when measured as a percentage of total tax paid in the relevant years, the revenue loss in 2000 is in the range +0.4% to +1.6% (i.e. a revenue gain), and ranges from –0.2% to –1.1% in each of 2001-03. When measured relative to total tax paid by the group in question – those with TI > $100k – these percentage ranges become +1.6% to +10.5% in 2000 and –0.8% and –6.0% per year approximately in 2001-03.

These results are inevitably rough estimates and do not account for potential revenue gains to the extent that more income was declared under corporate and trust tax schedules after 2000 than would otherwise have occurred. Evidence in section 4 on tax sheltering via trusts after 2000 only considered the impact of re-allocating reported total trust income among trustees and beneficiaries, rather than any increase in total income flowing through trusts. Data on total trust income growth, however, does not identify any growth increase in the post-2000 period. Indeed total trust (IR6) income grew by approximately 21% per year over 1994-00, but by 15% per year over 2000-08.

The Appendix results generally imply that much of the personal tax revenue losses, at least for those examined up to 2003, were effectively 'pre-covered' via the additional revenue in 2000 from inter-temporal shifting. The overall tax sheltering magnitude also depends crucially, and unsurprisingly, on whether most of the sheltered income avoided all tax, or was merely taxed at a slightly lower rate.

Tax Sheltering within Trusts, 2002-11.

As discussed in section 4.3, estimates of the amount of tax sheltered in trusts when the trust tax rate differed from the top personal rate are obtained by obtaining counterfactual trust income growth. This assumes that, in the absence of the tax change, both beneficiary and trustee incomes would have grown at the same annual rate over 2002-11. Sheltered tax revenue associated with the 6 percentage points difference in tax rates is calculated as shown in Table A4, based on the taxable income data underlying Figure 6 panel (ii), and the difference in tax rates (33% and 39%)., This yields a counterfactual estimate of $34.178 billion in trust tax revenue over the 10 years (cols. C & D), and an actual total of $33.075 billion (cols. A & B). Thus, actual trust tax revenue is estimated to be about $1.1 billion, or $110 million per year, less than in the counterfactual 'equal income growth' case.

Tax Sheltering via Dividend Avoidance, 2011-16

Revenue losses from tax sheltering via dividend avoidance are discussed in section 4.5. Derivation of the amounts discussed there are reported in Tables A5 and A6 respectively for sheltering associated with the use of company-shareholder loans (as captured by closely-held company shareholder current account debits), and closely-held companies' ICA balances. For the case of shareholder current account debits in Table A5, tax sheltering is calculated over 2011-16 when the rapid increase in these debits began following the 2010 tax reform. For the ICA balances tax sheltering is calculated over 2008-16 because the fall in the corporate tax rate

to 30% in 2008 opened up a 9 pps gap from the top personal rate. As Table A6 shows, ICA debits began to increase sharply from 2008, and more so after 2010 when trust tax sheltering vehicles were removed.

Table A5 leads to an estimate of around $3.3 billion of 'lost' tax revenue over six years via shareholder loans, or around $550 million per year. Table A6 estimates that around $1.2 billion of tax revenue was sheltered via ICAs over 2008-16, or $137 million per year on average, with most sheltering occurring from 2010 onwards.

Table A4 Trust Tax Sheltering ($ million)

	A. Beneficiary income	B. Trustee Income	C. Counterfactual Beneficiary income	D. Counterfactual Trustee Income
2002	1823.9	2732.4	2261.2	2295.1
2003	1995.5	3520.3	2737.3	2778.5
2004	2311.7	4774.3	3516.6	3569.4
2005	2822.8	6126.5	4441.3	4508.0
2006	3180.8	7338.1	5220.2	5298.7
2007	3329.8	8268.4	5755.9	5842.3
2008	3362.3	9097.6	6183.5	6276.4
2009	3267.0	8704.3	5941.0	6030.3
2010	3308.5	10303.3	6755.2	6856.6
2011	3357.1	5373.8	4332.9	4398.0
2002-11				
Tax rate	0.39	0.33	0.39	0.33
Total Tax	11,216.2	21,858.9	18,386.6	15,791.6
Sheltered Tax (A+B) – (C+D):				**-1,103.1**
Sheltered Tax per year:				**-110.3**

Source: Inland Revenue Department

Table A5 Shareholder Current Account Debits ($ million)

	Qualifying	Non-qualifying	Difference	Difference from 2008-10 average	Sheltered Tax @ 5pps
2004	4288	7880	3592		
2005	4994	6798	1803		
2006	5822	7649	1827		
2007	6894	8390	1496		
2008	8287	9184	897		
2009	8234	9286	1052		
2010	7259	8555	1295		
2011	11472	15947	4475	3394	170
2012	7919	20551	12632	11550	578
2013	7705	19924	12219	11137	557
2014	7849	20958	13109	12028	601
2015	7662	21952	14290	13208	660
2016	7425	23511	16086	15005	750
2008-10 average			1081		
2011-16					
Total Sheltered Tax:					**3,316**
Total Sheltered Tax per year					**553**

Source: Inland Revenue Department

Table A6 Closely-held Companies' ICA Closing Balances ($ million)

	Qualifying	Non-qualifying	Difference	Difference from 2005-07 ave.	Sheltered Tax*
2004	3182	2659	-523		
2005	2621	3108	487		
2006	3123	3502	379		
2007	3590	3779	190		
2008	3465	4239	774	774	38
2009	2740	4078	1339	1339	89
2010	2180	3866	1686	1686	120
2011	1842	4672	2830	2830	124
2012	1859	5044	3185	3185	142
2013	1792	4779	2987	2987	132
2014	2027	5731	3704	3704	168
2015	2296	6550	4254	4254	195
2016	2496	7357	4861	4861	225
2005-07 average			352		

2008-16

Total Sheltered Tax:	1,232
Total Sheltered Tax per year	137

* Tax sheltered at 9 pps for 2008-10, and 5 pps for 2011-16, reflecting differences between the top personal and corporate tax rates in those years.

Source: Inland Revenue Department

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