Capital Taxation in New Zealand
A Review from an International Perspective

By

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I. Introduction

New Zealand is often regarded as having a well-administered tax system because of its effective revenue collection and few tax distortions, both of which are a result of its relatively broad tax base and its not peculiarly high tax rates. However, "globalization, in the form of increased international competition for goods, capital and labor, is changing the economic landscape in which domestic taxes are set."[1] Wise policymakers therefore no longer believe any good tax system can stand still; the conventional trade-off between the three classic criteria for designing a sound tax system-efficiency, equity and simplicity-can no longer be weighed in isolation.

A concern of focus in this paper is the country's "capital shallowness" with low capital productivity. New Zealand is currently ranked 22nd out of the 30 OECD countries in the productivity league table. An hour of work in New Zealand typically generates 30 per cent less output than an hour worked in Australia (Max and Beard, 2008). As low productivity has been an issue in New Zealand since at least the 1970s (Max and Beard, 2008), it is not entirely clear that capital taxation is the factor underlying capital shallowness in New Zealand as opposed to other potential reasons (Benge 2009), one of which might be the traditional industrial structure[2]. Still, it is worth investigating the possibility that improved capital taxation may help enhance capital productivity and hence overall economic growth.

Another concern has been the reliance on capital inflows (both portfolio and foreign direct investment) and macroeconomic vulnerability as a result. During the 2001-7 period, inbound foreign direct investment was 2.8 percent of GDP, not particularly high compared to many OECD countries, and outbound foreign direct investment was only 0.1 percent of GDP. In other words, New Zealand is largely dependent on capital inflows and little savings are invested abroad. It is also not a particularly open economy ranking only 69th of 98 countries (Krzepkowski and Mintz (2008)). This raises issues about the sufficiency of New Zealand's savings rates to invest in capital at home and abroad.

Our task is to investigate the options that may help improve capital taxation in New Zealand in terms of its efficiency, fairness, effectiveness and overall coherence.

Capital taxation refers to those levies applied to income from capital: business profits, interest, dividends, capital gains, royalties and income from real property. This study is focused mainly on the taxation of business profits and related taxation of dividends and capital gains.

In our analysis, we come to three primary conclusions:

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[1] The Treasury Department (2009).

[2] For example, according to the basic statistics published by OECD, the primary industries, which are associated with relatively low capital productivity, account for a relatively high share of GDP in New Zealand compared to that in Australia.

- New Zealand should pursue a policy to reduce company tax rates further to 25 percent and broaden the company tax base by reducing the generosity of its tax depreciation allowances. This would not only improve neutrality and productivity by creating a level-playing field among business activities but also help shore up company tax revenues given the ease by which multinational companies shift book profits to low-tax jurisdictions using tax planning strategies.
- In the face of a lower company income tax rate compared to the personal tax rate, capital gains should be partially taxed at a rate consistent with dividends.
- New Zealand should study the adoption of a dual income tax with a flat tax on all forms of capital income (keeping in mind integration with the company tax), which is taxed on a separate schedule from labour income. However, the effect of a high tax on labour compared to capital income creates opportunities for taxpayers to recharacterize labour earnings as preferentially taxed dividends and capital gains, which is particularly important at the small business level.

The next section provides a literature review with international evidence on how the structure and rate of capital taxation may constrain or facilitate levels of capital investment and/or domestic savings. Then in Section III, we review the structure of capital taxation in New Zealand in comparison with that in other major small open economies and some global economic powers, following which we examine the main concerns of tax policymakers in New Zealand. Section IV provides our analysis of marginal effective tax rates by industry in New Zealand and compares them with those in other OECD countries, from which we draw up possible options for future tax changes. The final section concludes our study.

II. Capital taxation, capital productivity and domestic saving

Taxes reduce capital investment and saving since they increase the costs to investors and distort market signals for capital allocation. To mitigate these negative impacts, policymakers around the world have been lowering the tax burden on capital and, in some cases, leveling the playing field among different types of capital investors with respect to their savings. These changes, over the past decades of intensified economic globalization, have evolved from a simple notion of tax rate reduction to more sophisticated reforms in tax structure such as the shift from income to consumption taxes and “dual income taxes” with lower tax rates applied to capital relative to labour income.

This section provides a literature review focusing on how capital taxation constrains the level of capital investment and savings as well as affect business structures with respect to the nationality of investors, the organizational form of investment (e.g., company [used interchangeably with the term corporation in this report], partnerships, trusts, etc.), or the nature of investment (e.g., real capital vs. financial investment, and within the latter, loans vs. equity). The review also assesses which of the available indicators best evaluates tax impacts on capital investment and domestic saving by families and individuals in an open economy.

The recognition that New Zealand is an open economy in capital markets is particularly important to an evaluation of corporate and personal taxes with respect to their impact on

investment and saving markets (Boadway, Bruce and Mintz 1984). Corporate taxes on capital deter investment causing a net savings outflow as New Zealanders and foreigners shift their investment funds from New Zealand to international markets. Ultimately, company tax increases have a limited impact on savings since the after-tax return on capital is determined by international markets. Personal taxes levied by New Zealand on capital income will affect the savings decisions made by New Zealanders but not foreign savings (these are only affected by any withholding taxes levied by New Zealand applied to income paid to non-residents and only have impact when they are not refunded or credited by foreign governments when levying their own personal taxes on income accruing to residents).

To make this point clear, consider a small open economy where the return on assets in New Zealand is determined by international capital markets. Corporate taxes will reduce the return to capital earned by both domestic and foreign investors, and ultimately deter investment in the domestic economy. Investors whether in New Zealand or abroad will shift their savings to jurisdictions where the after-tax return on capital is higher. Ultimately, investors will only hold capital in New Zealand if the rate of return, net of corporate taxes, is the same as that earned in international markets. Corporate taxes on capital will be therefore be shifted onto immobile factors in New Zealand (labour and land) but not directly affect the return on capital earned by investors.

On the other hand, personal taxes on capital income earned by New Zealand residents will reduce domestic savings invested in both New Zealand and foreign assets. Given that the return, net of corporate income taxes, is the same across countries, personal taxes will not affect New Zealand corporate decisions since the cost of financial capital is determined by international markets only. Therefore, personal taxes only impact on domestic savings in a small open economy and are much less relevant to investment and economic growth considerations.

If the economy is open but not “small” such as an in the case that domestic and foreign assets are not perfect substitutes, the impact of company and personal taxes on income derived from capital is somewhat different. An increase in company taxes will deter investment causing the after-corporate-tax return on capital to decline. Net capital inflows will decline but not to the point whereby the after-tax return on capital rises to the international rate of return on capital, given that investors are not willing to substitute entirely foreign assets for New Zealand assets. In this case, company taxes will have some impact on savings since the return paid to savers will be somewhat reduced by company taxes. Similarly, increased personal taxes on capital income could cause investment in New Zealand to decline when interest rates rise due to less available domestic savings.

Given New Zealand is a small open economy, our working assumption is that company taxes will primarily affect capital investment and personal income taxes will primarily affect domestic savings.

While our analysis below for medium and large corporate investment markets is based on the assumptions given above, we recognize that personal taxes may impact on corporate investment decisions for small businesses, which is not a major focus for this study. Personal taxes on savings, including capital gains taxes, can impact on entrepreneurial decisions and some of the analysis will be devoted to the integration of corporate and personal taxes.

For a country to be an attractive location for foreign investment, it must provide a combination of advantages with respect to the three basic factors of ownership, location, and internalization, known as the OLI conditions (Dunning 1981). Ownership advantages relate to the foreign corporation possessing some advantage over local firms such as patents, trademarks, or technology. Location refers to the preference of a company to produce in a host country rather than simply export to the country from abroad, and will depend on cost factors. Internalization of production in a subsidiary is an alternative to arranging a licensing agreement, like protection of its manufacturing process. Theoretically, complex tax systems, as well as regulations, affect each of these conditions, but this has not been empirically proven in all cases.

Tax rate measures and capital investment

It is as important to decide which tax rate to use for evaluating the tax impact on capital investment. The most available data are statutory company income tax rates, but the overall impact of the tax system depends on other tax provisions such as capital cost allowances relative to economic depreciation under the income tax or other taxes applied to capital investment such as sales and excise taxes on capital purchases. The statutory company tax rate alone can therefore be misleading for purposes of determining the tax impact on capital investment.

Where the company income tax rate is particularly influential is with respect to the incentive to shift profits (or rents) from one jurisdiction to another (Mintz and Smart 2004). With profit shifting, a company can reduce worldwide taxes by deducting costs in countries with high company income tax rates and reporting higher income in jurisdictions with low tax rates. Clausing (2007) estimates that the revenue-maximizing OECD corporate income tax rate is 33 percent, using data for the period 1979 to 2002. Using a later period (1995-2005) when globalization trends have been much stronger, Mintz (2007) estimates the revenue-maximizing corporate income tax rate among OECD countries had fallen to 28 percent after taking into account not just statutory company tax rates but also growth in GDP, fixed capital formation and the size of the financial and resource sectors. Income shifting might also be more sensitive to differences among statutory tax rates for smaller countries like New Zealand although we are not aware of any empirical evidence to support this claim. It is not that investment is necessarily shifting among countries as much as multinational profits can be easily moved by adopting financial structures or transfer pricing to minimize worldwide taxes (Mintz and Weichenrieder 2009).

An alternative is to use the simple average tax rate calculated from data (income taxes paid as a percentage of operating surplus or profit), and this alternative tax rate is often used in empirical testing. However, this measure is equally misleading since the tax rate itself is endogenous, depending on the level of investment (Mintz 2001) and economic performance (Chen and Bird 2002). For example, investment undertaken in boom years could cause the average tax rate to decline if fast write-offs or investment tax credits are claimed, driving down the average rate. Similarly, carry forwards of unused losses incurred during downturns could be claimed as profitability recovers.

A third alternative is to measure prospectively taxes paid on future returns earned on capital. One approach is the marginal effective tax rate (METR) on capital (King and Fullerton 1984 and Boadway, Bruce and Mintz 1984) that is the tax paid as a share of the gross rate of return on capital for the marginal investment project that earns an after-tax rate of return on capital just sufficient to attract investor financing. Devereux and Griffith (1998) developed an alternative measure to account for lumpy investments: average effective tax rates (AETRs). The AETR is similar to METR (effectively a weighted average of the METR and statutory tax rates) except that investments could earn economic rents (returns in excess of the cost of capital) under the presumption that such rents are subject to tax in the host country (and not shifted elsewhere through licensing or other arrangements).

METRs (and AETRs for that matter) can be calculated by combining both corporate and personal taxes into one aggregate METR, as done by King and Fullerton (1984). However, this presumes that personal and company tax changes have the same impact on investment and savings, which is only appropriate for closed economies. With small open economies (as modeled by Boadway, Bruce and Mintz (1984)), company taxes primarily impact on business capital investment decisions and little, if no, impact on domestic savings. Personal taxes affect savings but not business capital investment. Our analysis is based on these assumptions. In particular, we assume that New Zealand companies are financed by international markets with interest rates determined by the "international investor" that we take as a GDP-weighted average of G7 investors to determine equilibrium after-tax returns on equity and debt which are assumed to be equalized on a net of risk basis.

Empirical studies, investment and growth

As company taxes reduce capital investment, several studies have been undertaken to estimate the size of the impact. We begin first with a brief discussion taxes and investment. This is followed by a detailed review of foreign direct investment and taxes since this has been a focus for tax competitiveness, given the importance of global supply chains for multinational companies. We then relate taxation to economic growth in this context.

Taxes and Investment

Business taxes in the form of levies on corporate income, assets, net worth, purchases of machinery, structures and their components and security trades, lower the return on capital and, hence, the attractiveness of investments. Taxes on capital investments have the most powerful effect on productivity – the ability to produce more with the same resources – compared to all other taxes. Without business investment, companies will not be able to improve wages paid to workers since less production is forthcoming from their efforts. More importantly, businesses fail to adopt new innovative technologies if they do not invest in capital.

Among the many factors which influence investment decisions by businesses, economic studies have shown that taxes have a significant impact in reducing investment. A reduction in taxes on capital investment encourages firms to substitute capital for labour, thereby increasing productivity especially if newer vintages of capital and technologies are adopted in the production process. Lower capital costs also reduce unit costs of production, enabling businesses to increase sales as they become more competitive in export markets and domestic markets subject to import competition.

A large number of investment studies have been undertaken over the years (see Mintz (1996) for a review of investment studies following different methodological approaches). More recent analyses have used firm level data that provide a stronger link between investment and taxation.

A conservative estimate would suggest that a percentage point increase in the effective tax rate on capital would cause capital investment to decline by at least half a percentage point and, for some industries, by as high as 1.7 percentage points (Chirinko and Meyer 1997). Another recent paper suggests a 10 percent reduction in the cost of capital can increase investment in machinery and equipment by 10 percent in Canada (Iorwerth and Danforth 2004). A study by the Department of Finance Canada (2007) concluded that a 10 percent increase in the user cost of capital reduces capital investment by 7 percent during recent Canadian tax reforms from the year 2000, a result that consistent with most studies.

Very few studies have looked at the impact of taxes on capital and labour on firm location. McKenzie 2005 finds that a 10 percent increase the incremental cost of production inclusive of taxes related to capital and labour reduces manufacturing establishments by 3 percent.

Foreign Direct Investment and Taxes

The first, and most basic, empirical approach in measuring the effect of taxation on foreign investment was an aggregate time series model developed by Hartman (1984). Hartman looked at the aggregate investment flowing into the United States as a ratio to GNP, using a model specification that calculated the after-tax rate of return of investment in the United States for foreign firms, the gross rate of return minus the (US) tax rate on

FDI, and a ratio of foreign and US firm tax rates on US capital. The first two terms are meant to measure the return on new investments; the last term is used to control for the fact that tax changes affecting the incentive of domestic firms to invest will change the costs of foreign investors to purchase a domestic firm through a valuation effect. The main result from Hartman's paper has been that investments from retained earnings have larger tax elasticities than newly transferred funds, although both are strongly affected by tax rate changes.

Several other papers using a time series approach followed shortly after Hartman's paper, using longer time series and revised rate of return, investment, and tax rate data, although the general results remained consistent . This model specification was later criticized by a number of other papers, most notably Slemrod (1990), who deviated from Hartman's approach by adding year dummy variables as well as controlling for other variables such as unemployment, exchange rates, relative country size, and the home country tax rate. Slemrod was also the first to include a marginal effective tax rate instead of an average tax rate. Using this different specification resulted in tax rates having a larger effect on transferred funds than on retained earnings, contrary to what was found in the previous papers. Nonetheless, taxes were still found to have a significant effect on investment.

Following Slemrod's paper, empirical methods shifted from use of a time-series approach to using either cross-sectional or panel data. The major difference in the cross-sectional data analyses has been the use of property, plant and equipment (PPE) investment data instead of aggregate FDI data. While Grubert and Mutti (1991), followed by Hines and Rice (1994), made use of similar model specifications and similar PPE data for US investments in foreign countries, they had conflicting results, with Grubert and Mutti finding insignificant tax effects and Hines and Rice finding a significant negative elasticity, which could be attributed to Hines and Rice including tax haven countries and non-banking corporations instead of just manufacturing firms in their model. Using more recent data, Grubert and Mutti (2000) and Altshuler et al. (2001) still find a significant negative correlation between average tax rates and investment decisions of US investors.

Research done using panel data have come up with mixed results. Two approaches have been to use either a panel of countries, comprised of either OECD or EU states, or a panel of industries, mainly US. Swenson (1994) was one of the first using such panel data, measuring investment into 18 industries in the US. Interestingly, she finds a positive correlation with an average effective tax rate to investment, and a negative relationship with a marginal effective tax rate, and sides with the average tax rate as being the proper specification. The argument in support of this preference is that foreign investors are highly susceptible to their home country tax rates and the pre-tax return on their investment (the caveat being that the home country must operate a tax credit system). This conclusion of a positive correlation is very much the exception rather than the rule, as both Buetter (2002) and Bénassy-Quéré (2003) find large negative elasticities for statutory, average, or marginal tax rates when looking at transfer of funds investment flows from within the EU and OECD, respectively. A number of other authors, such as Devereux and Freeman (1995) and Jun (1994) used OECD data and found largely insignificant elasticities.

Many of these results were synthesized by de Mooij and Ederveen (2003, 2005) in meta-analyses, converting much of the previous literature into comparable semi-elasticities and finding that, on average, the empirical results give an estimated elasticity of about -3.3, meaning that a tax rate increase of one percentage point results in decrease in FDI inflows of 3.3 percent. Dissecting these results by different tax potential tax rates, they find that while statutory tax rates have a statistically significant effect on investment, both average effective tax rates (which are endogenous to investment) and marginal effective tax rates (which measure marginal investment costs) have been found to affect investment even more, with the investment being most responsive to AETRs.

A majority of studies have used widely available aggregate foreign direct investment data, defined by the IMF/OECD as being an investment in which a foreign investor acquires a long term influence in the management of a host country firm, of at least 10 percent of the available stock. This definition may not be a complete picture of the total investment of corporations with foreign-controlled parent companies. If a local subsidiary borrows funds or issues shares in its host country, it is not considered a foreign investment and not included in the FDI calculations. Also, while this calculation of FDI involves real investments such as plant, property, and equipment (PPE) into an economy, it also includes financial flows from mergers and acquisitions, which are simply changes in ownership and not a real increase in investment[3]. Investment flows come from different sources: transferred funds from a parent company to a foreign affiliate or subsidiary (via equity or debt), or retained earnings from a foreign affiliate, which the latter may not or not be included in the data. Investment may react to tax rates differently, making both of these distinctions important (Hartman 1984; Auerbach and Hassett 1993).

Capital Taxation and Economic Growth

There are a number of reasons for corporate taxation to have a negative impact on economic growth, primarily through distorting incentives, either by changing factor prices, causing a reallocation to less productive sectors, or by altering financing decisions to favor debt instead of equity due to the deductibility of interest from corporate profits, which may disadvantage some industries compared to others (e.g. knowledge based industries that rely more heavily on equity financing). However, early empirical research, such as that of Easterly and Rebelo (1993), Slemrod (1995) and Mendoza et al. (1997) still found little correlation with average tax rates and growth or factor productivity. The problem may have resided, again, in the tax rate used. Use of an average tax rate (such as tax to GDP ratios in these models) fails to incorporate the marginal decisions of individuals or firms, and ignores the potential for progressivity in a tax system to alter incentives.

Using very simple measures of average and a calculated marginal tax rate, Koester and Kormendi (1989) found no significant relationship between tax rates and growth. The problem with these early empirical analyses lies in the fact that the calculations used

[3] This distinction may be an important one. The OECD (2009) estimates that mergers and acquisitions account for 80% of FDI flows.

force tax variables to be correlated with government expenditures[4], which may increase economic growth (Barro and Sala-i-Martin 1995). The potential negative effect of taxes and positive effect of government expenditures may offset each other, causing economically or statistically insignificant results. To overcome this issue, research first shifted to other aspects of the tax system.

Instead of calculating marginal tax rates, Kneller et al. (1999) include a variety of tax variables, finding that distortionary taxes (such as taxes on income, profit and labour) reduce growth while non-distortionary taxes (like taxes on domestic goods and services) do not. The progressivity of the tax system (Widmalm 2001; Padovano and Galli 2002) has also been shown to have a significant impact on long term economic growth. More recently, Vartia (2008) and Arnold (2008) investigated various types of taxes, finding that corporate taxes have the largest negative impact on growth, followed by personal, and consumption taxes. Some recent attempts by Padovano and Galli (2001, 2002) have been more successful in isolating the effect of tax rates by removing least developed countries which have higher frequency of tax rate changes and being more careful in separating the effect of fiscal policy from the tax rate, finding an increase in the marginal effective tax rate and a significant negative impact on economic growth. The reported results find that a 10-percent proportional decrease in the marginal tax rate will increase economic growth by 0.32 percent.

Saving and taxation impacts

Taxes also affect the degree to which New Zealanders accumulate wealth, especially personal taxes in an open economy exposed to capital flows, as discussed above. Taxes affect the quantity of domestic savings as well as the ownership of business assets held by New Zealanders.

Studies on the impact of personal taxes on domestic saving suggest that saving will increase with reductions in personal income tax rates. In theory, a reduction in the taxes on the return to savings encourages households to substitute future for current consumption (and thereby save more) although higher incomes encourage more current consumption. Further, as Summers (1981) points out, a reduction in tax on the return to savings reduces the value of human capital (discounted wages falls), thereby increasing saving. Thus, taxes have an ambiguous impact on household saving decisions.

Empirical studies on taxes and savings suggest a modest impact of taxes on the decision to save. Boskin (1978) estimates that an 10 percent increase in the after-tax return on investments increases household savings from 2 to 4 percent (elasticity between 0.2 and 0.4). Engen, Gravelle and Smetters (1997) estimate an elasticity of 0.4, consistent with Boskin. Dahlby (2008) concludes that the elasticity is not large, typically falling below 0.5.

Nevertheless, what is especially important to recognize is that taxes levied on asset yields reduce the amount of capital accumulated for retirement, health spending, education and

[4] Engen and Skinner, 1992; Easterly and Rebelo, 1993.

contingencies even if savings is unaffected. For example, a 20 percent tax rate on assets yielding 8 percent on a compounded basis reduced the amount of capital accumulated after 25 years by about 30 percent. This has a significant impact on the stock of savings that New Zealanders could have as they approach retirement.

While it is important to keep in mind that taxes can reduce the amount of wealth available at retirement, they can also influence in the income Canadians are willing to invest rather than consume. Taxes that reduce the return on saving increase the effective price of future consumption relative to current consumption since investors are rewarded less for their willingness to postpone consumption. Taxes also reduce income available for current and future consumption but those who have a target for future consumption may well increase savings to make up for the loss of income through taxation in later years. However, even though savings may not be too responsive to investment taxes, the reduction in the accumulation of wealth for retirement purposes remains substantial given the tax imposed on investment income, unadjusted for inflation.

High taxes on investment income make it more difficult to accumulate wealth – for example, a 40 percent tax rate on interest for a bond yielding a 6 percent rate of return reduces the wealth available after 20 years by 37 percent. With inflation, taxes on investment income expropriate a large share of wealth. For example, a bond with a 6 percent yield will only provide a 3.6 after-tax yield, assuming the taxpayer's marginal tax rate on interest income is 40 percent since the tax will reduce the yield by 2.4 percentage points. With inflation at an annual rate of 2 percent, the inflation-adjusted pre-tax and after-tax rates of return are 4 percent and 1.6 percent respectively. On an inflation-adjusted basis, the effective tax rate on savings in taxable bonds is 60 percent (2.4 divided by 4 percent) instead of 40 percent that is usually calculated when there is no adjustment for inflation.

Taxes affecting saving can also impair economic growth in an open economy in two respects. First, it can impact on the willingness of entrepreneurs to invest in small business, often a source of growth in an economy. Second, taxes on saving could reduce the incentive for individuals to invest in education that adds to the stock of human capital available in New Zealand. Endogenous growth models that include the impact of the acquisition of human capital on growth suggest that reducing taxes on investment income in favour of taxes on consumption can dramatically increase incomes by 50 percent as opposed to 5 percent when such impacts are ignored (for a review see Mintz 2003).

III. Capital taxation in New Zealand from an international perspective

Like all OECD member countries, capital taxation in New Zealand involves both a company income tax (CIT) system and a personal income tax (PIT). In the recent history of capital taxation in developed countries, it is not unusual that a given type of capital income is treated differently depending on the type of its recipient. For example, dividends may be taxed at a different tax rate from that for regular income depending on the size of shareholding; capital gains may be taxed differently depending on whether the recipient is a business or an individual receiving real estate or share gains (the two most

important sources of capital gains). It is also common that capital incomes having the same nature (e.g., dividends and capital gains are both equity incomes) are taxed differently. A debate on the conventional asymmetrical tax treatments on interest and equity financing and related incomes has also led to recent tax changes in some countries (e.g. Belgium and Norway, see below) that are alleviating such asymmetries in one way or another.

In this section we first provide an overview of the capital tax system in New Zealand in comparison with those of many other "small open economies" (SOEs) within the OECD and some other major economic players on the global stage. Table 1 presents a list of these twenty countries including New Zealand and summarizes the main features of their capital tax systems. We then review the main concerns about its capital tax system being discussed by policymakers in New Zealand and outline alternative possible tax changes in dealing with these concerns.

Table 1 Main Features of Capital Income Taxation

	Company income tax				Personal income tax		Capital income treatment	
	Tax rate	Generosity of TDA	Number of rates	Personal Tax Top rate (a)	Personal Tax on Net Dividends	Threshold (multiple AW)	Dividends	Capital gains From share
Australia	30.0	M	4	45 (15)	23.6	2.5	FI	PIN
Belgium	34.0	Over-G	5	50 (16)	15.0	1.0	CL	FT (b)
Brazil	34.0	M	4	27.5 (-6.5)		4.0	exempt	FRT
Canada	31.3	M	4	46.4 (15)	23.1	2.9	PI	PIN
China	25.0	G	8	45.0 (20)		5 +	exempt	FT (c)
Denmark	25.0	M	3	59.7 (25)	45.0	1.0	MCL	FT (d)
Finland	26.0	G	4	50 (24)	19.6	1.8	PIN	FT (d)
France	34.0	G	4	45.8 (12)	32.7	2.8	PIN	FRT
Germany	31.0	G	2	47.5 (17)	26.4	5.8	FRT (e)	FRT (e)
Ireland	12.5	G	2	41 (27)	41.0	1.0	CL	FRT
Italy	27.5	G	5	44.9 (17)	12.5	3.2	FRT (f)	FRT (f)
Japan	37.6	M	6	50 (12)	10.0	4.5	MCL	FT
Korea	24.2	M	4	35 (11)	29,3	3.2	PI	FT
Mexico	28.0	Over-G	8	28.0 (0)	0.0	4.9	FI	FT
Netherlands	25.5	Over-G	4	52 (17)	25.0	1.2	CL(g)	Exempt (h)
New Zealand	30.0	Over-G	4	38 (8)	11.4	1.5	FI	Exempt
Norway	28.0	M	3	25.3 (-3)	28,0	1.5	OTH (i)	OTH (i)
Sweden	26.3	Over-G	2	25 (-1)	30.0	1.5	CL	FT
UK	28.0	M	2	40 (12)	25.0	1.2	PI	FRT
US	38.6	Over-G	6	39.5 (1)	17.3	9.0	MCL	FRT

AW: Average wage. This column presents the level of gross wage earnings (expressed as a multiple of AW) at which the top marginal personal income tax rate (including both national and sub-national income taxes) is reached.
CD: Corporate deduction (corporate level deduction, fully or partly, in respect of dividend paid)
CL: Classical system (dividend income is taxed at the shareholder level in the same way as other types of capital income (e.g. interest income).
FI: Full imputation (dividend tax credit at the shareholder level for underlying corporate profits tax).

FRT: A flat rate tax on capital income that is lower than the top PIT rate on labour income.
FT: Fully taxed as ordinary income.
G: The tax depreciation allowance is higher than the economic depreciation rate, as estimated in Canada, by about 20%.
M: The tax depreciation allowance roughly matches the economic depreciation rate, as estimated in Canada.
MCL: Modified classical system (dividend income taxed at preferential rates (e.g. compared to interest income) at the shareholder level.
NST: No shareholder taxation of dividends (i.e., no tax other than the tax on corporate profits)
Over-G: The tax depreciation allowance is overly generous, surpassing the economic depreciation rate (as estimated in Canada) by 50% or more.
PI: Partial imputation (dividend tax credit at shareholder level for part of underlying corporate profits tax)
PIN: Partial inclusion (a part of received dividends or realized capital gains is included as taxable income at the shareholder level).
PT: Partially taxable.
SR: Split rate system (distributed dividends are taxed at higher rates than retained earnings at the corporate level).
TDA: Tax depreciation allowance.
OTH: Other types of systems. See Note (i) below for details in Norway's taxation on dividends and capital gains.

Note:

(a) The number shown in the brackets is the difference between the top PIT rate and the CIT rate measured by percentage points, rounded to the nearest whole number.
(b) Capital gains on shares are exempt from tax if dividends on the shares qualify for the participation exemption.
(c) Gains on the sale of shares of Chinese-listed enterprises and from sales of owner-occupied houses may be exempt for resident individuals.
(d) Fully taxed as "other income" with certain conditional exemptions.
(e) Personal tax payers may opt out of this dual income tax rate and pay tax at the lower PIT rate applicable to them.
(f) Income derived from the qualified participation is taxed as ordinary income.
(g) A "deemed" rate of return and a substantial amount of exemption apply.
(h) With exceptions such as gains derived from a substantial interest which is taxable at a flat rate.
(i) In Norway, at the shareholder level dividends equal to (or less than) the risk-free market interest rate times the cost price of the share is exempted. As such, even though the PIT rate is 28 percent, only the risk-premium potion of the dividends is taxable. Capital gains are taxed similarly. Under a proposal, the tax exemption would be limited to 97 percent of the dividends, effective from 7 October 2008.

As shown in Table 1,

i. The CIT rate in New Zealand is 30 percent, the same as that in Australia and above the OECD average of 27.4 percent (OECD Tax Database, Table II.2). New Zealand's tax depreciation allowance, however, is generous -- because of a 20 percent loading rate on top of the annual depreciation allowance that is more generous than that determined by the prescribed useful life of most non-building

ii. There are four PIT rates in New Zealand, indicating a mid-range of tax progressivity among the twenty listed countries (except for China and Mexico); the top PIT rate is 38 percent, the sixth lowest overall; and New Zealand's threshold for the top PIT rate is 1.5 times the national average wage, which is only relatively low compared to those countries which apply a much higher top PIT rate at a rather low threshold such as Belgium, Denmark, Ireland and the Netherlands.

iii. The gap between the top PIT and CIT rates in New Zealand is 8 percentage points, the sixth narrowest among the listed countries.

iv. Dividends are taxed under a full imputation system in New Zealand, as in Australia; other countries use either the "classical" system, or a partial imputation system, or a dual income tax system, or other methods[5]. For example, while China largely exempts taxation of dividends received by individuals, Norway exempts the portion of the dividends that is equal to risk-free interest income. Belgium allows a deduction for the nominal cost of equity for the CIT purpose so as to tax dividends as ordinary income for the PIT purpose.

v. Capital gains derived from sale of equity shares or real estate are largely exempted from taxation in New Zealand. This is a major difference from practice in all of the twenty countries surveyed except for the Netherlands, where capital gains except for those derived from a substantial interest in a company are also exempted.

A brief review indicates that New Zealand's tax structure is relatively simple; its tax bases are broad with only a few transparent leakages (the capital gains exemption being the most significant as explained below and the generous tax depreciation allowance relative to economic depreciation also being significant). This has permitted tax rates required to raise revenues to be relatively low although the company tax rate is still above the OECD average. In 2008, the World Bank found that with respect to ease in paying taxes, New Zealand had the second best system among 30 OECD countries. The New Zealand Inland Revenue Department also finds that the revenues from all the major tax bases in New Zealand have been resilient in the face of macroeconomic volatility.

We make special note, to be further elaborated below, that New Zealand provides relatively high rates of tax depreciation for investments compared to economic depreciation rates[6]. This will be further elaborated below when we discuss the corporate income tax regime.

[5] For example, Mexico integrates company and personal taxes by applying a withholding tax on dividends equal to the company tax rate unless the company has paid company taxes that reduces the dividend payment (the withholding tax is then zero in this case).

[6] The economic depreciation rates are based on Canadian studies undertaken by the Department of Finance and used by us for cross-country analysis. We presume that economic depreciation rates in New Zealand are similar to those in Canada and other countries in our analysis below.

While the New Zealand tax system has performed admirably in many respects, it faces issues that will need to be addressed to improve and even maintain the system's performance. To policymakers in New Zealand, the main concerns may be summarized as the pressure to rebalance the PIT system for efficiency and fairness, reduce the CIT rate, enhance the integration of PIT and CIT taxation to reduce the scope for tax planning, and improve coordination with the Australian tax system[7]. Although these concerns are mingled with each other, we attempt, in the rest of this section, to sort out some details of the individual concerns for purposes of analytical convenience. Again, our focus is on the tax impact on capital investment and hence we ignore tax issues that affect only labour earnings or are related to the welfare system.

1. The PIT system

As mentioned above, there are currently four PIT rates in New Zealand. While interest income is taxed as ordinary income, dividends are taxed under a full imputation system that results in a net top PIT rate of 11.4 percent of dividend payments, and capital gains are exempted from taxation with some exceptions (certain land and property transactions and investments for profit-making purposes and financial arrangements including foreign exchange).

As is shown in Table 2, in a full imputation system, the net top PIT rate on dividends will fall as the gap between the top marginal PIT rate and the CIT rate narrows. When the CIT rate is lower than the top personal rates, dividends are more highly taxed than exempt capital gains, creating incentives for companies to convert dividends into capital gains.

The PIT rate structure in New Zealand was quite different a decade ago when there were only two PIT rates with the higher rate being 33 percent and equal to the company tax rate. A third and top tier rate of 39 percent was introduced in 2000 and was retained until 2008. During this 9-year period, policymakers witnessed a significant increase in tax planning among PIT payers through use of income trusts and portfolio investment entities (PIE). This may be directly linked to the fact that for those taxpayers subject to the top marginal PIT rate of 39 percent, trustee income is taxed lower at 33 percent and PIE income at 30 percent. Also revealing during the same 9-year period is the trend in income statistics: the number of PIT payers with taxable income immediately under $60,000, the threshold at which the top PIT rate applied, spiked.[8]

[7] Based on New Zealand Treasury (2009) and Inland Revenue Department (2008).
[8] Inland Revenue (2008), Figure 15.

Table 2: The Net Personal Income Tax Rate (%) under an Imputation System -- A Quantitative Illustration

Company Income Tax Rate	Distributed Pre-tax profit[1]	Distributed profit	PIT rate on (grossed-up) dividend[2]	Grossed up dividend[3]	Imputation rate[4]	Imputational dividend tax credit[5]	Net personal tax[6]
A. For a given PIT rate, the lower the CIT, the higher the net PIT rate, and vise versa							
20.0	125.0	100	38.0	125.0	20.0	25.0	22.5
22.0	128.2	100	38.0	128.2	22.0	28.2	20.5
24.0	131.6	100	38.0	131.6	24.0	31.6	18.4
26.0	135.1	100	38.0	135.1	26.0	35.1	16.2
27.0	137.0	100	38.0	137.0	27.0	37.0	15.1
30.0	142.9	100	38.0	142.9	30.0	42.9	11.4
B. For a given CIT rate, the lower the PIT, the lower the net PIT rate, and vise versa							
30.0	142.9	100	38.0	142.9	30.0	42.9	11.4
30.0	142.9	100	36.0	142.9	30.0	42.9	8.6
30.0	142.9	100	34.0	142.9	30.0	42.9	5.7
30.0	142.9	100	32.0	142.9	30.0	42.9	2.9
30.0	142.9	100	30.0	142.9	30.0	42.9	0.0
C. To maintain a targeted net PIT rate on dividends, the CIT and PIT need to move in the same direction							
30.0	142.9	100	37.0	142.9	30.0	42.9	10.0
29.0	140.8	100	36.1	140.8	29.0	40.8	10.0
28.0	138.9	100	35.2	138.9	28.0	38.9	10.0
27.0	137.0	100	34.3	137.0	27.0	37.0	10.0
26.0	135.1	100	33.4	135.1	26.0	35.1	10.0
25.0	133.3	100	32.5	133.3	25.0	33.3	10.0

1. For a distribution of 100, the distributed pre-tax profit is calculated as 100/(1-u) where u denotes the corporate income tax rate
2. This column shows the top marginal statutory personal income tax rate imposed on grossed-up dividends.
3. This column reports grossed-up dividends, derived as 100(1+g), where 100 is distributed profit and g is the gross-up rate in percentage terms.
4. This column shows the imputation (or dividend tax credit) rate u* which, in most imputation systems, is related to the gross-up rate with g=u*/(1-u*), where u* denotes the actual rate of corporate tax imputed to shareholders.
5. This column shows the imputation/dividend tax credit in respect of the dividend distribution of 100.
6. This column shows the net top statutory rate to be paid at the shareholder level, taking account of all types of reliefs and gross-up provisions at the shareholder level.

This has led policy makers to ponder the following questions:

- Is the top PIT rate too high or does it kick in at too low an income level?
- Is the high top PIT rate along with its low income threshold the principal reason for tax sheltering activities?
- Is it an issue that different types of capital incomes are taxed very differently – and very differently from employment income? More specifically:
- Is the top PIT rate too high compared to the “net” rate on dividends and zero tax on capital gains?
- Does the tax system favor equity investors over bond investors?

- What kind of tax changes will help reduce tax planning through the use of income trusts and PIEs so as to save resources that could otherwise be productively employed?

Apparently, the answers to the first two questions are YES among policymakers. Therefore, the top PIT rate has been reduced to 38 percent in 2009 and the threshold for payment of this top rate increased by $10,000. A fourth and lowest PIT rate of 12.5 percent was also introduced at the same time to reduce the tax burden for those at the very bottom of the income scale.

Competitiveness concerns are also raised with respect to the taxation of savings. The top rate in New Zealand (table 1) that applies to regular investment income is 38 percent, one of the lowest in selected countries for comparisons. This rate is further reduced for trusts and certain other savings vehicles and on dividends (11.4 percent) and capital gains (exempt). The tax on dividends and capital gains reflect measures to alleviate the taxation of investment income already subject to company income tax (this is discussed below with respect to integration of company and personal taxes) so international comparisons of rates is not particularly meaningful. Moreover, given that people are not highly mobile, the international comparison of tax rates on savings is not critical for competitiveness – more important is the impact of taxes in distorting savings markets that can impact on decisions to accumulate capital in a country. We will focus more on the domestic tax structure affecting New Zealand's capital markets for this reason.

But the debate on how to deal with the current imbalance of the PIT system – the difference in tax rates across income sources and investment vehicles – has not yet reached a conclusion. The concerns revolve around the possible consequences of optional changes. For example, if capital gains are taxed like dividends, will the lock-in effect due to tax assessed on capital gains from the disposal of assets outweigh any postulated improvement in the fairness of taxation? Moreover, if the favorable tax treatment for various investment vehicles is reduced or even eliminated, will such changes lead to emigration of high income earners and/or individual financial investors?

2. The pressure on the CIT system

Despite its seemly high CIT rate compared to the OECD average, the current CIT system in New Zealand appears to function well in terms of generating revenue. According to the Inland Revenue Department (2008, Table 2), over the period 1995-2006, regardless of whether the CIT in New Zealand was higher or lower than the OECD average, the revenue from taxing company profits as a share of GDP was always significantly higher than the OECD average. The same was even more true for Australia. As discussed above, various factors might explain why company tax revenues have been sustained in New Zealand despite that the higher company tax rate works to reduce such tax revenues.

New Zealand is not particularly stellar in attracting foreign direct investment (FDI). FDI flows as a percentage of GDP in New Zealand averaged 2.8 percent over the period 2001-2007 compared to 2.1 percent in Australia (Krzepkowski and Mintz 2008). However,

among 98 countries, New Zealand only ranked 61st highest in terms of FDI inflows as a share of GDP (Australia ranked 68th). These simple comparisons do not indicate any significant negative impact of the New Zealand CIT system on its economy since other factors influence foreign direct investment.

Policymakers in New Zealand are rightly concerned, however, as to whether the current CIT system is sustainable, given the persistent worldwide downward trend in the CIT rate. While not unduly high, a 30 percent company income tax in New Zealand is above the average rate for 80 countries (Chen and Mintz 2008), thereby creating incentives for multinationals to shift profits out of New Zealand to other jurisdictions. From government's viewpoint, reductions in the company income tax rate could help attract foreign direct investment as well as counter incentives to shift income from New Zealand.

The question for New Zealand policymakers, therefore, is not only that of reducing the CIT rate but when and how to proceed with a rate reduction so that both the effectiveness and efficiency of the current CIT system can be preserved and even improved. Moreover, such a rate reduction needs to be carefully planned to help rebalance the PIT system (see above) and improve the coherence of the overall tax system and co-ordination with the Australian tax system (see below).

3. The overall coherence of the capital tax system

We use the term "coherence" to indicate whether the CIT and PIT systems work in a mutually supportive or contradictive manner. For example, is the gap between the CIT and the top PIT rates a serious problem resulting in certain inefficiencies and inequities as some forms of investment or finance are tax-favoured compared to others? If so, how should the system be fixed?

Most important is consideration of company and personal income tax integration since differential tax rates faced by resident (and non-resident) investors create opportunities for tax planning to avoid taxes. Businesses pay company level taxes, leaving income accruing to investors. New Zealand investors pay personal taxes on dividends, capital gains, interest and other income derived from New Zealand businesses with an imputation credit given to investors as an offset for corporate tax paid by the business prior to the distribution of profits. Non-residents receive New Zealand income net of withholding taxes and will pay tax on their income accordingly in their own countries. The combined corporate, withholding and personal tax rates will affect incentives for companies to choose specific forms of financing for their investments.

A wealth of materials presented in the recent two official documents noted above have convinced many in policymaking circles that the gap between the CIT and the top PIT rate in New Zealand has indeed provided arbitrage opportunities for better-off taxpayers to use companies and other savings vehicles such as income trusts and portfolio investment entities (PIE) to shelter various forms of income. Policymakers are rightly worried about the possible consequences of such tax planning, ranging from the waste of

resources in conducting such activities to deterioration of public confidence in the fairness and hence sustainability of the tax system as a whole.

As mentioned earlier in this section, however, the gap between the top PIT rate and the CIT rate in New Zealand is the sixth lowest among the 20 countries. It is perhaps the pressure on CIT rate reduction that has made improving the coherence of the overall income tax structure through narrowing the gap between the top PIT rate and the CIT rate more challenging. Further reducing the CIT rate will widen the gap between it and the top PIT rate, which in turn will lead to pressure for a further reduction in the top PIT rate. The latter goal would be easy to accomplish only if the integration of the two income tax structures were the sole purpose of tax changes.

Table 3: Integration of Corporate and Personal Income Taxes in New Zealand (as of 2009)

	Dividends	Capital Gains	Distributed Trust Income	PIE & Other	Interest & Salaries
Corporate Income	$100	$100	$100	$100	$100
Corporate Tax	$30	$30			
Pre-Personal Tax Income	$70	$70	$100		$100
Grossed-up Dividends	$100				
Personal Income Tax	$38	$0	$33	$30	$38
Dividend Tax Credit	$30				
Net Personal Tax*	$8				
After-tax Income	$62	$70	$67	$70	$62

*Note that the net personal tax is 10 percent of dividends, if the tax rate is calculated similarly to Table 2.

New Zealand's personal and company tax systems are not particularly well integrated. As shown in Table 3, while dividends and other forms of income received by investors from domestic corporations are taxed at the same rate (38 percent for top earners), taxes on reinvested profits (that yield one dollar of capital gains for each dollar of reinvested profits) is less than on dividends or other income. Businesses therefore have an incentive to finance capital with reinvested earnings, giving established firms with stronger cash flows a more competitive position compared to companies that must rely more on new equity issues.[9] The lack of capital gains taxation in the presence of a gap between PIT and CIT rates provides opportunities for businesses to convert income into gains, such as share repurchases, that enable investors to reduce personal taxes.

Company income distributed through trusts, PIEs and other widely-held tax-favoured savings vehicles (such as insurance and superannuation funds) is subject to a lower tax.

[9] If the company tax system is higher than the top personal income tax, which is not the case of New Zealand at the present time, a company will desire to use debt or new equity to finance capital rather than retained earnings.

These differences in tax rates among different savings vehicles create incentives for businesses to fund themselves with low cost sources of finance.

In summary, we see the inconsistency in taxing various forms of capital income as being greater concern than the mere gap between the CIT and PIT rates.

4. Co-ordination with the Australian system

There has been a strong consensus on the need for coordination in fiscal policy design between New Zealand and Australia. As a result, the tax structures in these two countries share many similarities. A recent example of such coordination is the lowering of the CIT rate in New Zealand to the level of the CIT rate in Australia. On the other hand, owing to their very different geo-economic features, a tax element with the same intended purpose often appears to be more successful in Australia than in New Zealand. For example, over the past decade or so, the relative level of the CIT rate in New Zealand has been relatively high or low compared to that in Australia, but both gross fixed capital formation and CIT revenue as a share of GDP in New Zealand have lagged behind those in Australia for most of this period.[10] This is so despite New Zealand's greater success than Australia in attracting FDI in recent years (see above). Nevertheless, with an emerging possibility of forming a "single market" across the Tasman Sea, New Zealand may be able to do more rather than less in promoting investment and economic growth through well designed tax changes.

Given this mind set, policymakers in New Zealand are keeping an eye on possible tax changes in Australia while planning their own medium term tax policy changes. With respect to capital income taxation, one such possible move being proposed to Australian policy makers is a combination of an allowance for an imputed return on corporate equity (ACE) and a dual personal income tax scheme that taxes capital income at a low flat tax rate and labor income at progressive tax rates[11]. These proposals are obviously radical given the long history of conventional tax structures in both Australia and New Zealand. If Australia decides to take such a radical move, however, New Zealand may wish to follow its example.

In summary, when considering medium term changes in capital income taxation, policymakers in New Zealand have to deal with the above four main concerns in addition to the general theory and conventional approaches that aim at increasing efficiency, simplicity and fairness. Possible options stemming from the above concerns might be the following:

> (1) Broader tax bases and flatter rates – reducing CIT and PIT rates in a coherent manner and removing some "leakages" in the tax bases (e.g. the present capital gains exemption, overly generous tax depreciation allowance relative to economic depreciation and favourable taxation of some forms of business organization such as trusts).

[10] OECD Country Statistical Profile (2008) and the NZ Department of Inland Revenue (2008), Table 2.
[11] Sorensen (2009)

(2) Aligning the top PIT rate with the company tax rate and the tax rates for income trusts and other financial investment vehicles.

(3) A dual income tax with a low flat tax rate on capital income along with progressive PIT rates on labor earnings.

(4) Allowing an imputed return on equity for CIT purposes in order to tax equity income as ordinary income, in similar fashion to what has been done in taxing interest income.

In the next section, we examine these options in terms of their tax efficiency using the tool of marginal effective tax rate (METR) analysis. In our analysis, we not only include corporate income taxes (rates and allowances) but also other taxes that impact directly on capital investment costs (sales taxes on capital purchases, asset-based taxes, stamp duties, etc.). We do not include property taxes in our assessment owing to inconsistent data availability. That is, property tax in many countries is levied at the sub-national level and varies by location and type of capital such that it is impossible to estimate effective property tax rates consistently across countries.

We should remark that we do not use the AETR measures for two reasons. The first is that it is not easy to assess the risk-adjusted return on capital earned by businesses. Companies will invest in capital if they earn an internal rate of return sufficient to cover costs and risk. Typically, studies have used an expected pre-tax rate of return on capital (such as 20 percent) but net-of-risk return on investments are substantially lower and will vary by project.[12] Second, contrary to some studies mentioned above, our own econometric results have found that our METRs which include not just corporation income taxes but other capital-related taxes are significantly related to foreign direct investment as a share of GDP, while statutory tax rates are irrelevant (Chen and Mintz 2008)). This might be due to the possibility that the METRs we estimate are not limited to corporate income taxes as in most studies.

As has been shown elsewhere, in a purely analytical world, METR analysis only provides indicators of tax efficiency. The other impacts, such as the revenue impact, of the above options have to be carefully examined in a prudent tax design.

IV. Capital Taxation in New Zealand: An Evaluation and the Options

Following the descriptive review in the last section, this section provides a technical evaluation of the current capital tax structure in New Zealand and the policy options that may help improve its tax efficiency. To do so, our evaluation will apply marginal effective tax rate (METR) analysis as discussed above and will be presented in four sub-sections.

[12] Corporations will use different after-tax internal rates of return benchmarks depending on perceptions of risk.

First, we assess New Zealand's tax competitiveness in comparison with those of the other 19 countries listed in Table 1. Second, we evaluate the efficiency of capital taxation in New Zealand at the company level. Third, we simulate various policy options for their potential in enhancing the efficiency and coherence of the current tax structure. And fourth, we discuss the issue of integration between company income tax and personal income tax systems.

The marginal effective tax rate (METR) is calculated as the annualized value of corporate income tax, capital tax and indirect tax paid on capital purchases as a share of the gross rate of return on capital. While statutory tax levies increase the METR, statutory tax allowances reduce the METR.

To single out the tax impact for comparative purposes, we made the following technical assumptions in our METR analysis for all countries (further elaboration is provided in Appendices A and B based on Chen and Mintz 2008): (1) the inflation rate is 2 percent, the same as that current in New Zealand[13], (2) the debt to assets ratio is 40 percent, (3) the Canadian capital distribution among different types of capital (i.e., buildings, machinery and equipment or M&E, land and inventory) within each industry, the most reliable set of such data available to us, is used to aggregate the METR for each industry covered in this study, (4) New Zealand's capital distribution among industries (based on its input-output accounts) is used to aggregate the METR for each country, and (5) the economic depreciation rate by class of depreciable assets is the same as that used in our generic METR model.

Since we focus on multinational companies that raise capital from international markets, the New Zealand imputation system is not relevant to determining the company's cost of equity finance, consistent with our small open economy assumption. If New Zealand were a closed economy, any incentives such as accelerated depreciation that would reduce company tax payments would also reduce the dividend tax credit (which is based on actual corporate tax payments) provided to New Zealand shareholders. In other words the imputation system claws back any fast write-offs given to companies for New Zealand shareholders. However, since companies are assumed to be marginally financed by international markets, New Zealand personal taxes on equity and bonds are irrelevant to the cost of finance.

1. Capital impact of the current tax structure: A cross-country comparison

To simulate the nature of a small open economy (SOE) where the financing cost of capital is dominated by the international financial market, we apply, in our multi-country METR model, the average of PIT rates on capital income in the G-7 countries. That is, the financing cost is assumed to be the same across all the countries because all the cost

[13] In Chen and Mintz (2008), we allow for country-specific inflation rates with adjustments to nominal interest rates to reflect differences in inflation rates. Countries with high inflation tend to have higher marginal effective tax rates. When using country-specific inflation rates, our assessment of New Zealand's ranking is more favourable compared to some countries such as Brazil with relatively high inflation rates.

factors including the tax cost of financing are determined in the international market. This assumption also allows our cross-country comparison of the METR on capital to focus on the effects of corporate income and other capital-related taxes on multinational investments.

Table 4 provides our METR calculations for this cross-country comparison. The main determinants of the statutory CIT system—the CIT rate and the tax depreciation allowance—are copied from Table 1 for reference. This calculation covers manufacturing industry and a broad services sector that includes public utilities, construction, transportation, communications, wholesale trade, retail trade and other services.

Table 4 Marginal Effective Tax Rate (METR) on Capital at Corporation Level

	METR on capital			Proportional Gap between METR and CIT	Reference: Company income tax	
	Manufacturing*	Services*	Aggregate		Tax rate (%)	Tax depreciation allowance
Australia	23.4	22.0	22.4	-25%	30.0	M
Belgium	-8.0	-7.2	-7.4	-122%	34.0	Over-G
Brazil	*29.3*	*34.3*	33.0	-3%	34.0	M
Canada	*17.5*	*32.3*	28.4	-11%	31.3	M
China	*18.6*	*14.3*	15.4	-38%	25.0	Over-G
Denmark	*20.2*	*17.5*	18.2	-27%	25.0	M
Finland	*21.5*	*18.7*	19.4	-25%	26.0	G
France	*28.2*	*25.6*	26.3	-23%	34.0	G
Germany	*26.8*	*23.6*	24.5	-21%	31.0	G
Ireland	10.7	11.3	11.2	-11%	12.5	G
Italy	25.2	27.3	26.7	-3%	27.5	G
Japan	37.0	35.7	36.0	-4%	37.6	M
Korea	*30.8*	*27.8*	28.6	18%	24.2	M
Mexico	17.0	15.5	15.9	-43%	28.0	Over-G
Netherlands	15.1	16.5	16.1	-37%	25.5	Over-G
New Zealand	16.9	*19.4*	18.0	-40%	30.0	Over-G
Norway	20.7	22.4	22.0	-22%	28.0	M
Sweden	18.7	20.0	19.6	-25%	26.3	Over-G
UK	24.8	25.7	25.5	-9%	28.0	M
US**	25.4	27.8	27.2	-30%	38.6	Over-G

* Numbers in *italics* indicate a METR gap between manufacturing and services greater than that in New Zealand, which is 2.5 percentage points.
**Like other countries, the US METR includes the impact of "bonus" depreciation which has been "temporarily" available since 2001 through frequent renewal. Without such a bonus depreciation allowance, the METR for the US would be the highest among these countries at 36 percent.
G: The tax depreciation allowance is higher than the estimated economic depreciation rate by about 20%.
M: The tax depreciation allowance roughly matches the estimated economic depreciation rate.
Over-G: The tax depreciation allowance is overly generous, surpassing the estimated economic depreciation rate by 50% or more.

The marginal effective tax rate on capital investment at the company level in New Zealand (18 percent) appears to be the sixth lowest of the twenty countries for which data are presented in the Table. This contrasts with its ranking solely by the CIT rate, where it is the sixth highest country (along with Australia). The contrast is highlighted by the gap between New Zealand's METR and CIT rate as a proportion of the CIT rate, which is -40

percent, the third largest divergence after Belgium (-122 percent) and Mexico (-43 percent). The next three countries that also appear to have their METR well below their CIT rates are China, the Netherlands and the US. The common feature among all six of the latter countries is their overly generous tax allowance for depreciation, which significantly narrows their CIT tax base.

The overly generous tax depreciation allowance in New Zealand is mainly provided for depreciable assets other than buildings (except for a few luxury items that have a high residual value of over 13.5 percent). For example, with a 20 percent loading rate in addition to the generous tax depreciation allowance beyond that determined by the length of useful life, a non-building asset with a useful life of 10 years can be written off in about 6 years. Similarly, non-building assets with useful lives of 2, 3, 4, 5, 7 and 8 years, respectively, may be written off in 1, 1.2, 2, 3, 4 and 5 years respectively.

It is also interesting to observe the gap in the METR between the manufacturing and services sectors. This gap shows the level of differences in tax treatment across industries: the wider the gap the more the inter-industry tax distortion. Canada provides the worst example of inter-industry tax distortion because many of its provincial governments, the sub-national tax authorities, hand out tax favors to manufacturing and processing businesses. New Zealand appears to tilt towards the higher side in this international ranking of inter-industry distortions. We will see later that the tax bias favoring manufacturing industry in New Zealand is attributable to its system of tax depreciation allowances.

The high statutory company income tax rate coupled with generous tax depreciation allowances raises several important policy issues for the government.

i. Generous depreciation allowances result in a narrower tax base and greater incidence of tax losses. Companies in a non-taxpaying position will look to shift losses to taxpaying companies or other entities using complex transactions that increase administrative costs for governments and compliance costs for the private sector.
ii. As remarked earlier, high tax rates also encourage companies to shift profits out of New Zealand, thereby reducing revenues available to government. Given that profits are much easier to shift by means of financial transactions than by movement of real capital, a policy to reduce corporate income tax rates as well cut back the generosity of tax depreciation rates could help increase revenue while maintaining a relatively low METR.
iii. Those investments that earn economic rents (profits in excess of a normal rate of return on capital) might also be more attracted to New Zealand if the corporate income tax rate is reduced (assuming such rents cannot be easily hived off to other jurisdictions where company tax rates are low).
iv. As further discussed below, METRs on assets and industries vary, thereby distorting business decisions with respect to their best capital structure to maximize profits. For a given METR, corporate rate reductions are more neutral than other tax measures (e.g., providing generous tax depreciation allowance) and hence promote better economic efficiency.

Overall, we believe the rather generous tax depreciation allowance scheme in New Zealand is the sole reason for its relatively low METR on capital at the corporation level compared to other countries. However, we believe a policy to lower company tax rates and broaden tax bases would be a better objective for New Zealand corporate tax policy and would not harm the international tax competitiveness of New Zealand's company tax system. Lower company tax rates would reduce the incentive to shift profits from New Zealand to other jurisdictions (thereby reduce the revenue cost of rate reductions) as well as improve efficiency by reducing economic distortions, which is addressed in the next section.

2. Capital impact of the current tax structure: An efficiency evaluation

Tax efficiency means tax neutrality: the fewer the variations in tax impact on different categories of capital investment, the more efficient or neutral is the tax system. Neutrality also promotes fairness among taxpayers. Those who derive income from businesses will pay the same tax at the company level if the tax burden is similar across business activities. Personal taxes are a better instrument to achieve redistributive objectives among taxpayers rather than attempting to do so by varying business taxes that are deducted from profits before being paid to owners with different incomes.

To measure tax efficiency, we calculate the METR dispersion index based on the coefficient of variation – the asset-weighted standard deviation of marginal effective tax rates divided by the average of marginal effective tax rates. The lower the METR dispersion index, the higher is tax efficiency[14].

Our estimates of METR at the corporation level are constructed by industry and by type of assets. We distinguish between nine industries and four major types of assets. The nine industries are: agriculture, fishing and forestry (AF&F), manufacturing, public utilities, construction, wholesale trade, retail trade, transportation, communications, and the "other services" sector. The four types of assets are buildings, machinery and equipment (M&E), land and inventories.

Table 5 provides our METR calculation based on the current capital tax structure for two cases. In Case A, the average of PIT rates on capital income for individual investors among the G-7 countries is used, the same as was used in calculating the cross-country METR comparison presented in Table 4. This case represents capital raised in the international market from marginal investors and invested in New Zealand. In Case B, New Zealand's PIT rates on capital income for individual investors are used. This is a case that describes investment capital raised from investors in the domestic market who are assumed to determine interest rates in capital markets. METR dispersion indexes of

[14] A better measure would be to estimate the marginal deadweight loss per dollar of revenue, but this would require information on substitutability of factors of production as well as other parameters determining demand and supply of goods and services in the economy. The dispersion index approximates the marginal deadweight loss per dollar of revenue if weights and elasticities are identical.

various types (i.e., inter-industry, inter-asset and overall dispersion) are also presented in the table.

Two findings for New Zealand are evident from Table 5: (a) the inter-asset METR dispersion index is higher than the inter-industry one, and (b) the METR calculated using domestic PIT rates (Case B) is lower than that calculated using average PIT rates for the G-7 countries (Case A). We discuss these two findings below.

Table 5: Marginal Effective Tax Rate on Capital Investment by Industry and by Asset Type in New Zealand

	A,F&F	Manu-facturing	Public Utilities	Cons-truction	Wholesale Trade	Retail Trade	Trans-portation	Communi-cations	Other services	Aggregate
Case A: with G-7 PIT rates										
Buildings	11.8	14.4	1.4	29.8	31.2	32.1	17.3	27.7	30.4	20.5
M&E	14.4	16.8	18.5	25.2	12.8	10.8	15.5	15.8	14.2	16.2
Land	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
Inventory	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
Aggregate	13.7	16.9	8.5	23.2	20.0	22.2	15.8	17.4	22.1	18.0
Inter-industry Distortion		24%								
Inter-asset Distortion		29%								
Overall Distortion		37%								
Case B: With New Zealand's PIT rates on capital income										
Buildings	10.0	12.9	-1.3	29.6	31.2	32.2	16.0	27.4	30.3	19.6
M&E	13.2	15.7	17.6	24.7	11.4	9.3	14.2	14.7	13.0	15.0
Land	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Inventory	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7
Aggregate	11.8	15.5	6.1	22.2	18.8	21.1	14.3	16.3	21.2	16.7
Inter-industry dispersion		27%								
Inter-asset dispersion		36%								
Overall dispersion		44%								

(a) The cause of tax distortion

The earlier cross-country comparison (Table 2) showed that the inter-industry tax distortion in New Zealand is above the middle rank for the twenty selected countries. We now see that inter-asset tax distortion appears more significant than that across industries in New Zealand, as measured by the METR dispersion index.

The variation in METR across different assets derives from both tax and non-tax factors. In our calculations, the non-tax factors are the inflation rate and the industrial variation in capital structure by asset type, and the tax factor is the tax depreciation allowances that deviate from economic depreciation rates in different proportions for different types of depreciable assets. We assume that financing ratios and debt financing costs are the same across countries (see Mintz 1996 for complications arising from measuring financing costs with different leverage ratios for businesses).

Inflation affects the components of the METR in different directions. With a positive inflation rate, land is always taxed the lowest among other types of assets. This is because

the sole cost of holding land is the leveraged financing cost; the interest deductions, unadjusted for inflation, provide a significant tax subsidy for holding leveraged assets.[15] In contrast, inventories incur the highest METR. This is related to the first-in-first-out (FIFO) method used for inventory accounting during periods of rising prices[16]. FIFO implies a deduction for inventory cost that is lower than the replacement cost, which gives rise to the taxation of inventory profits solely attributable to inflation.

Inflation may affect the METR on depreciable assets in both directions: it reduces METR because depreciable assets are also leveraged assets, but it also increases METR through an inflated discount rate that directly reduces the present value of tax depreciation allowances during the useful life of depreciable assets. How these opposite effects offset each other depends on the level of inflation rate, the tax rate and the generosity of tax depreciation allowances.

When a zero inflation rate is assumed, the inflation-induced inter-asset tax distortion will also be zero (assuming that debt finance is similar across asset types). Then, all assets will incur the same METR if tax allowances match economic depreciation rates for all types of depreciable assets (see below).

Among depreciable assets in New Zealand, buildings are taxed higher than M&E because the latter is entitled to a much more generous tax depreciation allowance (as explained earlier) and hence incurs a much lower METR.

The variation in METR across industries may also be affected by the impact of tax and non-tax factors. The tax factor is again attributable to differences in tax deprecation allowances. That is, even for the same type of assets such as M&E, the tax authority may provide a more generous allowance for one industry than others and hence directly contribute to inter-industry tax distortion. The non-tax factor derives from industrial variation in capital distribution by asset type, which can reinforce the inter-asset tax distortion caused by non-neutral tax depreciation allowances. For example, an industry such as manufacturing may incur a lower METR simply because it uses tax-favored capital assets such as M&E more intensively compared to other industries such as “other services” that use tax-neutral assets such as buildings more intensively. We note that service industries, particularly communications, other services (household and business services), trade and construction bear a tax burden (measured by the METR) that is a third higher than manufacturing.

(b) The problem with exempting capital gains

The METR associated with domestic capital income taxation in New Zealand (Case B) is over 1 percentage point lower than that associated with the international norm of capital

[15] Below, we discuss property and land taxation that could offset the effect of inflation in reducing the effective tax rate on land.

[16] Both FIFO and LIFO (last-in-first-out) methods are allowed for inventory accounting in New Zealand. Our simulation takes into account this mix of both methods, and the analysis here is purely technical with no intention of recommending LIFO.

income taxation (Case A).[17] This tax gap indicates an imbalance in taxation of capital income in New Zealand – taxing dividends under the imputation system (combined with the relatively low PIT rates) and exempting capital gains. Because of this imbalance, the aggregate net top PIT tax rate on equity income is only 4.6 percent, which is more than 13 percentage points below that of the G-7 average (17.7 percent). Dealing with such an imbalance is not a tough call; one can tax capital gains and dividends equally while keeping a relatively low tax burden on capital investment, and doing so could also help enhance tax efficiency and fairness in New Zealand.

We will therefore use Case B as the base case for simulating various policy options throughout the rest of this study. That is, we will apply New Zealand's PIT rates on capital income in our simulations for various policy options. A simple and primary baseline in these simulations is to keep the overall METR below 18 percent, which is associated with the international financial capital cost as shown in Case A. This approach is not consistent with fiscal neutrality, which is much better to consider.[18]

3. METR Simulation for Policy Options

Following the principles set out in Section III for policy options, we carry out the following METR simulations, from which the results are presented in Table 6:

Option 1: Taxing capital gains the same as dividends in the current imputation system. For example, under the current imputation system, dividends are taxed at a net PIT rate of about 11.4 percent for those recipients who are subject to the top PIT rate of 38 percent. Accordingly, capital gains received by taxpayers in the same top PIT rate brackets will be taxed at around 11.4 percent as well, either by applying this tax rate directly on capital gains or by including 30 percent of capital gains as part of income. Similarly, for recipients subject to the second highest PIT rate of 33 percent, capital gains will be taxed at 4.3 percent, as determined by the imputation system for the same group of taxpayers on their dividend income. (Refer to Table 2).

It would be difficult to assess specific capital gains tax rates that vary according to income level since taxpayers would likely look to smooth their asset sales over time to avoid jumping to a higher rate. Capital gains tax rates that vary according to income level would also encourage the use of financial derivatives to take advantage of differences in the tax rates for gains and losses. Since capital gains are typically earned

[17] Note that the slight difference in the METR dispersions between Cases A and B are not caused by the tax system itself but by the different METR levels, which are used as denominators for estimating the METR dispersion indexes. That is, with similar standard deviations, a lower average METR level results in a higher METR dispersion.

[18] We are not privy to data on corporate taxable income to simulate the impact of policy changes. The METR is only relevant to marginal income earned on projects. Changes to rates and tax bases will affect the tax revenue collected from both marginal and infra-marginal profits. To understand the fiscal impacts, it is necessary to look at corporate tax data on taxable income to see how revenues are affected by any policy changes. We use the constant METR benchmark to at least maintain New Zealand's competitiveness in attracting investment at the margin but it not the benchmark that would be normally used for policy analysis if considering revenue-neutral tax reforms.

by top earners, it might be easiest to have one income inclusion rate applying for all taxpayers.

By applying the current top net PIT rate (11.4%) on dividends to capital gains, the overall METR would rise 0.7 percentage points to 17.4 percent. This would also reduce the METR dispersion index because the increased financing cost would increase METR on land, the lowest taxed asset, by more than that on other types of assets.

This option, however, can cause a technical complexity in the tax system. Since the net PIT rate on dividends is determined by the CIT and PIT rates simultaneously, any attempt to adjust the tax burden on dividends AND capital gains will not be possible unless both the CIT and the PIT rates are adjusted in a coordinated manner (as shown in Table 2). One may avoid such a technical complexity by replacing the imputation system with a dual PIT rate that applies to both capital gains and dividends (see Option 2).

Note that the CIT reduction in this simulation does not have to be matched by a similar reduction for those companies that are used as tax planning vehicles such as income trusts and certain financial investment entities.

Table 6: Marginal Effective Tax Rate on Capital Investment by Industry and by Asset Type

	A,F&F	Manu-facturing	Public Utilities	Cons-truction	Wholesale Trade	Retail Trade	Trans-portation	Communi-cations	Other services	Aggregate
The Base Case: the current tax structure (with the New Zealand's PIT rates on capital income, the same as Case B in Table 3)										
Buildings	10.0	12.9	-1.3	29.6	31.2	32.2	16.0	27.4	30.3	19.6
M&E	13.2	15.7	17.6	24.7	11.4	9.3	14.2	14.7	13.0	15.0
Land	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Inventory	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7
Aggregate	11.8	15.5	6.1	22.2	18.8	21.1	14.3	16.3	21.2	16.7
Inter-industry dispersion		27%								
Inter-asset dispersion		35%								
Overall Distortion		44%								
Option 1: Taxing capital gains at the net PIT rate on dividends (assuming the top PIT rate applies)										
Buildings	10.9	13.7	0.1	29.7	31.2	32.2	16.7	27.5	30.4	20.1
M&E	13.8	16.3	18.1	24.9	12.1	10.1	14.8	15.3	13.6	15.6
Land	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
Inventory	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
Aggregate	12.8	16.2	7.3	22.7	19.5	21.7	15.1	16.9	21.7	17.4
Inter-industry Distortion		25%								
Inter-asset Distortion		31%								
Overall Distortion		41%								

Option 2: Introducing a 10 percent flat PIT rate for taxing dividends and capital gains (we leave aside the tax treatment of other sources of capital income and integration of personal and corporate income taxes to the next section until the next section). The 10 percent rate that applies in 2010 is picked somewhat arbitrarily for purposes of our simulation although, combined with corporate

income tax rate of 30 percent would roughly integrate corporate and personal tax rates at the 38 percent rate.[19] The technical merit of the flat rate tax, compared to using the imputation system as illustrated in Option 1, is that of its simplicity and flexibility for policy makers.

As shown in Table 4, compared to the base case, a 10 percent dual PIT will increase the overall METR by 0.6 percentage points to 17.3 percent.

Note that this flat PIT on dividends and capital gains may be implemented as a withholding tax, which may in turn be used as a credit against the overall tax payable for those whose marginal PIT rate is below the dual PIT rate. For example, if the flat PIT rate for equity income is 10 percent and a PIT payer falls in the income brackets associated with a marginal PIT below 10 percent based on his or her labour earnings, the PIT payer may elect to have any equity income such as dividends and/or capital gains received taxed as ordinary income. As a result of such an election, the 10 percent flat PIT tax withheld on dividends and/or capital gains received by this PIT payer may be used as a credit to offset his or her overall tax payable.

Option 2: Introduce a 10% dual tax on capital income

Buildings	10.8	13.5	-0.2	29.7	31.2	32.2	16.5	27.5	30.4	20.0
M&E	13.7	16.2	18.0	24.9	12.0	9.9	14.7	15.2	13.5	15.5
Land	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
Inventory	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
Aggregate	12.6	16.1	7.1	22.6	19.3	21.6	14.9	16.8	21.6	17.3
Inter-industry dispersion		26%								
Inter-asset dispersion		32%								
Overall dispersion		41%								

Option 3: Reduce the CIT rate to 25 percent and lower the tax depreciation allowances to match the actual economic depreciation rate[20]. The corporate income tax rate would be somewhat below the OECD average of corporate income tax rates, thereby increasing the incentive to book profits in New Zealand, and offset the impact of reduced depreciation allowances on the METR without affecting competitiveness. Although we could not make this assessment, we hope that the adjustments are also roughly revenue-neutral.

This change will not only broaden the CIT base but also significantly improve neutrality, simplify the current tax depreciation scheme, reduce administrative and compliance costs, and reduce the incentive to shift profits out of New Zealand. Compared to the current tax structure (the Base Case), this change will increase the overall METR by only a half percentage point to 17.2 percent but will cut the overall tax distortion by 50 percent!

[19] Note that the approach used here is consistent with the view that the company tax is a withholding tax to ensure that personal income is taxed – without the company tax, investors escape paying personal taxes on income derived from companies. This approach is consistent with the imputation system if dividend tax credits are based on actual company tax payments.

[20] The economic depreciation rates we assume here are based on the recent Canadian Department of Finance studies that have suggested that some assets have shorter lives compared to estimates derived in earlier years. We thus not only eliminate loading but also use tax depreciation rates that correspond to our estimated economic depreciation rates, which is based on recent revised estimates of economic lives for assets in Canada.

We also provide a breakdown of impacts on the METR when reducing tax depreciation allowances and the corporate income tax rate. In Variation 3A, the reduction in the corporate income tax rate only results in the aggregate METR declining from 16.7 percent (Table 6) to 13.4 percent. We note that little is gained in reducing the dispersion index since the variation in METRs as a proportion of the average METR (which is now lower) remains the same. If the tax depreciation allowances are reduced without a corporate rate increase the aggregate METR rises from 16.7 percent to 21.1 percent. We note that there is dramatic reduction in the dispersion index especially with regard to inter-industry differences in METRs.

Option 3: Reduce the CIT rate to 25% and lower the tax depreciation allowance to the rate of economic depreciation										
Buildings	17.6	18.5	16.9	17.0	17.3	17.5	17.1	17.2	17.2	17.5
M&E	20.2	20.3	20.6	20.5	20.7	20.6	19.4	20.4	20.8	20.4
Land	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Inventory	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Aggregate	16.5	18.0	15.1	17.7	17.0	16.4	17.2	19.4	16.9	17.2
Inter-industry dispersion		2%								
Inter-asset dispersion		26%								
Overall dispersion		21%								
Variation 3a: Reduce the CIT rate to 25% without changing the tax depreciation allowance										
Buildings	7.6	10.1	-1.7	24.7	26.1	27.0	12.7	22.6	25.3	15.8
M&E	10.2	12.4	14.0	20.2	8.8	7.0	11.1	11.5	10.1	11.8
Land	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Inventory	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Aggregate	9.2	12.3	4.4	18.2	15.2	17.2	11.3	12.9	17.2	13.4
Inter-industry dispersion		29%								
Inter-asset dispersion		37%								
Overall dispersion		48%								
Variation 3b: Match the tax depreciation allowance to the economic depreciation rate while keeping the CIT rate at 30%										
Buildings	21.6	22.7	20.8	20.9	21.3	21.5	21.1	21.2	21.1	21.5
M&E	24.7	24.8	25.1	24.9	25.2	25.0	23.7	24.9	25.3	24.8
Land	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Inventory	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7
Aggregate	20.3	22.0	18.7	21.7	20.8	20.2	21.2	23.7	20.8	21.1
Inter-industry dispersion		2%								
Inter-asset dispersion		25%								
Overall dispersion		20%								

Option 4 (a combination of Options 3 and 2). In this option, capital gains and dividends will be taxed at the 10 percent tax, the CIT rate will be reduced to 25 percent and the tax depreciation allowance will match the economic depreciation rate.

Note that the combined corporate and personal tax rate on dividends and capital gains would only be (25 + 10x.75=) 32.5 percent, which would be well below the existing personal income tax rate of 38 percent that applies to regular income. We would suggest that the flat tax rate on dividends and capital gains would need to be raised to 15 percent to achieve rough integration.

This option completes our simulation for closing the two main tax base leakages simultaneously. The combined changes will increase the overall METR by 0.9 percentage points to 17.6 percent, which is still below that associated with the G-7 average PIT rates on capital income.

Finally, we should reemphasize that while in theory both the dual PIT rate (applied to equity income) and the CIT rate may be adjusted at the will of policymakers, in practice all such changes have to pass the test of being revenue neutral or even assuring growth in revenues when such revenue goals arise. Our proposal, while satisfying the competitiveness test, may not be revenue-neutral.

Option 4: A combination of Options 3 and 2

Buildings	17.9	18.8	17.2	17.3	17.6	17.8	17.4	17.5	17.5	17.8
M&E	20.4	20.5	20.8	20.6	20.9	20.7	19.6	20.6	21.0	20.6
Land	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
Inventory	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
Aggregate	16.9	18.3	15.6	18.1	17.4	16.9	17.6	19.7	17.3	17.6
Inter-industry dispersion		2%								
Inter-asset dispersion		24%								
Overall dispersion		19%								

Memorandum 1 Item: Adoption of an Allowance for the Cost of Equity

Another option would be to adopt a deduction for the imputed cost of equity finance similar to that in Belgium (which has the most favourable METR among the twenty countries). The effect of providing an imputed deduction for the cost of equity finance is that it would convert the company tax into a withholding tax on economic rents since the full cost of finance is deducted from profits (assuming tax depreciation allowances are also neutral). In principle, dividends and capital gains earned by resident and non-resident investors could be fully taxed since the normal return on capital would not bear any corporate level tax (this would require tax treaties to be amended if the authorities wished to bump up withholding taxes to recover losses in corporate tax revenues paid by foreign companies). Alternatively, capital income accruing to investors could be fully exempt if savings are to be exempt from taxation.

While this company tax regime would not discourage investment decisions, it would introduce several issues that would need to be carefully addressed. The cost of equity finance is not easily measurable on a case-by-case basis so some general rate would need to be used. Assuming the government shares risks fully through loss offset provisions, it would be most appropriate to use a government bond rate for this purpose. However, the government would likely not fully share losses and thereby limit deductions, especially if the allowance for the cost of equity encourages multinationals to dump tax losses into New Zealand. But a limitation on loss refunds would imply that a cost of equity finance should include some sort of risk premium in the imputed cost of equity finance.

Even so, the imputed cost of equity finance could vary by size of firms with those more cash-constrained facing higher costs than those easily raising capital from markets.

Multinational companies are also in position to use tax planning methods (such as double-dip interest deductions) that provide a more favourable cost of finance. Thus, a deduction for the imputed cost of equity finance based on the government bond rate may be too generous for some and not generous enough for others, thereby undermining the neutrality of the tax.

As some countries have found from providing a deduction for the cost of equity finance, the incidence of non-taxpaying companies increases sharply since companies not only deduct interest expenses but also the cost of equity financing. Loss pools grow creating pressures on companies to trade them, thereby leading to instability in tax rules that try to prevent trades for these purposes. In Croatia where a deduction was initially provided for the cost of equity, it was later abolished in part because so many companies became non-taxpaying.

Memorandum 2 Item: Inflation Indexation and Other Potential Measures including Land Taxation

Another option that could be considered to improve efficiency of the income tax system is to index it for inflation. Even at relatively low inflation rates of 2 percent, the lack of indexation can lead to high taxes imposed on savings, as discussed above, as well as significant asset and industry variation in tax burdens.

To index the income tax for inflation, asset values would be revised annually to reflect rising prices and net financial costs would be adjusted downwards to reflect the reduction in real value of net debt held by taxpayers. The former adjustment would require tax depreciation allowances, inventory costs and cost basis of financial assets to be assessed on indexed values, resulting in less tax collected since inflationary income is no longer taxed. The latter adjustment would result in lower borrowing costs to be deducted from profits. Both corporate and personal income taxes would be adjusted accordingly.

Several countries (Mexico and Israel for example) use inflation accounting for tax purposes since inflation rates are relatively high in those countries. Many countries such as Argentina and Brazil abandoned inflation adjustments as inflation became less important as governments turned to inflation-targeted monetary policy to reduce inflationary expectations. Inflation adjustments under the tax system are complex and require all taxpayers to make significant adjustments to their accounts.

At times, governments have resorted to partial measures to account for inflation such as indexing the cost basis of assets to calculate capital gains. The UK for example has used tapering (lower tax rates on assets held for longer periods) to adjust capital gains for inflation and some other countries have distinguished between short and long term capital gains to adjust for inflation. The UK abandoned the tapering mechanism since it enabled taxpayers to use derivatives to combine gains and losses in a manner to reduce taxes as capital gains by holding transactions for different time periods. Other countries with differential capital gains taxes according to the length of time that assets have had similar tax planning issues – the US abandoned its multiple rate system for taxing capital

gains in 1986 but brought back the regime in later years with adjustments to minimize the use of derivatives that would lead to tax losses for the government.

Another adjustment might be to apply special taxes on those assets that tend to be highly levered and therefore enable assets to be taxed at low rates due to the deduction of interest expenses, unadjusted for inflation. A special tax on land and structures (such as a real estate tax) or reduction in tax depreciation allowances (as in the UK where commercial buildings are not depreciated) may be used for this reason. While a property or land tax might be sensible to fund public services to develop infrastructure and other services to property owners, it is not a proper mechanism to adjust for inflation impacts. Instead, we advise that tax depreciation rates be considered for adjustment for inflation as part of economic depreciation but only with the aim of achieving neutrality.[21]

4. The integration between CIT and PIT

Integration of corporate and personal taxes is important to tax systems for several reasons. Without such integration, tax systems can distort a number of economic decisions. Double taxation of shareholder income reduces the incentive to capitalize firms with equity since the borrowing costs are deductible from corporate income and only taxed once at the personal level. Executive and labour compensation can also be affected if some forms of payment are more tax favoured than others.

Further, double taxation encourages businesses to be organized as trusts, unincorporated businesses and partnerships rather than corporate legal entities. Corporate structures might be more beneficial to investors if limited liability helps protect them from claims against their personal assets. However, with favourable taxation of capital gains, the tax system encourages the creation of corporate structures as dividend payments to investors are discouraged relative to the reinvestment of company earnings. On the other hand, with trusts, businesses distribute their taxable profits in order to avoid tax penalties on retained income. As Canada found when 17 percent of the Toronto Stock Exchange was held in the form of trusts, many companies took on a corporate structure that left little cash flow available for investment purposes (Mintz and Richardson 2006).

Integration of company and personal taxes encourages investment for those businesses reliant on financing from domestic owners. Multinational companies that raise funds from international markets are not affected by measures that reduce personal taxes on New Zealand residents – effectively, the cost of financing is determined by tax measures affecting marginal savings obtained from international markets[22]. However, especially

[21] In Chen and Mintz (2005) we provide an exact formula or adjusting tax depreciation allowances based on historical prices to reflect inflation and a given debt-asset ratio. For example, with a debt-asset ratio of 40 percent and economic depreciation rate of assets equal to 8 percent, the declining balance capital cost allowance would be increased from 8 to 10 percent for neutrality. It would be impossible to assess different tax depreciation allowances according to leverage by company but a standard industry debt-asset ratio could be used instead to make rough adjustments.

[22] This assumes that New Zealand capital markets are "small" in that the international cost of funds is not affected by New Zealand savings rates. However, changes in domestic dividend and capital gains tax rates

for entrepreneurial firms that are typically small, their cost of equity finance will be affected by personal taxes on dividends and capital gains.

The tax treatment of inter-corporate income is also relevant. To avoid multiple taxation of income flowing through corporate groups, dividends should be exempt or subject to the imputation system to avoid multiple levels of tax. Issues arise with the taxation of foreign dividends received from abroad in terms of the eligibility for dividend tax relief – these issues go beyond our scope here since the taxation of foreign dividends is part and parcel of the overall approach used for taxing international income.

As discussed above, the current New Zealand tax system does not equally tax all forms of financial income under its company and personal tax systems. While company and personal income taxes are well integrated leading to a rate of tax on dividends equal to that applied to regular income, certain forms of financial income are tax-favoured: capital gains (exempt), trust income (taxed at 33 percent), personal investment entities, life insurance and widely-held superannuation funds (taxed at 30 percent).

To reduce distortions, two policy choices could be considered to minimize the use of certain business structures for tax reasons:

Option A: Tax business-related income at the personal rate (capital gains, dividends and trust income) with none or some preference rates only for some forms of income such as superannuation (pension funds) which allow individuals to accumulate income for retirement (and the amount invested on a tax-preferred basis is limited):

i. As discussed above, capital gains should be partially taxed with the aim of applying a similar rate as that for dividends. If the top personal rate were equal to the company tax rate, capital gains and dividends could be both exempt. However, with mobile multinational capital, many countries have found that differential company and top personal rates are customary – some rebalancing of the personal tax is therefore necessary. If personal taxes cannot be substantially reduced for revenue reasons, we see no difficult in having a company tax rate below the top personal rate so long as dividends and capital gains are sufficiently taxed to reduce tax avoidance on part of taxpayers. What we do emphasize is that the alignment of company and personal tax rates on dividends, capital gains and other investment income should be set to avoid distorting business financing decisions and minimize tax planning opportunities as much as possible.
ii. Trust income should be taxed at the top personal rate (currently 38 percent) and would be reduced to the extent income is distributed to beneficiaries who are taxed according to their typical rate of tax. This would eliminate the incentive to use trusts to avoid company and personal tax. It would therefore reduce the incentive for some business structures to evolve that lead to large payouts of taxable cash flows.

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have been found to affect the equity prices, suggesting that equity markets are not "small and open" (Helliwell 2001).

iii. It would be preferable to tax savings at a similar personal rate including portfolio investment entities, life-insurance and superannuation funds (at least in excess of limits on a preferential basis), in order to reduce the scope for certain tax structures. One could apply the top PIT rate on the entity with a refund of tax when income is distributed to individuals and therefore subject to personal tax.

Option B: Dual Income Tax. Going beyond the flat PIT rate for capital gains and dividends discussed above, New Zealand could consider the adoption of a dual income tax for all forms of capital income similar to the system in Scandinavia and other European countries.

Under the dual income tax, different schedules would be applied to labour and capital income. Labour income (wages, salaries and taxable benefits) would be subject to the progressive rate schedule. Capital income would be subject to a separate schedule with a flat tax rate of 25 percent (consistent with our recommendation for the company income tax rate).

The advantage of the dual income tax is that it would simplify the taxation of passive income. Dividends, subject to the imputation system, would effectively be taxed at a zero rate if company level tax is payable at 25 percent. Capital gains would also be exempt if the company tax rate and personal tax rate on capital income are equal to each other. All other capital income – interest, trusts, portfolio investment entity etc. would also be taxed at 25 percent.

The most difficult issue with the dual income tax arises with respect to the treatment of the small business sector, which is quite important in New Zealand. Owners of small businesses would prefer receiving income as dividends (or capital gains) from a corporation rather than business income subject to the personal tax (likely having a rate of tax in excess of 25 percent). To avoid tax planning, countries with dual income taxes have characterized dividend and other company income accruing or payable to shareholders in excess of a normal return to capital as labour income and therefore subject to personal taxes. The amount of dividends (and capital gains on share repurchases) that would be determined as capital income would be calculated by applying an interest rate (e.g., government bond rate) to the amount of capital invested in the firm (or alternatively applied at the shareholder level in determining amounts invested in the company). Issues arise with respect to the loss pools, inter-company income flows and non-resident ownership that impact on the taxation of closely-held firms.

The clear advantage of the dual income tax is that it enables corporate and top personal tax rates to diverge more easily. However, it can open up tax planning opportunities especially at the small business level.

V. Conclusions

The paper addressed the following issues. We have found that New Zealand"s METR on capital is 18.0 percent for non-financial companies financed by international capital markets. This compares well with OECD countries including Australia that we surveyed with only Ireland having a dramatically lower METR compared to New Zealand.

New Zealand's company income tax rate at 30 percent is somewhat higher than the OECD average, however, while its PIT rate of 38 percent is consistent with most OECD countries with particular advantages given to low taxes on dividends (due to the imputation system) and the exemption of capital gains. The high company income tax rate does create pressure on revenues for the government since business shift income out of New Zealand to jurisdictions with lower corporate income tax rates.

Taxes on capital also impact on economic growth, especially those at the corporate level. The taxation of savings also impacts on economic growth to the extent it erodes the incentive to invest in human capital and small business.

Of greater concern to use is the economic distortions caused by New Zealand's taxation of capital income. We find a wide variation in METRs across industries and assets under the corporate income tax. Also, favourable taxation of trusts, capital gains and other savings vehicles distort savings markets as well.

By and large, New Zealand taxation of capital income reflects a strongly held belief that taxes should be kept as efficient and fair as possible. The existing system is largely competitive internationally but it could be improved in a number of respects that would enhance efficiency and productivity.

The overall objective would be to keep tax rates as low and bases as broad as possible. This would result in New Zealand having a more neutral tax structure with internationally competitive rates.

To achieve these aims, we suggest that New Zealand pursue a policy to reduce company tax rates to 25 percent and broaden the company tax base by reducing the generosity of its tax depreciation allowances. This would not only improve neutrality and productivity by creating a level playing field among business activities but also help shore up company tax revenues given the ease with which multinational companies can shift book profits to low-tax jurisdictions using tax planning strategies.

New Zealand should also consider broadening the capital gains tax base so that gains are taxed at the same rate as dividends. This will not only reduce the incentive for taxpayers to convert income into capital gains but it would also ensure better integration of company and personal taxes. Taking the personal income tax rate of 38percent, a flat tax rate of 10 percent on dividends and capital gains would roughly achieve full integration and neutrality with respect to company payout decisions.

New Zealand should also study the adoption of a 25 percent dual income tax with a flat tax on all forms of capital income. Capital gains and dividends would be exempt since

income is fully taxed at the corporate level. Other preferentially treated savings vehicles such as trusts and PIEs would be taxed at the same rate. However, the effect of a high tax on labour compared to capital income creates opportunities for taxpayers to re-characterize labour earnings as preferentially taxed dividends and capital gains, which is particularly important at the small business level. This would be an Achilles heel for the dual rate structure.

In our analysis, we were unable to estimate the revenue impacts of our recommendations. Without examining these impacts in detail, it is not possible to determine whether our proposals are fiscally possible. An ultimate assessment of potential tax changes would require analysis of such revenue impacts.

APPENDIX A

Methodology for Estimating Marginal Effective Tax Rates

The standard method used to estimate marginal effective tax rates has been extensively documented[23]. The formula based on this method has been modified by incorporating some miscellaneous taxes such as capital or assets based taxes and property related taxes. Following are the general formulas used in this study. Note that these formulas are for profitable and hence tax-paying firms only. For a tax-loss case, the formulas will be much more complicated. (See the main text, page 17, for explanation of "tax-loss" case.)

(i) Marginal effective tax rate (*t)*

The marginal effective tax rate on a given type of capital is defined as the proportional difference between the gross-of-tax rate of return (r^G) required by a firm and the net-of-tax rate of return (r^N) required by a investor. r^G is the marginal revenue product (or user cost of capital, in equilibrium) net of economic depreciation. The after-tax rate of return is the weighted average of the return to debt and equity securities held by the financial investor. Thus, the effective tax rate (t) is defined as

$$t = (r^G - r^N)/r^G \qquad (1)$$

(ii) The net-of-tax rate of return on capital (r^N)

The net-of-tax rate of return on capital is defined by the formula

$$r^N = \beta i + (1 - \beta)\rho - \pi \qquad (3)$$

This is the rate of return on capital required by financial investors, or suppliers of investment funds to firms. Note that financial investors often include firms themselves when there is equity generated internally.

(iii) The real cost of financing (r^f)

The real cost of financing (r^f) is one of the main components of cost of capital, or gross-of-tax rate of return (r^G) on capital. The real cost of financing (r^f) is defined by

$$r^f = \beta i(1 - U) + (1 - \beta)\rho - \pi \qquad (2)$$

with β = the ratio of debt to assets ratio, i = cost of debt, U = the statutory corporate income tax rate, ρ = cost of equity, and π = inflation rate. That is, the cost of financing for the firm is the weighted-average cost of financing net of the inflation rate.

[23] Boadway, Bruce, and Mintz (1984) and King and Fullerton (1984).

(iv) The gross-of-tax rate of return (r^G) on capital[24]

A. Depreciable assets (i.e. buildings and machinery and equipment)

$$r^G = (1+tm)(r^f +\delta)(1- k)[1 - A +\tau (1-U)/(\alpha +r^f+\pi)]/[(1-U)(1- tp -tg)] - \delta \quad (4)$$

Where tm = tax on transfer of property, or a transaction tax (e.g., import duty and slaes tax) on capital goods wherever this is applicable, r^f = real cost of financing as defined in Section (iii) above, δ = economic depreciation rate, k = investment tax credit rate, A = the present value of tax benefit from the investment allowance and depreciation allowance, τ = capital tax rate, α = tax depreciation rate, tp = property tax rate based on the rental value, and tg = gross receipts tax rate, or presumptive tax that is based on the gross revenue.

B. Inventory

$$r^G = (1+tm)(r^f +U\pi\zeta)/[(1-U)(1-tg)] +\tau \quad (5)$$

Where tm = sales tax on raw materials where it is applicable, and ζ = 1 for the FIFO accounting method, 0 for LIFO, and 0.5 for the average cost method.

C. Land

$$r^G = r^f (1+tm) [1 +\tau (1-U)/(r^f + \pi)]/[(1-U)(1- tp -tg)] \quad (6)$$

Where tm = property transfer tax.

v) Aggregation

The METR for a given industry is the proportional difference between the weighted average of the before-tax rate of return by asset type and the after-tax rate of return; the latter is the same across asset types within a given sector[25]. That is, the marginal effective tax rate for industry *i.* t_i, is calculated as following:

$$t_i = (\Sigma_j r^G_{ij} w_{ij} - r^N_i)/ \Sigma_j r^G_{ij} w_{ij} \quad (7)$$

where j denotes asset type (i.e. investments in buildings, machinery, inventories, and land), and w_{ij} denotes the weight of asset type j in industry i.

[24] Formulas provided here are only for the regular case where companies are profitable and pay taxes. For the tax-holiday case or the case of tax reduction for a limited period, the formulas for depreciable assets are more complicated in that the present value of tax allowances needs to be adjusted to reflect the true impact of the tax holiday or tax reduction on METR. For non-depreciable assets such as inventory and land, the formula for the tax-holiday case is the same as that for the taxpaying case except that the statutory tax rate(s) may differ due to the lower or zero rate arising from tax incentives.

[25] The net-of-tax rate of return can be the same across all the sectors when there is no sectoral differentiation in the statutory income tax rate.

APPENDIX B

Impact of Non-tax Parameters on the Estimates of Marginal Effective Tax Rates

Expected Inflation Rate

The expected inflation rate affects the METR on capital through its impact on the nominal interest rate. For a given real interest rate, the higher the inflation rate, the higher will be the nominal interest rate. *When there is no regulation for adjusting the impact of inflation*, the nominal interest rate interacts with taxes mainly through the following three channels. First, interest cost is deductible for income tax purposes at the nominal rate. As a result, the higher the nominal interest rate in relation to a fixed real interest rate, the lower the real after-tax financing cost, and hence the lower the METR. This effect is particularly favourable for leveraged land financing since financing cost is the only non-tax cost for investment in land. Second, the accumulated present value of a given annual tax depreciation allowance decreases as the nominal interest rate rises. Since higher inflation lowers the present value of tax depreciation allowances, it increases METR on depreciable assets. And finally, if the first-in-first-out method is used for inventory accounting, it may result in inflated taxable income and, hence, a higher METR on inventory when prices rise. Since inflation thus affects METR on different assets in different directions, its net impact on capital will depend upon the capital structure of a given industry. (See the end section of this Appendix for further explanation of the capital structure by industry.)

Real Interest Rate

The impact of the real interest rate on the METR is in part similar to the impact of inflation. For example, as the real interest rate rises, so will the nominal rate, thus increasing the effective tax rate on depreciable assets. For a given debt-asset ratio, however, unless inflation is high, there is unlikely to be much of a distortion in effective tax rates arising from the deductibility of interest. In this study, a real interest rate of 2 percent is used for all countries under the assumption that there is full mobility of investment funds within international financing markets.

Debt-Asset Ratio

The ratio of debt to assets is sometimes referred to as the financing structure of investment. As already noted, the impact of this ratio on the METR is related to the expected inflation rate and the (real) interest rate. For a given inflation rate and real interest rate, the higher the debt-asset ratio, the more the potential benefit from tax deductibility for debt financing cost, or interest expenses. A higher debt-asset ratio may thus reduce effective tax rates through lowering the real after-tax cost of financing. For simplicity, we apply a debt to assets ratio of 40 percent across sectors and across borders in our study.

Economic Depreciation

The economic depreciation rate interacts with the tax depreciation allowance to affect the effective tax rate. Under our assumption of full mobility of capital and technology, a given type of machinery is depreciated at the same economic rate everywhere around the world. Investment in this given type of machinery will incur a higher (lower) effective tax rate in those countries that provide a lower (higher) tax depreciation allowance, and hence may be discouraged (encouraged) in these countries.

Capital Structure

A capital investment generally involves two categories of capital: depreciable and non-depreciable assets. These two categories can be further divided into four types: buildings and machinery (both depreciable) and inventory and land (non-depreciable). Capital investments in different industries are structured differently according to the nature of their business. Moreover, under the same statutory tax rate(s), different types of assets may incur different effective tax rates due to the various interactions between tax provisions and non-tax parameters discussed above. The latest Canadian capital structure is used in this study.

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