

eJournal of Tax Research

Volume 4, Number 1 August 2006

CONTENTS

5

The International Income Taxation of Portfolio Debt in the Presence of Bi-Directional Capital Flows

Ewen McCann and Tim Edgar

25

Coming out of the Dark?
The Uncertainties that Remain in Respect of Part IVA: How Does Recent Tax Office Guidance Help?

Nicole Wilson-Rogers

61

The Case for Measuring Tax Gap

Jacqui McManus and Neil Warren

80

IT Adoption Strategies and their Application to e'filing Self-Assessment Tax Returns: The Case of the UK

Ann Hansford, Andrew Lymer and Catherine Pilkington

The International Income Taxation of Portfolio Debt in the Presence of Bi-Directional Capital Flows[†]

Ewen McCann* and Tim Edgar**

Abstract

A country's net flow of capital consists of simultaneously occurring imports and exports. Because a tax on the income from capital imports affects the quantity of capital exports and vice versa, tax policies toward inbound and outbound capital should be jointly formulated in order to avoid distorting these bi-directional flows and the local capital market more generally. For a small open economy, distortion-free local capital markets are shown to require, in the limited case of portfolio debt flows: (1) the taxation of income from capital imports by the importing country at the same rate as income of residents from locally invested capital; and (2) the exemption from net tax (that is, after any foreign tax credit) in the home country of the income of its residents from capital exports.

INTRODUCTION

A country is either a net importer or exporter of capital, although the decomposition of the capital flows will show that some residents export their savings at the same time as others are importing capital. In short, the disaggregated capital flows of a country are bi-directional at any instant or over any defined period. This paper considers the income tax regime for the capital imports and exports of a small open economy in a partial equilibrium framework. The focus is the bi-directional flow of portfolio debt capital, by which we mean a loan contract between parties whose relationship is arm's length in the sense that one party does not control the decisions of the other.¹

Simultaneous bi-directional flows of capital would occur in an open-economy setting without taxation when residents have different rates of time preference that are above and below the interest rate. Those residents whose rate of time preference exceeds the rate of interest would be borrowers, and those whose rate of time preference is below

[†] A first draft of the paper was prepared for the New Zealand "Tax Review 2001" (New Zealand Treasury), where member Srikanta Chatterjee's engagement with the ideas was appreciated. Andrea Black, Geoff Cuthell, Robin Oliver and the participants in the workshops of the New Zealand Inland Revenue Department, Policy Advice Division, provided useful discussion. Andrea Black and Paul Cooper initially raised the need for a coherent international tax model of bi-directional capital flows. An anonymous referee also provided several helpful suggestions.

* Latterly, the Principal Economist in the Policy Advice Division of the New Zealand Inland Revenue Department.

**Of the Faculty of Law, The University of Western Ontario, and a senior research fellow in the Taxation Law and Policy Research Institute at Monash University, Melbourne.

¹ The distinction between direct and portfolio investment is commonly defined in terms of the ownership of the voting securities of an entity. The bright-line conventionally used in the literature and by tax policy-makers as a proxy for control is a 10 percent or more ownership stake.

the rate of interest would be lenders. In an open-economy setting with competitive capital markets, a resident is just as likely to transact with a non-resident as with another resident.² Bi-directional international flows of homogeneous portfolio capital can occur when the world interest rate lies between disparate rates of time preference. Given this context, resident lenders and resident borrowers arbitrage between the local interest rate and the world interest rate, which are adjusted for the appropriate taxes. The actions of resident lenders and resident borrowers are thus linked by their arbitrage off private prices in the local capital market: that is, the local interest rate after taxes.

Perhaps somewhat surprisingly, the development of national policies toward the taxation of income from inbound and outbound capital flows does not reflect either the bi-directional nature of those flows or the interdependence of lenders and borrowers, both resident and non-resident, which arises from their participation in the same market. Taxes on capital imports or capital exports are usually developed and viewed as independent regimes, notwithstanding the private-price linkages and their simultaneity. This singular focus on either net inbound or net outbound capital flows is also reflected in the academic literature considering optimal tax policy in an open-economy setting.³ We attempt to illustrate the critical importance to the development of an international tax regime for a small open economy⁴ of the mutual consistency between capital import and capital export taxes. Policy for the taxation of capital imports should be developed with a view to policy for the taxation of capital exports and vice versa.

More particularly, the paper uses a partial equilibrium analysis to find that: (i) the return to inbound portfolio debt should be taxed consistently with the return to debt contracts between resident lenders and borrowers; and (ii) the return to outbound debt should be free of residence-country net tax (that is, after any foreign tax credit). The application of our results is restricted by our partial equilibrium approach to the market for portfolio debt capital. In treating our problem, Slemrod et al (1997) use a partial equilibrium approach, which is also used by Findlay (1986) and Bruce (1992) to analyze one-way net equity flows. A general equilibrium approach has been widely applied to one-way net direct investment, for example, by Gordon (1989), Gordon and Varian (1989) and by Feldstein and Hartman (1979). Some of these papers maximize national income, others optimize for a representative agent. Disparate rates of time preference preclude us from using a representative agent model, while the constrained maximization of national income does not provide policy conclusions to the problem treated by Slemrod et al, which we reexamine.

² In adopting this competitive assumption, we abstract from the issue of the tax-policy significance of an observed home-country bias of resident portfolio investors. Gordon and Hines (2002) survey briefly some of the literature documenting an apparent home-country bias of portfolio investors and the possible causes of this bias. Razin et al (1999) argue that optimal tax policy for portfolio debt in the presence of a home-country bias requires that a capital-importing country subsidize capital imports. The subsidy is intended to correct market failure and restore the cost of capital for resident borrowers of a small country to the world rate. See also Gordon and Bovenberg (1996) for a similar argument in the context of portfolio equity.

³ The one exception in the literature, of which we are aware, is Slemrod et al (1997). See part three, *infra*.

⁴ We adopt, for the purpose of the paper, the standard concept of a “small open economy” as one in which the interest rate is determined exogenously in the international market.

Part two of the paper begins with a brief background review of the standard policy prescriptions for international capital flows articulated in the literature. Part three provides the intuition for our results and relates them to those of Horst (1980) and Slemrod et al. It also highlights some important implementation issues that our policy prescription raises. Part four presents an illustrative numerical example and the formal derivations of our policy prescription for inbound and outbound portfolio debt flows. Part five concludes the paper.

As noted above, we limit our focus in this paper to bi-directional flows of portfolio debt capital. We have done so primarily because of the deduction/inclusion income tax treatment of interest expense and income, which is broadly consistent across countries. Although we believe that our framework can be extended to foreign portfolio equity, as well as foreign direct investment, subtle differences in the tax treatment of such investment across countries makes the exposition somewhat more complex. In short, the simple and standard treatment of portfolio debt capital makes the exposition of our framework and organizing principle somewhat easier in the first instance. We intend to explore in a future paper the possible explanatory power of our framework for bi-directional flows of portfolio equity and direct investment.

THE STANDARD POLICY PRESCRIPTIONS ASSOCIATED WITH CAPITAL-EXPORT NEUTRALITY AND CAPITAL-IMPORT NEUTRALITY

Country practice has developed a compromise jurisdictional division of the income tax base.⁵ Very broadly, this accepted division allocates the principal jurisdictional right to tax portfolio income to the country in which an investor is resident. Countries in which the income is considered to arise are granted a limited ability to impose gross withholding taxes on the income streams, and the country of residence is required to credit such source-country taxes. This residence-based jurisdiction is conventionally supported by controlled foreign corporation (CFC) and foreign investment entity regimes that look through the separate-entity treatment of a non-resident corporation or other non-resident entity and attribute investment income of the corporation or entity currently to resident investors.

In contrast with the treatment of portfolio income, the principal right to tax income from direct investment is allocated to source countries, with the country of residence of the investor required to provide recognition of source-country taxation either by exempting the income from residence-country tax or crediting source-country tax. Even with credit countries, two common aspects of credit systems ensure that source-country tax on the income is predominant. First, foreign-source income earned through a foreign corporation is generally not taxed by a residence country until repatriation to a resident investor. Second, although the amount of the credit is limited to residence-country tax that is otherwise payable on the income, an element of averaging of high-tax and low-tax foreign-source income is permitted. Combined with deferral of residence-country tax, the ability to use excess foreign tax credits to offset any residual tax on low-taxed foreign-source income, means that the functional difference between exemption and credit countries is much less than the formal difference would suggest.

⁵ This division of the jurisdiction to tax international income has been referred to as the “international tax compromise.” The early development of this compromise is described in Graetz and O’Hear (1997).

This accepted jurisdictional division of the international income tax base contrasts sharply with the standard policy prescriptions found in much of the economics literature. To some extent, the contrast can be attributed to a fundamental preoccupation in this literature with the specification of an efficient or optimal international tax regime, which tends to ignore other normative considerations, such as inter-nation and inter-personal equity (though Peggy Musgrave's work is the exception here), as well as more mundane issues of enforcement and administration. The contrast between economic theory and country practice may also be attributed, in no small part, to the conflicting efficiency concepts of capital-export neutrality (CEN) and capital-import neutrality (CIN).

Both CEN and CIN focus on the maximization of worldwide welfare, where world income is the welfare criterion. CEN focuses on the allocation of investment across countries. As originally articulated by Musgrave (1963 and 1969),⁶ CEN is nothing more than an application of the Diamond-Mirrlees (1971) production efficiency theorem to cross-border investment flows.⁷ Where investors allocate capital to maximize their income, risk-adjusted, pre-tax rates of return to investment will be equalized across countries such that no reallocation of investment can result in an increase in world income. The standard international tax policy prescription for the realization of production efficiency is an exclusively residence-based jurisdiction to tax, which is equated with CEN. This standard prescription is well known and similar in both a co-operative and a non-cooperative setting.⁸

In the former setting, all countries co-operate and agree to tax the foreign-source income of their residents consistent with the taxation of their domestic-source income. Consistency of treatment generally means recognition of foreign-source income by residents on an accrual basis. Residents thus face the same after-tax return on investments, which should ensure that the pre-tax returns on investments in different locations are not disturbed as compared to a no-tax world. Those returns are equated, and no reallocation of the location of investment would result in an increase in world income. In effect, the decision to locate an investment is not distorted by the imposition of a residence-based tax.

In a non-cooperative setting, the same residence-based approach also arises as the standard policy prescription, but with a significantly different treatment of source-country taxes by residence countries. In order to maximize the social return from foreign-source income, a single capital-exporting country should attempt to equate the pre-tax returns from domestic investment with the returns on foreign investment after any source-country tax. This result is realized generally by taxing the pre-tax foreign-source income of residents on an accrual basis, with a deduction from such income for any source-country taxes. This particular residence-based system is commonly associated with the concept of "national neutrality" (NN) and the work of Peggy Musgrave (1963 and 1969). Although foreign-source income is subject to a higher tax burden than domestic-source income, the social returns to foreign and domestic

⁶ Hufbauer (1975) is another important early work developing the equivalence of CEN and the maximization of world income.

⁷ Slemrod (1995) draws on the production efficiency theorem as the basis for the development of an international tax regime that implements CEN as the income-tax equivalent of a free-trade tax regime.

⁸ Razin and Sadka (1990).

investments are equated. Accordingly, the tax system of the capital-exporting country is said to be neutral as between foreign and domestic investment.⁹

For a single, capital-importing country whose economy is small and open, the standard policy prescription in a non-cooperative setting is the non-taxation of income from capital imports, except to the extent that the residence jurisdiction provides a credit for source-country taxes. In the absence of a credit, any tax on capital imports would impose a wedge between pre- and after-tax returns. Because the tax can be avoided by investing elsewhere, pre-tax returns in the capital-importing country must rise to equate after-tax returns, with the incidence of the tax ultimately falling on immobile factors, such as labour. The inequality in pre-tax returns means that capital is misallocated in the sense that a re-allocation could increase income. A direct tax on labour is thus preferable, since it would avoid the distortion of the location of investment.¹⁰

In contrast with CEN, CIN focuses on the allocation of savings across countries. In other words, CIN is concerned with the maintenance of “inter-temporal exchange efficiency,”¹¹ whereby the savings decision (that is, the choice between current and deferred consumption) is not distorted in a cross-border context. This decision is, in fact, distorted by the use of an exclusively residence-based system in pursuit of CEN. Although such a system ensures that the location of investment across jurisdictions is not distorted, differences in country tax rates mean that the savings decision is distorted. In a simple two-country model with the savings decision responsive to after-tax rates of return, investors resident in the country with a higher tax rate will save too little as compared to investors resident in a country with the lower tax rate.¹² World welfare could be increased if returns from savings were transferred from residents of the low-tax country to residents of the high-tax country. The standard tax-policy prescription for the realization of inter-temporal exchange efficiency is an exclusively source-based jurisdiction to tax, which is commonly associated with CIN. Under this system, investors in a particular location are taxed at the same rate, so that after-tax returns to savings invested in that location are equated.

It is well recognized that in a world of different country tax rates applied to investment and savings, CEN and CIN cannot be realized simultaneously, unless demand for capital or the supply of capital is completely inelastic.¹³ When these extreme assumptions are relaxed, the alternatives for tax policy-makers are seen to be an international tax regime that is: (i) source-based and thereby distorts the allocation of investment across countries; or (ii) residence-based and thereby distorts the choice between current and deferred consumption and the level of worldwide savings. The decision variables in the choice between these alternatives are formally modeled by Horst, who builds on the earlier work of Musgrave, but defines an optimal international tax regime as one that maintains the social opportunity cost of capital rather than maximizes national income as the policy goal. He argues that such a regime should ensure the equality of the weighted average of pre-tax and after-tax returns to capital, with the weighting determined by the elasticity of the supply of

⁹ Feldstein and Hartman (1979) have an early paper expressing this result.

¹⁰ These results are obtained in Gersovitz (1987); Gordon (1986); and Gordon (1992).

¹¹ Altshuler (2000, at 1581).

¹² *Id.*, at 1580-81.

¹³ See, for example, Graetz (2001, at 272).

capital. An exclusively residence-based system is optimal only if the demand for capital is elastic and the supply of capital is inelastic. In that case, such a system maintains equality of pre-tax returns across investments in different countries without distorting the level of worldwide savings. An exclusively source-based system is optimal if the demand for capital is inelastic and the supply of capital is elastic. In that case, such a system increases the level of worldwide savings without disturbing the location of investment.

Much of the international tax debate following the work of Musgrave and Horst has focused on CEN and CIN as guiding principles in the taxation of foreign-source income from foreign direct investment.¹⁴ The debate has tended to coalesce around the dictates of CEN, which are seen to require the accrual taxation of foreign-source income with credit for any source-country taxes, and the dictates of CIN, which are seen to require exemption of such income in the residence country. In the context of foreign direct investment, the compromise position appears to be the deferral of the residence jurisdiction until repatriation of foreign-source income to the residence country. Provision of deferral with credit or exemption results in a tax rate on foreign-source income that is somewhere between zero and the rate on the domestic income in the residence country.¹⁵ It has been suggested that this compromise rate can be justified on the basis that the optimal tax rate on foreign-source income is somewhere within this band, depending on the relative elasticities of the demand for and supply of capital.¹⁶

In contrast with the heated debate over the optimal taxation of income from foreign direct investment, the treatment of income from foreign portfolio investment has received little attention. Indeed, it seems to be accepted that an exclusively residence-based system dictated by CEN is optimal.¹⁷ This position is even advocated by some analysts who see an exclusively source-based system as desirable for foreign direct investment, and draw on the concept of CIN as tantamount to a requirement of equality of after-tax returns to ensure the competitiveness of multinational firms headquartered across different countries. For example, Frisch (1990) and Hufbauer (1992) both argue that increased capital mobility means that portfolio investment flows determine the allocation of savings worldwide, and direct investment no longer serves this important allocative function. In effect, direct investment is no longer needed to intermediate the source and use of funds when portfolio investors resident in a particular country can invest directly, or indirectly through investment funds, in the securities of entities resident in another country. An exclusively residence-based jurisdiction to tax is advocated as the means to achieve CEN in the allocation of worldwide savings. Graetz and Grinberg (2003) even argue that a deduction for source-country taxes should be the residence-country norm for foreign-source income from portfolio investment, on the apparent basis that the residence-country tax treatment of such income does not affect the important decision as to the location of investment. Source-country withholding taxes on inbound portfolio capital are

¹⁴ United States (2000, at 23-42) surveys much of this literature in the context of foreign direct investment.

¹⁵ Altshuler (2000, at 1582).

¹⁶ Ibid.

¹⁷ Brean, Bird and Krauss (1991) provide a detailed development of this position in the context of an international tax regime that permits a limited source-based jurisdiction to tax portfolio income and requires the provision of a foreign tax credit mechanism by the residence jurisdiction.

considered desirable only to the extent that they serve as a backup to the enforcement of the residence-country jurisdiction.¹⁸

We believe, however, that this standard policy prescription for the taxation of portfolio income is incorrect for a small open economy. The error is attributable to a failure in the international tax literature to account for the two-way or bi-directional flow of capital. In particular, the literature is dichotomized in a way that is similar to that of international tax regimes. A paper will usually deal either with inbound capital or with outbound capital, but not with both of them occurring simultaneously. A gap in both practice and in theory is the consequence of this characteristic. Capital-market distortions to outbound capital that are created by a tax policy towards inbound capital are camouflaged by the dichotomy. Conversely, a recommended tax policy on capital imports will miss the distortions it introduces to capital exports, if the capital flows are viewed separately. The bifurcation of theory and policy may be traceable to the early papers that dichotomize the problem into taxes on inbound capital and taxes on outbound capital.

We believe that the disparity and the complexity of the separated approaches to taxing capital imports and capital exports, in theory and in practice, offers the prospect that an alternative organizing principle might succeed in simplifying international tax regimes. The notions that we offer here are:

- Bifurcated tax regimes for inbound and outbound capital bring about an unrecognized capital market distortion that arises because resident lenders and borrowers arbitrage off their local after-tax interest rate;
- Bi-directional capital flows, and the arbitrage between their returns, are to be recognized in the development of international tax policy; and
- The equality of the private and social rates of return to outbound capital with the private and social rates of return to inbound capital integrates the tax treatment of capital exports and imports.

We are careful, however, to emphasize that our approach and alternative organizing principle are limited in the first instance to portfolio debt capital, since we believe there are certain features of such capital flows that lend themselves more easily to an integrated approach. In particular, international portfolio debt markets are closely integrated, with interest expense and income subject generally to a deduction/inclusion tax treatment across countries. Moreover, the arm's length nature of the relationship between the borrower and the lender means that non-tax factors generally constrain the ability to substitute debt and equity securities in response to differences in tax treatment in source and residence countries, with an eye to the foreign tax credit position of the lender.

EFFICIENT TAXATION OF PORTFOLIO DEBT IN THE PRESENCE OF BI-DIRECTIONAL CAPITAL FLOWS

This part offers the intuition for our results and contrasts them with Slemrod et al and Horst. It also highlights briefly some important implementation issues for an

¹⁸ Zee (1998). See also Gordon (1992) and Slemrod (1988). This role is reflected, in part, in the initiative of the European Union (EU) to adopt a minimum interest withholding tax. See Huizinga and Nielsen (2000); and Huizinga (1994).

exclusively source-based regime for the taxation of the returns on portfolio debt capital. A formal derivation of our policy prescription is provided in the next part.

The organizing principle underlying the formal derivation is that the private cost of capital should equal its social cost.¹⁹ The social cost of capital is the amount per unit of inbound capital that the small country as a whole sends abroad. This cost of capital consists of two components for the small country: (i) the after world tax world rate of interest that a large country investor must receive from every investment;²⁰ and (ii) any tax that the large country levies on its outbound investment, after accounting for foreign tax credits. Such tax is a necessary supplement to the first component of the social cost of capital for a small country, otherwise the non-resident investors would not receive the after world tax world rate of interest from the small country. The sum of the two components is the amount that the small country remits overseas and is the social cost of inbound capital. Interest rates must alter sufficiently in the small country to at least meet the sum of components (i) and (ii) of the social cost of capital, although there is another effect on the interest rate in a small country.

An additional component of the interest rate in a small country is the gross up of the rate to account for the tax that the small country imposes on capital imports. The gross up is not, however, a part of the social cost of capital, because it is not remitted overseas. The interest rate in the small country is thus the sum of three components, but only the first two described above constitute the social cost of capital. Provided that the tax rate on inbound capital is set to equal the tax rate on the local capital of residents, the interest rate in the small country will exceed the social cost of inbound capital by the rate of tax on local capital of residents. Deduction of interest at this rate of tax brings the private interest rate of residents into equality with the social rate of interest, being the sum of the first two components described above. Thus the efficient rate of inbound tax in our sense is equal to the rate of tax on residents.

The same organizing principle underlies our result that the net local rate of tax on capital exports from a small country should be zero. Such a net rate of tax is necessary to equalize the social costs and returns to capital. This result may be surprising, although the reason for it is clear, once we consider the meaning of the social rate of return to outbound capital. That return is the world interest rate less any tax paid to the foreign government. If the private rate of return to outbound investment differed from the social rate of return to it, there would be capital market inefficiency. Thus, if in addition to foreign tax paid, the small country levied tax on outbound capital, the private rate of return would be driven below the social rate of return to it, and this would introduce a capital market inefficiency.

We argue, therefore, that an exclusively source-based system for the taxation of income from portfolio debt is optimal for a small country in the sense that it equalizes the inter-temporal marginal rates of substitution in production and consumption in that country. In effect, this policy prescription promotes undistorted local capital markets in the sense of the equality between the private and the social rates of interest on

¹⁹ Consistent with standard usage, we define the “private price” of an item as the price, including all tax obligations, which an agent pays or receives for it. The “social price” of an item is the dollar value of all of the resources of the community that are necessary to produce the marginal unit of the item. A market will be said here to be undistorted if the social price of the item equals the private price for every agent.

²⁰ The small country as a whole must pay at least this amount to non-resident investors.

capital. One of our fundamental points, which the literature has largely ignored, is that a tax on capital exports affects capital imports, and vice versa. The recognition of this effect indicates that tax policies towards inbound and outbound capital should be developed in a way that allows for it. A failure to recognize this effect means that the standard international tax-policy prescriptions described in the previous part of the paper introduce a distortion to local capital markets that is overlooked.

Slemrod et al is the only paper of which we are aware that treats inbound and outbound capital flows simultaneously. They derive a “seesaw” principle for the establishment of optimal tax rates. Under this principle, an increase in the tax rate on capital imports implies a reduction in the tax rate on capital exports and vice versa. Consistent with much of the economics literature on international taxation, Slemrod et al maximize national income with respect to the stocks of inbound and outbound capital, holding wealth constant.

In terms of approach, Slemrod et al solve in the standard way the first-order conditions²¹ that maximize the national income of the small country to obtain the stock levels for: (i) inbound capital; (ii) outbound capital; and (iii) domestically-located capital. Those first-order conditions are then compared with the international after-tax interest arbitrage conditions for inbound and outbound capital.²² The two sets of conditions are seen to be inconsistent for arbitrary rates of tax on capital imports and capital exports. The tax rates on imported capital and exported capital are then changed to bring about the consistency of the two sets of conditions. The first-order conditions and the arbitrage conditions are found by this process to hold simultaneously when: (i) the capital-import tax rate is zero; and (ii) the capital-export tax rate equals the tax rate on the domestically-located capital of residents of the small country.²³ These tax rates are claimed to provide the optimal relation between capital-import and capital-export tax rates.

The principal difficulty with the approach of Slemrod et al is that it assumes that the levels of the stocks of inbound and outbound capital are independent of the key capital income tax rates. Their approach does not allow for the effects of the required adjustments to the capital import and export tax rates on the levels of inbound and outbound capital stocks or on total wealth.²⁴ Altering the rates of capital-import and capital-export taxes in the way that Slemrod et al describe would cause the stocks of inbound and outbound capital to vary from the quantities that provided the maximum value for national income. Those stocks would then no longer be at the levels determined by the first-order conditions and required to maximize national income.

²¹ See Slemrod et al, equations (5a) and (5b) and the earlier unnumbered definition of K_s .

²² *Id.*, equations (5a)-(6b).

²³ *Id.*, discussions following equations (5a)-(6b). The result cited is the principal one from among several results in a taxonomy of tax situations in the paper involving a succession of constant tax rates and is the reverse of the policy prescription developed in our paper.

²⁴ None of the inbound, outbound or total capital stocks of either country in any equation in Slemrod et al is written as a function of any tax rate or of any interest rate.

The rates of capital-import and capital-export taxes would thus be sub-optimal in the sense of not maximizing national income.²⁵

There is some degree of similarity between our results and those of Horst. In particular, he found that a large capital importer should tax income from capital imports at the same rate as income of residents from domestically-located capital. Further, a separate, large capital-exporting country should not tax income from capital exports. These results apply for inelastic supplies of domestic capital. As well, they apply for the respective countries with uni-directional net capital flows. In contrast, our similar results on tax rates are for a small country that both imports and exports capital, and they apply regardless of the elasticities.

We recognize that adoption of our policy prescription presents some significant implementation issues. In particular, the existing international tax compromise has embedded within it certain procedural aspects that are intended to protect the status quo. Perhaps most importantly, effective enforcement of an exclusively source-based jurisdiction to tax portfolio debt requires the use of interest withholding taxes for capital imports.²⁶ Consistency of treatment with resident lenders requires the extension of these withholding taxes to local capital markets, including otherwise tax-exempt investors, such as pension funds.²⁷ The required use of a uniform withholding tax applicable to capital imports and domestically-located portfolio debt would also necessitate the renegotiation of bilateral tax treaties to establish such a tax in excess of currently permissible amounts on portfolio interest. The alternative to renegotiation is the use of tax-treaty overrides in domestic legislation implementing a uniform withholding tax. However, this alternative is contentious and arguably constrained, particularly in certain countries that have incorporated a “monist” doctrine, whereby international law is considered superior to domestic law and cannot be overridden.

An exclusively source-based jurisdiction to tax also places pressure on the rules in a small country that determine the source of interest income. In general, there is a high element of arbitrariness in sourcing rules for income and expense. Sourcing of interest income is not all that different in this respect, with the residence of a borrower conventionally taken as the reference point for the sourcing of interest income. The integrity of this rule would need to be protected from tax-avoidance arrangements that attempt to exploit residence rules for corporations, trusts and partnerships as both lenders and borrowers.

²⁵ The standard approach to constrained optimization is to set up a Lagrange multiplier expression and to optimize it with respect to the choice variables, in this case the inbound and outbound tax rates. This procedure, not followed in the seesaw model, yields complex partial derivatives with respect to inbound and outbound tax rates of the domestic and foreign located capital stocks. These effects are important and are omitted from the seesaw approach; it therefore fails to optimize with respect to the policy variables. Applying the Lagrangian technique to the seesaw model provides several complicated equations that are devoid of policy conclusions.

²⁶ An important second-order design issue is a legislative definition of “interest” subject to withholding tax. In general, the definition needs to extend to both original issue and secondary market discounts, as well as interest surrogates generally. Such definitions are part of much of the legislative regimes governing the income tax treatment of interest income in many countries. See generally, Edgar (2000).

²⁷ To the extent symmetrical rates are adopted for resident borrowers and lenders (both resident and non-resident), accrual recognition of interest income and expense is not required to constrain tax-avoidance opportunities based on asymmetrical rates. See Bradford (1995). Cash-basis recognition for interest withholding purposes could be used for deduction purposes.

A related problem is the need to source interest expense, where such expense is to be accounted for in measuring interest income subject to tax. In effect, interest expense must somehow be matched with interest income generated with borrowed funds and thereby recognized at the same tax rates. Otherwise, differences in after-tax borrowing and lending rates will result, which can distort capital flows. This implementation issue has two distinct, but conceptually related dimensions. The first dimension concerns the reporting of interest income on a net basis by non-residents on-lending funds to a small country. In fact, “net” reporting of interest income is enforceable and thereby feasible for both residents of a small country and non-residents, such as international banks, with a business presence in the country. Interest expense sourcing rules become necessary for this category of non-resident lenders as a function of a decision to extend net reporting as an option to a gross interest withholding tax. Some portion of the interest expense of these non-resident lenders must be allocated to the small country and recognized at the local tax rate such that only the interest spread or net interest income is subject to tax in the small country. For other non-residents, a gross withholding tax may be maintained as a proxy for net reporting, with the country of residence providing interest expense allocation rules for net reporting purposes, including the foreign tax credit mechanism.

The other dimension of the need to source interest expense concerns residents of a small country who, under an exclusively source-based jurisdiction to tax portfolio debt with a net reporting element, would have an incentive to source interest expense in the small country, since such expense would be recognized at the rate applying to income from domestically-located capital.²⁸ The lack of any sourcing rules provides an arbitrage opportunity whereby residents borrow funds to lend abroad, with the interest expense recognized at the local tax rate and the interest income exempt from such taxation. Moreover, non-residents could face the same sourcing incentives depending on the tax rates in their residence countries.

As an attempt to address the sourcing of interest expense, formulary allocation approaches can be justified, not on the basis that they realize some correct allocation in any normative sense, but rather as an allocation methodology that most effectively constrains tax-driven allocations of interest expense. That said, proposals for the formulary allocation of expenses have proven particularly contentious.

ILLUSTRATIVE EXAMPLE AND FORMAL DERIVATION

This part of the paper furnishes a numerical example illustrating the intuition underlying our policy prescription of an exclusively source-based regime for the taxation of the return on portfolio debt capital. The example is followed by a formal derivation of this policy prescription.

Assume, for illustrative purposes, that the tax system of a small country has the following features, which conform to our policy prescription. That is, the tax rate on inbound capital in the small country equals the rate applied to the locally-sourced income of residents, and the tax rate on the income from capital exports of residents is zero. Explicitly, this tax system reverses the relation between capital import and export taxes dictated by the standard policy prescription and is, say,

²⁸ This incentive is muted if capital-exporting residents of the small country can report interest income on a net basis for source-country purposes, and the source-country tax rate exceeds that of the small country on domestically-located capital.

- outbound tax rate, zero
- inbound tax rate, 30 per cent, and
- tax rate on locally sourced income of residents, 30 per cent.

Capital importers may deduct interest expense at the rate of 30 per cent, and interest on loan transactions between resident borrowers and lenders are taxed and deducted, respectively, at 30 per cent. For simplicity, we assume that all taxes in the rest of the world are zero, and the world interest rate for the small country is 5 per cent.

A non-resident investing in the small country would receive 5 per cent by investing elsewhere, since there are no taxes in the rest of the world. In a world of mobile capital, arbitrage opportunities dictate that a non-resident investor receive 5 per cent after any tax in the small country. That is, the non-resident requires a pre-tax interest rate that leaves 5 per cent after the small-country tax. The pre-tax interest rate in the small country must rise therefore by the amount of tax that the inbound investor is required to pay.²⁹ After payment of tax to the small country on the higher interest rate, the inbound investor would be left with 5 per cent, which is the opportunity cost of capital. If r is the higher interest rate in the small country,

$$(1-0.3)r = 0.05$$

so

$$\begin{aligned} r &= 0.05/(1-0.3) \\ &= 0.071429 \end{aligned}$$

A resident capital importer would therefore face an after tax, or private, rate of interest of

$$(1-0.3)(0.071429)=0.05$$

A return of 5 per cent thus remains after local tax is deducted, and this return is remitted to non-resident investors by the small country. The social rate of interest is thereby 5 per cent, and the private rate of interest for resident capital importers equals the social cost of inbound capital. Capital transactions between residents would also take place at the pre-tax rate of interest of 7.1429 per cent, which converts to a private rate of interest of 5 per cent after tax. Removal of the tax on capital exports also means that resident capital exporters receive 5 per cent: that is, the full world rate of interest, which is the social rate of return to capital. Resident capital importers and resident capital exporters now have the same private price of capital of 5 per cent.

The upshot is that the private rate of return to capital, or private cost of capital, is 5 per cent for all residents. The social rate of return or the social cost of capital is also 5 per cent. Private and social costs of capital are equal in every direction, and the local capital market is undistorted (that is, “efficient” in our sense) under this tax regime. That is to say, the policy of not taxing the income of resident capital exporters and taxing capital imports at the same rate as the locally sourced income of residents,

²⁹ We refer to this increase in the pre-tax interest rate as “the gross-up principle.” Huizinga (1996) provides some empirical evidence of the gross-up of source-country withholding taxes into pre-tax interest rates. His data set, taken from the World Bank’s Debtor Reporting System, consists of 510 individual loans made by international banks to borrowers resident in developing countries from 1971-1981.

results in distortion free or efficient local portfolio capital markets. The amount of capital remaining in the small country, the amount of capital imported into the country, and the amount of capital exported by residents, all settle at their undistorted capital market no-tax levels.

This result contrasts with those under the standard policy prescription, where private and social costs of capital are not equal in every direction, and the local capital market is distorted (that is, it is “inefficient” in our sense). That is to say, the policy of not taxing capital imports and taxing the income of resident capital exporters, increases the amount of capital imported into the country, while decreasing the amount of capital provided by residents, both locally and abroad.

To reiterate, our proposed policy for a small country is the exemption of income from portfolio debt capital exports and the taxation of portfolio debt capital imports at the same rate as the taxation of the locally-sourced income of residents. The argument that our prescribed tax policy results in local capital markets that are efficient in our sense can be set out in terms of the following components:

- Inbound non-resident investors gross up the tax rate on the local income of residents into the interest rate in the local capital markets of a small country;
- The gross up ensures that inbound non-resident investors are paid the world rate of interest by a small country;
- The world rate of interest is the social cost of capital to a small country;
- Residents transacting with each other in the local capital market do so at the interest rate that is grossed up by their own tax rate, and this interest is either taxable or tax deductible so that loan transactions between residents result in an after-tax interest rate that is equal to the world rate of interest;
- Capital exporters resident in the small country are not taxed by it, so they too receive the world rate of interest;
- Every resident of the small country - capital exporters, capital importers and residents transacting with each other - has the same private price of capital; and
- The private price is the world rate of interest, which is the social price of capital.

We now provide a formal derivation of these results. In particular, we formally model how local capital market efficiency requires that inbound debt capital is to be taxed consistent with the treatment applied to the locally-invested capital of residents, while outbound portfolio debt is to be free of any tax in partial equilibrium. The treatment preserves the existing system of foreign tax credits.³⁰

A non-resident investing in a small country is in an excess limitation position, for foreign tax credit purposes, when $0 < \tau_c^w \leq \tau_l \leq \tau^w$, where τ_c^w is the foreign tax credit

³⁰ Our approach is broadly consistent with that of Huizinga (1996), who models the relationship between the gross-up principle and the foreign tax credit mechanism. He suggests that the extent of the gross up depends on the availability of offsetting foreign tax credits for lenders, although he finds that foreign tax credits are largely unexploited by the borrowing countries in his data set, which may be attributable to a fear of retaliation and to differences in tax bases in the borrowing and lending countries that push lenders into an excess credit position. Our approach differs, nonetheless, from that of Huizinga in that we deal with bi-directional capital flows. We also treat a certain world and model the foreign tax credit mechanism explicitly.

granted by the rest of the world, τ_1 is the small country's tax rate on imported capital and τ^w is the tax rate in the rest of the world. When r is the small country's interest rate, the total tax in the two jurisdictions paid per dollar of portfolio investment by such a non-resident is the local tax, $\tau_1 r$, plus the tax in the rest of the world shown in the square brackets:

$$\tau_1 r + [\tau^w (r - \tau_1 r + \tau^w_c r) - \tau^w_c r] \tag{1}$$

The term in square brackets for tax in the rest of the world shows how the foreign tax credit system is applied by the large country in the excess limitation case. Expression (1) says that the small country imposes a tax on its inbound foreign investors of, $\tau_1 r$. Then, the foreign country taxes its capital exporters at the rate τ^w as modified in the square brackets. The square brackets give the amount of tax raised by the foreign government under its foreign tax credit system. Initially, the foreign government taxes, at rate τ^w , the full amount of interest earned in the small country, r . As the foreign government recognizes the source-country tax of the small country, there is a deduction of that tax, of $\tau_1 r$, in the round brackets. Continuing, the foreign tax credit, $\tau^w_c r$, is incorporated, first, as a part of the taxable income in the round brackets and, second, as a deduction in the last term in the square brackets from the amount of tax otherwise raised by the foreign country.

An excess credit position, for foreign tax credit purposes, arises for the non-resident investor when, $\tau_1 > \tau^w > 0$, in which case $\tau^w_c = \tau^w$. The total tax liability in the two countries then becomes,

$$\tau_1 r + \tau^w r - \tau^w_c r = \tau_1 r \tag{2}$$

The discussion can be simplified by assuming, for the excess limitation case, that³¹

$$\tau_1 = \tau^w_c \leq \tau^w \tag{3}$$

Subtracting the tax in (1) from r using (3) gives the after all taxes return,

$$r - \{\tau_1 r + [\tau^w (r - \tau_1 r + \tau^w_c r) - \tau^w_c r]\} = (1 - \tau^w) r \tag{4}$$

for inbound debt capital in the excess limitation situation.³²

A non-resident investing in the rest of the world has an after tax return of $(1 - \tau^w) r^w$. Arbitrage requires that this equals (4), which is the small country after all tax return to non-residents investing in the small country, that is, $(1 - \tau^w) r = (1 - \tau^w) r^w$. Hence, in the excess limitation case under assumption (3), local interest rates are³³

$$r = r^w \tag{5}$$

For excess credits, the arbitrage condition is, $(1 - \tau^w) r^w = (1 - \tau_1) r$ by (2), and the local interest rate becomes,

³¹ This simplification was suggested to us by an anonymous referee. The more general case is carried in the following notes.

³² More generally, that is, with excess limitation but absent (3), the return after total tax in the two jurisdictions is, $r - \{\tau_1 r + [\tau^w (r - \tau_1 r + \tau^w_c r) - \tau^w_c r]\} = (1 - \tau^w)(1 - \tau_1 + \tau^w_c) r \dots$ (I)

³³ Relaxing assumption (3) with excess limitation gives the arbitrage condition $(1 - \tau^w)(1 - \tau_1 + \tau^w_c) r = (1 - \tau^w) r^w$ from (I) in note 32, supra, so that more generally under excess limitation, $r = r^w / (1 - \tau_1 + \tau^w_c) \dots$ (II)

$$r=(1-\tau^w)r^w/(1-\tau_I) \tag{6}$$

The social cost of inbound capital, r_s , for the small country is the amount per dollar of capital that residents remit to the rest of the world, $(1-\tau_I)r$. From (5), in the excess limitation case, this is,³⁴

$$r_s=(1-\tau_I)r=(1-\tau_I)r^w \tag{7}$$

or from (6), for excess credits, it is

$$r_s=(1-\tau_I)r=(1-\tau^w)r^w \tag{8}$$

Using (5), the private cost of inbound capital is,

$$r_p=(1-\tau)r=(1-\tau)r^w \tag{9}$$

with an excess limitation.³⁵ When there are excess credits, the private cost of capital is, using (6)

$$r_p=(1-\tau)r=(1-\tau)(1-\tau^w)r^w/(1-\tau_I) \tag{10}$$

The condition for undistorted local capital markets (efficiency in our sense) is that the private cost and the social cost of capital are the same, $r_s=r_p$. For an excess limitation, using (7) and (9), this equality provides,³⁶

$$(1-\tau_I)r^w=(1-\tau)r^w \text{ so that } \tau_I=\tau \tag{11}$$

When there are excess credits, using (8) and (10) shows that $r_s=r_p$ which implies that,

$$(1-\tau^w)r^w=(1-\tau)(1-\tau^w)r^w/(1-\tau_I) \text{ so that } \tau_I=\tau \tag{12}$$

Capital-market efficiency thus requires the taxation of the return on inbound portfolio debt at the same rate applicable to resident lenders in the domestic market.

With outbound portfolio debt from a small country, capital exports are not symmetric with inbound investment, because a capital exporter from a small country cannot gross up foreign taxes in the way that an exporter of capital from a large country to a small country can. The private return to the export of capital from the small country after tax in two jurisdictions is,

$$\begin{aligned} r_p &= r^w - \{ \tau^w r^w + [\tau(r^w - \tau^w r^w + \tau_c r^w) - \tau_c r^w] \} \\ &= (1-\tau)(1-\tau^w + \tau_c)r^w \\ &= (1-\tau)r \end{aligned} \tag{13}$$

by arbitrage with the local capital market, where τ^w_I is the tax rate that the rest of the world imposes on its capital imports, τ_c is the rate of foreign tax credits in the small

³⁴ More generally, the social cost of capital with an excess limitation is, from equation (II), $r_s=(1-\tau_I)r=(1-\tau_I)r^w/(1-\tau_I+\tau^w_c)\dots$ (III)

³⁵ More generally, for an excess limitation, the private cost of capital from (II) is, $r_p=(1-\tau)r=(1-\tau)r^w/(1-\tau_I+\tau^w_c)\dots$ (IV)

³⁶ Absent the simplifying assumption (3) with excess limitation $r_s=r_p$ implies, from (III) and (IV), $(1-\tau_I)r^w/(1-\tau_I+\tau^w_c)=(1-\tau)r^w/(1-\tau_I+\tau^w_c)$ or $\tau_I=\tau\dots$ (V)

exporting country, and the term in the square brackets reflects the operation of the small country's foreign tax credit system for the excess limitation case on the capital export side.³⁷

The social rate of return for capital exports is,

$$r_s = (1 - \tau^w) r^w \quad (14)$$

Equating (13) and (14) so that $r_s = r_p$ provides an undistorted capital market,

$$(1 - \tau^w) r^w = (1 - \tau)(1 - \tau^w + \tau_c) r^w \quad (15)$$

Solving (15) for $\tau_c = \tau^*_c$ yields the rate of foreign tax credit necessary for capital market efficiency,

$$\tau^*_c = \tau(1 - \tau^w) / (1 - \tau) \quad (16)$$

in the excess limitation case. Notice from equation (16) that,

$$\tau^*_c > \tau \quad \text{if} \quad \tau > \tau^w \quad (17)$$

For the excess credit situation, $\tau^w > \tau > 0$, in which case $\tau_c = \tau \neq \tau^*_c$, so our search for the non-distorting rate of foreign tax credit terminates.

Returning to the excess limit case, the tax revenue of the small country from taxation of the income from a dollar of outbound capital is given by the terms contained in the square brackets in equation (13). Using the "efficient" rate of foreign tax credit, τ^*_c , in those square brackets provides tax revenue per dollar of capital exports of

$$\begin{aligned} & [\tau(r^w - \tau^w r^w + \tau^*_c r^w) - \tau^*_c r^w] \\ &= [\tau(1 - \tau^w) + \tau^*_c(\tau - 1)] r^w \\ &= [\tau(1 - \tau^w) + \tau(1 - \tau^w)(\tau - 1) / (1 - \tau)] r^w \quad \text{from (16)} \\ &= 0 \quad (18) \end{aligned}$$

That is, the capital-market efficient rate of foreign tax credit on capital exporters is such as to offset the tax on foreign earnings that they would otherwise pay to their own government. The efficient (in our sense) net tax that resident capital exporters pay to the government of the small country is zero.

The formal derivation thus highlights the need for the mutual consistency between (or what we call the jointness of) the tax policies toward capital imports and exports. As far as we know, this paper is the only one in the literature to make this connection in a proper way. Jointness is met under our policy prescription through: (i) the arbitrage relations between the local after-tax interest rate; (ii) the after-tax interest rates faced by both capital importers and by capital exporters; and (iii) the social opportunity cost of capital. Our policy prescription makes them mutually consistent inasmuch as they result in a distortion-free local capital market. We abstract, however, from the problems of international tax rate inconsistency.

³⁷ See the earlier discussion of foreign tax credits, *supra*.

More particularly perhaps, we demonstrate the mutual consistency or jointness of the two tax policies by using arbitrage arguments when the proposed policy, $\tau_I = \tau$ and $\tau_c = \tau^*_c$, is in place. Under this policy, the local interest rate, r , is grossed up by $\tau_I = \tau$ plus the effects of foreign tax credits in the rest of the world. Capital importers and capital exporters arbitrage off their local after-tax interest rate, $(1-\tau)r = r_p$, which is their common private rate of interest and under the policy, $(1-\tau)r = (1-\tau_I)r = r_p$. However, the local rate of foreign tax credit $\tau_c = \tau^*_c$ is so chosen that, when taxed by their own government at the gross rate τ , capital exporters pay no net tax to it. They therefore receive a private rate of return, r_p , equal to what the world pays them, which is $(1-\tau^w_I)r^w = r_p$. This is the exporters' private rate of return, being the world interest rate less the tax that they pay to the foreign government. $(1-\tau^w_I)r^w$ is also what the small country as a whole receives for capital exports, so it is also the social return to capital exports, r_s , and $(1-\tau^w_I)r^w = r_s$. Exporters' arbitrage against the local market means, under our policy prescription, that $r_s = (1-\tau^w_I)r^w = (1-\tau)r$. But since $\tau_I = \tau$, we have $(1-\tau)r = (1-\tau_I)r = r_p$, which is the importers' private cost of capital under our policy prescription. Thus the policies of $\tau_I = \tau$ and $\tau_c = \tau^*_c$ imply $r_s = r_p$, and they are mutually consistent by arbitrage.

CONCLUSION

The paper has developed a regime for a small country for the taxation of income from portfolio debt in the presence of bi-directional capital flows. Our fundamental point, which has largely been neglected in the literature, is that tax policy for non-resident lenders into the small country and tax policy for resident lenders out of the country should be formulated together in order to ensure that policy in one area does not introduce distortions for the other. In other words, portfolio debt imports and exports should not have unrelated international tax regimes. Our reason for this position is that resident lenders and borrowers arbitrage off the same after-tax local interest rate, whether or not they transact with non-residents. The local capital market will be distortion free when this private price equals the social cost and return to international capital.

We have linked the tax regimes on the capital imports and exports of a small country and found the rates of tax on them that leave its capital market in an undistorted, static partial equilibrium. The general methodology involved the following four steps:

- Find the social rate of interest and return to capital imports and capital exports;
- Find the private rate of interest and return to capital imports and capital exports;
- Allow for the gross up into interest rates of local taxes on capital imports into the small country;
- Apply arbitrage conditions between lending and borrowing locally or abroad; and
- Equate the private and social costs of and returns to capital under this arbitrage and gross up.

In order to maintain equality of the social and private rates of return, we have argued that a small country should adopt an exclusively source-based regime in which: (i) capital imports are taxed at the same rate as the domestically-located capital of residents; and (ii) capital exports are exempted from taxation.

REFERENCES

- Altshuler, Rosanne, (2000), "Recent Developments in the Debate on Deferral." *Tax Notes International* 20 No. 14: 1579-95.
- Bradford, David F., (1995), "Fixing Realization Accounting: Symmetry, Consistency and Correctness in the Taxation of Financial Instruments" *Tax Law Review* 50 No. 4: 731-785.
- Bruce, Neil, (1992), "A Note on the Taxation of International Capital Income Flows" *The Economic Record* 68 No 202: 217-221.
- Brean, Donald J.S., Bird, Richard M., and Krauss, Melvyn, (1991), *Taxation of International Portfolio Investment*, Ottawa: Center for Trade Policy and Law and Halifax Institute for Research on Public Policy.
- Diamond, Peter A. and Mirlees, James A., (1971), "Optimal Taxation and Public Production, I: Production Efficiency (II: Tax rules)" *American Economic Review* 61 Nos. 1 and 2: 8-27 (261-278).
- Edgar, Tim, (2000), *The Income Tax Treatment of Financial Instruments: Theory and Practice*, Toronto: Canadian Tax Foundation, Tax Paper No. 105, 2000.
- Feldstein, Martin S. and Hartman, David, (1979), "The Optimal Taxation of Foreign Source Income." *Quarterly Journal of Economics* 93 No. 4: 613-629.
- Findlay, Christopher C., (1986), "Optimal Taxation of International Income Flows." *The Economic Record* 62 No. 177: 208-214.
- Frenkel, Jacob, Razin, Assaf, and Sadka, Efraim, (1991) *International Taxation in an Integrated World*, Cambridge, MA: MIT Press, 1991.
- Frisch, Daniel J., (April 30, 1990) "The Economics of International Tax Policy: Some Old and New Approaches." *Tax Notes* 47 No. 5: 581-591.
- Gersovitz, Mark, (1987), "The Effect of Domestic Taxes on Foreign Private Investment." in David M.G. Newbury and Nicholas H. Stern (eds), *The Theory of Taxation For Developing Countries*, New York: Oxford University Press, pp. 615-635.
- Gordon, Roger H. and Hines Jr., James R., (2002) "International Taxation." in Alan J. Auerbach and Martin Feldstein (eds), *Handbook of Public Economics*, Amsterdam, North Holland.
- Gordon, R.H. and Bovenberg, A.L., (1996), "Why is Capital so Immobile Internationally? Possible Explanations and Implications for Capital Income Taxation." *American Economic Review* 86 No. 5: 1057-1075.
- Gordon, Roger H., (1992), "Can Capital Income Taxes Survive In Open Economies?" *The Journal of Finance* 47 No. 3: 1159-1180.
- Gordon, Roger H., (1986), "Taxation of Investment and Savings in a World Economy." *American Economic Review* 76 No. 5: 1086-1102.

- Gordon, Roger H. and Varian, Hal, (1989) "Taxation of Asset Income In the Presence of a World Securities Market." *Journal of International Economics* 26 No. 3/4: 205-226.
- Graetz, Michael J. and Grinberg, Itai, (2003), "Taxing International Portfolio Income." *Tax Law Review* 56 No. 4: 537-586.
- Graetz, Michael J., (2001), "Taxing International Income: Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies" *Tax Law Review* 54 No. 3: 261-336.
- Graetz, Michael J. and O'Hear, Michael M., (1997), "The 'Original Intent' of U.S. International Taxation." *Duke Law Journal* 46 No. 5: 1021-1109.
- Horst, Thomas, (1980), "A Note on the Optimal Taxation of International Investment Income." *The Quarterly Journal of Economics* 94 No. 4: 793-798.
- Huizinga, Harry and Nielsen, Soren Bo, (2000) "The Taxation of Interest in Europe: A Minimum Withholding Tax?" in Sijbren Cnossen (ed), *Taxing Capital Income in the European Union: Issues and Options for Reform*, New York: Oxford University Press, pp 135-160.
- Huizinga, Harry, (1996), "The Incidence of Interest Withholding Taxes: Evidence from the LDC Loan Market." *Journal of Public Economics* 59 No. 3: 435-451.
- Huizinga, Harry, (1994), "International Interest Withholding Taxation: Prospects for a Common European Policy." *International Tax and Public Finance* 1 No. 3: 277-291.
- Hufbauer, Gary C., (1992), *U.S. Taxation of International Income: A Blueprint for Reform*, Washington, Institute for International Economics.
- Hufbauer, Gary C., (1975), *A Guide to Law and Policy: U.S. Taxation of American Business Abroad*, Washington, American Enterprise Institute, Hoover Institution Policy Study No. 16.
- Musgrave, Peggy B., (1969), *United States Taxation of Foreign Investment Income*, Cambridge, MA, Harvard Law School.
- Razin, Assaf, Sadka, Efraim, and Yuen, Chi-Wa, (1999), "Implications of the Home Bias: A Pecking Order of Capital Inflows and Corrective Taxation." in Assaf Razin and Efraim Sadka (eds), *The Economics of Globalization: Policy Perspectives from Public Economics*, New York: Cambridge University Press, pp. 85-122.
- Razin, Assaf and Sadka, Efraim, (1990) "Capital Market Integration: Issues of International Taxation." in Horst Siebert (ed), *Reforming Capital Income Taxation*, Tubingen: J.C.B. Mohr, pp. 155-197.
- Richman (Musgrave), Peggy B., (1963), *Taxation of Foreign Investment Income: An Economic Analysis*, Baltimore, Johns Hopkins Press.
- Slemrod, Joel, Hansen, Carl, and Proctor, Roger, (1997), "The Seesaw Principle in International Tax Policy" *Journal of Public Economics* 65 No. 2: 163-167.
- Slemrod, Joel, (1995), "Free Trade Taxation and Protectionist Taxation." *International Tax and Public Finance* 2 No. 3: 471-489.

Slemrod, Joel, (1988), "Effect of Taxation with International Capital Mobility." in Henry J. Aaron, Harvey Galper, and Joseph A. Pechman (eds), *Uneasy Compromise: Problems of a Hybrid Income-Consumption Tax*, Washington, The Brookings Institute, pp. 115-148.

United States, (2000), *The Deferral of Income Earned Through U.S. Controlled Foreign Corporations: A Policy Study*, Washington, Office of Tax Policy, Department of the Treasury.

Zee, Howell H., (1998), "Taxation of Financial Capital in a Globalized Environment: The Role of Withholding Taxes." *National Tax Journal* 51 No. 3: 587-599.