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Modernizing Business Taxation

The Canadian corporate income tax system is unnecessarily distortionary. It could be reformed in a relatively straightforward way to make it much more efficient by drawing on lessons learned elsewhere.

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The Study In Brief

The Canadian corporate income tax system is subject to a number of problems that call for fundamental reforms, starting with rethinking the main role of the system.

The corporate tax is mainly designed to serve as a withholding device for the personal income tax. It prevents shareholders from sheltering corporate-source earnings from the personal income tax by taxing those earnings at source. Integration of the corporate income tax and of the personal income tax, through the dividend-tax credit and the preferential treatment of capital gains, mitigates the potential for double-taxation. We argue that exposure to international capital markets, which implies that the incidence of the corporate tax is largely shifted to labour, and the fact that most capital income can be sheltered from the personal income tax undermine the withholding role of the corporate tax and make integration provisions unnecessary. The current system also leads to distortions in firms' investment decisions, financing decisions, risk-taking and innovation efforts, and decisions about where to locate business activities and where to report profits. Tax competition and international profit-shifting are also putting downward pressure on tax rates.

This *Commentary* examines these problems and formulates a number of recommendations for reform. The main one involves changing the tax base from shareholder income to above-normal profits, or rents. This could be done with relatively little disruption of the current system by adopting the allowance for corporate equity (ACE) tax system which allows firms to deduct from taxable income the cost of equity financing, in addition to deducting interest on debt. Ideally, this tax base would apply to both incorporated and unincorporated businesses. Adopting the ACE would narrow the tax base, although the potential loss in revenue would be entirely compensated by eliminating the dividend-tax credit and the partial tax-exemption of capital gains, as we argue should be done.

Our proposed reforms include a number of other elements. First, the territorial approach for taxing international active business income should apply. Second, firms should be allowed to carry forward and backward tax losses at the risk-free interest rate, which would encourage risk-taking and innovation. Third, we recommend maintaining the small business deduction to compensate for the non-refundability of losses, which are more prevalent among small businesses. However, eligibility should be determined on the basis of a lifetime threshold rather than an annual one. Finally, in order to promote innovation, introducing a preferential tax rate for patent income, as well as extending flow-through share financing to investment in small innovative firms, should be considered.

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Designing a fairer, more effective and more efficient corporate tax system is at the forefront of recent tax-reform debates.

The challenge has featured prominently in the US President's Advisory Panel for Tax Reform, the UK Mirrlees Review and the so-called Henry Report in Australia. It has also been the subject of the OECD Base Erosion and Profit Shifting initiative, as well as the EU proposal for a Common Consolidated Corporate Tax Base.[1]

Canadian corporate tax reform raises several key issues. First, the existing tax system distorts several types of business decisions, including where to locate business activities, how much to invest, how to finance investments, how much to invest in risky and innovative projects and where to book profits.

Second, Canadian corporate tax is designed mainly as a backstop to personal tax. It taxes shareholder income as it is earned and provides relief through the dividend tax credit and the partial tax-exemption of capital gains when income is taken out of the corporation. However, this approach has been undermined now that much capital income can be sheltered from personal tax and as exposure to international capital markets determines required returns to investment. As a result, corporate taxes are largely shifted to workers. Third, the mobility of investment encourages countries to engage in tax competition, which on the one hand reduces corporate tax rates and the inefficiency they entail but on the other reduces tax revenues that accrue on above-normal returns on investment or rents.

Finally, the conventions for allocating taxable income across countries – the use of the source or territorial rule for active business income and of the residence rule for passive income – and the difficulty of countering tax havens are alleged to contribute to profit shifting, which put further downward pressure on corporate tax rates.

In this *Commentary*, we review these issues as they apply to the Canadian business tax system. We discuss alternative policy proposals, some of which require ambitious international cooperation. We also offer feasible proposals for reform. The key recommendation is to change the corporate tax base from shareholder income to above-normal profits – that is, economic rents (see Box 1) – based on the source principle. We consider what this implies for other elements of the tax system, such as the taxation of unincorporated business, the taxation of financial intermediaries, integration with the personal tax and federal-provincial tax harmonization. Of particular relevance is how a rent-based business tax system would treat returns to risk and intellectual property. We build on our earlier work done for the Mowat Centre (Boadway and Tremblay) where the case was made for rent-based corporate income taxation and the elimination of integration with the personal income tax, proposals that also apply here.

Brief Review of Canadian Business Tax System

Comprehensive reviews of the business tax system in Canada are available elsewhere (e.g., Kerr, McKenzie and Mintz 2012; Boadway and Tremblay 2014), so we highlight only what is important for our purposes.

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1 See President's Advisory Panel on Federal Tax Reform (2005), Mirrlees et al. (2011), Australian Treasury (2010), OECD (2013) and European Commission (2011).

Box 1: The Concept of Economic Rents

Economic rents are profits in excess of normal competitive profits. More technically, rents in a given period are the difference between a firm's revenues and the opportunity costs of all inputs, including the manager's or entrepreneur's time and risk-taking. Rents are notoriously difficult to measure since the imputed costs of some inputs are not directly observable. However, a cash-flow tax or its present-value equivalent approximates the current value of economic rents under normal economic conditions.

The structure of corporate income tax (CIT) is notionally based on the idea that it serves as a withholding device for personal income tax (PIT). Shareholders can shelter corporate-source earnings from the PIT by retaining them in the corporation where they can accumulate tax-free. The CIT can pre-empt that by taxing shareholder income at source and compensating the shareholder for CIT paid when he withdraws funds from the corporation as dividends or by selling shares. Corporate tax has other roles, such as enabling the transfer of tax revenues from foreign to Canadian treasuries via the ability of foreign corporations (mainly US-based) to claim tax credits on profits earned in Canada, taxing above-normal corporate profits and paying for government services that benefit the corporation. But the design of the CIT is dominated by the withholding role.

The CIT base is roughly shareholder earnings; that is, revenues less current costs less imputed capital costs such as capital cost allowances (CCAs) and interest payments. Federal and provincial tax rates apply separately to the base, and there are various federal and provincial tax credits, including the Scientific Research and Experimental Development (SRED) tax credit to encourage innovative spending. Tax losses are non-refundable, but can be carried forward for 20 years and backward for three years, both without interest. Small Canadian Controlled Private Corporations (CCPCs) obtain a lower tax rate on their first $500,000 of taxable income through the small business deduction (SBD), and they also obtain a higher SRED tax credit on up to $3 million of eligible spending, both subject to asset limits. Accelerated CCA rates are available for manufacturing as well as for processing machinery and equipment investments, while mining, oil and gas and renewable energy corporations can pass their exploration and development deductions through to shareholders, using flow-through shares.

Canadian corporations' active business income is nominally taxed on a worldwide basis, but either there is a credit for foreign taxes paid or, where tax treaties or tax information exchange agreements exist, income earned abroad is exempt. This implies that the CIT effectively applies on a territorial basis to active business income. In contrast, all passive investment income earned worldwide is taxable in Canada independently of whether the source country has a treaty with Canada and whether the income is repatriated. Foreign corporations are taxed on their Canadian earnings. Royalties and other returns from intellectual property are treated as ordinary income and are taxed under the CIT. Intellectual property rights that are granted for specific lengths of time, such as patents, can be depreciated for tax purposes.

The tax system includes a number of measures intended to mitigate tax-base erosion. Withholding taxes are imposed on dividends, interest and royalties paid to non-residents. Arm's-length

transfer-pricing rules apply for transactions within multinationals. Thin capitalization rules limit interest deductions that can be claimed for loans from non-resident affiliates or parent companies.

All provinces except Alberta and Quebec participate in tax collection agreements (TCA) whereby they agree to use the federal tax base but select their own tax rates and credits subject to some principles of non-discrimination. Participating provinces' taxes are administered by the Canada Revenue Agency (CRA), and where firms operate in more than one province, taxable income is allocated by a formula that gives equal weight to sales and payrolls. Non-participating provinces have similar tax bases and abide by the same allocation conventions but retain the right to deviate from the federal base and choose their tax credits freely.

Financial institutions are subject to CIT, although they benefit from a number of special provisions. For example, interest paid to depositors is deducted from taxable income. Banks and credit unions may also deduct from taxable income some amount of reserves intended to cover the costs of defaults. Similarly, insurance companies can deduct policy reserves, and preferential treatment applies to the investment income of life insurance companies.

Some personal income tax provisions are relevant for our subsequent discussion. Unincorporated business income is taxed under the PIT regime using a similar definition of taxable income as the CIT. Business income is aggregated with other forms of personal income and subject to a common rate structure. To crudely integrate the PIT and CIT, the former allows a dividend tax credit on dividends paid by Canadian corporations (appropriately scaled down for small CCPCs to reflect their lower corporate tax rate) and one-half of all capital gains is tax-exempt. Taxpayers can shelter most capital income from PIT using RRSPs, RPPs, TFSAs and housing. As well, savings in RESPs are largely sheltered.

Notably, capital income earned in unincorporated businesses cannot be sheltered. Integration provisions do not apply to sheltered savings. Under the PIT, royalties derived from the ownership of patents, trademarks or copyrights, for example, are included in an individual's total income.

Problems with the Current System

The CIT as it applies to active business income is roughly a territorial or source-based tax on income earned on behalf of shareholders. By virtue of interest deductibility, the CIT does not apply to income earned by individual holders of corporate debt, which is taxed directly under the PIT, unless it is sheltered. Shareholder income includes a normal risk-adjusted return plus any above-normal profits or rents. In contrast to the CIT, the PIT, including its integration provisions, applies on a residence basis.

In an open economy like Canada's, risk-adjusted returns are determined largely by international capital markets, as discussed below. As well, the investment and saving sides of the market in open economies are largely segmented. Even for local firms that are wholly financed domestically, rates of return should conform to those determined on international markets in order to attract creditors. This does not preclude rates of return from including Canada-specific risk premiums.

The determination of rates of return by reference to international markets has a number of implications. For one, corporate taxes on normal risk-adjusted returns to investment are not borne by shareholders: they are mostly shifted from shareholders to labour. That is because normal after-tax returns to investment must equal those that can be obtained on international markets. Any tax imposed on investment returns increases pre-tax returns so that the after-tax return is not affected. The rise in pre-tax required rates of return impedes investment, reducing the demand for labour and

ultimately reducing wages to cover the tax on normal profits. In economic terms, the incidence of the tax on normal returns from investment is borne by labour.[2]

On the other hand, taxes on above-normal corporate profits or rents are borne by shareholders, assuming the rents are specific to the country where production is located. By the same reasoning, the PIT on non-sheltered savings is borne by savers since rates of return on savings are also determined on international capital markets. The implication is that while the CIT distorts investment, the PIT distorts savings. Integration provisions apply through the PIT to subsidize savings rather than undoing the CIT effect on investment.

More generally, integration is imperfect. It does not apply to sheltered savings or to shares held in foreign corporations, and it bears little relation to the taxes actually paid by corporations. The implication is that integration through PIT provisions serves little purpose since it does not undo the effects of the CIT, and taxing normal shareholder income in corporations by the CIT serves little purpose if capital is highly mobile internationally.

A substantial amount of asset income is sheltered from the PIT. Sheltered assets include pensions (RRSPs, RPPs, TFSAs), housing and RESPs. Under existing RRSP and TFSA limits, many if not most taxpayers can eventually shelter all eligible capital income from PIT if they so choose.[3] Basically, the PIT is close to a consumption tax, which minimizes the need for CIT withholding and integration. Despite most financial assets and housing being sheltered from the PIT, assets invested in unincorporated businesses are not. They are subject to similar tax treatment as corporations, albeit at personal rather than corporate tax rates.

The CIT is distortionary on various margins. By taxing the rate of return on investment, it discourages investment, as reflected in positive marginal effective tax rates (METRs). As well, the CIT distorts the allocation of investment across sectors since METRs differ.[4] The METR measures the difference between before- and after-tax returns on investment, and not the CIT's impact on investment.

Meanwhile, the marginal cost of public funds (MCPF) measures the economic cost per additional dollar of revenue raised and, unlike the METR, is based on an estimate of the induced investment reduction due to a tax increase.[5] Dahlby (2012) estimates that the MCPF was $1.45 for the CIT in 2011 and $1.17 for the PIT.

2 There is a caveat to this tax-incidence argument. The rate of return on investment set in international capital markets depends on corporate taxes applied by all countries. One might expect that the international rate of return is lower than it would be in the absence of world CITs. However, whatever that return is, it can be taken as given by a small open economy like Canada's, so changes in our tax rate should be shifted to labour.

3 Using wealth data from 2005, Milligan (2012) estimates that under a mature TFSA system with a total contribution limit of $200,000 per family, only 3.3 percent of families would exhaust their contribution limit and would therefore need to hold some of their saving in taxable assets. In this case, 72 percent of taxable assets would be held in TFSAs. Under a much smaller accumulated contribution limit of $50,000, about 11 percent of families would exhaust their contribution limit.

4 Chen and Mintz (2015) estimate that METRs on capital investment in Canada in 2014 were 8.2 percent in manufacturing and 23 percent in services. Compared to a decade ago, these tax rates have been lowered, but the sectoral gap has increased. METRs in 2005 were 35 percent in manufacturing and 42 percent in services. Overall, the average Canadian METR decreased from 38.8 percent in 2005 to 19 percent in 2014, which is about the OECD average.

5 The MCPF per dollar of additional revenue raised includes the revenue itself plus the increase in the deadweight loss – the difference between the before- and after-tax returns on investment – resulting from the reduction in investment.

For its part, the CIT discourages risk and innovation, especially by young firms since loss offsetting is imperfect. This effect on risk-taking is mitigated to the extent that loss offsetting is possible since a tax on risky returns with full loss offsetting can actually encourage risk-taking as the government is sharing in the risk (Mossin 1968, Stiglitz 1969).[6] To the extent that the average effective tax rate is higher at home than abroad, it encourages firms to locate elsewhere. Equivalently, the CIT is prone to tax competition, which is a property of CITs that are levied at source (Auerbach, Devereux and Simpson 2010). It encourages profit shifting to jurisdictions with lower statutory tax rates, including tax havens, through transfer pricing, shifting of royalty income on intellectual property, intra-firm borrowing and other tax-avoidance devices.

Provincial CITs are also liable to profit shifting across provinces, although that is more difficult because of formula apportionment. However, it can occur since corporations need not consolidate their accounts among affiliates in different provinces (Mintz and Smart 2004). To the extent that a corporation's rent-generating activity, including investment in intellectual property, is internationally mobile, rent taxation encourages the movement of innovative activities abroad. Finally, the fact that interest payments are deductible from taxable corporate income, but the cost of equity finance is not, generates a bias in favour of debt financing. This induces firms to accumulate too much debt and increases bankruptcy risk.

The small business deduction can also have behavioural effects. Its purpose is to provide preferential treatment to small businesses to offset some of the disadvantages they face, such as limited credit access to finance investment and growth, and discriminatory treatment under the CIT due to imperfect loss-offsetting and relatively high rates of bankruptcy.[7] Because successful firms will pay taxes on their profits, while unsuccessful ones cannot claim a tax credit on their negative profits when they wind up, the CIT discourages risk-taking. By limiting SBD eligibility (and access to SRED tax credits) on the basis of taxable income and asset size, small firms could be discouraged from growing (Chen and Mintz 2011). However, using micro tax data, Dachis and Lester (2015) argue that this is not quantitatively important. The SBD rate might also encourage high-income professionals to incorporate so that their business income is not taxed at personal rates until it is withdrawn from the corporation (Wolfson, Veall and Brooks 2016).

Some of these distortionary effects arise from the structure of the CIT, particularly the fact that it taxes risk-adjusted rates of return. Others result simply from the fact that the CIT applies at source, so corporations have an incentive to shift activities to low-tax jurisdictions.

Capital Mobility

Empirical evidence suggests that international capital mobility among developed countries is relatively high and is increasing over time

6 This point goes back to Domar and Musgrave (1944). A tax on risky income reduces both the mean and the variance, thereby providing a sort of insurance against risk. Under certain circumstances, taxpayers will respond by investing more in the risky asset.

7 The one-year survival rate among firms with five to 99 employees was 85 percent in 2009. For firms with one to four employees, it was 79 percent and fell to 68 percent in the second year (Industry Canada 2013). Macdonald (2012) also found that survival rates increased with firm size and fell dramatically between the first and the seventh year. Only 67 percent of firms with 50 to 100 employees created in 2002 survived beyond seven years, compared with just 44 percent for firms with one to five employees.

(Zodrow, 2010). Feldstein and Horioka (1980), among the first to study the phenomenon, found that the proportion of domestic savings invested domestically – the saving-retention rate – in OECD countries was about 0.9 percent. This finding was taken as evidence of low international mobility of capital, although it has been later challenged in a number of ways. Using more recent data, Feldstein and Bacchetta (1991) and Obstfeld and Rogoff (2000) found saving-retention rates of about 0.6 percent, and others also found that the rates have been decreasing over time in OECD countries (Adedeji and Thornton 2008; Giannone and Lenza 2008). Using more advanced estimation approaches, Caprio and Howard (1984) report a saving-retention rate of 0.45 percent for roughly the same time-period as that used by Feldstein and Horioka, while Coakley, Fuertes and Spagnolo (2004) estimated rates close to zero for a more recent time period. Finally, using time-series data rather than cross-sectional data, Evans, Kim and Oh (2008) found a very low saving-retention rate for Canada consistent with perfect capital mobility.

In any case, a high correlation between domestic saving and domestic investment should not necessarily be seen as evidence of low capital mobility. For example, exogenous productivity or demand shocks can generate co-movements in domestic investment and domestic savings, even if capital markets are highly integrated internationally (Tesar 1991, Obstfeld 1995). A high investment-saving correlation can also simply result from the need to balance the current account in the long run (Summers 1988, Sinn 1992, Obstfeld and Rogoff 2000, Pelgrin and Schich 2004).

High capital mobility suggests that a relatively large share of corporate taxes will be borne by labour, a conclusion supported by other empirical evidence. Using data from nine European countries, Arulampalam, Devereux and Maffini (2012) found that one-half (49 percent) of corporate tax increases are shifted to labour in the form of lower wages. In the US, between 45 percent and 75 percent of corporate tax increases are borne by labour (Desai, Foley and Hines 2007, Felix and Hines 2009, Liu and Altshuler 2013), while Fuest, Peichl and Siegloch (2013) found this share to be 77 percent in Germany. Other recent studies have found similar incidence results in cross-sections of countries (Felix 2007, Hassett and Malthur, 2010).

In internationally integrated capital markets, foreign investment will be highly sensitive to differences in corporate tax rates. Based on a meta-analysis of 25 studies, De Moiij and Ederveen (2003) found relatively high tax elasticity of foreign direct investment (FDI) – the median estimate was that a one-percentage-point reduction in the corporate tax rate increases FDI by 3.3 percent – consistent with high capital mobility. Devereux (2007) surveyed the evidence on the impact of corporate taxation on several dimensions of foreign investment and concluded that the overall allocation of capital and discrete location decisions of multinational firms are significantly affected by effective average tax rates, while statutory tax rates have a significant impact on the location of taxable income.

For tax policy purposes, it is reasonable to assume that international capital mobility is relatively high and that it has been increasing over time. This assumption is especially reliable in the case of a small and open economy such as Canada's and underlies some elements of our policy proposals described below.

Alternative Reform Options

Given the myriad of problems with the existing corporate tax system, it is not surprising that there have been many proposals for reform. Some are designed to reduce the distortions that CIT imposes on investment decisions of corporations, while others focus on international problems, such as tax competition and profit shifting, and others challenge the rationale for the CIT. Some suggestions consider reform from an individual nation's point of view, while others envision some

cooperation among subsets of countries. We focus on the main thrust of the proposals, particularly as they apply to Canada.

Piecemeal Revision of Existing System

The least disruptive proposals, submitted to then finance minister Paul Martin by the 1997 Technical Committee on Business Taxation, chaired by eminent economist Jack Mintz (the Mintz Report), take the basic purpose and structure of CIT as given and seek to minimize its inefficiencies. The design of CIT as a withholding tax for PIT is maintained, so the tax base is shareholder income earned by the corporation, which is similar to book profits. The thrust of the reforms is to eliminate special treatment of particular corporate activities, such as accelerated CCA in manufacturing and processing and overly generous deductions for resource depletion. The Mintz Report also urged the elimination of investment tax credits, except those that correct for market failures such as externalities of R&D, and preferential corporate tax rates that favour certain industries or that apply to small businesses and may discourage their growth. It also recommended avoiding profit-insensitive taxes, such as capital and general payroll taxes as well as sales taxes on business inputs. The report said improving loss-offsetting by allowing carry-forward of tax losses with interest would mitigate disincentives to undertake risky investments. It also recommended that using tax savings from base-broadening to lower statutory CIT rates would reduce the CIT's distorting effect on investment.

A necessary complement to the CIT, according to this view, is to integrate it with the PIT by giving credit to shareholders for corporate taxes paid on their behalf. This is easier said than done. Attributing corporate taxes paid to Canadian shareholders is difficult given that dividends are not distributed at the same time as taxes, shares can change hands frequently and the proportion of foreign shareholders can vary. As well, corporate tax rates depend on the circumstances of the firm, such as whether it has been in a loss position. More problematic is the fact that the integration should apply to sheltered savings, like pension funds and TFSAs, which is currently not the case.

The main case against the withholding view of CIT is that this function is highly compromised in an open economy. To the extent that rates of return are determined on international markets, the CIT on normal risk-adjusted returns is not borne by shareholders. Therefore, giving them credit is not warranted. Moreover, withholding is not needed for shareholders whose equity income is sheltered, a significant amount. A case can be made for the CIT as a withholding tax against rents earned in the corporation since these are presumably borne by shareholders, but it would be difficult to target integration to above-normal shareholder returns.

Cash-flow Corporate Taxation

These criticisms of the CIT withholding rationale have encouraged tax-policy analysts to focus on other roles. The academic literature has long been pre-occupied with designing business taxes that are non-distorting or neutral. Neutral business taxes are ones that apply to economic rents. Under certain circumstances, especially risk-neutrality of the firm's owners and the absence of capital-market distortions, the firm's cash flow is equivalent in present-value terms to economic profits (Auerbach 1979). Meanwhile, Brown (1948) was the first to point out the efficiency of cash-flow taxation, and others followed, including Stiglitz (1973) and Sandmo (1979).

For its part, the UK Meade Report (1978) proposed a cash-flow tax as a natural policy-option complement to a progressive PIT. Under consumption taxation, all capital income is sheltered, and there is no need to use the CIT for withholding. Meade actually proposed three different cash-flow tax options. One, the R-base, would apply to real cash flows, which is sales of goods and services less real current costs (e.g., wages) plus investment. Another, the (R+F)-

base, would include financial transactions between shareholders and capital markets as a way of taxing rents from financial intermediation. In addition to real cash flows, the (R+F)-base would include borrowing, interest earned by the corporation and revenues received from the sale of financial assets or from other financial instruments, minus interest paid, repayment of loans and other payments for the purchase of financial assets or related to other financial instruments. The third option is the S-base, which would include dividends paid plus the repurchase of shares, less dividends received by the corporation and new shares issued. The S-base is, in fact, equivalent to the (R+F)-base, so an equivalent cash-flow tax could be based on either one.

There are two related problems with such cash-flow taxation. The first is that it ignores the need for refundability of tax losses arising from negative cash flows. Firm that are growing will incur investment costs in excess of revenues, implying negative cash flows. For the cash-flow tax to be neutral, tax losses must be refundable. This is difficult for governments to accept and opens up opportunities for tax fraud and transferring tax losses to Canada. However, the refundability challenge can be addressed by allowing carry-forward and backward of tax losses with interest, or more generally by tax schemes that are equivalent to cash-flow taxes in present-value terms while avoiding negative tax liabilities. We outline such schemes below.

The second problem is that cash flows include not just rents but also returns on risk-taking. If the firm is risk-neutral, this is not a problem since there is no risk premium: the firm maximizes expected rents, and expected cash flows are equivalent to expected rents. A cash-flow tax would not affect investment decisions. However, if the firm's owners are risk averse, a cash-flow tax applies both to expected rents and returns to risk. The tax will distort risky investment decisions, but it will not necessarily discourage risk-taking. The cash-flow tax is equivalent to the government becoming a silent equity partner in the firm. Positive returns are taxed, but tax liabilities on negative returns are refunded. As is well known, a cash-flow tax with full loss-offset is more likely to increase than decrease risk-taking (Domar and Musgrave 1944, Mossin 1968, Stiglitz 1969).

The fact that the cash-flow tax might apply to risky returns further emphasizes the need for full loss offsetting. If positive returns are taxed while tax losses from negative returns are not refunded, risk-taking will be discouraged. The carry-forward of losses with interest partly addresses this question. But it does not deal with the case where firms wind up with tax losses on their books. Ideally, refundability of these unrequited tax losses should apply, but governments will find this difficult to do administratively and politically. This refundability problem is not unique to cash-flow taxation. A corporate tax on shareholder income faces the same problem.

Cash-flow-equivalent Taxation

Most refundability concerns can be addressed without sacrificing the cash-flow tax's neutrality by defining the tax base as equivalent to cash-flow taxation in present-value terms. There are two broad approaches to doing this. The first is the capital account allowance (CAA) method based on Boadway and Bruce (1984). Instead of investment spending being immediately deductible, a proportion is postponed and carried forward with interest. This is accomplished as follows. Investments are added to a capital account, and a proportion of this account is depreciated annually at a CCA rate, which can be arbitrary and vary over time. In particular, it can be chosen so that negative tax liabilities are avoided. The firm then deducts from its tax base both depreciation and the cost of financing its capital account, calculated as the product of a risk-free corporate interest rate and the capital account.

This procedure is equivalent to the firm carrying forward its unused investment costs at a risk-free interest rate. (A risk-free rate is used on the presumption that the government will honour the

postponed investment deductions.) The CAA tax is almost as easy to administer as a cash-flow tax. Cash, rather than accrual accounting, is used, and there is no need to index for inflation. It has similar neutrality properties to the cash-flow tax, and like the latter applies both to rents and to returns to risk.

The system just described is contingent on all CAA deductions eventually being honoured. This would require a refund for firms that wind up, and that may not be permitted. As mentioned, this is of particular concern for new firms for whom the chances of winding up with tax losses are high. The SBD is a reasonable policy to avoid these firms facing much higher effective tax rates if they succeed than if they fail.

A further potential problem is that there is some possibility that government policies will change so that some promised CAA deductions are not honoured. This is a less likely problem, but it could be addressed by an increase in the uplift rate to reflect political risk.

An existing version of the CAA system is the allowance-for-corporate-equity (ACE) tax system, which has been adopted in various countries and recommended by the 2010 Mirrlees Review. The ACE system differs from the current regime by allowing firms to deduct equity-finance costs at a risk-free corporate interest rate. This deduction would apply only to the amount of capital financed by equity; interest deductibility would still apply for debt-financed investment.

The ACE also differs from the CAA in other fundamental ways. First, the CCA rate is arbitrary, whereas the ACE depreciation rate should approximate the true depreciation rate so that the capital book value approximates the actual value. Second, interest deductibility under the ACE uses the firm's actual interest rate, which will differ from the CAA risk-free corporate rate if there is some bankruptcy risk. This is beneficial since it implicitly allows the firm to deduct the bankruptcy-risk premium from its taxable income (Boadway, Sato and Tremblay 2015). A clear ACE advantage is that the transition from the current system is straightforward.

A second approach to defining a cash-flow equivalent base is used in the Resource Rent Tax (RRT), which has been deployed in Australia and other contexts (Garnaut and Clunies-Ross 1975, Australian Treasury 2010). In contrast to the CAA, where investment deductions are deferred, RRT negative cash flows are deferred and carried forward with interest as a way to avoid tax liabilities. Although designed to apply to non-renewable resource firms, an RRT-type tax could readily be applied to all industries. An ambitious reform would be to adopt the same cash-flow equivalent tax for all industries alongside a similar provincial tax on resource industries. The advantages of business tax harmonization could then be exploited.

Meanwhile, cash-flow equivalent taxes narrow the CIT base. For example, the ACE system allows a deduction for equity finance costs in addition to existing deductions. What remains is a tax on rents and returns to risk. Some evidence suggests that the reduction in the tax base would be relatively small. Using balance sheet information from a large sample of Canadian firms, De Mooij (2011) estimated that introducing an ACE tax would reduce the federal corporate tax base by about 19 percent or, in 2013/14, a $7 billion revenue loss, though this could be smaller if investment is stimulated. Below, we discuss ways of making up this loss.

Profit-shifting Considerations

Rent taxes have been touted as efficient because they do not distort investment decisions; that is, they exhibit zero METRs. However, in an international context they can affect the location of profits in two ways. First, to the extent that rent-generating activities are specific to corporations rather than to location, rent taxation levied in one country can encourage firms to locate in low-tax jurisdictions. This is particularly the case where the

rents arise from the ownership of scarce intangibles, like intellectual property or brand names, which are granted quasi-monopoly status by legislative protection. Indeed, many countries offer preferential treatment to profits generated from intellectual property. This generally takes the form of a reduced tax rate. Eligible income may be limited to patent income, but it can also include income derived from the ownership of trademarks, copyrights, software, designs, etc.

Preferential treatment may also be extended to any capital gains from selling intellectual property rights. Some countries restrict the preferential treatment of intellectual property income to that which resulted from domestic R&D activity. Pantaleo, Poschmann and Wilkie (2013) recommend adopting a preferential tax regime on intellectual property income that would take the form of a reduced tax rate – half of the federal 15 percent rate – for income that resulted from R&D activity conducted in Canada.

Second, rent taxation mitigates tax competition to the extent that rents are location specific. Since normal investment returns are not taxed, there is less incentive for governments to reduce corporate tax rates simply to attract investment. However, rent taxes do not preclude profit shifting, that is, the booking of profits in low-tax countries using tax-planning techniques such as financial transactions designed to exploit interest deductibility, transfer pricing and setting up affiliates in tax havens. As well, intellectual property rights such as patents and copyrights can be transferred to affiliates in low-tax countries with royalties charged to the parent company. As mentioned, some measures have been taken to address these problems, such as thin capitalization and arm's-length rules for intra-firm transactions, but with less than full success. The incentive to shift profits is related more to statutory tax rates than to the tax base, and the potential for profit shifting encourages competition in tax rates.

Devereux and de la Feria (2014) argue that profit shifting is an inevitable consequence of the principles that have evolved for allocating profits among countries, including via bilateral tax treaties. These principles, incorporated in the OECD model tax treaty (OECD 2014), are twofold: profits from real business activity should be allocated to the source country where the activity takes place, while passive income should be allocated to the recipient's country of residence. They argue that these principles are no longer clear-cut in a world where multinational corporations engage in a myriad of activities in many countries and financial instruments blur the distinction between debt and equity. As a result, it becomes very difficult to identify the source of business income when it is generated from the complementary activities of a large corporation. Moreover, even if the source of corporate income could be identified, firms would have an incentive to shift profits to low-tax countries.

Options for Mitigating Profit Shifting

Two potential options have been proposed to address these profit-allocation/shifting issues. One, contained in the EU's 2011 proposal for a Common Consolidated Corporate Tax Base, is to allocate active business income by formula apportionment, analogous to what is done among Canadian provinces. In principle, this would undercut the ability to shift profits, since their location would be determined by formula. But there are formidable difficulties to applying this internationally. All countries would have to agree on a formula and, ideally, on tax bases as well.

Moreover, there is no ideal formula. Those used in federations like Canada or the US typically involve some combination of revenues, payrolls and capital, none of which bear a one-to-one relation to the source of profits. And although profit shifting is mitigated, it may not be precluded altogether unless corporations and their affiliates are required to consolidate their accounts (Mintz and Smart 2004). As well, some incentives remain for firms to reallocate activity to exploit the formula (Gordon and Wilson 1986). In short, this option is a non-starter.

Second, some authors propose a destination-based corporate tax, ideally of the cash-flow form (Auerbach, Devereux and Simpson 2010, Devereux and de la Feria 2014). Taxable income arising from final sales would be allocated to their country of destination. Since the sales destination is relatively fixed for the firm, this would constrain the ability to shift profits. This is analogous to destination-based value-added tax (VAT) systems – such as the GST – used with success worldwide. To see the similarity, note that a VAT is equivalent to a tax on labour income plus rents, so a destination-based, cash-flow tax (DCT) is equivalent to a VAT with a deduction for labour costs on export sales. Equivalently, the DCT tax base applied to corporations would exempt export sales, less domestic costs that went into producing the exported goods, but include cash flows incurred abroad in producing imported products.[8] However, it would pose challenging compliance problems, and Cui (2015) has identified other potential problems such as how to deal with intermediate cross-border sales.

It is relevant to ask whether the destination approach makes sense as a way of allocating rent taxation among countries. The case of natural resource industries is most telling. Rents there represent the value of a commonly owned resource. Source-based taxation ensures that the revenues accrue to the resources' collective owners rather than to countries whose entities purchase the resource. The case for assignment of taxing rights by source is less clear-cut for rents generated by market power or information advantage, but the case for assigning them on a destination basis is far from obvious.

Integration of CIT and PIT

A final issue is whether it is desirable to integrate a rent-based CIT with the PIT. We have argued above that CIT that applies to risk-adjusted corporate returns should not be integrated with PIT since corporate taxes are likely shifted from shareholders to workers in an open economy. The case of a cash-flow equivalent tax is not so clear. The part of such a tax that applies to risk premiums will be shifted away from shareholders so it needs not be integrated. However, part of the pure rent portion taxed by the CIT will also be subject to personal taxation. Rents earned by shareholders will eventually be taxed if the assets are unsheltered or if they are held in RRSPs or RRPs. In the absence of integration, these rents will be taxed both at the corporate and personal levels.

Recommended Policy Reforms

The current business-tax system is clearly unsatisfactory. The CIT's function as a withholding tax for the PIT is no longer necessary as the economy has become more open and the PIT system allows much capital income to be sheltered. The result is a CIT that distorts investment decisions and an integration system that is imperfect and largely unnecessary. There are also more deep-seated problems related to international compliance problems that are difficult to solve unilaterally. No single set of business tax reforms can address all of the existing system's problems. But the above discussion offers reforms that will make the system much more efficient. Although our preferred improvements involve resetting the CIT rationale, they can be achieved with limited disruption.

The main elements of our reforms are summarized in Table 1 and discussed below.

8 Bradford (2004) proposes a similar destination-based business tax. As with the DCT, the tax base would exclude sales in foreign countries. Domestic, but not foreign, costs would be deductible from the base. In addition, Bradford recommends that the business tax be accompanied by a tax on workers' wage income at progressive rates, with the highest marginal rate being equal to the business rate.

Table 1: Summary of Proposed Reforms

Reform Issue	Proposed Changes to the Current CIT System
Rationale for the CIT	• Redesign the CIT to a tax on rents, or a cash-flow equivalent tax, by removing the normal return to investment from the tax base. • For practical reasons, the ACE tax would be suitable.
Scope of Cash-flow Taxation	• Apply the tax to real cash flows for all non-financial businesses and to real and financial cash flows for financial institutions. • Apply same tax base to corporations and unincorporated businesses.
Tax Rates	• Maintain the basic federal rate at 15 percent despite the narrower base. • Maintain the SBD, with eligibility limited by a cumulative threshold rather than an annual threshold. • Consider introducing a preferential tax rate for income generated from patents derived from R&D conducted in Canada.
International Allocation of Income	• Use the territorial approach to tax multinational corporations and active business income of Canadian corporations.
Loss Offsetting	• Allow carry-forward and –backward of tax losses at a risk-free interest rate. • Maintain non-refundability of tax losses for firms that go out of business. • Consider extending flow-through share financing for investment in innovative small firms.
Integration	• Eliminate the dividend tax credit and partial exemption of capital gains.
Harmonisation	• Harmonize provincial CITs with the federal rent-based tax and encourage all provinces to sign TCAs with the federal government. • Introduce consolidated accounting for firms operating in more than one province.

Rationale for the CIT

The CIT should be designed to tax rents generated by corporations rather than as a backstop for the PIT. The base of the current tax includes both rents and risk-adjusted returns to shareholders. A pure rent tax would remove the latter from the tax base, eliminating the tax distortion on risky investments.

If there were no risk premiums, taxing rents would be straightforward. A cash-flow equivalent CIT that avoids negative tax liabilities would be suitable, such as CAA or ACE systems with carry-forward of losses at a risk-free interest rate. When there are risk premiums, it is not feasible to separate rents from returns to risk, so a cash-flow equivalent CIT would tax both rents and returns to risk. As long as there is full-loss carry-forward with interest, risk would not be unduly discouraged: it may even be encouraged.

The ACE tax has the practical advantage that it is a straightforward extension of the existing system, requiring that firms be allowed to deduct the cost of equity finance.

Scope of Cash-flow Equivalent Taxation

Cash-flow equivalent taxation should apply to both corporations and unincorporated businesses. A

design issue in the taxation of personal businesses is the difficulty of distinguishing investment returns from returns created by the business owner's effort. This is a challenge whenever the business tax rate is less than the personal tax rate as, for example, in the dual income tax system of Nordic countries. If the same rate structure applies to personal business income and earnings, the problem is largely avoided. On the other hand, there can be an incentive for high-income business owners to incorporate if they can take advantage of the SBD (Wolfson, Veall and Brooks 2016). We return to this issue below.

Cash-flow equivalent taxation could be applied to real cash flows – the R-base – or to both real and financial cash flows – the (R+F)-base. The latter could apply to all businesses, although it would add considerable complexity to the system and one could argue that there are not likely many rents in the financial income of non-financial institutions. A reasonable hybrid would be to apply (R+F)-based cash-flow equivalent taxation to financial institutions or firms whose main business is financial intermediation. For the rest, R-based taxation would apply.

Tax Rates

The current basic federal CIT rate is 15 percent, down from 18 percent in 2010. For eligible CCPCs, the SBD reduces the tax rate to 10.5 percent. The provinces choose their own tax rates, and these vary from 12 percent to 16 percent (2 percent to 5 percent for eligible CCPCs). There are two main issues: the choice of the basic rate and the extent of preferential treatment.

If the business-tax system becomes based on rents, the tax base will fall and a higher basic tax rate would be needed to maintain revenue neutrality. As mentioned earlier, adding an ACE deduction would reduce the federal tax base by approximately 19 percent (De Mooij 2011). Increasing the tax rate to 18 percent would roughly compensate for the resulting revenue loss, an option that should be considered. A higher tax rate could also be justified on the grounds that tax competition pressures are less under rent taxation than under the current taxing of shareholder income.

In any case, there is no reason to reduce the rate further. If the current rate is maintained, revenues lost from tax-base reduction can be made up from eliminating PIT integration. Federal tax expenditures in 2013 were approximately $5 billion for the dividend tax credit and $4 billion for the partial exemption of capital gains (Department of Finance 2014b). Elimination of PIT integration would, therefore, more than compensate for the $7 billion loss resulting from introducing an ACE tax. The revenue cost of adopting an ACE could also be reduced, at least in the short run, by limiting the deduction to new investments.

The argument for maintaining the SBD is that the rate of failure of new small businesses is relatively high, and those that fail do not receive credit for cumulated negative tax liabilities. A high tax rate would discriminate against small businesses and discourage the entry of new firms. Meanwhile, Chen and Mintz (2011) argue that the SBD discourages growth of small firms since it disappears once firm profits or assets reach a threshold amount, although Dachis and Lester (2015) maintain this disincentive effect is not quantitatively large. However, this threshold effect could be mitigated and the SBD restricted to new firms if the threshold were defined by cumulative, rather than annual, income.[9] This would also reduce the incentive for professional personal businesses to incorporate. Alternatively, eligibility of professional corporations for the SBD could be eliminated.

A case can also be made for providing a reduced corporate tax rate on income generated

9 Howitt (2015) argues for restricting the SBD to young firms.

from Canadian patents, as proposed by Pantaleo, Poschmann and Wilkie (2013). This could potentially encourage domestic R&D activity if the preferential tax rate applies for patents that resulted from R&D conducted in Canada. It would also reduce incentives to own patents abroad through foreign affiliates to shift profits to lower-tax countries.

International Allocation of Income

An ongoing issue in international taxation is how to allocate the tax base of international corporations among countries in a way that is fair, efficient and avoids both double and zero taxation. The current convention, which goes back to the League of Nations (1928) and is recognized by the OECD model tax treaty, is that active business income is taxed on a territorial basis while passive investment income is taxed on a residence basis, albeit with some withholding taxes imposed by the host country that can be credited in the country of residence. This roughly corresponds with the Canadian approach.

As mentioned, authors such as Devereux and de la Feria (2014) argue that this approach is unsatisfactory because, among other things, it is difficult to identify the source of a multinational corporation's profits. They propose instead that corporate profits be allocated to the country of final-sale destination. For a country like Canada, where considerable rents are generated on exported products such as natural resources, unilateral adoption of a destination approach would mean passing such rents to importing countries. Therefore, destination-based corporate taxation would not be appropriate for Canada. Residence-based corporate taxation is equally difficult to implement. It requires that corporations be taxed on their worldwide income, which is difficult for the CRA to monitor.

Territorial taxation of active business income involves taxing business activity in Canada. This also has its challenges, particularly dealing with profit shifting through transfer pricing and the use of internationally mobile intangible inputs. But the ability of the CRA to encourage compliance is stronger for income earned in Canada than for worldwide income. Source-based taxation is also vulnerable to tax competition to the extent that countries can stimulate business activity by lowering their corporate tax rates. For its part, the Advisory Panel on Canada's System of International Taxation (2008) concluded that the current approach to taxing outbound and inbound investment is largely satisfactory. As a result, the panel did not recommend any fundamental reform of the broad principles underlying the current approach, but proposed instead a series of relatively minor changes.[10]

The current approach evolved in the context of a CIT based on shareholder income. If an R-based cash-flow equivalent tax were adopted, as we are recommending for the non-financial sector, the treatment of passive investment income is no longer relevant. A territorial ACE tax would tax rents generated in Canada, which seems appropriate. The use of a rent base would reduce the incentive

10 Some of the main recommended changes include: exempt from Canadian taxation all dividends received by a Canadian corporation derived from the active business income of a foreign affiliate independently of whether the origin country has a tax treaty with Canada; exempt capital gains from the sales of shares in foreign affiliates, provided the gains are derived from active business assets; lower the maximum debt-to-equity ratio permitted under the thin-capitalization rules and broaden the scope of the thin-capitalization system; pursue bilateral decreases in withholding taxes through tax treaties; improve transfer-pricing rules. These measures would reinforce the source or territorial approach to the taxation of active business income while deterring profit shifting. Ottawa has implemented some of these recommended changes, in particular with respect to the thin-capitalization rules.

for tax competition and would eliminate the ability to shift profits abroad using debt finance, since the overall deduction for debt and equity finance are determined by investment and not debt. But the system would not be immune to other forms of profit shifting. If the (R+F) cash-flow tax were applied to financial corporations, the territorial approach would be suitable as well. It would capture rents earned on the Canadian operations of multinational financial institutions, whether or not they exported financial services. Passive investment income earned by Canadians worldwide would be taxable under the personal tax system to the extent that it is not sheltered.

Loss offsetting

Efficiency of rent taxation requires that positive and negative tax liabilities be treated symmetrically. Otherwise, risk and innovation along with the evolution of small firms into larger ones will be discouraged. In an ideal world, tax-loss refundability is desirable, but in practice it likely would be resisted by politicians and may provide opportunities for tax fraud. As mentioned earlier, it may also provide incentives for multinationals to transfer losses to Canada.

In the absence of tax-loss refundability, symmetry can be achieved by carrying losses forward or backward with interest, where the appropriate interest rate would be the risk-free corporate rate, as long as there is no political risk. The main problem is what happens when firms wind up before offsetting their tax losses, something that especially effects new firms. In principle, unused tax losses should be refunded, but that is rarely done in practice and was recommended against by the President's Advisory Panel on Federal Tax Reform (2005).

We argued above that the absence of tax-loss refundability for firms that wind up justifies the SBD. To compensate small firms for the risk that tax losses will never be recovered, one could argue that the interest rate on carry-forwards should be higher than the risk-free rate. In addition, loss offsetting for small firms engaging in risky or innovative investments could be enhanced by extending flow-through share financing to them.

Integration

There is little need for the CIT to act as a withholding tax against shareholder income if most of the latter is sheltered from personal tax and if the CIT on normal returns is shifted to labour. Nonetheless, to the extent that rents are taxed at the personal level, a rent-based corporate tax would be a source of double taxation. An option for addressing this would be to keep a dividend tax credit but apply it only to above-normal shareholder returns.[11]

While one could adopt this prescription in principle, implementing it would be challenging. It would be unfeasible to identify rents earned by shareholders on which they would receive credit for corporate taxes paid. Shareholder income includes both normal risk-adjusted returns and rents, and much of the latter is sheltered from personal taxation. Disentangling the part of the returns on which both personal and corporate taxes had been paid is simply impractical. Thus, the case against integration is compelling.

In practice, this implies eliminating the dividend tax credit and preferential treatment of capital gains, which would largely be to the disadvantage of high-income taxpayers who cannot shelter all their capital income. As mentioned, the revenue gains from eliminating the dividend tax credit and the favourable taxation of capital gains would provide

11 The Mirrlees Review advocated taxing personal shareholders only on their share income above some normal rate of return.

sufficient revenue to offset the revenue loss from reducing the CIT base.[12]

Corporate Tax Harmonization

Corporate tax harmonization implemented via TCAs is an important achievement of the Canadian income tax system and is worth preserving and enhancing under a rent-tax system. For TCAs to remain in force, the provinces would have to revise their corporate tax bases in parallel with the federal government. It would be even more beneficial if all provinces were to participate in the corporate TCAs.[13] The current allocation formula could continue to be applied, but it would be more effective if consolidated accounting were required for firms operating in more than one province in order to reduce profit-shifting incentives.

Meanwhile, Laurin (2009) has proposed a system of consolidated accounting where the profits and non-capital losses of all subsidiaries in a corporate group would be included in the parent company's taxable income. The parent would pay taxes on their behalf, including provincial taxes, which would be computed according to the current allocation formula.

Two more ambitious reforms of federal-provincial business taxes would also be desirable. For one, natural resource taxes should move to cash-flow-equivalent taxes with the same base as the corporate tax. As a result, the TCAs could be broadened to include natural resource taxes so the CRA would administer both taxes. Provinces would still be able to choose their own resource tax rates separately from the general corporate tax rate.

Second, harmful tax competition among provinces could be avoided if the corporate tax were moved to full federal jurisdiction. This could in principle be accomplished by a simultaneous increase in federal corporate tax rates, an elimination of provincial corporate taxes (apart from resource taxes) and a compensating increase in federal-provincial transfers as proposed by Tremblay (2012).

Conclusion

The Canadian CIT system is due for reform. The current system is unnecessarily distorting. It could be reformed in a relatively straightforward way to make it much more efficient by drawing on lessons learned elsewhere. Our main recommendation is to change the current CIT from one based on shareholder income to one based on above-normal profits or rents. Ideally, a cash-flow-type system would be the preferable form of tax. Alternatively, a cash-flow system could be approximated by the ACE system that gives a deduction for equity-finance costs. Such a system would remove various distortions that exist in the current system, including the disincentive to invest, the excessive reliance on debt, and discouragement of innovation and risk-taking.

Under our scheme, the CIT would cease to be viewed as a withholding tax for the PIT. As such, there would be no need to integrate the CIT with the PIT, especially since most capital income is now sheltered from PIT. Therefore, the dividend tax credit and preferential treatment of capital gains could be eliminated. This would simplify PIT compliance considerably and offset the revenue loss from the CIT reform.

These proposals address some of the most important concerns arising from a CIT system that was designed for a bygone era. Some challenges

12 The Quebec Taxation Review Committee (2015) proposed replacing the half-taxation of capital gains with full taxation of real capital gains. This would be administratively complex and would neglect the tax advantage capital gains have by postponing taxation until gains are realized.

13 The Quebec Robillard Commission (Gouvernement du Québec 2015) proposed transferring corporate tax collection to the federal government.

remain. Profit shifting is a growing issue as multinational corporations produce output in many countries and rely heavily on intra-firm transactions for their inputs. Firms engaged in high-tech products, e-commerce and the exploitation of intellectual property challenge traditional approaches to international profit allocation based on the territorial principle. The complexity of financial instruments blurs the distinction between debt and equity, and the complexity of innovation blurs the distinction between capital and labour income. Addressing the challenges of profit shifting and the allocation of corporate income among countries can best be addressed by cooperative international effort.

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