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CONTENTS

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

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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

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1

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

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

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 suffi

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 conditions[21] that maximize the national income of the small country to obtain the stock

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.

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

- 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

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

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. Re

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 $0 < \tau^w_c \leq \tau_I \leq \tau^w$, where τ^w_c is the foreign tax credit

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[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_I 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, $\tau_I r$, plus the tax in the rest of the world shown in the square brackets:

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

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, $\tau_I r$. 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 $\tau_I r$, 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, $\tau_I > \tau^w > 0$, in which case $\tau^w_c = \tau^w$. The total tax liability in the two countries then becomes,

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

The discussion can be simplified by assuming, for the excess limitation case, that[31]

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

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

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

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 are[33]

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

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

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[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, $r-\{\tau_I r+[\tau^w(r-\tau_I r+\tau^w_c r)-\tau^w_c r]\}=(1-\tau^w)(1-\tau_I+\tau^w_c)r\dots(I)$

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

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

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]

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

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,

$$r_s = (1 - \tau^w_I) r^w \tag{14}$$

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

$$(1 - \tau^w_I) r^w = (1 - \tau)(1 - \tau^w_I + \tau_c) r^w \tag{15}$$

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

$$\tau^*_c = \tau(1 - \tau^w_I)/(1 - \tau) \tag{16}$$

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

$$\tau_c^* > \tau \qquad \text{if} \qquad \tau > \tau_I^w \tag{17}$$

For the excess credit situation, $\tau^w_I > \tau^w > 0$, 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

$$[\tau(r^w - \tau^w_I r^w + \tau^*_c r^w) - \tau^*_c r^w]$$

$$= [\tau(1 - \tau^w_I) + \tau^*_c(\tau - 1)] r^w$$

$$= [\tau(1 - \tau^w_I) + \tau(1 - \tau^w_I)(\tau - 1)/(1 - \tau)] r^w \qquad \text{from (16)}$$

$$= 0 \tag{18}$$

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 internationTc0.0336s71u7.2842 -1 Tc0.-1)]1 Tf4i42 cionTc0.5(dilistencr07 Tw[8t)5rtuj/T'

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 $\tau_c=\tau^*_c$

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