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An Analysis of the Economic Effects of Withholding Taxes on Cross-Border Income Flows for Canada

Kenneth J. McKenzie

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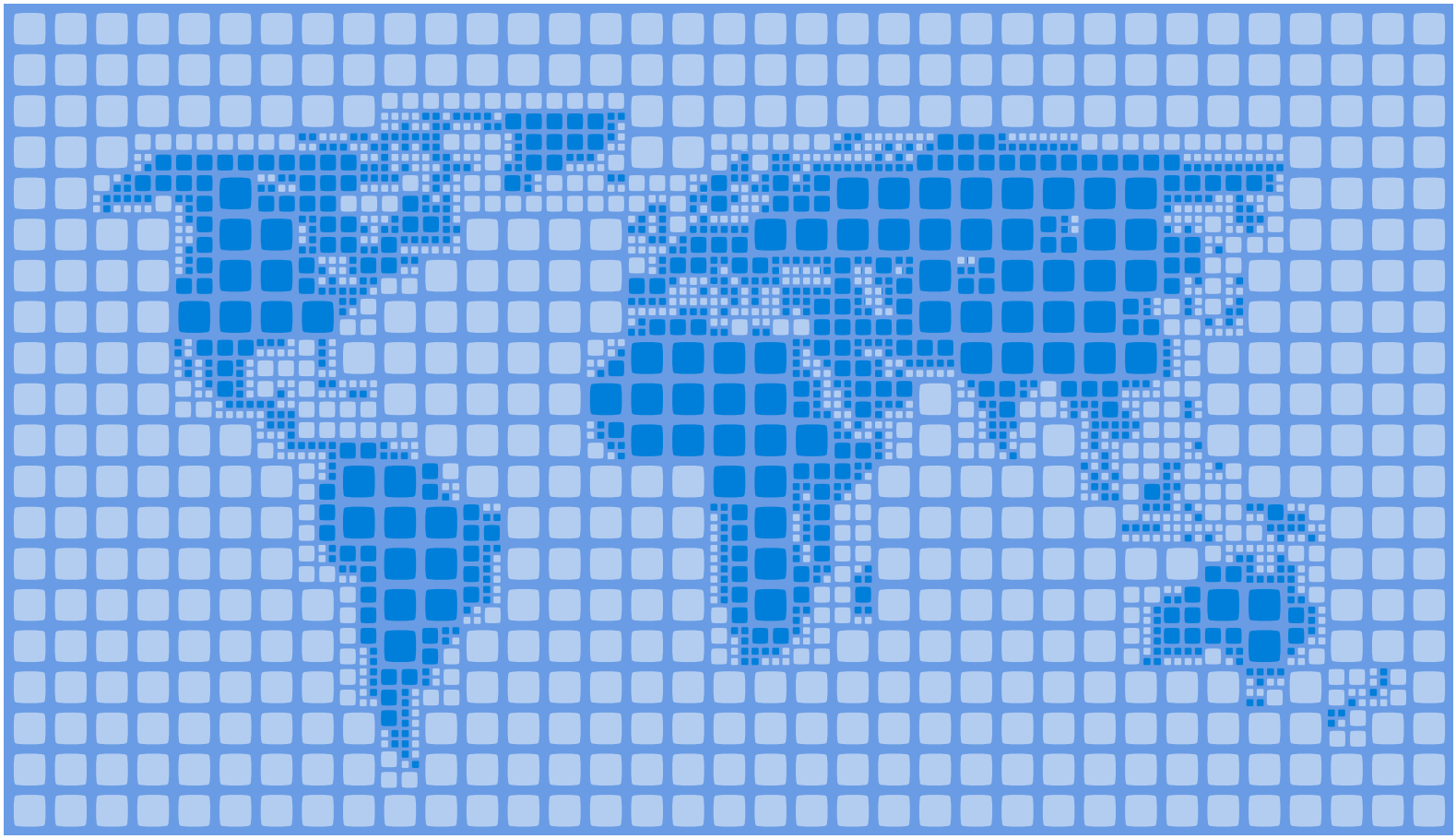

An Analysis of the Economic Effects of Withholding Taxes on Cross-Border Income Flows for Canada

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Abstract

This paper examines some of the economic issues associated with the imposition of withholding taxes on cross-border income flows between Canada and other countries. Its primary focus is on the investment and revenue effects of eliminating, or reducing, withholding taxes on dividends, interest, rent and royalties.

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1. Introduction and executive summary

The purpose of this report is to examine some of the economic issues associated with the imposition of withholding taxes on cross-border income flows between Canada and other countries. The primary focus is on the investment and revenue effects of eliminating, or reducing, withholding taxes on dividends, interest, rents and royalties.

Withholding taxes are often justified on revenue grounds, as a way to protect Canada's revenue base and to capture revenue from other countries. The latter is relevant in the case where the home country of foreign companies investing in Canada utilizes the foreign tax credit (FTC) approach to international taxation. To the extent that Canadian income and withholding taxes are fully credited against home-country taxes, this results in a straight transfer of revenue from the foreign treasury to the Canadian treasury. In this case, there are no investment incentive effects, and Canadian withholding taxes are essentially a lump sum, non-distortionary tax.

However, there are many situations when this is not the case. For example, if the home country follows the exemption method (EM) of international taxation, withholding taxes impinge directly on investment and act as a distortionary tax on foreign direct investment (FDI) into Canada. Or, if the home country follows the FTC approach, but companies are not able to fully claim all of the credits because of FTC limitations, withholding taxes again impinge upon investment and discourage FDI.

To investigate this, the report presents calculations of effective marginal tax rates (EMTR) and effective average tax rates (EATR) for inbound FDI from G7 host countries into Canada under various scenarios. Three of the G7 countries employ the FTC approach (the United States, the United Kingdom, Japan) and four employ the EM (Canada, Germany, Italy, France).

The effective tax rates analysis suggests that eliminating Canadian withholding taxes on dividends, interest and other income will, in many cases, lower the tax burden on FDI quite significantly. The size of the reduction in the tax burden depends upon the existing withholding tax rates, the approach to eliminating the double taxation of foreign source income in the home country (EM or FTC), and in the case of FTC countries whether or not the firm is in an excess credit or excess limitation position. In general, the reduction in the EMTR due to the complete elimination of withholding taxes ranges from zero (for firms in excess limitation from FTC granting countries) to 4.6 percentage points (for U.S. firms that face FTC limitations) to 8.1 percentage points (for German firms). For home countries that follow the FTC approach a key issue is the proportion of FDI that is undertaken by firms in an excess credit position. If, for example, most firms are able to fully credit withholding taxes, eliminating withholding taxes will do little to stimulate investment and will simply result in a revenue loss to Canada's treasury.

While unilateral reductions in Canadian withholding taxes are possible, a more sensible approach would be to engage in bilateral discussions with our treaty partners to reduce withholding taxes on FDI flowing both ways. EMTR and EATR calculations are also presented for outbound FDI to other G7 countries. The analysis shows that the elimination of withholding taxes in the other countries would lower the effective tax rate on outbound Canadian FDI by from two to seven percentage points, depending upon the host country.

The empirical literature on taxation and FDI suggests that FDI flows are relatively sensitive to tax differentials. However, the magnitude of the responses is uncertain. Using the EMTR, and the cost of capital calculations upon which they are based, rough back-of-the-envelope calculations based on "reasonable" assumptions about the sensitivity of capital formation to tax changes suggest that eliminating withholding taxes will lead to an increase of foreign investment into Canada from the countries studied of between two and nine percent in the long run, depending the country of residence and the ability of multinational enterprises (MNEs) resident in FTC countries to claim the credits.

The revenue effects of eliminating withholding taxes are difficult to determine within the limited scope of this study, and depend not only on the investment effects (which are uncertain) but on other factors as well (which are also uncertain). In total, withholding taxes brought in about $4.3 billion in tax revenue in 2005 (as a point of reference, federal income taxes in 2005 were about $30.5 billion). About two-thirds of this ($2.7 billion) was paid by U.S. taxpayers. The static revenue losses from completely eliminating withholding taxes would therefore be quite significant.

However, a reduction in withholding taxes would be expected to cause a series of behavioral responses in reaction to the associated fall in the effective tax burden on inbound FDI. Particularly important here are the investment effects and the interactions with the labour market. Taking these dynamic effects into account in rough, back-of-the-envelope calculations suggests that some of the static revenue losses will be recovered through dynamic feedbacks. Again, the results depend on, among other things, the magnitude of the investment response which depends upon the residence country of the parent companies and, in some cases, their FTC position. For FTC-granting countries, the calculations suggest that the dynamic revenue offset will be from 15 to 20 percent in the long run (i.e., government revenue losses will be 15 to 20 percent lower than suggested by the straightforward static revenue estimates). For home countries that employ the EM, the dynamic revenue offset will be closer to 50 percent in the long run. This suggests that, over time, the reduction in withholding tax rates will pay partly for themselves.

2. The costs and benefits of withholding taxes: general discussion

Withholding taxes are typically justified on revenue grounds, as a way to protect the host country's revenue base and to capture the tax revenues on income from operations in the host country that would otherwise go to another country's treasury.

The need to protect the Canadian revenue base arises if non-residents earning income from operations in Canada are able to avoid paying taxes in Canada. This could occur, for example, if the corporate income tax (CIT) rate in Canada is substantially greater than other countries. When this is the case, multinational corporations can use transfer pricing and financial transfers to shift expenses (such as interest) into Canada, where they are deducted at a high rate, and shift income into lower-taxed jurisdictions. Withholding taxes on interest payments can help alleviate some types of transactions that lead to this sort of tax base erosion.[1] This was a serious concern in the past, when Canada imposed relatively high corporate income tax rates. Federal and provincial reductions in statutory CIT rates in Canada have alleviated this concern somewhat, though some provincial rates are still quite high. Importantly, the average CIT rate in Canada is now significantly below the United States.

One of the most compelling arguments for withholding taxes is that they can be used to siphon off tax revenue from foreign treasuries in countries that use the foreign tax credit (FTC) approach to taxing foreign source income. When withholding taxes are fully credited against foreign income taxes, they represent a pure transfer of revenue from the foreign to the Canadian treasury, without impinging upon investment incentives.[2] This, in principle, makes withholding taxes an attractive non-distortionary source of revenue.

As will be discussed in more detail below, the difficulty here is that this requires that the withholding taxes be fully creditable in the home country. This is not always the case for two reasons. First, some countries do not employ the FTC approach, but rather follow the exemption method (EM), and simply exempt foreign income from domestic taxes. In these cases, withholding taxes act as a distortionary tax on foreign investment. While some of Canada's key trading partners, such as the United States, the United Kingdom and Japan, follow the FTC approach, other countries such as Germany, France and Italy do not.

Second, intricacies in the operation of the tax credit in countries that follow the FTC approach, in particular the ability to cross-credit and limitations on the extent to which companies can claim the FTC, means that in many cases companies are not able to fully claim the credits arising from income and withholding taxes. In these cases, withholding taxes are distortionary and impinge upon investment.

1 Other measures, such as thin capitalization rules, are intended to address this as well.

2 This ignores compliance costs associated with withholding taxes, which could deter investment, particularly for small- and medium-sized corporations.

In the case of home countries that follow the EM, and to the extent that credits cannot be fully claimed in FTC countries, Canadian withholding taxes can deter foreign investment. If withholding taxes lower the return on Canadian investments relative to what can be earned abroad, foreign investors are likely to take their capital to countries that offer greater after-tax profits. With less foreign savings, capital investment in Canada declines, which ultimately reduces the earnings of working Canadians as the demand for labour declines. Also, non-resident investors may require a gross-up in their rate of return to compensate them for the withholding tax, shifting the burden of the tax on to Canadian companies and increasing their cost of capital.

Inbound FDI is associated with the creation of jobs and/or increases in wage rates as the demand for labour to work in conjunction with the inbound capital increases. Moreover, inbound FDI is often associated with the transfer of new technologies, organizational innovations and skills.

Of course withholding taxes are a two-way street — withholding taxes imposed in other jurisdictions can be harmful to Canadian-based companies and investors. This suggests that the bilateral elimination of withholding taxes would be more beneficial than unilateral changes. As pointed out by Jack Mintz in a recent paper published by the C.D. Howe Institute, withholding taxes can act as a tariff on cross-border portfolio capital flows.[3] For example, in the absence of crediting, U.S. withholding taxes can discourage Canadians from investing in North American mutual funds to improve the performance of their portfolios. Similarly, without full crediting, U.S. taxpayers would require higher returns on securities issued by Canadian borrowers. The withholding tax penalty on cross-border capital flows can therefore reduce foreign portfolio investments and opportunities for diversification by Canadians investors.

Similarly, withholding taxes levied in other countries on payments to Canadians can discourage Canadian businesses from diversifying their portfolios on a worldwide basis, resulting in greater concentration of activities at home or in other countries with more favourable tax regimes. Withholding taxes can also interfere with the operation of companies located in both Canada and elsewhere. This is particularly important in a North American context. Given the integration of North American markets, businesses may operate in several states and provinces with different branches and subsidiaries. Since withholding taxes apply only at the Canada-U.S. border, their presence can harm the efficiency of North American operations by discouraging certain forms of transactions internal to the company.[4] Finally, like inbound FDI, outbound FDI is likewise associated with the transfer of new technologies, organizational innovations and skills.

3 See Mintz (2001).

4 Ibid.

3. Eliminating double taxation on cross-border income flows

The impact of withholding taxes imposed by the host country on inbound FDI depends critically upon the taxation of foreign income in the home country. Thus, the impact of withholding taxes levied by Canada on interest, dividends and royalties depends upon the approach to taxing international income followed in the home countries of companies investing in Canada.

The key issue is the way in which these home countries eliminate the double taxation of foreign income. Countries use two basic methods to provide relief from double taxation: the exemption method and the foreign tax credit method. In their simplest forms (which rarely operate in practice), these two methods are straightforward.

Under the EM the home country forgoes taxation of foreign source income altogether. The EM is typically associated with countries that follow the territorial approach to international taxation. Under this approach, a country only taxes income generated within its borders, regardless of the home residence of the company. In this case the only taxes that are relevant are the taxes imposed by the host country, including withholding taxes. This means that withholding taxes imposed by Canada will impinge upon the decision to undertake FDI from countries that employ the EM.

The FTC approach, on the other hand, is associated with the global approach to international taxation. Under this approach the home-country taxes the income of its residents on a worldwide basis, but provides a credit against its domestic tax liability when its resident companies pay foreign taxes. A pure FTC approach which offers full and unlimited credits for foreign income and withholding taxes completely relieves double taxation. In this case, withholding taxes imposed by Canada on dividends, interest and royalties paid to countries resident in countries operating under a pure FTC approach will not impinge upon FDI from these countries.

No country imposes either of these simple or pure approaches to international taxation; many countries impose a hybrid of the two — using the EM for some types of income and the FTC for others; and many countries impose limits on the ability of companies to claim FTCs.

FTC limitations[5]

A key issue under the FTC approach to international taxation involves the rules regarding limitations to the FTC. Under a pure approach, a fully refundable FTC for all foreign income taxes paid directly or indirectly and all foreign withholding taxes would completely remove the double taxation of foreign income, causing companies to be indifferent to the effect of foreign taxes since they would be fully creditable against home taxes. In this case, withholding taxes imposed by the host country have no impact on FDI from FTC countries and result in a non-distortionary transfer of revenue from the home country to the host country. This is the simple

5 These examples and some of the discussion follow Larkin (2001).

justification often provided for the imposition of withholding taxes by small capital importing countries when capital exporting countries operate under the FTC approach — not to impose these taxes would be to lose revenue to the home country without encouraging investment.

However, the home country is also concerned about revenue losses. Countries that use the global approach generally limit the extent to which the FTC can be used to offset domestic tax liabilities. The way in which this is accomplished varies widely, but the objective is to ensure that the FTC is permitted for domestic income tax paid on foreign income, but not domestic income. The result is the creation of "excess credits", or credits that cannot be used; this means that some of the taxes imposed by host countries are subject to double taxation. The presence of excess credits is relieved to some extent as most countries allow excess credits to be carried forward or back for limited periods (sometimes referred to as intertemporal averaging).

To provide a simple illustration, assume a multinational company is resident in country **E** where the income tax rate is 33 percent. The country operates branch plants in countries **F** and **G** where the income tax rate is 50 percent in country **F** and 30 percent in country **G**. Assume also that country **F** also imposes a withholding tax on dividends of 10 percent. Finally, say that during the current year the company earns $400 in business profits from each country (active business income), and $200 in dividends from portfolio investments (passive income) from country **F**, for total income of $1,000. Based on these facts, country **E** taxes on worldwide income, before considering the FTC, is $330 (33% x 1000). The foreign taxes on this $1,000 would be $340 (30% x 400 + 50% x 400 + 10% x 200).[6]

In the absence of a FTC limitation, i.e., if the FTC was refundable or, equivalently, could be used to reduce the domestic tax liability on earnings from domestic operations in the home country, country **E** would allow the entire $340 in foreign taxes as a FTC. This would entirely eliminate the home-country taxes of $330, and would leave the company with an excess $10 in credits that could be used to reduce the taxes on domestic income. This "pure" approach to the FTC, and the resulting ability to fully claim all foreign taxes as a credit against domestic taxes with no limitations, means that the double taxation of foreign source income is completely eliminated, rendering the foreign taxes irrelevant in the decision to invest in the foreign jurisdiction.

The problem with this, of course, is that it reduces home-country taxes on domestic income (by $10), resulting in a loss in revenue in the home country. This provides an incentive for capital importing host countries to inflate their income tax and/or withholding tax rates to siphon off tax revenues from other treasuries to their own.

Because of this, most countries that follow the FTC impose limitations on the ability to claim the credit. The precise manner in which these limitations are applied varies widely. Some countries apply a limit on a per-country basis. Others apply the limit to a company's overall income. Others segregate company income into baskets, and apply a separate limitation formula to each basket. For example, each basket might contain a different type of income (e.g., passive income in one basket and active business income in another basket). Another approach is to

6 Branch plant profits are taxed on accrual. Earnings from subsidiaries are taxed on a deferral basis, when they are repatriated as dividends.

group income from different countries into separate baskets, for example separate baskets for high and low tax countries. Or limitations may apply on a per-country basis, with each country forming its own basket.

The idea behind the various basket approaches is to limit the ability of taxpayers to average (or mix) high-taxed and low-taxed foreign income. The result is the creation of excess credits which limits the benefit of the FTC and, depending on the limitation approach, results in the double taxation of some foreign income. In these cases, host-country taxes, including withholding taxes, can discourage FDI from countries operating under a FTC regime.

For example, say country E imposed a limit on a company's overall income (with no segregation of income into baskets). In this case, country E would allow only $330 as a FTC (33% x 1,000), rather than the $340 allowed under no limitation. This limitation eliminates the revenue loss to the country from taxes on the company's domestic income. However, as a by-product of this it also means that the company has an excess credit of $10 that cannot be used to reduce its tax liability. This excess credit means that the company pays tax on the income earned in the high-tax country F, which provides a disincentive to invest.

Or, suppose that country E employed a per-country limitation instead, putting each country into its own basket. In this case, the country F basket would include $600 in income ($400 from branch operations plus $200 in portfolio income) with $220 in foreign taxes paid (50% x 400 + 10% x 200). Under a per-country limitation, however, the FTC would be limited to just $198 (600 x 33%). Similarly, the country G basket would include $400 in income with $120 in foreign taxes (30% x 400), which turns out to be less than the limit of $132 (400 x 33%) because country G's tax rate is less than country E's. Thus, using the per-country limitation approach the FTC allowed would be $318 (198 + 120), rather than $340 under the no limitation and $330 under an overall limitation. In this case, there is an excess credit of $22, all on the taxes paid in country F.

Rather than using a country basket approach, limitation baskets can also be based on the type of income. This can be more or less restrictive than country baskets, depending upon the circumstances. For example, say country E requires separate baskets for active business income and passive income. The business income basket would include $800 in active business income ($400 from each of countries F and G), giving rise to $320 in foreign taxes (50% x 400 + 30% x 400), with a FTC limit of $264 (33% x 800). The passive income basket would include $200 in portfolio income, generating $20 in foreign withholding taxes, which is less than the limit of $66 (33% x 200). In this case the FTC would be limited to $284 (264+20). Thus, the type-of-income basket limitation yields a FTC that is less that either the overall limit or the country basket limit.[7] In this case, the excess FTC is $56.

These examples are very simple, but illustrate how various FTC limitation approaches generate excess credits that restrict the extent to which FTCs offset the double taxation of foreign source income, which in turn affects the extent to which withholding taxes impinge upon FDI.

7 Under different circumstances the FTC under the type-of-income basket could be higher than the per-country basket. The overall limitation approach will always be the least restrictive if both domestic and foreign activities are profitable.

4. Foreign tax systems in G7 countries[8]

While the EM and the FTC are the two fundamental approaches to dealing with the double taxation of foreign source income, in their implementation there are as many systems as there are countries. Tables 1 through 3 provide a summary of withholding tax rates and the basic approach to international taxation in the G7 countries. A very brief synopsis of some of the key features of the international tax treatment for selected countries follows below.

Canada imposes a general withholding tax at the rate of 25 percent on dividends, interest, royalties, and other payments, except copyright royalties and interest on government debt and arm's-length debt obligations that are exempt from withholding tax.

This general rate is reduced for our bilateral treaty partners. For example, Canada levies a 15 percent withholding rate on dividends paid to U.S. residents and reduces that rate to five percent when the U.S. recipient has a minimum 10 percent of the voting shares in the Canadian company. The current withholding tax on dividends received by Canadians from U.S. companies is 15 percent but it is reduced to five percent when the recipient has a sufficient share of ownership in the U.S. corporation. Since January 2008 all interest on arm's-length debt (both long-term and short-term) is exempt from withholding tax. Copyright royalties in respect of the production or reproduction of copyrighted work is also exempt (other copyright royalties are not exempt). Under the new Canada-U.S. protocol, both arm's-length and non-arm's-length interest will be fully exempt, but the exemption for non-arm's-length interest is phased in over a three-year period. The protocol has not been ratified in the United States.[9]

Tables 1 and 2 contain withholding tax rates on dividends and interest for income flows between the G7 countries. The rates are those applied to cross-border flows associated with largely owned subsidiaries. The table illustrates a wide range of rates across the countries. In particular, it is noteworthy that the United Kingdom has completely, and in many cases unilaterally, eliminated withholding taxes on dividends, and in many cases for interest as well. Also, in the European Union (EU), the EU Parent-Subsidiary Directive eliminates withholding taxes on direct dividends on cross-border payments within corporate groups located in treaty countries. In many cases EU countries have eliminated withholding taxes on interest and royalties as well.

Table 3 reports the basic approach to international taxation for dividends and interest followed in the G7 countries, with a brief statement regarding their approach to FTC limitations. All of the countries use the FTC approach for interest income, while four of the seven countries rely primarily on the EM for dividends (Canada, Germany, France and Italy) and three rely primarily on the FTC (the United States, the United Kingdom and Japan).

8 Some of this discussion relies on Larkin (2001).

9 In the effective tax rate calculations that take place later in the paper it is presumed that both arm's length and non-arm's length interest is exempt.

Table 1

Host-Country Withholding Tax Rates on Cross-Border Payments of Dividends from Largely Owned Subsidiaries, 2008 (percent)

From/to	Canada	United States	Germany	United Kingdom	France	Japan	Italy
Canada		5	5	5	5	5	5
United States	5		0	0	5	0	5
Germany	5	5		0	0	15	0
United Kingdom	0	-.30*	0		0	0	-.30*
France	5	5	0	0		0	0
Japan	5	10	10	10	0		10
Italy	5	5	0	0	0	10	

**The United Kingdom does not levy withholding tax on the payment of dividends at home or abroad. The non-resident parent company, however, is entitled to repayment of a proportion of tax credit under the tax treaty.*

Table 2

Host-Country Withholding Tax Rates on Cross-Border Payments of Interest, 2008 (percent)

From/to	Canada	United States	Germany	United Kingdom	France	Japan	Italy
Canada		0	10	10	10	10	10
United States	0		0	0	0	10	15
Germany	10	0		0	0	10	0
United Kingdom	10	0	0		0	10	0
France	0	0	0	0		0	0
Japan	10	10	10	10	10		10
Italy	10	12.5	0	0	0	0	

Note: Intra-EU, intra-group interest is exempt under the EU Interest-Royalty directive.

Table 3

Home-Country Treatment of Foreign-Source Dividend and Interest Income

	Dividends	Interest	FTC Limitations
Canada	Exemption	Credit	Per-country limitation; two baskets (active and passive)
United States	Credit	Credit	Overall limitation; several baskets based on type of income
Germany	Exemption	Credit	Per-country limitation
United Kingdom	Credit	Credit	Per-country limitation
France	Exemption (95 percent)	Credit	Per-country limitation on passive income
Japan	Credit	Credit	Overall limitation; no FTC available on the excess of taxes generated by income taxes in excess of 50 percent or withholding tax in excess of 10 percent
Italy	Exemption (95 percent)	Credit	N/A

Canada

Canada follows a hybrid approach to double tax relief, relying mostly on the EM. "Exempt surplus" dividends received from foreign affiliates are exempt from Canadian income tax, while "taxable surplus" dividends are not. Exempt surplus dividends are those received from active business income from foreign affiliates residing in designated treaty countries. A recent change extends exempt surplus status to active business income earned in countries with which Canada has signed a tax information exchange agreement (though no such agreements currently exist). Dividends paid from the non-exempt, taxable surplus (basically everything else, including passive income) is subject to Canadian taxes, with taxpayers able to claim a FTC for foreign taxes paid and foreign withholding taxes.

Canada has a fairly restrictive FTC limitation. The FTC cannot exceed the portion of the Canadian income tax attributable to the foreign taxable income, with a separate limitation followed for each country (the per-country approach discussed above). Moreover, within each country there are separate limitations on business and non-business (passive) income. Excess credits on business income can be carried forward for seven years and back for three years. Excess credits attributable to non-business income cannot be carried over, but are deductible.

France

France largely follows a territorial tax system and generally taxes resident corporations only on their domestic source income. As such, the EM is the cornerstone of the French system, with foreign branch profits and 95 percent of dividends owned by foreign subsidiaries exempt from income tax. Foreign source royalties and interest income are taxable in France, with a FTC granted for foreign withholding taxes on interest and royalties paid in treaty countries. Since this FTC applies primarily to relatively low taxed passive income, FTC limitations and excess credits are not an important issue in France.

Germany

Germany employs a similar system to France, relying on the EM for dividends and the FTC for interest and royalties. The EM applies to foreign dividends, with 95 percent of foreign dividends exempt from German taxes (the five percent of dividends that are taxable are supposed to approximate costs the taxpayer has previously deducted). German companies can claim a FTC for foreign income taxes on branch profits and withholding taxes on interest and royalties. The FTC limitation is applied on a per-country basis.

Japan

Japan follows the FTC approach to taxing foreign source income. A unique part of the Japanese system is that it disallows a FTC for foreign tax paid in excess of an effective rate greater than 50 percent and any withholding tax in excess of 10 percent. The FTC limitation is imposed on an overall basis, with excess credits carried forward for three years and back for three years.

United Kingdom

Unlike most European countries, the United Kingdom operates a worldwide system of corporate income taxation, which means that UK companies are taxed on the total earnings from activities both in the United Kingdom and overseas. To avoid double taxation, the United Kingdom follows the FTC approach. The FTC is limited to the amount of liable UK tax on the foreign income, so if the foreign tax rate exceeds the United Kingdom rate, companies effectively pay the foreign tax on their foreign earnings.

As with other countries that use a FTC approach, in general resident companies are not subject to UK tax on earnings from their foreign subsidiaries until the profits are repatriated to the United Kingdom. Reforms introduced in 2001 for controlled foreign companies (CFCs) restrict the ability of UK-based groups to retain profits overseas without paying UK taxes. The rules require that the retained profits of subsidiaries that are located in countries where the corporation tax is less than three-quarters of the rate applicable in the United Kingdom be apportioned back to the United Kingdom and taxed as income of the parent.

Income from foreign subsidiaries may also take the form of interest or royalties. Since these items are normally deductible expenses for the foreign subsidiary, they are subject to UK tax in the hands of the UK parent company, with a credit for any withholding taxes paid abroad.

The CFC regimes in most OECD countries distinguish between "active" business income and "passive" income from financial investments. Typically the CFC rules are only applied to passive investment income retained abroad. By contrast, the UK CFC regime is based on an "all-or-nothing" approach, applying to all of the income (active as well as passive) of the foreign subsidiaries falling under the CFC rules.

United States[10]

Because of its importance to Canada, some time will be spent on the U.S. system. This also allows several points of broader relevance to be discussed within the context of a specific system.

The United States follows the FTC approach to international taxation, with foreign income taxes paid (or rather deemed paid) and direct withholding taxes on repatriated income eligible for a credit against domestic taxes on foreign operations. Taxpayers can elect to deduct foreign income taxes rather than claim the FTC (with the election made on an annual basis).

10 Much of this follows Altshuler and Newlon (1991).

The U.S. FTC has two components. The first, called the direct credit, is a credit for foreign taxes paid directly on income as it is received by a U.S. taxpayer. For the most part the direct credit is associated with withholding taxes on remittances to the U.S. taxpayer such as dividends, interest, and royalties, and also income taxes on foreign branch operations. The second component, called the indirect or deemed-paid credit, is a credit for foreign income taxes paid on the income out of which a distribution is made to the U.S. taxpayer. The deemed-paid credit is available to the U.S. corporate shareholders of a foreign corporation who own at least 10 percent of the voting stock of the foreign corporation.

To see how the deemed-paid credit works, suppose a U.S. subsidiary in country i makes a dividend payment, D_i, to its U.S. parent. Since foreign income taxes were already paid on this dividend this is a distribution of profits after foreign tax, and the United States treats the taxable income arising from this dividend to be the dividend grossed-up by the foreign tax deemed to have been paid on that dividend. The grossed-up dividend is $D_i+T_iD_i/(Y_i-T_i)$, where T_i is the total foreign income tax paid by subsidiary i and Y_i is the subsidiary's pre-tax income from the U.S. perspective, which is the subsidiary's book earnings and profits. The grossed-up dividend can be rewritten as $D_i/(1-\tau_i)$, where $\tau_i = T_i/Y_i$ is the average subsidiary tax rate on foreign earnings from the U.S. perspective. The U.S. tax on the grossed-up dividend before the deemed-paid credit is $\tau D_i/(1-\tau_i)$, where τ is the U.S. tax rate.

The foreign tax that is deemed to have been paid be on the dividend is $\tau_i D_i/(1-\tau_i)$, which is the deemed-paid (or indirect) FTC. If the dividend is also subject to withholding tax in country i at the rate ω_i, this gives rise to a direct credit of $\omega_i D_i$. The U.S. tax liability on the dividend payment is then the U.S. tax on the grossed-up dividend less the deemed-paid credit and the direct credit: $\tau D_i/(1-\tau_i)-[\tau_i D_i/(1-\tau_i)+\omega_i D_i] = D_i[(\tau-\tau_i)/(1-\tau_i)-\omega_i]$.

However, there are limitations on the ability of firms to claim the FTC. The limitation on the FTC operates to some extent on an overall basis — a separate FTC limitation exists for different baskets based on different types of income, but not on income from different countries. This means that excess credits accruing from high-tax countries can be used to offset U.S. tax on foreign income from lower-taxed countries. This is sometimes called cross-crediting or averaging of foreign income. Prior to 2006, FTC limitation baskets existed for passive income, high withholding tax interest, dividends from non-controlled foreign subsidiaries, financial service income, shipping income, oil and gas income, export-related profits, and "general income", that is, business income not falling into the other baskets. The number of baskets has since been reduced to two, passive income and general income. The general basket turns out to be the most important in many cases. Excess credits within a basket can be carried forward for 10 years, and back for one year.

The ability to average or cross-credit foreign income means that U.S. corporations may have excess credits, with more FTCs than they can claim. This means that they will not be able to claim a FTC for some of the foreign taxes that they have paid, and some double taxation will result. When corporations are in a position to fully claim all of their FTCs, they are said to be in a deficient credit, or excess limitation position.

Mintz (2001), using data gathered by PriceWaterhouseCoopers (1996) from the U.S. Internal Revenue Service, estimates that about 36 percent of income remitted to the United States from Canada is not able to claim the U.S. FTC (i.e., is in an excess credit position). Unfortunately, more recent data is not publicly available.

Altshuler and Newlon (1991) introduce the notion of the tax price on foreign-source income flows. They define the tax price as the additional tax liability arising from an incremental dollar's worth of income remittance, which includes both the host- and home-country taxes. The tax price of sending income back to the United States depends on the foreign tax credit position of the U.S. parent — whether it is in excess credit or excess limitation — and the channel used to remit the income — dividends, interest, royalties, etc.

The total tax price imposed on an incremental $1 in dividend income remitted in the case of a corporation that has excess credits is simply the host country's withholding tax rate, ω_i. In the case where the U.S. tax liability (before the credit) is greater than the FTCs, and the firm is an excess limitation situation, the tax price is $(\tau-\tau_i)/(1-\tau_i)$.

This highlights a key point made many times above: withholding taxes impinge upon cross-border investment decisions when the EM to eliminating double taxation is employed in the home country and when the FTC approach is followed but the company is in an excess credit situation due to FTC limitations; in these cases the tax price is the withholding tax rate. For FTC countries, withholding taxes do not impinge upon cross-border investment in cases where the corporation is in an excess limitation position; in these cases the tax price is independent of the withholding tax rate.

5. Effective tax rates on inbound FDI

Studies of the impact of taxation on FDI have employed several indicators of the tax burden on investment to identify how taxation affects the pattern of cross-border investment. The most commonly-used indicators are: i) the effective marginal tax rate (EMTR), ii) the effective average tax rate (EATR), and iii) the average tax rate (ATR) based on the tax revenues actually collected from MNEs. The first two indicators are forward looking in the sense that they intend to assess tax burden for a prospective investment project, while the third one is backward looking, measured using the realized tax liabilities on the existing capital stock. This study employs the two forward looking, effective tax rate approaches.

The EMTR and the EATR share several features. Both measures reflect various features embodied in the corporate income tax code. They take into account differences both in the tax base and the tax rate by considering depreciation allowances or tax incentives for various types of investment, the valuation method for inventories, withholding taxes on cross-border income flows, and other aspects of international tax treaties. Specifically, they measure the difference between the pre-tax rate of return on investment earned by the host-country company and the post-tax rate of return earned by home-country MNEs, and thus serve as suitable indicators for a hypothetical investment project.

The crucial difference between the EMTR and the EATR is that the former applies to a marginal investment project that earns the minimum required rate of return after tax, whereas the latter applies to an infra-marginal investment project that earns some economic rent (after-tax pure profits) due to a location or firm-specific advantage, economies of scale, etc. The EMTR is an older concept, first introduced by King and Fullerton (1984) and Boadway, Mintz and Bruce (1984). It, and the tax adjusted user cost of capital upon which it is based (which goes back to Jorgenson (1963)), has been the basis of several empirical studies of the impact of taxes on domestic and foreign investment flows. The EATR is a somewhat newer concept, recently developed by Devereux and Griffith (1999) for cross-country comparisons of tax burdens on FDI. Fewer empirical studies have employed the EATR concept.[11]

Some, such as Devereux and Griffith (1999), have argued that the EATR concept is more appropriate for FDI, as the decision to locate production in one country or another is by nature a discrete decision — a firm will choose to build one plant among alternative competing locations. In this case, it is argued, the choice between alternative locations depends on the EATR since the MNE is likely to choose the location where the highest post-tax profits can be earned, while the optimal level of production on the chosen location depends on the EMTR.

As indicated, the EMTR and EATR share several features and depend on a number of common simplifying assumptions. Specifically the effective tax rate on investment depends on the type of assets purchased (since different types of assets are subject to different depreciation allowance schemes) and on the source of finance (since the returns paid out as dividends, interest or capital gains may be taxed differently). Inflation also affects the effective tax rate since depreciation allowances are not indexed and nominal interest payments can be deducted as operating

11 Empirical studies employing both approaches are discussed below.

expense against the tax base. Moreover, particularly important for our purposes is that cross-border investment may be subject to two forms of additional taxes: a host country's withholding tax and a home country's tax on foreign source income. Withholding taxes may be levied on payments of dividends or interest from the subsidiary to the parent company. The country where the parent company is located may also levy the corporate income tax on the parent firm's receipts of dividends and interest from its foreign subsidiaries. As noted above, whether this leads to additional taxes on foreign source income depends on whether the home country has adopted an exemption system or a credit system for foreign source income, and, in the latter case, it depends on whether the firm is in an excess credit or excess limitation position at home.

Calculations of EMTRs and EATRs for inbound FDI into Canada from the other G7 countries are illustrated in Tables 4 and 5. Calculations are for firms in both an excess credit and excess limitation position. The effective tax rates presented are a weighted average aggregated over three types of investments: machinery and equipment, buildings, and inventories. The effective tax rates are also aggregated over three types of financing available to both a parent and its Canadian subsidiary — retained earnings, new share issues, and debt. Thus, seven types of financing are jointly possible for FDI — i) a subsidiary uses retained earnings; ii)-iv) a subsidiary raises new equity from the parent and the parent finances the subsidiary's equity issuance from retained earnings, new equity or debt; v)-vii) a subsidiary raises debt from the parent and the parent finances this from retained earnings, new equity or debt.

Calculations are presented for the current system and for several counterfactuals: the elimination of the dividend withholding tax, the interest withholding tax, and both. It needs to be emphasized that the current system employs the Canadian corporate income tax rates that are anticipated to be in place by 2012. Important in this regard is the substantial reduction in the federal corporate income tax rate from 19.5 percent in 2008 to 15 percent by 2012. Several provinces have also announced small reductions in their corporate income tax rates over this period. No anticipated changes in the corporate income tax rates in the other G7 countries are included.

It is also important to emphasize that the counterfactual calculations presume no response in the financing choices of firms. This is not likely to be the case in reality. For example, eliminating withholding taxes on interest payments while maintaining the tax on dividends (as in the Canada-U.S. case) provides an incentive for multinationals to transfer income via the untaxed interest route. One might, therefore, expect to observe an increase in cross-border flows of interest and a decrease in dividends. While a tightening of thin capitalization rules may stem some of this "leakage", it is likely to be imperfect. None of these financial behavioral responses are taken into account in the effective tax rate calculations. Also, it should be stressed that both EMTR and EATR do not capture the myriad of tax planning opportunities available to multinational corporations.

The tables suggest that the EMTRs and the EATRs are in fact quite similar, so the discussion focuses on the EMTRs.[12]

12 Mintz (2001) presents EMTR calculations for inbound and outbound investment between Canada and the United States. The calculations presented here are similar, though not identical, to his. The differences arise because of different assumptions about the underlying parameters in the calculations, aggregation weights, and financing assumptions. Most particularly, the calculations here are based on Canadian corporate tax rates that will hold in 2012, whereas Mintz employed tax parameters anticipated in 2005.

Table 4

Effective Marginal Tax Rates on Inbound FDI into Canada, by Home Country (percent)

	United States	Germany	United Kingdom	France	Japan	Italy
			Excess credit			
Current	26.2	29.4	30.9	29.9	28.2	29.3
No dividend withholding tax	21.6	25.3	27.0	25.9	24.0	25.2
No interest withholding tax	26.2	26.0	27.7	26.6	24.8	25.9
No dividend or interest withholding tax	21.6	21.3	23.3	22.1	19.9	21.3
			Excess limitation			
Current	27.9	24.9	25.5	25.2	29.8	24.8
No dividend withholding tax	27.9	22.6	25.5	23.0	29.8	22.6
No interest withholding tax	27.9	24.9	25.5	25.2	29.8	24.8
No dividend or interest withholding tax	27.9	22.6	25.5	23.0	29.8	22.6

Source: Author calculations.

Table 5

Effective Average Tax Rates on Inbound FDI into Canada, by Home Country (percent)

	United States	Germany	United Kingdom	France	Japan	Italy
			Excess credit			
Current	25.2	26.2	26.7	26.3	25.8	26.1
No dividend withholding tax	22.7	23.7	24.2	23.9	23.3	23.7
No interest withholding tax	25.2	25.1	25.6	25.3	24.8	25.1
No dividend or interest withholding tax	22.7	22.7	23.2	22.8	22.3	22.6
			Excess limitation			
Current	29.2	26.4	25.3	26.1	33.0	26.4
No dividend withholding tax	29.2	24.4	25.3	24.1	33.0	24.4
No interest withholding tax	29.2	26.4	25.3	26.1	33.0	26.4
No dividend or interest withholding tax	29.2	24.4	25.3	24.1	33.0	24.4

Source: Author calculations.

The first thing that is evident from the calculations is that in some cases the EMTR is higher for excess credit firms than for excess limitation firms, and sometimes lower. For countries that follow the EM for dividends, the EMTR is lower in the excess limitation case because the FTC approach is used for interest. For countries following the FTC approach for dividends, it depends upon the total tax price imposed on an incremental $1 in dividend income remitted in the case of a corporation that has excess credits relative to the tax price with excess limitations. Recall that in the excess credit case the tax price is simply the host country's withholding tax rate, ω_i, while in the excess limitation case the tax price is $(\tau-\tau_i)/(1-\tau_i)$. If the home country's tax rate (τ) is significantly higher than the Canadian corporate income tax rate (τ_i) then the tax price under excess limitation could be higher than the tax price under excess credit. Given the substantial reduction in the Canadian corporate income tax rate in 2012, this is the case for U.S. and Japan based multinationals.

The elimination of withholding taxes reduces the EMTRs on inbound investment in all cases in the presence of excess credits, and for the EM countries in the presence of excess limitations. In the case of a U.S. parent in an excess credit position, for example, the EMTR declines by 4.6 percentage points if the dividend withholding tax is eliminated.[13] This is slightly less than the six percentage point reduction in the EMTR reported in Mintz (2001), but it is still a significant reduction. For the other FTC countries the impact of eliminating withholding taxes is even larger, because the withholding tax rates are higher. For the United Kingdom and Japan the elimination of withholding taxes for excess credit firms lowers the EMTR by about eight percentage points. Larger reductions in the EMTR due to the elimination of withholding taxes are evident for FDI from home countries that employ the EM. In this case the reductions in the EMTR are present for both the excess credit and excess limitation case. For example, the ETMR on German FDI in the excess credit case declines from over 29 percent under the current system to just over 21 percent if both withholding taxes on both dividends and interest are eliminated.

The effective tax rates presented in Tables 4 and 5 suggest that eliminating Canadian withholding taxes on dividends, interest and other income will, in many cases, lower the tax burden on FDI quite significantly. The size of the reduction in the tax burden depends upon the existing withholding tax rates, the approach to eliminating the double taxation of foreign source income in the home country (EM or FTC), and in the case of FTC countries whether or not the firm is in an excess credit or excess limitation position. For home countries following the FTC approach a key issue is the proportion of FDI that is undertaken by firms in an excess credit position. If, for example, most firms are in an excess limitation position, eliminating withholding taxes will do little to stimulate investment and will simply result in a revenue loss to Canada's treasury. This issue will be discussed in more detail below.

13 The simulations presume that the withholding tax on Canada-U.S. interest payments is eliminated under the current system.

6. Effective tax rates on outbound FDI

While Canada could unilaterally lower its own withholding taxes associated with inbound FDI, for reasons discussed earlier a more sensible approach would be to engage in bilateral discussions with tax treaty countries regarding reductions in withholding taxes on income flows going both ways. This would generate some (minor) offsetting revenue gains for Canada, as well as lower the cost of capital for Canadian multinationals investing abroad.

Canada operates primarily under the EM. This suggests that the elimination of withholding taxes on income earned by Canadian multinationals will have a direct impact on the effective tax rate on outbound Canadian FDI. Calculations of EMTRs and EATRs on outbound Canadian FDI are presented in Tables 6 and 7. The calculations show that elimination of withholding taxes by other G7 countries would lower the effective tax rate on outbound Canadian FDI by from two to seven percentage points, depending on the host country.

Table 6

Effective Marginal Tax Rates on Outbound Investment from Canada, by Host Country, Excess Credits (percent)

	United States	Germany	United Kingdom	France	Japan	Italy
Current	33.3	35.6	30.9	27.4	39.2	29.9
No dividend withholding tax	31.1	33.7	30.9	24.8	37.3	27.6
No interest withholding tax	33.3	32.1	27.0	27.4	35.8	25.7
No dividend or interest withholding tax	31.1	29.7	27.0	24.8	33.5	22.8

Source: Author calculations.

Table 7

Effective Average Tax Rates on Outbound Investment from Canada, by Host Country, Excess Credits (percent)

	United States	Germany	United Kingdom	France	Japan	Italy
Current	31.8	33.9	27.6	29.0	37.4	32.4
No dividend withholding tax	30.0	32.1	27.6	27.1	35.7	30.5
No interest withholding tax	31.8	31.8	25.4	29.0	35.4	30.2
No dividend or interest withholding tax	30.0	30.0	25.4	27.1	33.8	28.3

Source: Author calculations.

7. Taxation and FDI: a review of the empirical evidence

In the previous sections it was shown that the elimination of withholding taxes on dividends and interest lower the effective tax burden on both inbound and outbound FDI, as reflected in the marginal and average effective tax rates. The reduction in effective tax rates is considerable in some cases. In principle, this should stimulate inbound investment into Canada, with the associated benefits. The magnitude of the investment response to these reductions in effective tax rates depends upon the sensitivity to FDI to the effective tax rate. This is an empirical question.

Several studies have undertaken empirical investigations of the importance of taxation in determining FDI. Most studies focus on FDI between OECD countries — in particular, the United States for which data tends to be most reliable (Gordon and Hines (2002)). Hines (1999) reviews the literature on the sensitivity of FDI to tax differentials and concludes that the allocation of real resources is quite sensitive to tax policies (see also De Mooij and Everdeen (2006)). For example, Hines (1996) finds evidence that the location of foreign investment into the United States is affected by differences in U.S. state taxes. Using data from individual U.S. and Canadian companies, Cummins (1996) finds that a 10 percent increase in the Canadian cost of capital relative to the U.S. cost results in a 10 percent reduction in Canada's share of investment by U.S. companies. Altshuler and Cummins (1997) also show that the impact of taxes on Canadian investment outbound to the United States is substantial. More recently, Buettner and Ruf (2007) find that taxes play a significant role in the decision by German multinationals on where to locate or hold subsidiaries abroad.

However, Devereux and Maffini (2007) and Devereux and Griffith (2003) argue that the empirical literature suffers from various shortcomings. One issue concerns problems with the measurement of FDI and its usefulness as a measure of real investment activity. There are also difficulties with measuring effective tax rates (average and marginal), and several issues associated with econometric methodology, in particularly endogeneity problems. Consequently, estimates of the elasticity of investment with respect to tax rates can vary considerably according to sample type and methodology.

There is also evidence that other factors also matter for FDI, perhaps more so than taxes. A study of FDI in major emerging economies by McKinsey (2004) found that targeted FDI policies, such as tax holidays, accelerated depreciation, and import duty exemptions (among others), were ineffective in influencing the volume of FDI. In fact, in many cases they were counter productive, contributing to fiscal and administrative costs and lowering productivity by encouraging inefficient levels of investment. Instead, primary considerations when MNEs invested abroad were macroeconomic stability, the quality of infrastructure and the labour force, the size and growth of the domestic market, and the accessibility of location.

This is not only the case for emerging economies. In a study of FDI flows between OECD countries, Hajkova, Nicoletti, Vartia, and Yoo (2006) argue that ignoring the institutional and business environment of FDI host countries may lead to an upward bias in the effect of corporate taxes on FDI. They find that cross-country differences in taxation appear to be a minor factor affecting the location choices of MNEs. Instead, changes in labour costs, as proxied by the tax wedge on labour income, have an effect on FDI that is 10 times larger than that of an equivalent change in effective tax rates, and relatively high employment protection and anti-competitive product market regulations also tend to curb FDI.

In a discussion of the empirical literature on taxes and FDI, Devereux and Griffith (2002) conclude that while there is strong evidence that taxes affect the location and investment decisions of firms, it is not clear how big this effect is. Thus, while it appears that tax policy is an important factor in determining investment flows, it is difficult to say precisely how strongly international real investment reacts to specific changes in tax policies.

Aside from the location of real investment, another issue concerns the shifting of income across jurisdictions in response to tax differentials. Multinational corporations have an incentive to shift revenue and expenses between jurisdictions to exploit differences in tax rates, through transfer pricing and financial transactions. There is evidence that international profit-shifting does indeed take place, despite the attempts of governments to contain it via transfer-pricing regulations and rules against thin capitalization. Using different methods of identifying income-shifting, Grubert and Mutti (1991), Hines and Rice (1994), and Altshuler and Grubert (2003) all find evidence of significant tax-induced profit-shifting between the United States and various other countries. Weichenrieder (1996) and Mintz and Smart (2004) find similar evidence for Germany and Canada, respectively, and Bartelsman and Beetsma (2003) use a broader data set to support their hypothesis of tax-avoiding profit-shifting between OECD countries.

To sum up, there is ample evidence, and general agreement, that the location of real investment, the cross-country pattern of company ownership and the location of paper profits react to international tax differentials. There is no agreement on the magnitude of these effects.

8. Impact on FDI: some back-of-the-envelope calculations

The empirical evidence reviewed in the previous section suggests that reductions in effective tax rates due to the elimination of withholding taxes would stimulate foreign investment in Canada to some extent. While the magnitude of the effect is highly uncertain, if one is willing to make various (and sometimes heroic) assumptions, some "back-of-the-envelope" calculations are possible.

The impact of the elimination of withholding taxes on effective tax rates, and therefore investment, depends upon the host country and its approach to international taxation. Over half (almost 60 percent) of FDI in Canada originates from the United States. As indicated earlier, Canada has eliminated withholding tax on arm's-length interest payments as of January 2008 and has recently negotiated with the United States the elimination of withholding taxes on all interest payments, with the elimination of withholding taxes on non-arm's-length interest payments to be phased-in over a three-year period. Mintz (2001), in a study of the impacts of removing withholding taxes on both dividends and interest, estimated that eliminating the withholding tax on interest would, in the long run, increase the stock of U.S.-owned capital in Canada by about six percent, or $18.6 billion. This was primarily due to the reduction in Canadian borrowing costs assumed to occur in conjunction with the elimination of taxes on interest flows, which lowers the cost of capital (and the effective tax rate).

Mintz's estimate of the long run impact of eliminating the withholding tax on dividends in 2001 was $9.5 billion — about a three percent increase in the stock of U.S.-owned capital in Canada. This is significantly lower, by half, than the impact of eliminating interest withholding taxes because, as discussed above, most firms in the United States are able to fully credit withholding taxes on dividends against domestic taxes. Mintz assumes that 64 percent of U.S. firms are in this (excess limitation) position. As such, the elimination of the withholding tax on dividends would impact the effective tax rate, and the underlying cost of capital, for only 36 percent of U.S. firms investing in Canada.

Mintz assumed that the long run elasticity of the capital stock in Canada with respect to the tax adjusted cost of capital is unity. Thus, a 10-percent reduction in the cost of capital would lead to a 10-percent increase in the capital stock. As discussed above, while there is a consensus that taxes on capital do significantly affect investment, there is not widespread agreement on the magnitude of the effect. Mintz's unit elasticity assumption is not unreasonable, and is in the mid-range of many estimates.

Adopting the same approach — in particular a unit elasticity and the share of U.S.-based investors in an excess credit position of 36 percent — and using the cost of capital underlying the effective marginal tax rate calculations in Table 4, a back-of-the-envelope estimate of the impact of eliminating the withholding tax on dividends paid to U.S.-based companies based on the 2012 tax system is about a 2.2-percent increase in the U.S.-owned stock of capital in Canada in the long run. This is slightly lower than Mintz's calculation of three percent; the difference is due to reductions in the Canadian corporate tax rate through 2012 that are incorporated here (but not in Mintz), as well as different parameter assumptions underlying the calculation of effective tax rates.

Estimating the impact of eliminating withholding taxes on income remittances to other countries is even more difficult because of lack of data. This is particularly the case for FTC countries, such as the United Kingdom and Japan, where there is no public information on the extent to which investors based in these countries are able to claim FTCs. If we make the (heroic and probably unjustified) assumption that 36 percent of multinationals in the United Kingdom and Japan are also in an excess credit position, and adopt the same unit elasticity assumption, then eliminating dividend withholding taxes would increase the British- and Japanese-owned capital stock in Canada by just under four percent.[14] If withholding taxes on interest were also eliminated, FDI from these countries would increase by just over five percent.

For home countries that employ the EM for dividends (Germany, France, and Italy), it is assumed that all companies enjoy the full decline in the effective tax rate due to the elimination of withholding taxes (i.e., all companies are in an excess limitation position for interest). This suggests that the impact of eliminating the withholding tax on dividends will be greater. A back-of-the-envelope calculation for these cases suggests that in the long run the elimination of the withholding tax on dividends would increase the capital stock in Canada owned by these countries by from 3.5 to 8.5 percent, depending on the country.

Thus, depending upon the country of origin, in the long run the elimination of the withholding tax on dividends might be expected to increase the stock of foreign-owned capital in Canada by from 2.2 percent to 8.5 percent.

It should be emphasized that these are very rough, back-of-the-envelope calculations. A proper analysis requires a much richer, dynamic simulation that is well beyond the scope of this report.

14 In fact, a more reasonable assumption may be that a smaller (greater) proportion of firms in the United Kingdom (Japan) will be in a deficit FTC position given the somewhat lower (higher) corporate income tax rate in the United Kingdom (Japan). However, there is no way to know how much the proportion would differ without the relevant data. As such, these calculations should be regarded as illustrative only.

9. Revenue effects: more back-of-the-envelope calculations

Tables 8 through 11 show data obtained by the Advisory Panel from the Department of Finance on the revenue collected from withholding taxes in Canada from 2000 to 2005. Note that the elimination of the withholding tax on interest income between Canada and the United States would alter these figures for 2008.

Regardless, it is clear from these tables that withholding taxes are a significant source of revenue for the federal government, bringing in almost $4.3 billion in 2005. Comparing this to about $30.52 billion in federal revenues from corporate income taxes, it is clear that withholding taxes are an important source of revenue for the federal government. It is also noteworthy that the three biggest sources of withholding tax revenues are investors resident in the United States, the United Kingdom and Japan, all three of which employ the FTC approach to international taxation.

When estimating the revenue impact of tax policy changes, two approaches can be followed. The first is called static scoring. Static scoring presumes that there are no behavioral, dynamic or general equilibrium reactions to changes in tax policy. Simple accounting changes are made in the calculation of tax revenue, assuming no reaction on the part of taxpayers and no feedback from the tax changes. In our case, static scoring revenue estimates from reducing or eliminating withholding taxes can be read directly from Tables 8 through 11. So, for example, unilaterally eliminating all Canadian withholding taxes would generate a static annual revenue loss of $4.3 billion based on the 2005 data. Or eliminating withholding taxes on dividends paid to U.S. residents would cost $2.1 billion per year. This could be refined by assuming a growth rate in withholding taxes, based on historical growth rates in the series, or perhaps on the basis of relationships with other variables, such as GDP, corporate profits, capital stock, etc. While these refinements can be more or less sophisticated, there is no explicit modelling of behavioral changes or feedback under static scoring.

Of course this approach to determining the revenue implications of tax policy changes is at odds with reality, and indeed (presumably) with the underlying rationale for the tax policy change. If there are no behavioral changes anticipated then what is the point of the tax policy change in the first place (aside, of course, for pure transfer motives)? Ideally, then, these behavioral responses should be taken into account in determining the budgetary implications of changes in tax policy, preferably in a dynamic framework. Attempts to do this are called dynamic scoring. This is, of course, much more difficult. The difficulties in modelling the dynamic feedback from tax policy changes notwithstanding, in 2003 the U.S. Congress adopted a rule that requires the Joint Committee on Taxation to develop dynamic scoring budgetary estimates of all tax policy changes before they are taken to the House of Representatives. Several U.S. states have adopted similar requirements.

As suggested by much of the above discussion, analyzing the behavioral responses to changes in multinational taxation is all the more complicated. This is because interactions with tax systems in other jurisdictions must be taken into account. Moreover, significant tax planning opportunities exist because of different approaches to taxing cross-border investment flows. Changes in the taxation of FDI in Canada, and elsewhere, can set in motion a cacophony of responses, which are extremely difficult to model.

What sort of responses, and feedbacks to government revenue, might we expect to occur in reaction to an elimination of withholding taxes? The most obvious is the investment effect. As discussed above, this is complicated in and of itself and depends upon the country of residence, the approach to international taxation, and the excess credit/limitation position of companies. If there is an increase in the capital stock due to a reduction in the effective tax rate on FDI it will, eventually, generate income in Canada that will be subject to various taxes, most particularly federal and provincial corporate income taxes. This will recoup, to some extent, the static revenue loss from eliminating the tax.

Selectively eliminating withholding taxes for some countries on some types of income will also set in motion various tax planning strategies. For example, eliminating the withholding tax on interest, but not dividends (as with Canada and the United States) may result in an increase in parent-subsidiary debt financing to transfer income in a more tax effective manner, thin capitalization rules notwithstanding.

Another feedback effect concerns the relationship between taxes on capital and labour. Capital does not work in isolation. The increase in capital that may occur in reaction to a reduction in withholding taxes will require other inputs, such as labour and materials. Labour is the most important. The impact of the increased capital stock on the labour market is also complicated and depends upon the nature and state of the labour market, but the increase in the capital stock will either create new jobs and/or drive up wages. Either way, this will generate personal income that will be subject to income taxation, GST, provincial sales taxes, etc.

It is very difficult, and well beyond the scope of this paper, to model all of these dynamic effects. We can, however, account for some of them. Mankiw and Weinzierl (2004) present a set of relatively simple dynamic growth models that allow for feedback within and between capital and labour markets to do some simple "back-of-the-envelope" dynamic scoring simulations of cuts in labour and capital taxes. They find, that "in the long run, about 17 percent of a cut in labour taxes is recouped through higher economic growth. The comparable figure for a cut in capital taxes is about 50 percent." Thus, half of the static revenue reduction due to a reduction in the effective tax rate on capital is recovered in the long run — capital tax cuts pay (eventually) for about half of themselves. Interesting, and importantly, in their model about two-thirds of the tax revenue that is recouped from a tax cut on capital comes from increased taxes on labour associated with the new capital.

Mankiw and Weinzierl's calculations were undertaken for a closed economy, with very simple taxation of labour and capital. We have seen that things are much more complicated in an international context. Adopting the Mankiw and Weinzierl model for international taxation is beyond the scope of this paper. However, by making some more heroic assumptions we can go even deeper into the "back-of-the-envelope" and undertake calculations in the spirit of their model.

Consider the elimination of the withholding tax on dividends for Canada and the United States. The static revenue loss, using the 2005 data from Table 9, is about $2.1 billion per year. As discussed above, evidence suggests that about 64 percent of firms in the United States are in an excess limitation position. For these firms, the elimination of the withholding tax on dividends will have no impact on the cost of capital, and there will be no behavioural response. This will lead to a straight $1.4 billion per year revenue loss to Canada, with no dynamic feedback. It is for firms in this situation that a withholding tax on dividends is typically justified — it is a straight transfer of revenue from the U.S. treasury to the Canadian treasury.

Table 8

Canadian Withholding Tax Revenues by Country, All Sources ($ millions)

	2000	2001	2002	2003	2004	2005
United States	1,399	1,559	1,738	1,633	1,863	2,747
United Kingdom	136	155	143	178	162	246
Japan	154	208	183	239	199	199
Netherlands	206	124	122	176	138	184
Germany	81	68	103	76	94	120
Switzerland	68	80	73	72	81	79
Barbados	33	32	44	25	32	72
Luxembourg	16	29	36	60	61	63
Bermuda	24	42	29	26	33	49
France	51	59	41	39	50	49
Other	341	406	325	357	530	475
Total	**2,510**	**2,762**	**2,838**	**2,881**	**3,242**	**4,283**

Source: Department of Finance.

Table 9

Canadian Withholding Tax Revenues by Country, Dividends (Direct and Indirect) ($ millions)

	2000	2001	2002	2003	2004	2005
United States	706	750	841	725	924	1429
United Kingdom	69	81	69	84	79	141
Japan	23	60	15	33	22	40
Netherlands	158	58	69	113	89	133
Germany	34	20	57	28	33	46
Other	172	236	206	209	309	312
Total	**1,161**	**1,206**	**1,258**	**1,191**	**1,456**	**2,101**

Source: Department of Finance.

Table 10

Canadian Withholding Tax Revenues by Country, Interest ($ millions)

	2000	2001	2002	2003	2004	2005
United States	242	303	284	296	341	381
United Kingdom	33	43	34	47	2	63
Japan	6	6	3	4	43	3
Netherlands	33	49	39	46	34	32
Germany	15	15	12	12	14	22
Other	163	202	142	143	241	216
Total	**492**	**617**	**514**	**549**	**676**	**717**

Source: Department of Finance.

Table 11

Canadian Withholding Tax Revenues by Country, Rents and Royalties ($ millions)

	2000	2001	2002	2003	2004	2005
United States	310	344	368	367	384	404
United Kingdom	16	17	19	20	18	22
Japan	122	140	161	200	174	152
Netherlands	8	9	9	11	12	15
Germany	27	29	30	32	41	45
Other	79	77	88	99	104	93
Total	**562**	**615**	**676**	**730**	**733**	**730**

Source: Department of Finance.

However, (by assumption) the remaining $700 million per year in dividend withholding taxes paid by U.S. companies cannot be claimed as a credit; in this case the effective tax rate will fall and some of the static revenue loss will be recouped because of growth effects in the labour and capital market. As calculated above, we might expect an increase in the U.S.-owned capital stock in Canada of about $6.4 billion (all figures in 2005 dollars) in the long run due to the elimination of the withholding tax on dividends paid to U.S. parents. Mintz (2001) calculates that federal taxes on capital are about 0.78 percent of assets and provincial taxes about 0.48 percent. This suggests that the resulting increase in the capital stock will generate additional federal taxes of about $50 million per year and provincial taxes of $30 million per year; for a total of $80 million.[15] Using the Mankiw and Weinzierl (2004) result that one-third of the revenue offset from a capital tax cut comes from an increase in capital income and two-thirds from labour income, the additional capital will be expected to generate about $240 million in incremental

15 It bears mentioning that the $30 million in provincial revenue is a straight revenue gain to the provinces, as they collect none of the withholding tax revenue. However, there may be a revenue offset if multinational corporations adjust their financing in response to the elimination of withholding taxes, for example increasing their debt financing.

labour taxes. The total revenue offset is $320 million, which is 46 percent of the initial static revenue loss of $700 million from these excess credit companies (which, perhaps reassuringly, is close to Mankiw and Weinzierl's 50-percent offset calculation).

Adding up, the long run dynamic annual revenue loss from the elimination of the withholding tax on dividends repatriated to U.S. parent companies is $1.78 billion (1.4 + 0.38), about 85 percent of the static revenue loss of $2.1 billion.

The reason for this relatively low dynamic offset of 15 percent is, of course, because almost two-thirds of U.S. companies are able to fully claim their FTCs. As discussed throughout, this means that the elimination of dividend withholding taxes for these companies results in a straight transfer from the Canadian treasury to the U.S. treasury. For other FTC countries, such as the United Kingdom and Japan, we would expect dynamic offsets of an equal magnitude (in the 20-percent range), presuming that the same proportion of companies are in an excess credit position. For withholding taxes collected from companies resident in countries that employ the EM, the dynamic revenue recovery is closer to the 50-percent rate calculated by Mankiw and Weinzierl; so the elimination of withholding taxes for these countries will pay for roughly half of themselves in the long run. If withholding taxes were eliminated on a bilateral basis, which would be sensible, the elimination of taxes credited against Canadian taxes would lead to a slight increase in revenue. These effects, which would be relatively small, are not included in the calculations due to lack of information regarding withholding taxes paid by Canadian companies.

The dynamic feedback effects of reducing withholding taxes discussed above also apply to any reduction in the cost of capital due to a decrease in taxes. For example, broad corporate income tax rate reductions would also have revenue feedback effects. An interesting question concerns whether a smaller or larger share of revenues would be recouped from a reduction in the CIT vs. withholding taxes. While an investigation of this question is beyond the scope of this analysis, several factors bear upon the question.

The most important difference between a reduction in withholding taxes versus a reduction in the CIT rate is that the former applies only to foreign investment while the latter applies more broadly to all investment (domestic and foreign). The sensitivity of investment to a reduction in the cost of capital may differ between domestic and foreign investment, and to the extent that it does there will be differences in the behavioral responses and the dynamic feedback to revenues. I am not aware of any studies that explicitly investigate the relative sensitivity of foreign vs. domestic investment to the cost of capital, however one might speculate that foreign investment is more sensitive to tax changes than domestic investment. This is because FDI is, by its nature, internationally mobile. Multinational firms will thus be more sensitive to differences in the cost of capital between countries than domestic firms. Domestic investment might be expected to be less sensitive to tax-induced changes in the cost of capital simply because of the relative absence of outside opportunities. To the extent that foreign investment is more sensitive to tax-induced reductions in the cost of capital a greater share of the tax revenue will be recouped through dynamic feedback effects.

Another issue concerns the marginal source of finance for firms. Dividend withholding taxes, to the extent that they affect the cost of capital at all (which depends, in part, on whether the home country follows the EM or FTC approach) typically apply only on repatriation of the foreign source income. To the extent that earnings are retained and reinvested in the host country, the reduction in withholding taxes reduction will have a smaller impact on investment. One might, therefore, expect a broad CIT rate cut to have a greater impact on investment (both domestic and foreign), though this may not affect the share of tax revenue recouped because of dynamic feedback effects. Moreover, as discussed above, to the extent that corporate or withholding taxes are fully creditable in a home country under the FTC approach, corporate income tax cuts applied to foreign multinationals would generate no behavioral responses and result in a pure loss in tax revenue.

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