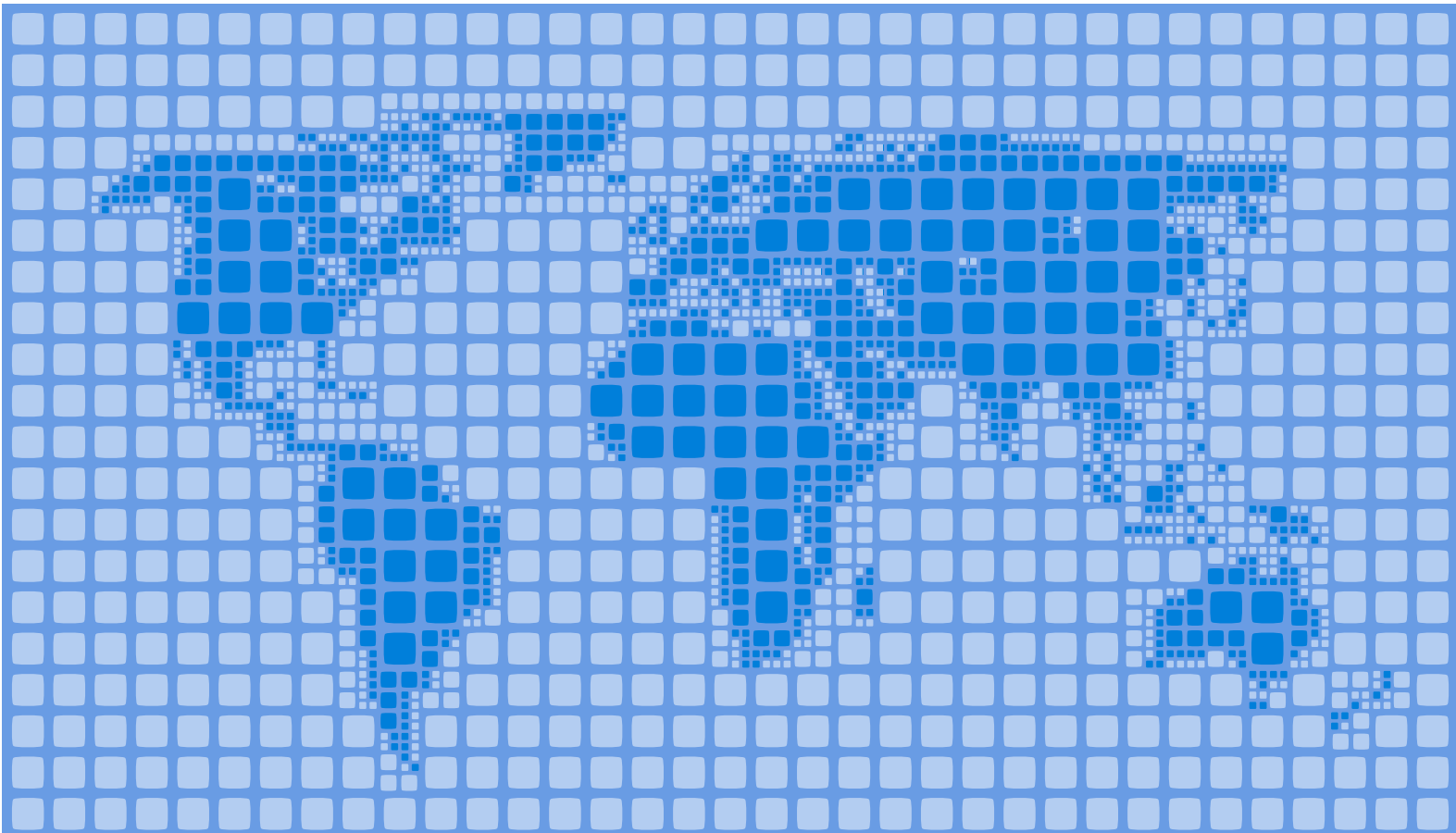


Taxation of Canadian Inbound and Outbound Investments

Duanjie Chen and Jack M. Mintz

Research Report Prepared for the Advisory Panel on Canada's
System of International Taxation

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1. Introduction

In recent years, many industrialized economies have been making significant changes to their tax regimes applied to inbound and outbound investments, reflecting the sharp increase in cross-border transactions since 1990 (OECD (2008)). In this paper, we provide new work analyzing the impact of home (residence) and host (source) country tax systems on multinational investment decisions for Canada in comparison to selected countries. We take into account not only corporate income tax provisions but also withholding taxes, the degree to which foreign income is subject to home taxation, interest restrictions, and conduit financing (double-dip interest financing structures).

In our evaluation, we have been asked to review six source countries other than Canada (bracketed numbers are the share of the increase in Canada's outbound foreign direct investment (FDI) over the past 10 years, except five years for China): Brazil (1.9 percent), China (0.5 percent), France (3.7 percent), Ireland (3.8 percent), the United Kingdom (10.7 percent) and the United States (30.0 percent). Except for Ireland, these countries tend to tax capital more highly at the corporate level compared to other countries.¹ We also consider five home countries besides Canada: Australia, Germany, Sweden, the United Kingdom and the United States; and four conduit jurisdictions: Barbados, Hong Kong, the Netherlands and Switzerland.² Similar to Canada which is both a home and host country in the analysis, we calculate an effective tax rate on capital for investments for domestic investments in the home country for the United Kingdom and the United States, which will be instructive for later presentation.

Our main results are two-fold. Some tax provisions tend to increase the effective tax rate on multinational investments relative to the effective tax rate on domestic transactions, especially withholding taxes and interest restrictions of various sorts (thin capitalization rules and interest allocation rules). On the other hand, conduit financing results in sharply lower effective tax rates on foreign direct investment compared to the effective tax rate on domestic investment, even at typical leverage ratios that would enable companies to avoid interest restrictions.

As for Canada's "international competitiveness" (a popular but often misleading concept that we define in more detail below), three aspects are involved: (i) taxation of capital in Canada for inbound investments that could go to other countries, (ii) taxation of outbound investment by Canadian multinationals compared to domestic investment, and (iii) taxation of outbound investment from Canada compared to outbound investment originating from other countries.

With respect to inbound investment, we suggest that Canada's 2008 domestic tax burden tends to be less than the selected countries except for Ireland as a source country, once taking into account all aspects of the tax system, including corporate income tax provisions, sales taxes on capital purchases, and other capital-related taxes. This conclusion has more to do with domestic tax provisions than those related to the taxation of inbound investment. Canada's thin capitalization rules are not particularly onerous and its withholding taxes do discourage investment but are not as problematical as other provisions such as sales taxes on capital

1 For an 80-country ranking, see Chen and Mintz (2008).

2 Caribbean countries that are often used for conduit investments account for 21 percent of Canada's outbound FDI.

purchases, depreciation, and the corporate income tax rate. More critical, however, once conduit financing is considered, inbound foreign investment into Canada is much more favourably treated since foreign companies are able to use tax-efficient structures to invest in Canada that provide them an advantage over domestic investments made by Canadian companies.

As for the incentive for Canadian companies to invest abroad rather than at home, generally Canada's effective tax burden is less than that found for the selected countries in this study (the one exception being Ireland with a very low marginal effective tax rate). However, this conclusion is dramatically reversed when considering tax-efficient conduit financing by multinationals. Ireland, the United Kingdom and the United States become much more favourable for Canadian multinationals compared to domestic Canadian investment when Canadian companies are able to finance capital with two interest deductions. Only foreign direct investments in China remain more highly taxed for Canadian multinationals compared to domestic investment, mainly due to China's 17 percent non-refundable value-added tax (VAT) on machinery.

As for multinational investment abroad, Canadian companies face lower effective tax rates on capital compared to other jurisdictions. An exception arises with respect to conduit financing especially in the cases of the United Kingdom and the United States. When multinationals do not pay tax on foreign income earned abroad (income is not remitted or foreign taxes are more than home tax liabilities so no tax is paid on income remitted to the United Kingdom or the United States), effective tax rates on foreign investment in a particular source country (like Brazil or China) are lower than those faced by Canadian companies also using conduit-financing structures. Conduit financing dramatically reduces effective tax rates for UK and U.S. firms in part due to lower withholding taxes applied to dividends through treaty negotiations and, in the case of the United States, a high corporate income tax rate that provides a significant tax benefit for debt financing taken in the United States to finance foreign expansions.

Two other conclusions from this study are worth noting.

The first is that earnings stripping rules that limit interest deductions to a percentage of earnings before the deduction of interest, taxes, and depreciation and amortization expense (EBITDA) would be viewed as increasing the effective tax rate on capital due to the disallowance of interest expense. However, as shown below, a counter-intuitive result is derived showing that the effective tax rate on capital can be dramatically reduced by this type of earnings stripping rule since the tax savings from less corporate tax paid on earnings before the deduction of depreciation expenses more than offset the loss in interest deductions for marginal investments (for example, a 50-percent limitation reduces the corporate income tax rate on cash flows before the deduction of depreciation and amortization by one-half). In the case of the United States with an earnings stripping rule based on 50 percent of EBITDA, the earnings stripping rule dramatically reduces the effective tax rate for marginal investments especially for machinery investments written off at a high capital cost allowance rate. In this machinery case, EBITDA is much greater than taxable income so the 50-percent exclusion of EBITDA from corporate taxation swamps the cost of losing some interest deductions for U.S. tax purposes. However, if the earnings stripping rule is based on earnings before the deduction of interest and taxes (EBIT) only, the effect of a reduction in the corporate tax on a more narrowly defined definition of cash flow is much smaller than in the case of the earnings stripping rule based on EBITDA. In this case, the effective tax rate is not nearly as affected and can be higher (lower)

than the effective tax rate on capital in the absence of the limitation depending on whether the loss in interest deductions has a larger (smaller) impact on marginal investments compared to the degree to which earnings are sheltered from corporate tax due to the limitation.

The second conclusion is that an interest allocation method that uses a formula to recharacterize domestic source interest as foreign source interest would have a dramatic impact, increasing the effective tax rate on both domestic and foreign investment for an exemption country (this result is similar to Altshuler and Mintz (1995)). We find that the effective tax on capital for U.S. domestic and outbound U.S. investments is sharply higher than the domestic effective tax rate when interest allocation methods are used (assuming the U.S. company pays no tax on foreign earnings).

Interest limitation policies should be carefully considered given these rather perverse results.

2. The meaning of international competitiveness

International competitiveness is a rather ill-defined term since it could have a variety of meanings. It might mean how competitive a country might be as a place of location for investments and production compared to other jurisdictions. It could also imply how competitive a home-based multinational resident is relative to other multinationals operating at a worldwide scale. These concepts are not the same.

What should be a concern for tax policy is the efficiency of the tax structure for a particular country (Mintz and Weichenrieder (2008)). Efficiency implies that the tax system should distort economic decisions as minimally as possible so that individuals and businesses make choices based on economic gains that are not influenced by tax considerations.

In the domestic policy sense, an efficient corporate tax structure is one that does not distort investment decisions. A tax on the return on capital causes an inter-temporal distortion by increasing the cost of future production relative to current production. Tax burdens that vary across business activities affect the allocation of capital across different assets or industries rather than being invested according to their best use.³ Corporate taxes that are levied at low rates and on a neutral tax base are thus most efficient.

In an international context, neutrality for a corporate tax structure is more difficult to define. Country tax systems intermesh with one another such that capital will be distorted on a worldwide basis. From a country's perspective, it can only control its own tax system, not that of other countries. Thus, it can only achieve allocative efficiency in a constrained sense — minimizing distortions on domestic, outbound, and inbound investments as best as possible in terms of its own tax policies.

In Mintz (2001), competitiveness has a special meaning related to the operation of multinational companies that are able to combine resources together as efficiently as possible, enabling them to derive greater profits by combining managerial and other public factors of production to produce in several markets.⁴ A tax system in a country that draws more rents to itself while minimally distorting investment allocation decisions is most appealing although difficult to accomplish.

3 At times, the tax system might be used to distort economic decisions such as investments in green technologies or research and development based on the argument that market prices are inappropriate signals for an optimal allocation of resources. For example, firms may not bear the cost of pollution so they produce too much output that causes pollution. Businesses may under-invest in research and development since their decisions are based on their own returns, not the increased profitability generated for other businesses from innovative practices. In the discussion above, it is not assumed that foreign investments are any more or less worthy than the domestic investments since market failures are not important in this context.

4 This is akin to the concept of economies of scope in production whereby a company can operate in several markets at less overall cost compared to independent companies operating in each market.

3. Effective tax rates on capital for a multinational company

In the analysis below, we estimate effective tax rates for cross-border investment for different cases depending on the application of international tax provisions. The theoretical underpinnings of our measurements are provided in Appendix A. Here a more heuristic discussion of effective tax rates is provided.

The effective tax rate on capital calculated in our study is an effective *corporate* tax rate on capital, which combines all the taxes that would affect the capital investment at the corporate level. Personal income taxes, however, may be incorporated into our calculation when they affect the capital investment at the corporate level. For example, the withholding tax on dividends could affect the cost of capital⁵ invested at the corporate level through its impact on the rate of return to equity required by shareholders.

The effective tax rate measures the impact of a tax system on an incremental unit of capital investment or business activity. It incorporates the effects of not only statutory tax rates and related tax provisions (e.g., tax depreciation, tax credits, tax deductibility, tax holidays, etc.) but also various economic factors interacting with these tax treatments (e.g., financial costs, the inflation rate, the structure of investment, etc.). In other words, the effective tax rate is a summary indicator of the overall tax burden imposed by a tax system on an investment within a certain economic environment.

The calculation of the effective tax rate is based on the assumption of profit or value maximization by a business. Profit-maximizing firms choose their investment or business decisions on the foreseeable present value of incremental net revenues generated by holding additional capital stock. Taxes reduce the portion of the profits accruing to the investor, while tax allowances mitigate a reduction in taxable accrued profits. Due to the interaction between these statutory tax provisions and the actual economic/industrial conditions (e.g., financing costs, capital structure, input structure of production, etc.), the effective tax rates can vary by industry even under the same tax regime. Furthermore, as mentioned above, the difference in effective tax rates may reflect not only the variation in tax regimes but also the differentiated economic and financial climates for a cross-jurisdiction comparison.

For profit-maximizing firms, the gross rate of return on capital (net of economic depreciation) must be equal to financing costs, adjusted for taxes. The size of this adjustment for taxes on a new investment is the effective tax rate on capital. For example, if the gross-of-tax rate of return to capital is 20 percent and the net-of-tax rate of return is 10 percent, the effective tax rate on capital is 50 percent.

5 We subscribe to the “traditional” financial models whereby the dividend tax will affect the cost of capital. An alternative is the “new view” which argues that dividends payments are simply excess of investment needs so that any dividend tax would be lump-sum and not affect investment decisions. See Mintz (1995) for further elaboration.

It should be noted that the analysis of the effective tax rate provided in this study deals with profitable firms only. By “profitable” we mean those firms that have taxable income. This assumption is important because the tax benefit of depreciation allowances and interest deductions is less valuable to a company if taxable losses are created to be used up against future taxable income generated by the investment. If the company never expects to pay taxes, then the tax benefit of cost deductions is equal to zero.

The standard method used to estimate effective tax rates has been extensively documented.⁶ The formula based on this method has been modified by incorporating some miscellaneous taxes such as capital tax, property tax, and tax on transfer of property (Chen and Mintz (1993)).

Where this study differs from earlier work is in the explicit modelling of multinational investments for various residence countries including countries that generally exempt dividends (Australia, Canada, Germany, and Sweden) and those countries that tax dividends (and other remitted income) with a direct credit given for foreign withholding taxes and an indirect credit given for foreign corporate income taxes (United Kingdom and United States). Multinational companies invest in foreign jurisdictions including Brazil, China, France, Ireland, the United Kingdom, and the United States. They might also use conduit countries to route flows of capital through countries to other jurisdictions to reduce the impact of withholding taxes or enable certain tax-efficient indirect financing structures (Mintz and Weichenrieder (2008)). Countries that we shall model as conduits include Barbados, Hong Kong, the Netherlands, and Switzerland.

6 See Boadway, Bruce, and Mintz (1984) and King and Fullerton (1984).

4. Some theoretical insights

Below, we present an analysis incorporating many features of international tax systems that are described in Appendix C. The comparisons of effective tax rates is quite complicated so it would be appropriate to lay out some theoretical insights that help explain some results taken below.

- *Corporate Income Taxes:* Typically, corporate income taxes result in a higher cost of investment so that a higher corporate tax rate is correlated with a higher effective tax rate. This is not always the case. In some instances, tax credits and capital cost deductions for inventory, depreciation, and interest expenses may be sufficiently large that increases in corporate tax rates may actually lower the cost of investment. In this case, effective tax rates on capital are negative for marginal investment projects, implying that the business earns taxable losses that must be used against other sources of income (presumably profits earned from infra-marginal investments).
- *Other Taxes on Capital:* In this analysis, we not only incorporate the impact of corporate income taxes on capital investment but also other taxes related to capital expenses. These include sales taxes on capital purchases (retail sales taxes in the United States and Canada) and non-refundable VAT or other sales taxes (Brazil and China).⁷
- *Withholding Taxes:* Withholding taxes on cross-border investments increase the cost of capital faced by a parent when returning dividends or, in some cases, earning capital gains on investments in subsidiaries. Such taxes increase the cost of investment to the degree that they are not credited against foreign taxes.
- *Financial Arbitrage:* The cost of capital investment is reduced by interest deductions taken against profits. On cross-border investments, businesses can reduce financial costs by placing debt in jurisdictions with high corporate income tax rates to earn income subject to a lower corporate income tax. Such financial arbitrage can lead to lower effective tax rates on capital. Further, interest expense, unadjusted for inflation, is deductible from profits thereby providing a tax benefit to firms issuing debt in “weak” currencies (that devalue due to high inflation).⁸ Thus, businesses will shift debt to high inflation jurisdictions to take advantage of currency devaluation.
- *Interest Restrictions:* Countries may impose rules to limit deductions for interest expense incurred by subsidiaries operating in the host country (inbound investments) or by parents for foreign investments (outbound investments).

⁷ See Appendix B.

⁸ Typically, gains from holding debt in currencies that devalue will not be subject to the same rate of tax or could be exempt. See Boadway, Bruce, and Mintz (1984) and Gordon (1987).

- *Conduit Financing:* Many companies set up tax-efficient financing structures that enable a company to deduct interest and other expenses (leasing, insurance, etc.) twice or more for the same investment. To do this, an intermediate company is established that converts interest received from an operating subsidiary into tax-free dividends paid to the parent. For example, a Canadian company can invest in a Barbados international business corporation (IBC) that is subject to 1.5-percent tax in Barbados. The IBC provides a loan to a subsidiary in a third country, which results in an interest deduction taken there. The income of the IBC is paid to the Canadian parent as a tax-free dividend. The parent borrows in Canada and receives a second interest deduction in Canada for the investment in the third jurisdiction. If no withholding taxes are levied and Canada treats the IBC income as active business income (and therefore exempt from Canadian income tax), the effect of the transaction is to allow interest expense to be deducted twice for an investment. Many countries provide opportunities for such tax-efficient structures, including the United States which has enabled U.S. multinationals to avoid passive income taxation on interest such as through check-the-box rules. As a result, a U.S. company can reclassify for tax purposes the status of a conduit corporation into a flow-through vehicle to achieve a double-dip interest deduction without using a third country.⁹

9 See Finance Canada (2007) for an example.

5. The base case

To begin, we consider a multinational parent resident in a home country that invests at home or in a foreign jurisdiction. For simplicity, the multinational finances subsidiary investments by a parent equity transfer to the subsidiary, inter-corporate debt transfers or third-party debt. The interest cost for inter-corporate and third-party debt for the subsidiary is assumed to be the same, consistent with transfer price rules. The equity transfer, however, is in turn financed by equity and debt raised by the parent to invest in the subsidiary or domestic investments.

When we compute effective tax rates on capital, we not only take the tax provisions relevant to taxing capital in the host country but also the tax savings that arise from interest deductions taken by the parent. Thus, the effective tax rate is a combined tax rate reflecting both host and home tax provisions as related to the subsidiary's investment decision.

Keeping this in mind, arbitrage is quite important as related to debt financing. For example, suppose a Canadian parent invests in Ireland. Income earned from the Irish investment is taxed at a rate of 12.5 percent. However, any interest deductions taken in Canada are deductible at the rate of 31.7 percent. Thus, international arbitrage by placing debt in Canada rather than in Ireland will lower the effective tax rate in Ireland compared to a case when all debt is raised in Ireland only. Thus, the choice of the debt placement is important in determining effective tax rates on capital.

Taking values typical for Canada in the past 10 years, it is assumed that subsidiary investments are financed 25 percent by debt and 75 percent as parent equity transfers. In turn, the parent is 40 percent financed by debt and 60 percent by equity, also consistent with typical debt-asset ratios for the Canadian economy. This implies that a subsidiary investment is financed 55 percent by debt (25 percent in the host country and 30 percent indirectly through the parent).

The results related to the base case are shown in Table 1 where the host (source) countries are listed in the first column and the parent (residence) is listed in the second row. For the UK and U.S. cases, we separate the deficient tax credit case (home country tax is more than foreign tax on foreign income remitted to the parent) from the excess tax credit case (home country tax is less than foreign tax on foreign income remitted to the parent and therefore zero in value, or no dividends are remitted to the parent).

Taking Canada as the host country, generally, the effective tax rate faced by subsidiaries in Canada owned by parents in other countries is higher than for domestic investments. Given that Canada's withholding taxes vary little across countries, the primary source of differences in effective tax rates is differential corporate tax rates and inflation rates faced by the parent that affects the value of interest deductions taken in the home country (higher tax and inflation rates in the home country reduces the effective tax rate on capital in Canada).

The low effective tax rate for U.S. firms in Canada, which is 17 percent in the excess credit case, is a result of the benefits of issuing debt in the United States with higher tax savings. The United States has the highest corporate income tax rate of all the countries (see Appendix B) so that any debt deductions taken there to support Canadian subsidiary investments result in a lower effective tax rate on capital in Canada. Also, the U.S. inflation rate is a point higher than in Canada so taking nominal interest deductions in the United States to finance Canadian operations also provides a benefit to U.S. companies.

Table 1
Effective Tax Rates on Cross-Border Investment (2008) (percent)
Base Case: Debt finance at 40 percent for the parent and 25 percent for the subsidiary

Subsidiary	Parent							
	Australia	Canada	Germany	Sweden	United Kingdom		United States	
					Excess Credit	Deficient Credit	Excess Credit	Deficient Credit
Brazil	34.6	35.7	37.1	37.2	34.9	31.9	30.3	32.1
Canada	22.7	24.4	26.1	26.3	23.1	23.9	17.0	22.5
China	43.9	42.9	44.1	43.9	43.1	46.0	39.8	45.0
France	35.1	32.6	32.8	32.9	30.1	28.5	26.7	28.7
Ireland	-0.5	1.7	4.2	4.4	0.0	12.9	-8.2	12.2
United Kingdom	21.5	23.0	24.9	25.0	21.8	21.8	15.8	21.4
United States	29.6	31.0	32.7	32.8	30.0	27.7	24.6	24.6

As another example, the effective tax rate on capital for an Australian company investing in Canada is slightly lower than for Canadian firms at 22.7 percent, reflecting all provisions in the Canadian tax system as well as tax savings from interest deductibility in Australia. While the Australian company deducts interest expense at a lower corporate rate than in Canada (to finance Canadian investments) and must pay withholding taxes on investments from Canada, the Australian inflation rate is higher than in Canada by a percentage point, making interest deductions more valuable there. If Australia had the same inflation rate as Canada, the effective tax rate on capital for an Australian firm operating in Canada would be 25 percent, higher than for a Canadian business operating at home.

The Australian parent effective tax rate on capital is also less than a Canadian company investing in Canada using a 55 percent debt-asset ratio (similar to the aggregate debt financing ratio for the Australian company's investment in Canada).

In the case of Ireland as host jurisdiction, we see that effective tax rates are generally much lower than those in Canada with values close to zero for an Australian company. While this is clearly related to the very favourable corporate tax regime in Ireland (with a corporate income tax rate of 12.5 percent), the effective tax rate for Irish investments is also affected by the degree to which debt is used by the parent to finance investments in Ireland. Again, the U.S. parent case is instructive for the excess credit case — the effective tax rate is negative in Ireland since interest expense taken in the United States results in tax savings at a corporate income tax rate of 38.6 percent. As discussed below, the application of United States interest allocation rules has a substantial impact offsetting the benefits U.S. companies have in issuing debt in the United States.

In the case of the deficient tax credit case for the United Kingdom and the United States,¹⁰ we note that effective tax rates on investment are slightly higher than the excess credit case especially for the U.S. case where the corporate income tax is substantially higher than in Canada. In this case, Canadian taxes paid by a subsidiary is less than the UK or U.S. tax paid on the income (reflecting not just statutory tax rates but also other corporate income tax provisions related to depreciation and inventory costs).

It is not always the case that the deficient tax credit case results in a higher effective tax rate on capital compared to the excess credit case (Leechor and Mintz (1993)). Take for example UK investment in the United States where the effective tax rate for the deficient tax credit case is 27.7 percent, which is less than the excess credit case of 30 percent for investments in the United States. The reason for this result is that the U.S. corporate tax rate of 38.6 percent is sharply more than that in the United Kingdom at 28 percent. For an investment project in the United States, the UK company generates excess credits on U.S. source income that can be applied against UK tax paid on other sources of foreign income. Thus, a lower effective tax rate for the deficient tax credit case can arise when a parent shelters high taxes on other sources of income with excess tax credits from another remitted source. Effectively, U.S. and UK multinationals are able to average high and low corporate tax rates to avoid home-country tax liabilities on remitted income.

Table 1 illustrates how much variation there is in effective tax rates across host and home jurisdictions. With effective tax rates ranging from -8 percent to 46 percent (in China), we can see that international tax systems highly distort worldwide capital allocation decisions. Taking into account industry and asset distortions, worldwide corporate tax systems are far from efficient.

¹⁰ We assume that both U.S. and UK parents are subject to a “global” tax credit that allows a parent to add up different sources of income and taxes to determine total foreign tax paid relative to the home country tax liability (in other words, average high and low tax sources of income). UK law can be more restrictive as foreign tax credits are determined according to source of income although the use of “mixer” corporations enables many UK parents to achieve the global tax credit result.

6. Shifting debt to the subsidiary from the parent

As discussed above, financial arbitrage significantly affects effective tax rates for host country investments. In Table 2A below, we assume that all the debt held by the parent and associated with the investment in the host country is shifted to the subsidiary so that the subsidiary is 55 percent rather than 25 percent financed by debt. The effective tax rates in Table 2A can be compared to those in Table 1 to see how effective tax rates in host countries are affected.

For Canada, which has a corporate income tax rate below the United States but above other selected countries, we see that the effective tax rate in Canada as a host country generally rises although for different reasons.

In the case of the United States, placing debt in Canada is less advantageous for two reasons — both Canada's corporate income tax rate and inflation rate are lower than those in the United States so shifting debt from the United States to Canada raises the effective tax rate on capital.

For Australia and the United Kingdom, the effective tax rate increases slightly mainly due to inflation being higher in these countries than in Canada despite both countries having a lower corporate income tax rate than Canada at 30 percent and 28 percent respectively.

On the other hand, the effective tax rate on capital for German and Swedish investment in Canada declines by shifting debt to Canada. Canada has about the same inflation rate as those two countries but a somewhat higher corporate income tax rate in 2008.

For outbound investments from Canada, the effective tax rate on capital declines when debt is shifted to the subsidiary operating in the host country except for Ireland. With respect to the latter, the corporate income tax is only 12.5 percent compared to Canada's 31.7 percent so that debt shifted to Ireland raises the effective tax rate on capital in Ireland since the tax savings from debt deductions in Ireland are less than if debt were issued in Canada (even though inflation in Ireland is higher than in Canada). If Canada reduces its corporate income tax rate as planned to 27 percent by 2012, there will be less incentive for Canadian companies to finance subsidiary investments with debt in Canada.

In Table 2B, we examine the case when third-party debt is pushed to a much higher level increasing the debt ratio in the subsidiary to 80 percent (with no debt held by the parent in the subsidiary). Not surprisingly, effective tax rates sharply decline, indicating the importance of overall leverage in lowering corporate tax costs for host country investments.

Table 2A

**Effective Tax Rate on Cross-Border Investment (2008) (percent):
No debt in parent and 55-percent debt in subsidiary with no interest restrictions**

Subsidiary	Parent							
	Australia	Canada	Germany	Sweden	United Kingdom		United States	
					Excess Credit	Deficient Credit	Excess Credit	Deficient Credit
Brazil	28.9	29.0	29.0	29.1	28.9	25.5	28.9	30.7
Canada	24.2	24.4	24.3	24.4	24.2	25.0	24.2	29.1
China	43.5	42.3	42.3	42.2	42.8	45.7	42.8	47.8
France	33.6	31.2	30.2	30.3	30.1	28.5	31.3	33.2
Ireland	9.4	9.5	9.5	9.5	9.4	20.5	9.4	25.3
United Kingdom	21.9	22.0	22.0	22.0	21.8	21.8	21.8	26.9
United States	24.6	24.9	24.8	24.9	24.6	22.2	24.6	24.6

Table 2B

**Effective Tax Rate on Cross-Border Investment (2008) (percent):
No debt in parent and 80-percent debt in subsidiary with no interest restrictions**

Subsidiary	Parent							
	Australia	Canada	Germany	Sweden	United Kingdom		United States	
					Excess Credit	Deficient Credit	Excess Credit	Deficient Credit
Brazil	9.7	9.9	9.9	10.0	9.6	5.0	9.6	12.1
Canada	12.8	13.0	13.0	13.0	12.8	13.8	12.8	18.5
China	34.8	34.2	34.2	34.2	34.4	37.8	34.4	40.2
France	20.6	19.3	18.8	18.8	18.6	16.7	19.3	21.5
Ireland	3.1	3.2	3.2	3.3	3.1	15.0	3.1	20.1
United Kingdom	9.0	9.2	9.2	9.3	9.0	9.0	9.0	15.1
United States	5.1	5.5	5.4	5.5	5.0	2.0	5.0	5.0

7. Interest restrictions: inbound investment

Many countries have some form of interest expense limitations applied to inbound capital (see Appendix C). Canada, for example, applies a thin capitalization rule whereby interest expense in excess of two times equity is disallowed as a deduction as defined for equity and debt held by related parties in a Canadian subsidiary. Australia also limits interest deductions to no more than 75 percent of domestic assets, applied to both related and third-party debt (Australia enables a larger deduction if they satisfy a commercial test or worldwide allocation test). The United Kingdom uses only a commercial test to determine whether interest expense is deductible in the United Kingdom. Earnings stripping rules have been introduced in the United States and Germany, for example, which limit deductions to a percentage of earnings before the deduction of interest, taxes, depreciation, and amortization (EBITDA). The U.S. rule that allows interest to be deducted in an amount not in excess of 50 percent of EBITDA also includes a safe harbour in that the rule does not apply when debt is no more than 1.5 times equity.

Given these rules, the thin capitalization rules only apply in high leverage circumstances (at least 60 percent or more). Thus, the base case that we have begun with in Table 1 would not be affected by these thin capitalization rules. Instead, we take Table 2B as the base for analysis (80-percent debt in the host country if unconstrained) and examine the impact of the rules on inbound investment if they effectively apply.

Table 3 below provides an analysis of the impact of the various thin capitalization rules on the effective tax rate on capital for inbound investment. For France and Canada, we assume that most companies tend to avoid the restriction and limit their debt financing rather than take on more leverage than that permitted for tax purposes under the thin capitalization rule. However, the interest limitation applies to related-party debt only and, in the case of Canada, does not apply to guaranteed debt.

More interesting is the application of the earnings stripping rule in the United States. The effective tax rate on capital is negative at -41.4 percent when inbound investment is affected by the earnings stripping rule. This result may sound counter-intuitive since one would expect a company with more than 60-percent debt financing of assets would face higher interest costs because the debt interest in excess of 50 percent of EBITDA (the safe harbour).

The earnings stripping rule reduces the corporate income tax rate by one-half (in the U.S. case) on the cash flows generated by investment before the deduction of depreciation and amortization. Most importantly, the earnings stripping rule based on EBITDA provides greater benefits to those businesses with large cash flows measured before the deduction of depreciation and amortization. As the firm invests in more depreciable capital, it loses debt interest deductions but shelters its EBITDA partially from tax, especially providing a greater benefit to companies with highly depreciable capital. Effectively, the tax value of depreciation deductions is based on the full corporate income tax rate even though the income from investments is taxed at half the rate.

Table 3
Effective Tax Rate on Cross-Border Investment (2008) (percent):
No debt in parent with interest restrictions in source country¹

Subsidiary	Parent							
	Australia	Canada	Germany	Sweden	United Kingdom		United States	
					Excess Credit	Deficient Credit	Excess Credit	Deficient Credit
Brazil	9.7	9.9	9.9	10.0	9.6	5.0	9.6	12.1
Canada²	19.1	19.3	19.3	19.3	19.0	19.9	19.1	24.3
China	34.8	34.2	34.2	34.2	34.4	37.8	34.4	40.2
France²	31.3	29.0	28.1	28.1	27.9	26.3	29.1	31.0
Ireland	3.1	3.2	3.2	3.3	3.1	15.0	3.1	20.1
United Kingdom	9.0	9.2	9.2	9.3	9.0	NA	9.0	15.1
United States³	-41.4	-40.7	-40.76	-40.5	-41.62	NA	NA	NA

- Notes:**
1. Assumes 80-percent debt in unconstrained case — interest limitations will reduce debt financing for the United Kingdom, the United States and Canada.
 2. Canada and France impose a thin capitalization rule with a restrictive debt-to-equity ratio at 2 to 1 and 1.5 to 1 respectively. Therefore, by assuming an 80-percent debt-to-asset ratio for this simulation, subsidiaries in these two host countries that do not meet the thin capitalization rule face higher financing costs for non-interest deductibility at margin. Among the other five countries, Brazil does not impose any restriction on interest deductions. China has not yet specified its thin capitalization rule. Ireland disallows only “unlawful” interest payment (e.g., distributional payment and borrowing solely for reducing tax payment). The thin capitalization rule in the United Kingdom applies only in the case for borrowing among related parties.
 3. This simulation is for the 50-percent U.S. earnings stripping rule.

Thus, the earnings stripping rule increases the effective tax rate when interest expenses are limited but reduces the effective tax rate since EBITDA is taxed less. It is a matter of determining which impact is more important but the reduced tax on earnings is bigger when capital is more depreciable.

In our estimates, the effective tax rate on capital becomes highly negative for machinery investments while positive for inventories, land, and structures under the U.S. earnings stripping rule.

If the earnings stripping rule were based on earnings after the deduction of depreciation and amortization (EBIT rather than EBITDA), the effective tax rate on capital in the presence of the earnings stripping rule would be much higher at 32 percent. Using EBIT instead of an EBITDA results in the tax value of depreciation deductions being based on the corporate income tax rate adjusted for the inclusion rate for interest deductions (see Appendix A for the proof), thereby increasing the effective tax rate on capital.

8. Interest restrictions: outbound investment

On outbound investment, some countries require multinationals to allocate interest expense according to the distribution of investments made domestically and abroad. Australia uses this as an additional test to its thin capitalization approach for inbound and outbound investments while the United States uses this approach in general. We specifically model the U.S. rule that would apply even in the situation when debt financing is typical as used in our base case (Table 1).

The United States currently uses the “water’s-edge” approach, which allocates U.S.-source interest expense by the degree to which net foreign assets (foreign assets net of foreign debt) are a share of domestic and net foreign assets. The United States has also considered the possible adoption of a worldwide asset allocation approach (similar to Australia’s test) that would distribute interest expense according to the ratio of foreign assets to worldwide assets (the difference in the approaches primarily arising from the use of total rather than net foreign assets for distributing interest expense).

The effect of the interest allocation rule depends on whether a U.S. company pays tax on remitted foreign income or not. If a U.S. company is in a deficient tax credit position (meaning that a multinational, when repatriating income from abroad, will pay more U.S. tax on foreign income than foreign tax credits), the interest allocation rule has no impact on the company. Any interest allocated to foreign income increases U.S. tax paid on domestic income but this is fully offset by a reduction in U.S. tax paid on foreign earnings remitted to the parent. However, if the U.S. parent is in an excess credit position (more foreign tax paid than U.S. tax on foreign earnings), the allocation of interest to foreign earnings increases tax on domestic income but with no reduction in U.S. tax paid on foreign income.

The effect of the interest allocation rule when no U.S. tax is paid on foreign earnings is to increase the effective tax rate on both domestic and foreign income as shown in Table 4.¹¹ For example, the effective tax rate on U.S. foreign investment in Canada increases from 17 percent to 37.7 percent since any incremental foreign investment results in a loss of interest expense deductions taken domestically. More important, the effective tax rate on U.S. domestic investment sharply increases from 24.6 percent to 50.8 percent since a portion of the financing costs associated with parent investments at home are disallowed as a deduction as they are allocated to foreign earnings.¹²

11 We use the Altshuler and Mintz (1995) estimate that 29 percent of interest is allocated to foreign earnings.

12 In Table 4, the effective tax rate on domestic investments in the United States is estimated to be 24.6 percent (36 percent) based on a 55-percent (40-percent) debt financing to ensure comparability of leverage for inbound foreign-controlled investments that are financed by debt issued by either the subsidiary or indirectly through the parent. However, the effective tax rate on domestic investments for a U.S. multinational assumes a 40-percent debt-to-assets ratio for domestic investments with the interest allocation rule. If we take a 55-percent debt-to-assets ratio for domestic investments, the effective tax rate on capital would be 50.3 percent under the interest allocation rule, fairly close to the 40-percent debt financing assumption. With higher leverage assumed for domestic investments, the effective tax rate would normally be reduced with greater interest expense deductions but the higher leverage would result in more interest allocated to foreign investment, thereby increasing the effective tax rate. For these reasons, the effective tax rate on capital does not change much if we change the indebtedness assumption since one impact offsets the other in these calculations.

Table 4
Effective Tax Rate on Cross-Border Investment by U.S. Parent Companies (2008) (percent)

Subsidiary	U.S. Parent Company			
	Base Case (Table 1)		Excess Credit with Interest Allocation	
	Case 1: Excess Credit	Case 2: Deficient Credit	Case 3: Water-edge Formula	Case 4: Worldwide Allocation Formula
Brazil	30.3	32.1	44.6	46.3
Canada	17.0	22.5	35.6	37.7
China	39.8	45.0	50.1	51.4
France	26.7	28.7	42.7	44.5
Ireland	-8.2	12.2	16.7	19.5
United Kingdom	15.8	21.4	34.3	36.5
United States	24.6	24.6	50.8	50.8

With worldwide allocation, the effect of interest allocation is similar when the U.S. multinational pays no U.S. tax on foreign earnings, given our assumption that foreign assets are less debt financed than U.S. domestic investments. It is possible that worldwide allocation would have no impact on foreign or domestic U.S. effective tax rates if foreign assets are financed similarly or more by debt than domestic assets.

The above results demonstrate that interest allocation methods in the presence of exempt foreign income could have a large impact on both foreign and domestic investments made by a multinational company.

9. Conduit financing

As discussed above, multinationals are able to create certain tax-efficient financing structures that reduce the effective tax rate on capital for foreign investments.¹³ These structures enable companies to “self-arbitrage” whereby they can deduct interest expense twice for the same foreign investment (double-dip interest deductions). The importance of double-dip interest expense deductions depends on prevailing withholding tax rates, corporate income tax rates, and the application of passive controlled foreign corporations or CFC rules.

Conduit financing arrangements are quite prevalent even for countries that tax repatriated foreign earnings. For example, U.S. companies are able to create tax-efficient financing structures without the use of a third country by taking advantage of the “check-the-box” rules that enable a U.S. company to characterize an affiliate as any form of business such as corporation, limited liability company, or partnership. Double-dip interest deductions are created by establishing a conduit that is a partnership for U.S. tax purposes but a corporation under foreign tax law (see the “tower structure” in Finance (2007) as an example). These double-dip arrangements provide tax relief for U.S. international investments when the U.S. parent is in an excess credit position.

In Tables 5A to 5D, we provide estimates of effective tax rates on capital for multinationals of different residence countries using conduit financing structures established in Barbados, Hong Kong, the Netherlands, and Switzerland. Hong Kong is typically used as conduit for investments in China, in part facilitated by the absence of withholding tax applied in Hong Kong on income paid to non-residents (Hong Kong also applies tax on a source basis resulting in the exemption of foreign source income except for banking institutions). The Netherlands and Switzerland are more commonly used for worldwide investments,¹⁴ facilitated by group financing regimes and, in the case of Switzerland, taxation of foreign income only at the federal level results in a low corporate tax rate of 7.8 percent.

It is possible that the application of CFC income rules and other tax provisions result in these structures providing no tax relief (so that some results in Tables 5A to 5D would not apply). For example, Germany has rules that make conduit financing more difficult to achieve since income paid from tax haven jurisdictions is subject to German tax. Similarly, Canada has legislation to curtail double-dip financing arrangements after 2009 by disallowing interest deductions taken in Canada traced to such investments (although it will be possible to avoid such tracing). Brazil applies a 25-percent withholding tax on interest paid to a Barbados subsidiary as part of its anti-tax haven regime.

As Tables 5A to 5D illustrate, effective tax rates on capital are sharply reduced if a multinational parent is able to achieve tax-efficient financing structures through conduits, assuming that such tax-efficient structures are not curtailed by CFC and other provisions used in some countries. This can be seen by comparing effective tax rates in host countries in these tables to Table 1.

13 For further elaboration see Mintz (2004), Mintz and Weichenrieder (2008), and OECD (2007).

14 Mintz and Weichenrieder (2008) find that the Netherlands and Switzerland have been common conduit countries for both inbound and outbound German investments. Swiss conduits have become less frequently used by German companies when higher withholding taxes were applied to interest paid to Swiss residents following recent European Union policies to curb tax competition.

Table 5A
Effective Tax Rate on Cross-Border Investment (2008) (percent):
Conduit Financing through Barbados

Subsidiary	Parent					
	Australia	Canada	Germany	Sweden	U.K. Excess Credit	U.S. Excess Credit
Brazil	20.1	21.1	24.0	25.4	21.7	6.7
Canada	10.7	24.4	15.4	16.6	12.1	-2.3
China	36.2	34.6	36.5	37.0	35.8	27.6
France	26.1	22.4	23.2	24.3	20.3	10.7
Ireland	-22.9	-20.7	-15.8	-13.5	-20.4	-45.7
United Kingdom	6.3	7.9	11.3	12.8	21.8	-9.0
United States	16.3	17.6	20.7	22.0	17.8	24.6

Table 5B
Effective Tax Rate on Cross-Border Investment (2008) (percent):
Conduit Financing through Hong Kong

Subsidiary	Parent					
	Australia	Canada	Germany	Sweden	U.K. Excess Credit	U.S. Excess Credit
Brazil	19.2	20.2	23.2	24.6	20.8	5.4
Canada	10.0	24.4	14.7	15.9	11.4	-3.3
China	35.7	34.1	36.1	36.6	35.3	27.0
France	25.6	21.8	22.7	23.7	19.7	9.9
Ireland	-24.4	-22.0	-17.1	-14.7	-21.8	-47.7
United Kingdom	5.4	7.0	10.5	12.0	21.8	-10.3
United States	15.4	16.8	19.9	21.3	17.0	24.6

For example, Chinese effective tax rates on capital drop by almost one-quarter when Hong Kong is used as a conduit compared to the base case (the non-refundable VAT plays an important role here). The most dramatic example is Ireland as a host country for foreign investment. Double-dip interest deductions result in negative effective tax rates on capital.

Of course, in some cases, thin capitalization and interest allocation rules could undermine tax efficiency achieved by conduit arrangements. Given the debt financing assumptions used in Tables 5A to 5D, however, most of these rules would not apply to the conduit financing arrangements illustrated in these tables.

In some cases, the dividend withholding tax paid by the conduit reduces tax benefits from conduit financing arrangements. With the Netherlands and Switzerland treaties with Australia, a withholding tax rate of 15 percent is applied, resulting in somewhat higher effective tax rates on capital.

Table 5C
Effective Tax Rate on Cross-Border Investment (2008) (percent):
Conduit Financing through the Netherlands

Subsidiary	Parent					
	Australia	Canada	Germany	Sweden	U.K. Excess Credit	U.S. Excess Credit
Brazil	27.7	23.1	23.2	24.6	20.8	9.6
Canada	16.8	24.4	14.7	15.9	11.4	-0.1
China	40.1	35.7	36.1	36.6	35.3	28.9
France	30.7	23.8	22.7	23.7	19.7	12.5
Ireland	-11.2	-17.6	-17.1	-14.7	-21.8	-41.1
United Kingdom	14.2	9.9	10.5	12.0	21.8	-6.0
United States	23.2	19.4	19.9	21.3	17.0	24.6

Table 5D
Effective Tax Rate on Cross-Border Investment (2008) (percent):
Conduit Financing through Switzerland

Subsidiary	Parent					
	Australia	Canada	Germany	Sweden	U.K. Excess Credit	U.S. Excess Credit
Brazil	27.7	20.2	23.2	24.6	20.8	9.6
Canada	16.8	24.4	14.7	15.9	11.4	-0.1
China	40.1	34.1	36.1	36.6	35.3	28.9
France	30.7	21.8	22.7	23.7	19.7	12.5
Ireland	-11.2	-22.0	-17.1	-14.7	-21.8	-41.1
United Kingdom	14.2	7.0	10.5	12.0	21.8	-6.0
United States	23.2	16.8	19.9	21.3	17.0	24.6

With respect to Canada as a host country, Canadian companies face higher effective tax rates on capital when foreign-controlled multinationals are able to take advantage of double-dip interest deductions to finance capital invested in Canada with the most significant advantage given to U.S. companies.¹⁵

As a capital exporter, capital allocation decisions are affected in two ways for Canada: (i) the decision to invest at home rather than abroad, and (ii) the ability to compete in foreign jurisdictions that shifts economic income to Canada.

Effective tax rates on capital invested abroad by Canadian multinationals drop below the effective tax rate on domestic investments in Canada for most host countries except China (given the non-refundable VAT applied to machinery in China). Thus, conduit financing

¹⁵ Note that both the Canadian-controlled and foreign-controlled investments in Canada are 55 percent financed by debt, taking into account both direct and indirect debt financing.

arrangements create a bias toward investing in other countries. However, given further reductions in corporate tax rates in Canada by 2012 (lowering the domestic effective tax rate from 24.4 percent to less than 20 percent at a 55-percent debt-asset ratio), only investments in Ireland and the United Kingdom would continue to have a significant advantage due to double-dip interest deductions available to Canadian companies.

When investing in foreign countries, Canadian multinationals have a similar advantage as other multinationals using conduit financing arrangements except for U.S. multinationals which have the lowest effective tax rates on capital when investing abroad. The case of double-dip interest financing deduction is similar to the base case — U.S. companies financing foreign investments with debt raised in the United States are able to achieve a lower cost of funds given the higher corporate tax savings in the United States when interest deductions are taken there.

Conduit financing arrangements that result in double-dip deductions create significant tax benefits to multinationals when making foreign investments. The effects of conduit financing on economic efficiency are ambiguous from a country's perspective.

- Double-dipping could reduce the inter-temporal distortion arising from taxing highly mobile capital, thereby improving efficiency. However, negative rates imply that too much investment is undertaken.
- With respect to inbound investment, conduit financing arrangements give an advantage to foreign companies investing in the host country and therefore distort capital market decisions by giving tax advantages to some companies that are not necessarily the most economically efficient enterprises to operate in an industry. This reduces economic efficiency since some investments may be undertaken by those in better position to take advantage of tax avoidance than those most able to run the operation.
- Conduit financing gives an advantage to home-based multinationals to invest abroad as opposed to investing at home, thereby reducing economic efficiency from the capital-exporter country's perspective. A neutral tax regime would result in similar taxes on domestic and foreign investments by multinationals.
- To the extent other countries permit their multinationals to take advantage of tax benefits arising from conduit financing, multinationals are able to invest more easily abroad or acquire assets in bidding wars. This could allow the home country to derive greater rents from foreign operations and potentially increase wages for home-country workers, thereby improving economic efficiency.

The planned reductions in corporate tax rates from about 32 percent in 2008 to 27 percent in 2012 will help in reducing some of the distortions facing Canada's investment markets arising from conduit financing arrangements. Corporate tax reductions reduce the inter-temporal distortion arising from the taxation of capital and create a better level-playing field between domestic and foreign investments made by Canadian multinationals. They also help reduce any advantage that foreign companies might have in investing in Canada since the tax benefits from double-dip interest deductions are reduced. Overall, however, significant distortions remain even when corporate income tax rates are further reduced as planned.

10. Conclusions

This paper examines in detail the application of international corporate taxation to cross-border investments taking into account financial decisions, interest limitation rules, and conduit financing arrangements.

Overall, our conclusion is that corporate taxes highly distort investment decisions made by businesses at the international level. It is difficult for any country to create a level-playing field for cross-border and domestic investment decisions given that it cannot control what other countries do. Certainly, reductions in corporate income tax rates help reduce distortions although significant efficiency losses remain as a result of the non-neutral taxation of various cross-border and domestic investments.

From the perspectives given here, we can see that some rules could have much bigger impacts on investments than others. For example, earnings stripping rules limiting interest expense as a proportion of earnings before the deduction of depreciation and interest can result in a surprisingly low or negative effective tax rate on capital investments. A rule based on earnings before the deduction of interest would be more sensible in comparison.

On the other hand, interest allocation rules could sharply increase effective tax rates on both domestic and foreign investments made by home-based multinationals when foreign source income is exempt from taxation. Such rules should be avoided since they may do more harm than good.

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Appendix A — Technical appendix

The derivation of the effective tax rates on capital in the presence of interest deductibility restrictions as well as crediting is based on a theoretical methodology described in this technical appendix.

To begin, we focus on financial costs for capital investments, leaving depreciation and amortization costs to be incorporated later (which is straightforward to do). Various assumptions are used in all models:

- Multinationals invest in capital in home and foreign jurisdictions to produce output under conditions of diminishing returns to ensure an optimal choice of investment in each country.
- Multinationals finance investments in affiliates with equity transfers (and affiliates are 100 percent owned by the parent). Affiliates raise debt financing from third or related parties at an interest cost similar to other companies operating in the host country.
- Multinationals finance investments in the home country and transfers to affiliates with either debt or equity. The annual imputed cost of equity finance is denoted as ρ , which is equal to the home-country interest rate, i , adjusted for personal taxes so that shareholders and bondholders receive the same after-tax return on equity and bond securities. Letting m be the personal income tax rate on bond interest and t the weighted average of the accrual-equivalent capital gains tax rate and dividend tax rate with the weights depending on the dividend payout ratio of the company (tax rates are assumed to hold for the typical G7 investor). This implies that $\rho = i(1-m)/(1-t)$ for capital market equilibrium.
- Companies are assumed to face differing inflation rates across jurisdictions, which therefore leads to different interest rates across countries as a result of purchasing power parity conditions. Let i^* be interest rate in the host jurisdiction and π and π^* be the inflation rates in the home and host countries. Under purchasing power parity, nominal interest rates, net of inflation, would be the same across all countries, therefore implying that $i - \pi = i^* - \pi^*$.
- Companies finance capital assets with a fixed debt-asset ratio. In principle, businesses trade off the non-tax cost of third-party debt financing (such as bankruptcy costs) with the tax benefits of interest deductions. To simplify modeling, it is assumed that parent and affiliates each have a fixed debt-asset ratio for financing capital (see Mintz (1995) for further elaboration).
- A withholding tax rate applies to any dividends received from abroad. Any capital gains from the sale of shares in affiliates are assumed to be taxed at a differential rate, which is the accrual-equivalent capital gains tax rate. Let x be the weighted average of the withholding tax rates on dividends and capital gains. Any withholding taxes on interest paid to third-party debt holders are assumed to be embedded in the interest rate.

Exempt Dividends and the Absence of Interest Cost Restrictions: Multinationals, when operating from exempt countries, will pay corporate income tax in foreign jurisdictions and distribute profits as exempt dividends to the parent.

For a parent investing in the home and host country, the inflation-adjusted cost of financing (r_f and r_f^* respectively) is equal to

$$(1.1) \quad r_f = \gamma [i(1 - U) + (1 - \gamma)\rho] - \pi = R_f - \pi$$

$$(1.2) \quad r_f^* = (1 - \gamma^*) R_f / (1 - x) + \gamma^* [i^*(1 - U^*) - \pi^* + \pi] - \pi$$

with U = the statutory corporate income tax rate in home country, γ and γ^* are the ratios of debt raised in home and host countries respectively to total capital, x = withholding tax rate in host country, U^* = statutory corporate income tax rate in host country, π = inflation rate in home country, and π^* = inflation rate in host country. That is, the cost of financing to a foreign investor is the weighted average of costs of its investment fund taken from home country and the debt raised abroad. The former is the weighted average cost of financing at home net of withholding tax payable in host country, and the latter is the cost of debt in host country adjusted by income tax deductibility and difference in inflation rate between home and host countries.

Exempt Dividends with Conduit Financing: With conduit financing, a parent company is able to finance its investment in a host country by routing income through a conduit by which income is subject to little or no tax. Mintz and Weichenrieder (2008) derive conditions needed for conduits to be created, which will depend on the application of passive income tax rules by the home country, withholding tax rates and the taxation of interest, dividends, and capital gains. The key point is that a conduit enables a company to deduct nominal interest expense twice for investments in the host country with indirect financing structures. As derived by Mintz (2004), the cost of financing in the host country is not only deductible at the rate U^* but also a second time at the rate U . However, the second deduction is reduced by withholding tax on interest paid to the conduit, passive income taxation by the home country or tax on dividends and capital gains paid by the conduit to the parent. Let V be the tax-back that reduces the value of the second deduction.

With conduit financing, the costs of financing r_f and r_f^* for home and host investments respectively are the following:

$$(2.1) \quad r_f = \gamma i [(1 - U) + (1 - \gamma)\rho] - \pi = R_f - \pi$$

$$(2.2) \quad r_f^* = (1 - \gamma^*) R_f / (1 - x) + \gamma^* [i^*(1 - U^* + V - U) - \pi^* + \pi] - \pi$$

Exempt Dividends with Interest Cost Restrictions (thin capitalization in host country): Several different types of thin capitalization rules could apply but we focus on of the most interesting one. The first is a limitation on interest deductions when debt as ratio of equity held by related party non-residents is in excess of an allowable debt-to-equity ratio. The second is when debt is greater than a portion of domestic assets invested in the host country.

In principle, debt plus equity equals assets so the exact formulation of the debt restriction in this sense is not relevant. What matters most is whether the restriction applies to related party or both related and third-party financing — the latter likely having a more significant impact in that all debt is included.

With interest cost restrictions in the form of a limit on interest deductibility according to a specific debt-to-equity ratio, a corporation may not be able to write off the full value of interest deduction in the host country, although the rule depends on what debt is included for the limitation (general debt or debt owing to a related non-resident and resident party). Assume that γ^* is the optimal ratio of debt-to-assets that is more than the allowable debt-asset ratio in the host country. If a company chooses more debt than the allowable amount, interest expense on marginal sources of debt finance are not deductible. Regardless of the specific limitation, the theoretical cost of finance in the host country in this case would be the following for any disallowed debt used to finance marginal investments:

$$(3.1) \quad rf^* = (1 - \gamma^*) Rf / (1 - x) + \gamma^* [i^* - \pi^* + \pi] - \pi$$

However, we might think most companies would constrain their debt to the allowable amount since the loss of tax benefits in issuing debt might make debt financing above the maximum ratio permitted for tax purposes too costly to issue due to bankruptcy or agency costs. If the allowable tax ratio constrains the optimal debt issue, debt issuance is $B^* = \varphi K^*$ where φ is the allowable debt-to-asset ratio for determining tax deductions. In this case, additional investment in capital stock increases the cost of finance. The cost of finance in this case is the following:

$$(3.2) \quad rf^* = (1 - \varphi^*) Rf / (1 - x) + \varphi^* [i^*(1 - U^*) - \pi^* + \pi] - \pi$$

with φ^* being the allowable debt-to-equity ratio in the host country. Clearly if the company desires less debt then the cost of finance is no different than the regular cost of finance.

The conduit case immediately follows from the above with a limitation on interest expense by the host country. Equations for conduit financing with a limitation on interest expense, corresponding to equations (3.1) and (3.2) are the following:

$$(4.1) \quad rf^* = (1 - \gamma^*) Rf / (1 - x) + \gamma^* [i^*(1 + V - U) - \pi^* + \pi] - \pi$$

$$(4.2) \quad rf^* = (1 - \varphi^*) Rf / (1 - x) + \varphi^* [i^*(1 - U^* + V - U) - \pi^* + \pi] - \pi$$

Given that the debt financing ratios used in the main text are less than the thresholds for the application of thin capitalization rules, equations (4.1) and (4.2) are generally not required in estimates.

Exempt Dividends with Interest Cost Restrictions (earnings stripping in host country): With earnings stripping rules, interest deductions are limited to a share of earnings (typically before the deduction of depreciation, interest and taxes although this need not be the case). We ignore depreciation at this point (see below).

Let $F[k^*]$ be earnings of the subsidiary in the host country and ζ be the percentage of earnings that allows the degree to which interest expense may be deducted as a share of earnings in the host country. Thus, $i^* \gamma^* k^* \leq \zeta F[k^*]$.

Profits earned by the multinational in the host country would be the following:

$$Y^* = (1 - U^*) F[k^*] - (i^* - \pi^* + \pi) \gamma^* k^* + U^* \zeta F^*[k^*] - R_f k^* (1 - \gamma^*) / (1 - x) - \pi.$$

The choice of k^* yields the following user cost of capital, adjusted for taxes:

$$(5) \quad F'[k^*] = \{\gamma^* (i^* - \pi^* + \pi) + (1 - \gamma^*) R_f / (1 - x) - \pi\} / (1 - U(1 - \zeta))$$

If conduit financing is introduced, the cost of finance would be adjusted accordingly as with equations (4.1) and (4.2).

The case of depreciation (which is developed in more detail below) results in an effective tax rate on capital incorporating both economic and tax depreciation terms. Let δ be the economic depreciation rate on capital (declining balance rate). Let U^*A^* be the present value of tax savings from annual capital cost allowances. $A^* = \alpha^* / (\alpha^* + R_f^*)$ is the present value of the stream of annual capital cost allowances at the rate α discounted by the nominal interest rate, R_f^* , in the host country that reduces the effective purchase cost of capital investments. Under an earnings stripping rule that disallows interest expense in excess of a share of earnings before the deduction of interest expense, $i^*B^* \leq \zeta f[k^*]$, implying a user cost of capital as follows:

$$(5.a) \quad F'[k^*] = (\delta + r_f^*) (1 - U^*A^*) / (1 - U^*(1 - \zeta))$$

$$\text{with} \quad r_f^* = \gamma^* (i^* - \pi^* + \pi) + (1 - \gamma^*) R_f / (1 - x) - \pi.$$

If the earnings-stripping rule is based on earnings before the deduction of interest and taxes (and not depreciation), the cost of capital becomes:

$$(5.b) \quad F'[k^*] = (\delta + r_f^*) (1 - U^*(1 - \zeta) A^*) / (1 - U^*(1 - \zeta))$$

$$\text{with} \quad r_f^* = \gamma^* (i^* - \pi^* + \pi) + (1 - \gamma^*) R_f / (1 - x) - \pi.$$

Exempt Dividends with Interest Cost Restrictions (allocation by home country): When the home country imposes an allocation rule to limit interest deductions, interest deductions taken by the parent for foreign investments may be limited. The United States currently uses the water-edge formula as discussed in the text, which still applies as the general rule. Another test is the worldwide allocation formula which is to be applied in the United States although recently postponed. Some countries like Australia currently use the worldwide allocation method if the safe-harbour is too restrictive based on a percentage of assets.

Under the water-edge formula, interest expense incurred by the parent is allocated to foreign earnings according to the share of net foreign assets to domestic and net foreign assets (net foreign assets are net of debt financing). The allowable amount of interest (α) that can be deducted is therefore $\alpha = k / \{k + k^* (1 - \gamma^*)\}$. Earnings of the multinational from both foreign and domestic production are the following:

$$(6) \quad \Pi = Y + Y^*$$

with

$$Y = (1 - U) F[k] - i(1 - U\alpha)\gamma k - \rho(1 - \gamma)k - \pi.$$

$$Y^* = (1 - U^*) F[k^*] - [i^*(1 - U) - \pi^* + \pi] \gamma^* k^* - R_f k^* (1 - \gamma^*) / (1 - x) - \pi.$$

Choosing k and k^* yields the following user costs of capital after some manipulation:

$$(7.1) \quad F'[k] = \{\gamma i(1 - U\alpha^2) + (1 - \gamma)\rho - \pi\} / (1 - U)$$

$$(7.2) \quad F'[k^*] = \{\gamma^*(i^*(1 - U^*) - \pi^* + \pi) + (1 - \gamma^*)R_f/(1 - x) - \pi + U_i\gamma(1 - \gamma)\alpha^2\} / (1 - U^*)$$

Both domestic and foreign investments are affected by the water-edge limitation. The user cost of capital is affected domestically since any gearing will result in some denial of interest expense that is allocated to foreign income exempt from taxation. The foreign investment also causes more domestic interest expense to be allocated to foreign income. If the foreign income were taxed by the home country, then any allocated interest deductions would reduce home country tax and therefore have no impact so long as the tax rate on foreign income is the same as on domestic income. For further elaboration, see Altshuler and Mintz (1994).

If the worldwide allocation formula is used (with exempt earnings), then the amount of domestic interest that is deductible for tax purposes is the percentage $\alpha' = k/\{k+k^*\}$. The user costs of capital for domestic and foreign investments are the following:

$$(8.1) \quad F'[k] = \{\gamma i(1 - U\alpha'^2) + (1 - \gamma)\rho - \pi\} / (1 - U)$$

$$(8.2) \quad F'[k^*] = \{\gamma^*(i^*(1 - U^*) - \pi^* + \pi) + (1 - \gamma^*)R_f/(1 - x) - \pi + U_i\gamma\alpha'^2\} / (1 - U^*)$$

As in the previous cases, the inclusion of conduit financing and capital depreciation is straightforward.

Deferral and Tax Crediting: The analysis for modeling crediting is based on Leechor and Mintz (1993) for deferral taxation. If a UK or U.S. parent company credits corporate income and withholding taxes paid by affiliates against home tax liabilities owed on foreign source income, the company may be in an excess credit position when foreign taxes are greater than home tax liabilities or in a deficient tax credit position when the opposite holds. The United States provides for a global tax credit whereby foreign earnings and profits remitted from all sources (except passive income) are included in one basket. This enables a company to average high and low tax sources of income. Many U.S. and UK companies are in an excess credit position, which implies that they cannot fully use their foreign tax credits. This case is therefore little different than the exemption case.

It is assumed that the allocation method used to limit home deductions has no impact on the total taxes paid as companies reduce their home tax liabilities on foreign profits by the same amount as they face in domestic taxes when interest is allocated. Therefore, the deficient tax credit case is quite different in this respect.

Without repeating the complicated analysis provided in Leechor and Mintz (1993) and applied by Mintz and Tsiopoulos (1994), we will simply present the results.

Under the exemption system for dividends, the user cost of capital for a parent and subsidiary respectively, now accounting for depreciation of assets, is equal to the following:

$$(9.1) \quad F'[k] = (\delta + r_f)(1 - A) / (1 - U)$$

$$(9.2) \quad F'[k^*] = (\delta + r_f^*)(1 - A^*) / (1 - U^*)$$

with A and A^* equal to the present value of tax savings from capital cost allowances and investment tax credits provided by each country, δ being the economic rate of depreciation for fixed assets and r_f and r_f^* the inflation-adjusted weighted cost of finance (as above). We note that inclusion of conduit financing, thin capitalization, earnings stripping and allocation methods is straightforward in the above formula by adjusting the cost of finance to include penalty terms or the corporate tax rate in the case of the earnings stripping rule.

With the deficient tax credit case, foreign withholding taxes and the indirect tax credits for foreign corporate taxes are less than the home-country tax on dividend liabilities. The tax paid to the home country is the repatriation tax on dividends paid to the parent. Since the definition used by the home country to determine profits for tax purposes is different than that used by the host country, it can be shown that the repatriation tax on such dividends is endogenous to the subsidiary's capital and financing decisions.

Defining Y and Y^* as taxable income earned by the subsidiary as defined by the home and host countries respectively, the repatriation tax on dividends (σ) is equal to the following, with $U =$ being the home-country tax rate and DIV being dividends received by the parent:

$$\sigma = (U + x) DIV - FTC$$

with foreign tax credits (FTC) = $xDIV + U^*Y (DIV / (Y - U^* Y^*))$. Note that the indirect credit for foreign corporate income taxes will be based on a dividend payout ratio equal to dividends divided by taxable income as defined by the home country (which is not the same as that used by the host country). Letting d^* be the $(DIV / (Y - U^* Y^*))$ and A'' be the present value of tax depreciation allowances under the home-country law for the subsidiary and A^* be the present value of tax depreciation allowance under the host-country law, Leechor and Mintz show that the user cost of capital for the subsidiary is the following:

$$F'[k^*] = (\delta + r_f^*) (1 - A'') / (1 - U'')$$

$$\text{with } U'' = U^* + d^* \{U - U^* - \sigma(1 - U^*)\} / (1 - \sigma)$$

$$\text{and } A'' = U^* (1 - d^*) A^* + d^* (U - \sigma) A$$

$$r_f^* = (1 - \gamma) R_f + \gamma^* [i^*(1 - U^*) - \pi^* + \pi] - \pi$$

$$\sigma = (UY - U^* Y^*) d^*$$

$$\text{with } d^* = DIV / (Y - U^* Y^*)$$

For empirical application (based on Jog and Mintz (1989)), we estimate Y and Y^* as the gross return on capital less tax depreciation and interest expense per dollar of investment: $F[k^*]/k^* - \gamma^* i^* - v k^*(t)/k^*$ with taxable capital $k^*(t)/k^* = (\delta + g^*) / (g + v^* + \pi^*)$ with v = average tax depreciation rate (declining balance) for fixed assets (land, machinery and structures), and g^* = real growth in capital investment in the host country. Using the Canadian data, we estimate that the return on capital net of interest expense to be 14 percent and the nominal and real growth in capital stock to be five and three percent respectively.

Effective tax rate

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

$$(10) \quad t = (rG - rN) / rG$$

Aggregation

The effective tax rate for a given industry is the difference between the weighted average of gross-of-tax rate of return by asset type and the net-of-tax rate of return (which is the same across asset type within the industry) divided by the gross-of-tax rate of return on capital. That is, the marginal effective tax rate (METR) for industry i (t_i) is calculated as follows:

$$(11) \quad t_i = (\sum_j rG_{ij}w_{ij} - rN_i) / \sum_j rG_{ij}w_{ij}$$

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

Appendix B — Data appendix

The METR on capital investment by multinational companies in both residence and source countries is estimated for each of the six residence countries. For each of these six countries, a single METR is estimated for each case. Therefore, in our METR calculations, all industries excluding resource sectors (i.e., agriculture, forestry, mining, and oil and gas sectors) are combined into a single “national” industry.

Capital weights

The original data set of capital weights by industry and by asset type was provided by Finance Canada and is adopted in our Canadian METR model. Excluding agriculture and forestry from that dataset, we combined all the industries into a “national” capital structure that covers four major capital assets: structures, machinery and equipment (M&E), land, and inventory.

Economic depreciation rates

The economic depreciation rate by type of assets (i.e., structures and M&E) is the weighted average across industries and classes of depreciable assets based on the data provided by Finance Canada.

Debt-to-asset ratio

Various debt-to-asset ratios are assumed for purposes of simulation. For the base case, the debt-to-asset ratio is assumed to be 40 percent for a parent company and 25 percent for subsidiaries. As a result, the combined debt-to-asset ratio associated with the investment in a subsidiary is 55 percent ($= 40\% \times 75\% + 25\%$), which is also used for a parent company investing in its home country. A higher debt-to-asset ratio (i.e., 80 percent) is used to simulate situations where companies violate the interest restrictions prescribed in the tax laws.

Real interest rate

The real interest rate is assumed to be four percent.

Inflation rate

The CPI-based inflation rates by country for 2005-08 are gathered from the following data sources: the CPI data published by the IMF in its International Financial Statistics (2000-07), the 2008 forecast of the CPI-based inflation rate published in *The Economist* and the website of the Economic Intelligence Unit (EIU), and various national statistical sites. This data was compiled up to the end of June 2008.

The annual average inflation rate for 2005-08, by country, is then estimated based on the above data sources.

Table B1
General Parameters Applied in our METR Model

	Percent
Capital weights	
Structures	30.2
M&E	47.2
Land	7.6
Inventory	15.1
	100.0
Economic depreciation rate	
Structures	7.5
M&E	21.9
Debt-to-asset ratio for the multinational company	
In residence country	40
In source country	25
Real interest rate	4

Table B2
Country-specific Parameters Applied in our METR Model (percent)

	Company Income Tax	Turnover Tax	Capital Tax	Sales Tax	CCA – Structures	CCA – M&E	Inflation Rate
Australia ¹	30.0				NA	NA	3.0
Barbados ³	25.0				NA	NA	6.6
Brazil ²	34.0	2.35			4.1 SL	11.4 SL	4.96
Canada ^{1,2}	31.7		0.1	2.2	7.0 DB	37.6 DB	2.0
China ²	25.0			17.0	7.4 SL	13.6 SL	3.6
France ²	34.4	4.0			3.4 SL	25.3 DB	1.96
Germany ¹	31.0				NA	NA	2.1
Hong Kong ³	16.5				NA	NA	2.6
Ireland ²	12.5				2.6 SL	12.0 SL	3.9
Netherlands ³	25.5				NA	NA	1.8
Sweden ¹	28.0				NA	NA	1.8
Switzerland ³	18.5				NA	NA	1.2
United Kingdom ^{1,2}	28.0				2.8 SL	18.8 DB	3.3
United States ^{1,2}	38.6		0.05	3.0	7.2 DB	31.5 DB	3.3

NA = not applicable, DB = declining-balance method, SL = straight-line method

Notes: The annual capital cost allowance (CCA) rates are based on country chapters published by the International Bureau of Fiscal Documentation. In particular, the estimated CCA rates for the United States are based on the conversion from the United States MARCS system to the DB rates by industry and by assets type.

1. Residence country
2. Source country
3. Conduit country

Tax rates

Taxes considered in our calculation include company income tax (CIT), turnover tax, capital or assets-based taxes, and sales tax applied to capital goods. Statutory tax rates are obtained from the following sources published up to the end of June 2008: *Ernst & Young Corporate Tax Guide 2008*, country chapters published by the International Bureau for Fiscal Documentation, and *Tax Notes International*.

Where the statutory tax rate differs by industry (e.g., all taxes in Canada and the United States and the turnover tax in Brazil), a weighted average across industries is estimated.

Capital Cost Allowance (CCA)

CCA rates are adopted from our latest report prepared for the World Bank, of which the original data sources include country chapters published by the International Bureau of Fiscal Documentation and our reading of the latest statutory changes by country.

For the current study, CCA rates are combined, based on the corresponding capital weights by industry and by CCA class, into “national” CCA rates for structures and M&E respectively.

Withholding taxes

See Appendix C for details.

Appendix C — Review of main features in taxing FDI by country

This appendix provides a review of main features in taxing FDI among countries that are covered in our study. The information is mostly drawn from the country chapters published by the International Bureau for Fiscal Documentation, unless stated otherwise.¹⁶

The countries covered in this appendix are listed in Table C1 below:

Table C1
Countries Reviewed

Residence Countries	Conduit Countries	Source Countries
Canada	Barbados	United States
United States	Hong Kong	United Kingdom
United Kingdom	Netherlands	China
Germany	Switzerland	Ireland
Australia		France
Sweden		Brazil

The general tax rates affecting business taxation by country can be found in Appendix B. Tables C2 to C4 present the bilateral treatment of foreign source income in the aforementioned three categories of countries (i.e., residence, conduit, and source countries). Table C5 summarizes the withholding tax rates on outbound payment towards the six residence countries. Following these five tables is a brief description of the main tax features for each country.

As our study is focused on the tax impact on FDI, we assume all investments meet “participation” criteria for tax benefits wherever applicable.

¹⁶ For details on thin capitalization rules, see Ernst & Young LLP, *Thin Capitalization Regimes in Selected Countries*, report prepared for the Advisory Panel on Canada's System of International Taxation (May 2008).

Table C2
Bilateral Treatment of Foreign Source Income in the Six Residence Countries

	Residence Countries					
	Australia	Canada	Germany	Sweden	United Kingdom	United States
Domestic taxing rule	worldwide	worldwide	worldwide	worldwide	worldwide	worldwide
Relief method — general	credit	credit	credit	credit	credit	credit
Special relief — dividends	exempt (1)	exempt (2)	exempt (3)	exempt (4)	credit (5)	credit (6)
Relief for underlying tax	no	no	no	no	yes (10% V)	yes (10% V)
Per-class limitation	no	no	no	no	yes	basket limitation (6)
Per-country limitation	no	yes	yes	no	yes (5)	no
Excess credit carry-over	no	yes (2)	no	yes (4)	yes (5)	
Thin capitalization rules	D/A < 75%	D/A < ⅔	yes	no	no (5)	D/A < 60%
Passive (CFC) rules	yes	yes	yes	yes	no	yes
Tax on foreign income						
Interest	taxable	taxable	taxable	taxable	taxable	taxable
Dividends	taxable	taxable	exempt (3)	exempt (10% V)	taxable	taxable (6)
Capital gains	taxable	taxable	exempt (3)	exempt (10% V)	taxable	taxable
Royalties	taxable	taxable	taxable	taxable	taxable	taxable

D/A = debt-to-asset ratio, CFC = controlled foreign company, V = voting power

Special Rules:

- (1) Australia does not tax: (a) foreign business income and net capital gains derived from foreign permanent establishments carrying on an active business; and (b) non-portfolio dividends (with 10 percent or more voting power). Domestic losses may be used to offset foreign income and vice versa.
- (2) Within certain limits, a Canadian corporation may elect to increase its foreign-source taxable income in order to increase the portion of foreign taxes that qualifies for the foreign tax credit. Any amount added to income in this manner is treated as an ordinary loss for the year. The excess foreign non-business credit cannot be carried over to other years, but it may be claimed as a deduction in computing current year taxable income. The excess foreign business credit can be carried over on a per-country basis into three years back and seven years forward. The foreign business income tax credit must be deducted after the foreign non-business income tax credit. In lieu of the credit, the resident company may elect to deduct the foreign income tax from their total taxable income. Foreign taxes which do not qualify for the foreign tax credit are also deductible from total income.
- (3) Dividends from non-resident companies are generally exempt under domestic law with a lump sum of five percent of the dividends added back to the taxable income as non-deductible business expenses in Germany. Capital gains on shares in non-resident companies are treated similarly. That is only five percent of the dividends and capital gains are taxable. The treatment of inbound dividends employs both the exemption and credit methods. The exemption method is applied if the parent's holding is at least 10 percent of the subsidiary's capital.
- (4) Exemption is provided for eligible dividends received from abroad. In Sweden, any excess foreign tax credit may be carried forward for three years. In the case of dividends, credit relief is also given for foreign tax on the corporate income underlying the distribution if the resident company holds at least 10 percent of the voting power in the non-resident distributing company.
- (5) The United Kingdom allows companies to create a holding company that allows the parent to mix different sources of income to average tax rates for foreign tax credits. Any excess foreign tax credit may be carried back for one year and forward indefinitely. Statutory thin capitalization rules are not imposed although an arm's-length test applies to interest payable on all related party debt. There is no prescribed "safe harbour" level of debt, but the official non-binding guidance indicates that they would consider a debt-to-equity ratio of 1:1 and interest coverage ratio of 3:1.
- (6) For taxable years beginning after 31 December 2006, two separate FTC baskets are applicable in the United States, i.e., the passive category income basket and the general category income basket. Patent royalties, dividends, and interest generally fall in the passive category income basket subject to exceptions for: (1) items treated as high-taxed income, i.e., items subject (after deduction of related expenses) to foreign tax at a rate that exceeds the highest U.S. corporate income tax rate (currently 35 percent); (2) patent royalties received in an active trade or business from an unrelated party; (3) items received in a financial services business (i.e., an active banking, financing, insurance, or similar business); and (4) interest received from an export financing transaction. In these cases the patent royalties, dividends or interest will fall in the general category income basket. An indirect foreign tax credit may be claimed on dividends from foreign subsidiaries if a U.S. corporation meets the requirement of minimum levels of stock ownership.

Table C3
Bilateral Treatment of Foreign Source Income in the Four Conduit Jurisdictions

	Conduit Countries			
	Barbados	Hong Kong	Netherlands	Switzerland
Domestic taxing rule	worldwide	territorial	worldwide	worldwide
Relief method — general	credit	exempt	exempt	exempt/credit
Relief method — special	(7)	(8)	(9)	(10)
Relief for underlying tax	no	exempt	no	yes
Per-class limitation		NA	no	
Per-country limitation	yes	NA	yes	
Excess credit carryover	no	NA	no	
Thin capitalization rules	no	(8)	D/A < 75% + €500,000	
CFC rules		no	yes	no
Tax on foreign income				
Interest	taxable	NA	taxable	taxable
Dividends (condition)	exempt (10% K)	NA	exempt (5% K,V)	exempt (20% K)
Capital gains (condition)	taxable	NA	exempt (5% K,V)	exempt (20% K)
Royalties	taxable	NA	taxable	taxable

D/A = debt-to-asset ratio, CFC = controlled foreign company, K = capital, NA = not applicable, V = voting power

For other notes see Table C2.

Special Rules:

- (7) Barbados: The normal CIT rate is reduced substantially to 1-2.5 percent (from 25 percent) for international business companies established in the International Business and Financial Services Sector.
- (8) Hong Kong: Interest is deductible only if it is payable to a person carrying on a business in Hong Kong. Therefore, no deduction is allowed for interest paid by resident companies on borrowings from non-resident companies.
- (9) Netherlands: Patent royalties, dividends, and interest from foreign and domestic sources are included in computing taxable income. However, dividends, currency gains (or losses), and capital gains (and losses) on shares are fully exempt from corporate income tax if the participation exemption applies.
- (10) Switzerland: For unilateral relief, a method of "exemption with progression" applies. But under the treaty relief, the ordinary foreign tax credit method is adopted. With the latter, Swiss companies may credit one-third of the foreign tax against the federal income tax and the other two-thirds the cantonal and municipal taxes. Furthermore, the tax credit is only granted to the extent the income is taxable at the relevant tax level (federal vs. cantonal/municipal). If the income is not taxable at the federal level, one-third of the foreign withholding tax will not be credited against the federal tax (because no double taxation exists).

Table C4
Bilateral Treatment of Foreign Source Income in the Six Source Countries

	Source Countries					
	Brazil	China	France	Ireland	United Kingdom*	United States*
Domestic taxing rule	worldwide	worldwide	territorial	worldwide	worldwide	worldwide
Relief method — general	credit	credit	exempt	credit	credit	credit
Relief method — special	(11)	(12)	(13)	(14)	(5)	(6)
Relief for underlying tax	yes	yes (12)	(13)	yes (14)	yes (10% V)	yes (10% V)
Per-class limitation	no		NA	yes	yes	basket limitation (6)
Per-country limitation	yes	yes	NA	no	yes (5)	no
Excess credit carryover		yes (12)	NA	yes	yes (5)	yes
Thin capitalization rules	no	yes	D/A < 75%	no	no (5)	D/A < 60%

D/A = debt-to-asset ratio, CFC = controlled foreign company, NA = not applicable, V = voting power, * Reproduced from Table C2

Special Rules:

- (11) Brazil: For unilateral relief, the Brazilian tax liability included both company income tax and the social contribution. For resident legal entities, interest on net equity is also deductible with certain limits. However, interest on net equity paid to resident or non-resident beneficiaries is subject to a 15-percent withholding tax.
- (12) China: Excess credits can be carried forward for up to five years. For dividends received from foreign companies, a credit is available in respect of withholding tax paid on the dividends and for underlying tax on the corporate profits. At the current stage, there is no prescribed standard for restricting interest deductibility under the thin capitalization rule.
- (13) France: Dividends may qualify for participation exemption. Patent royalties, dividends, and interest derived by a resident company through a permanent establishment abroad are generally exempt in France, unless the controlled foreign company legislation applies.
- (14) Ireland: Credit for underlying tax is given under most treaties, but in the more recent treaties only if a minimum voting power test is met. No thin capitalization rule operates although debt in excess of 75 percent will be reviewed.

For other notes see Tables C2 and C3.

Table C5
Withholding Tax Rate Towards Six Residence Countries

Source/Conduit Countries	Residence Countries					
	Australia	Canada	Germany	Sweden	United Kingdom	United States
Withholding Tax on Interest						
Barbados	15	15T	15	5T	15T	5T
Brazil	15	15	15	15	15	15
China	10T	10T	10T	10T	10T	10T
France	10T	10T	0T	0T	0T	0T
Hong Kong	exempt	exempt	exempt	exempt	exempt	exempt
Ireland	0T	0T	0T	0T	0T	0T
Netherlands	10T	0T	0T	0T	0T	0T
Switzerland	10T	0T	0T	0T	0T	0T
United Kingdom	0/10T	10T	0T	0T	NA	0T
United States	0T	0T	0T	0T	0T	NA
Withholding Tax on Royalties						
Barbados	15	10T	15	5T	0T	5T
Brazil	15	15	15	15	15	15
China	10T	10T	10T	10T	10T	10T
France	10T	0T	0T	0T	0T	5T
Hong Kong	4.95	4.95	4.95	4.95	4.95	4.95
Ireland	10T	0T	0T	0T	0T	0T
Netherlands	exempt	exempt	exempt	exempt	exempt	exempt
Switzerland	exempt	exempt	exempt	exempt	exempt	exempt
United Kingdom	5T	0/10T	0T	0T	NA	0T
United States	5T	exempt	exempt	exempt	exempt	NA
Withholding Tax on Dividends						
Barbados	15	15T	15	5/15T	0T	5/15T
Brazil	0	0	0	0	0	0
China	15T	10/15T	10T	10T	10T	10T
France	15T	5/15T	0/15T	0/15T	0/5/15T	5/15T
Hong Kong	exempt	exempt	exempt	exempt	exempt	exempt
Ireland	exempt	exempt	exempt	exempt	exempt	exempt
Netherlands	15T	5/15T	0/15T	0/15T	0/15T	5/15T
Switzerland	15T	0/5T	0/15T	0/15T	0/5/15T	5/15T
United Kingdom	exempt	exempt	exempt	exempt	NA	exempt
United States	0/5/15T	0/5/15T	0/5/15T	0/5/15T	0/5/15T	NA
Withholding Tax on Capital Gains						
Barbados						
Brazil	0P	0P	0P	0P	0P	0P
China	10	10	10	10	10	10
France	0PE	0PE	0PE	0PE	0PE	0PE

T = treaty rate, P = portfolio income, PE = participation exemption (see the text for details)