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Capital Mobility and Source-Based Taxation of Capital Income in Small Open Economies

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Abstract

This paper examines the taxation of capital income in a small open economy that faces a highly elastic supply of internationally mobile capital and increasing tax competition. The analysis considers a wide variety of additional factors that affect the determination of capital income taxation policy, including the desire to tax economic rents earned by foreign and domestic firms, the desire to take advantage of any treasury transfer effects, the role played by transfer pricing and other financial accounting manipulations by foreign multinationals, the need for a backstop to the personal income tax and various political concerns. The paper evaluates several potential income and consumption-based tax reforms in this context.

Keywords: international taxation, capital income taxation, tax competition, dual income tax, income tax, consumption tax

JEL Code: H21, H25, H87

1. Introduction

As the world economy becomes increasingly integrated and factors of production, especially capital investment by large multinational corporations, become more mobile internationally, the contentious issue of the appropriate means of taxing capital income will continue to take center stage in debates concerning fiscal policy.[1] Many factors complicate the design of capital income tax policy in an economically integrated world, especially for essentially small open economies such as those of most capital-importing developing countries and countries in transition from socialism. From an administrative standpoint, capital income taxation has become increasingly difficult to enforce due to the ease with which multinational corporations can engage in various accounting and financial manipulations that reduce overall tax liability, including transfer prices and the reallocation of debt; these manipulations are facilitated by the prevalence of tax havens. Moreover, numerous recent theoretical analyses of taxation in open economies question both the desirability and the feasibility of maintaining source-based corporate income taxation in the face of increasing globalization.[2,3] Finally, many observers have argued that the most common form of source-based capital income taxation—the corporate income tax—is particularly undesirable because it is a highly distortionary tax instrument, relative to other potential revenue sources.

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Despite these practical and theoretical arguments for limiting source-based taxation of capital income, corporate income taxes have not disappeared, and instead are utilized by virtually all countries, including developing and transition countries. Supporters of the corporate income tax invoke many long-standing arguments on its behalf, including the need for a corporate tax as a backstop to the personal income tax and as a means of capturing some of the economic rents earned by both foreign multinationals and domestic corporations. In addition, the foreign tax crediting arrangements adopted by many important capital exporters, including the US, UK and Japan, provide capital importers with an often-cited argument for maintaining a corporate income tax at a rate roughly equal to that of their major foreign suppliers of capital. Finally, despite its many economic flaws, corporate income taxation remains politically popular. Moreover, political pressure is also likely to require at least approximately uniform taxation of domestic and foreign businesses, even if the latter may be relatively more mobile and generate more rents.[4]

This paper examines the implications of increasing globalization, especially in the form of increased capital mobility, for the structure of source-based capital income taxation. It focuses on the case of the use of a corporate income tax in a relatively small open economy—perhaps a developing or transition country—that is a capital importer attempting to attract foreign direct investment (FDI) by multinational corporations. By way of background, the paper first briefly examines the arguments for minimal or zero source-based taxes on capital income in such an economy, as well as various qualifications to these arguments, and then summarizes some of the relevant empirical literature. The discussion then turns to the implications of the analysis for the structure of source-based taxation of capital income in a small open economy, including both corporate income taxes and consumption-based cash flow business taxes.[5,6]

2. Should Capital Income be Taxed at Source?

2.1. Arguments Supporting Minimal or Zero Taxation

The standard argument against source-based taxation of capital income by a small open economy—defined as one that is too small to affect the return to internationally mobile capital or the prices of internationally traded goods—is that such taxation is inherently counterproductive, as mobile international capital will migrate from the taxing country until its before-tax rate of return rises by enough to entirely offset the tax (Zodrow and Mieszkowski, 1983; Gordon, 1986; Razin and Sadka, 1991).[7] This emigration of capital lowers the productivity of the fixed factors in the taxing country—land and labor (or at least relatively immobile labor), so that local factors of production ultimately bear the entire burden of the capital income tax, including its efficiency costs.[8] The clear implication is that, solely from the viewpoint of the residents of the taxing country, it is preferable simply to tax local factors (land and relatively immobile labor) directly, and thus avoid at least the excess burden of the tax on capital income. This "zero tax" result[9] is reinforced by much of the tax competition literature, which stresses the downward pressure on capital income tax rates associated with interjurisdictional competition for mobile capital and the tendency for inefficiently low expenditures on public services

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when they are financed with taxes on mobile capital (Zodrow and Mieszkowski, 1986; Wilson, 1986; Sinn, 1990).[10] Moreover, the standard tax competition argument also applies to the taxation of the firm-specific economic rents[11] generated by investment by a multinational enterprise in a small open economy, as countries face an incentive to undercut their competitors in an attempt to gain the benefits of such investment for their residents, resulting in an equilibrium in which capital income tax rates are competed down to zero (Gordon and Hines, 2002). Yet another argument for minimal source-based taxation of capital income arises because such taxation typically takes the form of a corporate income tax, and many observers have argued that the corporate tax, especially when applied to multinational corporations, is a singularly complex and inefficient tax (Gravelle, 1994; Cnossen 1996).

Perhaps the most prominent issue raised by the corporate income tax in an international context, however, arises because modern multinational corporations have considerable discretion in allocating profits among the various countries in which they operate. In particular, because it is exceedingly difficult for tax authorities to allocate a multitude of overhead expenses, determine appropriate "transfer prices" for transactions between related entities, and allocate deductions for interest expense, multinationals have considerable freedom in allocating revenues to low tax countries and deductions to high tax countries. Although governments have attempted to minimize their revenue losses using various tools such as advance pricing agreements, thin capitalization rules, interest allocation rules and special treatment of passive investment income, revenue losses due to income shifting still pose a serious problem for most countries. This in turn puts downward pressure on corporate income tax rates around the world, as no country wants to have a relatively high tax rate and thus receive a disproportionate share of deductions or lose its fair share of worldwide income. Indeed, from the perspective of the taxing country, a lower corporate income tax rate is advantageous—beyond the conventional effect of attracting investment through a lower cost of capital—because it may increase tax revenues by encouraging firms to engage in manipulations that allocate revenue to the taxing country and expenses elsewhere. Similarly, a lower tax rate may have an independent effect in terms of attracting FDI to a country, as having investments in low-tax countries facilitates such tax avoidance manipulations (Slemrod, 1997).

2.2. Arguments Favoring Source-Based Capital Income Taxation

Notwithstanding the arguments detailed in the previous section, the corporate income tax is still a revenue mainstay in most developed and developing countries. A variety of arguments have been offered in support of its continued use (Mintz, 1995; Sorensen, 1995; Bird, 1996).

From a domestic standpoint, the traditional rationale for a corporate income tax is that it is essential to protect the revenue base of the personal income tax. At one level, this simply reflects the administrative advantages of withholding tax at source, especially in terms of ensuring that the capital income of wealthy individuals is subject to tax. More importantly, in the absence of a corporate tax—and especially if capital gains are untaxed or taxed preferentially—individuals could incorporate and defer personal income tax on labor income by retaining the earnings in corporate form, while financing

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consumption by taking out personal loans from the corporation.[12] Moreover, if foreign corporations did not face the domestic corporate income tax, individuals and firms could easily establish corporations that are nominally “foreign” (e.g., in a tax haven) and again avoid domestic liability on their corporate income (Gordon and Mackie-Mason, 1995; Gordon and Slemrod, 2000).

Note, however, that this rationale for a corporate income tax is not entirely convincing. In particular, most of the anti-avoidance, anti-evasion characteristics of the corporate tax could be achieved with a corporate cash flow tax, which would remove the incentives for conversion of labor income into corporate income, while taxing economic rents and exempting ordinary returns to capital (Hubbard, 2002; Zodrow and McLure, 1991). Alternatively, as accomplished under the Nordic “dual income tax” (Sorensen, 1994; Cnossen, 2000), a separate tax could be imposed on closely held businesses, which would be designed to capture the labor income component of returns to the corporation and tax such labor income at the rates prevailing under the personal income tax. These options are discussed further below.

Several other rationales for a corporate income tax arise in an international context. The most prominent of these is the so-called “treasury transfer” argument. Several important capital exporting countries, including the US, UK and Japan, tax their multinational corporations on a residence basis but allow foreign tax credits (FTCs) for taxes paid abroad, up to the amount of the domestic tax that would be assessed on such income.[13] Under certain circumstances, the existence of FTCs creates a strong incentive for the imposition of a corporate income tax by countries that import significant amounts of capital from credit-granting countries, since a host country tax rate increase (to any rate below the home country rate) costlessly transfers revenues from the home to the host country, without creating any disincentives for investment in the host country. Bird (1996) argues that the worldwide prevalence of corporate income taxes with creditability implies that any relatively small country simply cannot deviate very far from the norm of utilizing a “conventional” corporate income tax without incurring large revenue losses. In marked contrast to the “zero tax” small open economy argument presented above, this rationale suggests that the government of such an economy should institute a corporate income tax with a rate equal to that of its main source of capital imports (or perhaps some average of the tax rates of its primary sources of capital imports).

However, despite its apparently compelling nature, the “treasury transfer” rationale is irrelevant in several important situations. First, the argument does not apply to multinationals based in “territorial” countries, including Australia, Canada, France, Germany and the Netherlands, that exempt foreign-source income from home country taxation, or in countries such as Japan and the UK that grant foreign tax credits but also have “tax sparing” provisions (Hines, 2001).[14] Second, firms from FTC-granting countries that are in an “excess foreign tax credit” position (with more credits than they can use currently) do not benefit from host country tax reductions, since they only reduce the firm’s stock of excess FTCs rather than resulting in any offsetting increase in domestic tax liability.[15] Third, since home country taxes and credits are typically not assessed until income is repatriated to the parent firm, the host country tax is often the primary tax burden on investment by the multinational; indeed, Hartman (1985) and Sinn (1987) construct models in which the home country repatriation tax is irrelevant to investments

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financed with the retained earnings of the subsidiary, which are affected only by the host country tax.[16] Under all of these circumstances, the "zero tax" small open economy argument made above is valid. The relative importance of these three qualifications to the "treasury transfer" argument for full taxation of corporate income of course depends on the specific circumstances in any given country. However, it seems likely that in many cases the cumulative effect of these qualifications will greatly diminish the importance of the treasury transfer effect. For example, Gordon and Hines (2002) conclude that in general "it is difficult to argue that tax-crediting arrangements have much effect on equilibrium corporate tax rates in host countries."

Two other arguments supporting source-based capital income taxation are especially important in the international context. First, in addition to the firm-specific rents discussed above, investments by multinationals may generate location-specific rents, due to factors such as lower transport costs, inexpensive but relatively productive local factors of production, and easier access to customers, in addition to the ability to avoid trade barriers such as tariffs and quotas. Taxing such location-specific rents earned by multinationals—as well as any economic rents earned by domestic firms—provides an efficient and thus highly desirable (not to mention politically popular) means of raising tax revenue (Mintz, 1995). Moreover, increasing globalization implies that foreign ownership of domestic corporations is increasing over time, so that taxation of domestic firms may also imply taxation of some economic rents that would otherwise accrue to foreigners (Huizinga and Nielsen, 1997).

Second, political realities may make some form of corporate income taxation inevitable. For example, taxing both domestic and foreign "rich" corporations may be indispensable from a political viewpoint, irrespective of the economic arguments against such taxation (Bird, 1996). In addition, in an international context, source countries often assert a "right" to tax the income generated within their boundaries, beyond any natural resource royalties. Although this argument is somewhat tenuous, as it depends on the validity of claims related to territorial sovereignty or the provision by the host country of a suitable investment environment and access to local markets, it is believed to be compelling in many quarters and thus provides another rationale for source-based taxation of capital income (Musgrave, 2000).[17,18]

2.3. *Empirical Evidence*

The discussion thus far suggests that a number of offsetting forces affect the decisions of small open economies in designing their tax policy toward capital income. Given these offsetting forces, empirical evidence on the relative importance of some of the phenomena underlying the various arguments presented above should be quite useful.[19] Accordingly, this section provides a brief review of some of the large empirical literature on the effects of taxation on investment decisions by multinationals.[20]

This evidence can be summarized as four general findings. First, the current consensus is that taxes do have significant effects on the investment decisions of large multinational corporations. For example, Gordon and Hines (2002, p. 49) conclude that the "econometric work of the last fifteen years provides ample evidence of the sensitivity of the

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level and location of FDI to its tax treatment." A similar conclusion is reached by de Mooij and Ederveen (2003), who perform a "meta analysis" of the literature, in which they correlate the results of 25 studies of the effects of taxes on FDI (measured as various elasticities of FDI with respect to home country tax variables) to various characteristics of the underlying studies. Both surveys suggest that FDI is responsive to effective tax rates, with elasticities in the neighborhood or in excess of one, with more recent studies, especially (Altshuler, Grubert and Newlon, 2001), tending to obtain the largest estimates. Thus, the empirical literature suggests that international capital is significantly affected by tax factors, even if the degree of responsiveness is not as large as assumed in the "zero tax" small open economy argument.[21]

A second critical issue is whether FDI is responsive to home country tax rates. If the "treasury transfer" effect were operative, then the home country tax rate would be the primary determinant of investment decisions by multinational corporations. On the other hand, if the various factors that act to mitigate this effect are sufficiently important, then home country taxes should not have much of an effect on FDI. Slemrod (1990) finds that host country tax effects on FDI in the US are little affected by whether the multinational is based in a country that allows FTCs or exempts foreign income, lending support to the latter view. This interpretation is reinforced by earlier evidence that FDI financed with retained earnings is more sensitive to host country taxes than investments financed with debt or equity transfers from the parent to the subsidiary (Hartman, 1984; Boskin and Gale, 1987; Young, 1988); de Mooij and Ederveen (2003) obtain a similar finding. The issue is not clear cut, however, as Slemrod (1990) obtains the opposite result, finding that only FDI in the US financed with parent transfers (and not FDI financed with retained earnings) is responsive to US taxes, and de Mooij and Ederveen caution that their results are not statistically significant and that there are numerous econometric problems with the early studies cited above. These results, while not definitive, suggest that most of the relevant empirical evidence implies that caution should be exercised in putting great weight on the "treasury transfer" effect.

A third line of empirical research suggests that multinationals do engage in the various tax avoidance manipulations described previously, such as shifting revenues to low-tax countries, shifting deductions including interest expense to high-tax countries, and arranging to defer repatriations subject to tax. For example, several studies find that deductible interest payments (and in some cases rents and royalties) tend to be made by subsidiaries in high tax countries, while non-deductible dividend payments tend to be made in low-tax countries (Hines and Hubbard, 1990; Grubert, 1998). Similarly, there is evidence that multinationals reduce their combined tax liabilities by substituting deductible royalties for non-deductible dividends in host countries with high tax rates (Grubert, Randolph and Rousslang, 1996; Grubert, 1998). Empirical tests of the extent of tax-motivated transfer pricing typically focus on differences in profitability across host countries with varying tax rates. Normally, one would expect before-tax profits to be relatively low in low-tax host countries, since the host country tax burden is relatively low. However, numerous studies have found that after-tax profitability tends to be high in low-tax countries, suggesting that firms are shifting profits to such countries (Grubert and Mutti, 1991; Harris et al., 1993; Hines and Rice, 1994). Moreover, Grubert (2001) concludes that such tax-motivated income shifting is increasing over time. Finally, Hines and Hubbard (1990) and Desai, Foley and Hines (2001) find that the US multinationals

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are more likely to defer repatriation if its tax costs are relatively high. Taken together, these results strongly support the widely held perception that many multinationals aggressively engage in international tax avoidance activity.

Finally, a natural question is whether international tax competition has resulted in the predicted effect of declining effective corporate tax rates. The evidence on this issue is open to varying interpretations. It is clear that statutory corporate tax rates have declined in recent years. For example, Devereux, Griffith and Klemm (2002) note that average statutory corporate income tax rates in the EU and US have fallen dramatically over the past twenty years, from 48 percent in 1982 to 35 percent in 2001. At the same time, however, these rate reductions have been accompanied by base-broadening efforts, so that overall corporate tax revenues as well as average and especially marginal effective tax rates have declined considerably less (Devereux, Griffith and Klemm, 2002; Gorter and de Mooij, 2001). Since effective tax rates (and especially the marginal effective tax rate) are the relevant concept in most theories of tax competition, this evidence suggests that tax competition has not yet had a significant impact on tax rates in these countries. More generally, Grubert (2001) examines a sample of 60 countries and shows that average effective tax rates fell by almost ten percentage points between 1984 and 1992,[22] with statutory rates falling by a somewhat smaller amount (and rates in the EU falling by less than this average). This result is more consistent with the existence of tax competition, as is Grubert's finding that average effective tax rates fell much more in the small, open and relatively poor countries that are more susceptible to the effects of tax competition.[23] Similarly, Slemrod (2004) finds that statutory tax rates are negatively associated with measures of openness (although he does not find evidence of such a link for revenues as a fraction of GDP), and Devereux, Lockwood and Redoano (2004) present empirical evidence consistent with an expanded structural model of tax competition in which countries both reduce statutory tax rates to attract mobile profits (which can be shifted with accounting manipulations) and reduce marginal effective tax rates to attract mobile capital.

A complicating factor is that much of the rate reduction that has occurred around the world in recent years may be attributable not to international tax competition but to a perception that movement toward broader bases and lower rates is an inherently desirable tax policy, especially following the large scale reforms in the mid-1980s in the US and the UK that were based on this long-standing principle.[24] In addition, to the extent that capital importing countries were at least partially setting their corporate rates to maximize the treasury transfer effect from the US and the UK, reductions in their corporate tax rates would have been expected after the 1980s reforms. Indeed, Grubert, Randolph and Rousslang (1996) demonstrate that the amount of foreign source income for US multinationals that would have been attributable to firms in an excess foreign tax credit position would have soared had such rate reductions not occurred. Thus, although there is some evidence which suggests that the rate reductions predicted by some theories of tax competition are occurring, this evidence is not yet entirely conclusive.

3. Implications for Tax Policy

The discussion thus far demonstrates clearly that policy makers in any moderately small open economy that is attempting to attract foreign direct investment from large

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multinational corporations face a difficult problem. On the one hand, international tax competition for highly mobile capital, coupled with tax avoidance efforts by multinationals, results in considerable downward pressure on corporate income tax rates, a tendency that is reinforced by a natural reluctance to use a highly distortionary tax instrument. On the other hand, these effects may be mitigated by other factors that support a significant level of capital income taxation, at a rate roughly equal to the top individual marginal tax rate; these include the desire to limit tax avoidance under the personal income tax, to take advantage of the "treasury transfer" effect when possible, to appropriate economic rents, especially location-specific economic rents earned by foreign-owned multinational corporations, and to satisfy political demands for corporate taxation.[25] Empirical evidence suggests that (1) foreign direct investment is sensitive to host country taxes and this sensitivity seems to be increasing over time, (2) the practical significance of the "treasury transfer" effect is open to considerable doubt, (3) the use of tax avoidance techniques by multinationals is prevalent, and (4) there is some evidence that international tax competition is causing downward pressure on capital income tax rates although this evidence is open to alternative interpretations. Although the resolution of the difficult issue of how capital income should be taxed in this challenging environment will ultimately depend on the specific circumstances of any given country, this section makes several general points about directions for tax policy and identifies some of the parameters that are most critical to resolving this issue. It first considers two income tax alternatives—the traditional base-broadening, rate lowering reform and the Nordic "dual income tax"—and then considers the alternative of consumption-based taxation at the business level.

3.1. Base-Broadening, Rate-Reducing Income Tax Reform

A traditional prescription for income tax reform is to measure real economic income as accurately as possible, by eliminating business tax preferences such as preferential rates, investment tax credits and allowances, and accelerated depreciation deductions; the resulting revenues can then be used to lower the (uniform) tax rate applied to both domestic and foreign firms.[26] Such a neutral approach to business taxation reduces, and at least under certain circumstances, minimizes the myriad economic distortions associated with taxing corporate income,[27] while simultaneously simplifying tax administration and compliance and the perceived fairness of the tax system. It results in a positive tax burden on both the normal and the inframarginal returns to investments by multinationals, a burden that will be as moderate as the overall level of taxation in the country. At the same time, the base-broadening, rate-lowering approach avoids distorting the tax system applied to domestic firms who in many cases will be facing intense international competition.

The base-broadening, rate reduction approach is clearly more attractive in a country that places a relatively larger emphasis on the counter-arguments to the zero-tax argument described above. The tax rate under this approach is not likely to approximate the zero tax rate that may be optimal for a small open economy when capital is internationally mobile and a country is competing for multinationals that generate firm-specific economic rents; instead it is likely to approximate either (1) the top individual rate, which reflects concerns about maintaining a backstop for the personal income tax and attempts to

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"fully" tax location-specific rents, or (2) a rate that reflects an attempt to maximize the treasury transfer effect. Such an approach will also satisfy political demands for business taxation of both domestic and multinational corporations, but, depending on how much rate reduction is achieved, may also imply that tax revenues will be susceptible to accounting and financial manipulations by tax-avoiding multinationals.

The model for such a reform could be the business tax proposals offered by the US Department of the Treasury (1984) or the recent proposals recommended by the Canadian Department of Finance (1997). The thrust of these proposals is to eliminate as many of the tax preferences that litter the typical corporate income tax code, while simultaneously lowering the basic corporate income tax rate. Although this approach suffers in the short run from the problem that it is relatively costly because it benefits old investments (as opposed to new tax preferences such as an investment tax credit that applies only to new investment), it has the important advantage of creating a tax system that is based on economic principle rather than short run opportunism. A broad-based low-rate system is also less susceptible to tax avoidance manipulations by multinationals (relative to a system with a higher statutory rate coupled with preferences for new investment). It may also be less susceptible to political favoritism, to the extent that uniform and comprehensive taxation is perceived to be the rule.[28] In addition, by avoiding special provisions and thus the problems of determining who qualifies for them and enforcing the limitations on their use, a broad-based low-rate uniform tax structure simplifies both the compliance and administration of the corporate income tax. Finally, a relatively low tax rate implies that the costs of the distortions and inequities that remain under the income tax are smaller.

The outlines of the resulting tax system are as follows. The tax structure should be one characterized by deductions for the best available estimates of real economic depreciation, with few other special deductions or credits; for example, these might be limited to credits for research and development expenditures, which are defensible on economic grounds, and perhaps a special rate structure for small businesses, if such is essential for political reasons. If inflation is a serious problem, some form of inflation indexing should be provided (Thuronyi, 2000, describes alternative approaches). However, if inflation rates are relatively low and fairly stable, the complexity of a comprehensive system of inflation adjustment can be avoided (although at the cost of some additional complexity in the treatment of asset sales) with ad hoc adjustments such as appropriately accelerated depreciation allowances (or partial expensing) and LIFO inventory accounting.

Most income tax experts argue that some form of integration of the corporate and individual income taxes is appropriate in order to limit the double taxation of equity income.[29] After reviewing the various options for integration, the US Department of the Treasury (1992) concluded that—apart from the fairly radical reform of adopting its "Comprehensive Business Income Tax" discussed briefly below—exclusion of dividends at the personal level is the best integration option. The dividend exclusion approach has the advantages of achieving integration for distributed income in a way that is considerably simpler than the common alternative approaches (full shareholder allocation of profits, shareholder credits for distributed income, dividend paid deductions) while ensuring that such income is taxed at least once, at the corporate level—although it must be stressed that dividend exclusion is appropriate only for distributions that have incurred corporate tax (Hubbard, 2005). In an international context, the dividend exclusion approach treats

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foreign and domestic corporations symmetrically (with additional taxation of foreign investors straightforward, if deemed desirable, through dividend withholding taxes). It also can be structured to avoid creating a bias favoring home investments for domestic investors as long as foreign dividends are also excluded from taxable income (although such a bias can of course be created if deemed desirable by taxing foreign dividends).[30] The primary disadvantage of the dividend exclusion approach is that it taxes dividend income at the business rather than the individual tax rate. The extent to which this is problematical depends primarily on the degree of progressivity of the individual income tax structure. Of course, to the extent that international tax competition coupled with increased mobility of skilled labor limits the progressivity of the individual income tax and most equity income is earned by upper income individuals, this may be an acceptable price to pay for the other advantages of the dividend exclusion approach.

The treatment of losses is also critical, especially for start-up enterprises that are unlikely to generate taxable profits in their first few years of operation. For such small firms, generous carryforward of losses, perhaps with a nominal after-tax rate of interest, is essential to ensure competitiveness with established firms that can write off their losses on new ventures against the income from existing profitable investments. The case for generous treatment of losses, however, must be tempered by a concern that such treatment will "attract" losses as multinationals manipulate transfer prices and the allocation of debt to locate losses where they will be treated relatively generously. This suggests that, as a rough compromise, the most generous loss offset provisions should be limited to small domestically-owned firms, although such an approach will clearly be harsh for larger firms experiencing real economic losses.

Although such a base-broadening, rate-reducing reform would lower the corporate income tax rate, it would in all likelihood still be relatively high and thus be susceptible to the criticisms that it results in counter-productive taxation of highly mobile international capital and risks revenue losses to financial and accounting manipulations by multinational investors. Accordingly, a more radical reform, which is still generally consistent with the notion of taxation on the basis of income rather than consumption, but is arguably more suited for a small open economy facing an increasingly competitive international tax environment and attempting to attract investment from multinationals, may be appropriate—the "dual income tax" that has been adopted in the late 1980s and the early 1990s by the Nordic countries.

3.2. *The Dual Income Tax*

A "pure" dual income tax, as described by Cnossen (2000), has the following features.[31] The essential element is that the tax is a schedular rather than a global income tax, with all capital income taxed at a single proportional rate at either the business or individual levels (equal to the minimum non-zero tax rate applied to labor income), while labor income is taxed at progressive rates under the individual income tax. Dividends are excluded from the individual capital income tax base, while capital gains are taxed at the individual level on a realization basis but with shareholders allowed to write up their basis by net retained earnings. Capital income taxes are collected via withholding at source, which in the simplest version of the tax (which does not allow capital loss offsets

المنارة للاستشارات

against labor income or apply personal exemptions or standard deductions against capital income) represents a final tax. Profits of proprietorships and closely-held companies are split into a capital income component, typically calculated by applying a presumptive rate of return to the firm's capital, which is taxed at the proportional rate on capital income, and a labor income component, which equals the residual profit and is taxed at progressive rates under the personal income tax.[32]

The features of the dual income tax are designed to cope with the tensions stressed above in the discussion of the design of tax structure in a small open economy attempting to attract multinational investment in the face of international tax competition (Sorensen, 1994; Cnossen, 2000, 2003). Most importantly, the provision of a relatively low but nevertheless positive tax rate on capital income reflects the striking of a balance between the "zero tax rate" result obtained in the simple optimal taxation model described previously and the relatively high tax rates suggested by the counterarguments that stress the importance of the treasury transfer effect and the role of the corporate tax as a backstop to the personal income tax. Similarly, a relatively low but positive tax rate on capital income also reflects a striking of a balance between the desire to attract multinational investments that generate firm-specific rents, which would move the system toward a very low or zero tax rate, and the desire to tax at a relatively high rate multinational investments that generate location-specific rents, as well as the rents earned by domestic firms. Finally, a relatively low statutory tax rate on capital income reduces the likelihood of revenue losses from accounting and financial manipulations by tax-avoiding multinational corporations, while maintaining at least some politically desirable taxation of business.[33,34]

The treatment of proprietorships and closely held companies is of special interest under the dual income tax. The method used to split capital and labor income, if effectively enforced, limits the extent to which labor income can be sheltered in a business; that is, the dual income tax, despite its relatively low capital income tax rate, still functions as a backstop for the taxation of labor income under the personal income tax.[35]

The imposition of a withholding tax at source on interest payments, even at a reduced rate, is also of critical importance.[36] If applied uniformly, such treatment has the same effect as the denial of a deduction at the business level for interest payments coupled with exclusion at the individual level, as proposed under the US Department of the Treasury's (1992) preferred business-individual tax integration reform alternative, the Comprehensive Business Income Tax (CBIT). Since dividends paid are treated equivalently under the dual income tax, full integration of interest payments and distributed earnings is achieved. The treatment of capital gains described above also achieves integration for retained earnings; however, given the basis adjustment procedure specified, the remaining capital gains tax base would appear to be largely purely inflationary gains, so that elimination of the taxation of capital gains at the individual level would be a measure worth serious consideration. In any case, if coupled with a corporate tax that accurately measured real economic income, the treatment of capital income under the dual income tax achieves the tax integration goal of ensuring that capital income is taxed comprehensively a single time.

Finally, given the typically limited extent to which interest income is actually taxed under most income tax systems (Steuerle, 1985), it seems likely that, even with a reduced tax rate, the treatment of interest under the dual income tax would typically result

المنارة للاستشارات

in a relatively small revenue loss, or perhaps even a revenue increase permitting a modest rate reduction.[37] In the latter case, adoption of the dual income tax would again somewhat reduce the likelihood of revenue losses from tax avoidance manipulations by multinational corporations. In any case, the relatively harsh treatment of debt (in comparison to the standard treatment of full deductibility with limited if any withholding) would discourage multinationals from allocating debt to any country that adopted a dual income tax.

In summary, by largely separating the taxation of capital income from the progressive income taxation of labor income, the dual income tax approach provides a mechanism for dealing with the many tensions faced by tax policy makers in a small open economy that is attempting to attract direct investment from foreign multinationals. Taxing capital income comprehensively but at a relatively low rate provides a means of designing a tax system that is (1) attractive to highly mobile international capital (including investments by firms who are in an excess foreign tax credit position), (2) reduces the distortions of the corporate tax, (3) reduces the exposure of government tax revenues to accounting and financial manipulation by tax-avoiding multinationals, and (4) allows the taxation of labor income to be set independently of the tax rate on capital income in order to better reflect both social tastes for government expenditures including redistributive expenditures as well as concerns about tax-induced emigration of skilled labor. At the same time, the dual income tax (1) raises positive revenue from both marginal returns and firm-specific and especially location-specific economic rents from both foreign and domestic corporations, (2) takes some advantage of any revenues available through the treasury transfer effect, (3) serves as a backstop to the taxation of labor income under the personal income tax, and (4) satisfies political demands for some form of taxation of corporations, while (5) avoiding some of the pitfalls (discussed below) that would arise with the adoption of the alternative of a consumption-based cash flow business tax. The dual income tax approach will not satisfy those who, following the Schanz-Haig-Simons tradition, insist on taxing all income comprehensively under the same rate structure. Nor does it completely eliminate income taxation of highly mobile capital, as is optimal under the "zero tax" scenario. Nevertheless, the dual income tax represents a potentially promising compromise to the offsetting tensions that characterize today's fiscal landscape, and deserves serious consideration by governments who are attempting to design capital income tax policy in the face of increasing capital mobility and international tax competition.

3.3. Consumption-Based Cash Flow Taxation

An even more radical tax policy reform that has received a great deal of attention in recent years is the replacement of the personal and corporate income tax system with a consumption-based direct tax system that would include a cash flow tax, or an equivalent construct, at the business level.[38] Examples of this approach include the Flat Tax proposed by Hall and Rabushka (1983, 1995) and its X-Tax variant as designed by Bradford (1986, 2003), the "cash flow income tax" proposed by Aaron and Galper (1985),[39] the "hybrid consumption tax" proposed by McLure and Zodrow (1996a, b),[40] and the "allowance for corporate equity" or ACE tax developed in Institute for Fiscal

المنارة للاستشارات

Studies (1991) and implemented for a short period in Croatia (Rose and Wiswesser, 1998; Zodrow, 2003). The business tax under a consumption-based tax is accompanied by an individual level tax, typically only on labor compensation, or on labor compensation with cash flow treatment of capital income (which has the effect of exempting normal returns to capital).

Many academic and business economists have long extolled the virtues of consumption-based taxation over income-based taxation, arguing that the former tax system is preferable on efficiency, equity and simplicity grounds. In brief, these arguments can be summarized as follows.[41] On efficiency grounds, consumption tax advocates argue that by eliminating both the income tax distortion of consumption-saving decisions as well as distortions of the level and allocation of investment by applying a marginal effective tax rate of zero to investment income, a broad-based low-rate consumption tax would result in large increases in saving and investment, labor supply, output, and economic welfare.[42] Several economic models support such a contention. To cite one prominent example, Altig, Auerbach, Kotlikoff, Smetters and Walliser (2001), using an overlapping generations dynamic general equilibrium model with 12 income groups in each generation, predict that enactment of the Flat Tax would result in long run increases in saving of 17 percent, investment of 24 percent, and output of 6.1 percent.[43] All income groups would benefit in the long run, with welfare gains ranging from roughly 0.5–2.0 percent of "full lifetime resources," defined as labor earnings plus the value of leisure over the lifetime. Moreover, in an open economy, the efficiency gains from implementing a consumption tax would be larger than in a closed economy setting to the extent that reform raised net rates of return to investment, as would typically be the case (Ballard, 2002). Most importantly for present purposes, a consumption-based tax is attractive from the viewpoint of a small open economy facing a highly elastic supply of capital, as it is consistent with the "zero tax" criterion in the sense that it imposes a marginal effective tax rate of zero on normal returns to investment. Nevertheless, a consumption tax also taxes above-normal returns of both foreign and domestic businesses at the statutory rate—although this result obtains not only for location-specific rents but also for more mobile firm-specific rents—and, as noted above, provides a backstop for the taxation of labor income under the individual level tax.

On equity grounds, consumption tax advocates argue that the tax is fairer because, unlike the income tax, it does not discriminate against individuals who save and earn capital income; they also stress that consumption taxes are less regressive when viewed in a lifetime incidence context, and sometimes note that the progressivity of the current income tax could be roughly replicated under a multi-rate consumption tax. In addition, the business tax under a consumption tax satisfies at least partially the political need for such a tax.

On simplicity grounds, advocates of consumption tax reforms stress that such taxes are inherently simpler than income taxes because they are typically calculated on a cash flow rather than an accrual basis; in particular, thorny timing issues, such as inflation adjustment and accounting for depreciation, inventories and capital gains, disappear under the cash flow accounting of a consumption tax. This would be particularly important in the case of a developing country, where capital flight in response to income taxation of capital income is often a critical problem and in which administrative resources are especially scarce (Zodrow and McLure, 1991); moreover, these simplicity advantages would

المنارة للاستشارات

be augmented if the tax were assessed on a territorial basis, as is often proposed (Ballard, 2002). In addition, partly in response to the pressures for reduced capital income taxation stressed in this analysis, income taxes in practice are often greatly complicated by the introduction of investment incentives, such as accelerated depreciation, investment tax credits and special allowances, and tax holidays; by comparison, expensing (or its equivalents) under a consumption tax provides a uniform incentive to all forms of investment in a very straightforward fashion.[44]

Nevertheless, despite these many advantages, several factors suggest that implementing a consumption tax may not be appropriate for a small open economy attempting to attract investment from large multinational corporations. The first points are related to the "treasury transfer" argument discussed above. Since a consumption tax exempts the normal return to capital, it would not take advantage of any opportunities for such treasury transfers from countries that grant foreign tax credits. More importantly, despite the fact that on economic grounds a cash flow tax is similar to taxes that have been deemed creditable and dissimilar from taxes that have been deemed non-creditable and are the focus of the legal limitations on creditability, it appears that the US Internal Revenue Service (IRS) would not deem a cash flow tax to be a creditable tax for US multinationals.[45] In this case, the treasury transfer effect would not be operative for investment by US firms and double taxation of economic rents would result, providing a potentially serious disincentive for investment. In addition, a non-creditable tax might also discourage investment simply because it does not have the "seal of approval" of the IRS. These considerations have been sufficiently important to prevent several countries from adopting a cash flow tax (McLure and Zodrow, 1996b), and creditability problems have often been viewed as a "show stopper" for consumption tax reforms. However, recent developments suggest the fiscal landscape has changed at least somewhat on this score. First, the IRS has agreed to allow creditability for a portion of the Italian IRAP (Imposta Regionale sulle Attivita Produttive), a type of origin-based value-added tax that is quite similar to a cash flow business tax with no deductions for labor compensation; roughly speaking, the creditable portion is the value-added tax base less compensation and interest payments (Adelchi Rossi, 2002). Thus, there is now a precedent that a consumption tax on at least the equity-financed component of investments that earn above-normal returns would be creditable. Second, the "adjustment for corporate equity" or ACE version of a consumption tax mentioned previously, which requires depreciation and interest deductions but then creates the economic equivalent of cash flow treatment by allowing a special deduction equal to the product of an interest rate and the equity-financed component of the capital stock has been deemed creditable when it was enacted briefly in Croatia (Rose and Wiswesser, 1998; Zodrow, 2003). Thus, the likelihood that an appropriately structured consumption-based business tax will be creditable in the US may be considerably greater than once thought. Moreover, in a recent variant of his X-Tax, Bradford (2003) argues that an approach similar to that under an ACE tax is in fact a highly desirable way to implement a consumption tax, as it reduces transition problems and eliminates the potential distortions of investment decisions that arise under strict cash flow accounting when tax rates change over time.

Second, despite the fact that it imposes a zero effective tax rate on the income from marginal investments, a cash flow tax would nevertheless act as a disincentive to inframarginal investments that generated firm-specific economic rents; that is, for such

المنارة للاستشارات

investments, average rather than marginal effective tax rates are the more relevant concept for measuring the incentive effects of taxation and average effective tax rates are positive under a cash flow tax (Bond, 2000; Devereux, 2000; Devereux and Hubbard, 2003). Moreover, the tax rate under a cash flow tax may be high, relative to the rate under a corporate income tax, for two reasons. First, the rate may be relatively high to make up for the revenue loss attributable to the fact that the normal returns to investment that are taxed under an income tax are not included in the base of a cash flow tax. Second, cash flow tax rates may be relatively high in an attempt to appropriate a significant share of economic rents from domestic firms or location-specific rents from multinationals. Thus, the disincentive for investments generating economic rents may be relatively large under a cash flow tax, making it an unattractive option for a small open economy attempting to attract foreign direct investment.

Third, the possibility that the statutory tax rate may be relatively high under a cash flow tax also makes it unattractive in terms of minimizing the extent to which a country suffers revenue losses attributable to the accounting and financial manipulations used by multinationals to lower their overall tax liabilities. As noted above, these manipulations typically involve shifting revenues to low-tax countries and shifting expenses to high tax countries. A relatively high tax rate under a cash flow tax would encourage revenue shifting out of the country and expense shifting into the country, having a potentially significant negative effect on tax revenues. On the other hand, if the cash flow tax did not allow deductions for interest expense (as under the Flat Tax) or if loans were treated on a cash flow basis, firms would face a large incentive to allocate debt to income tax jurisdictions where interest was deductible (and the proceeds of loans were not taxable), thus mitigating the effect of a relatively high cash flow tax rate.

Fourth, expensing under the cash flow tax implies that many firms would be in a negative cash flow position, especially if loans were ignored for tax purposes, as under the Flat Tax. Such negative cash flows should in principle be carried forward at the nominal risk-free interest rate. The determinations of this rate would inevitably be controversial.

Finally, adoption of a cash flow tax in a world where all of a country's trading partners maintained their income tax systems would pose problems. In addition to the obvious issues of creditability problems and the potential need to renegotiate a multitude of tax treaties, the enactment of a cash flow tax would create tax avoidance opportunities for businesses dealing with companies subject to an income tax. These would be especially severe under the Flat Tax or its variants, which exempt interest income and disallow deductions for interest expense. To cite one example, suppose that Firm A is subject to the Flat Tax and is selling its output abroad to Firm B which is subject to an income tax. In this case, Firm A has a clear incentive to sell its output at a reduced price in exchange for either (1) an above-market interest rate on a loan that it extends to B (e.g., an installment sale or other type of seller financing), or (2) a below-market interest rate on a loan from B to A. Firm A benefits from such an arrangement, since the price reduction lowers taxable receipts under the cash flow tax and either (1) the higher interest income is tax exempt, or (2) the lower interest expense is not deductible in any case. At the same time Firm B is indifferent to the price manipulation, as the lower deductions for inputs purchased from A would be offset by either (1) higher interest deductions on the loan from A, or (2) lower interest income on the loan to A.[46] Such manipulations would be difficult to detect, and regulations designed to limit them would be complex and difficult to enforce.

المنارة للاستشارات

To combat these problems, McLure and Zodrow (1996a, b) recommend that the Flat Tax be converted to a "hybrid" consumption tax under which all business transactions are taxed on a cash flow basis (while retaining the simplicity of ignoring loans and interest income and expense at the individual level). Bradford (2003) recommends a similar but more targeted approach, under which all transactions of related firms are taxed on a cash flow basis.

Thus, although consumption-based taxation has many advantages, its adoption is not a panacea for a small open economy. Rather, the advantages and disadvantages of the various consumption tax options, relative to the income tax options discussed above, must be considered within the context of the specific country contemplating reform.

4. Conclusion

The analysis in this paper demonstrates that international capital mobility and tax competition create vexing problems for tax policy design in a small open economy. In this context, policymakers face two basic questions. How should the various factors described above be balanced in determining the tax treatment of capital income? And what types of empirical data would be beneficial in choosing among the various options for reform?

Although the traditional base-broadening income tax approach should result in some modest reductions in the corporate income tax rate and in the distortions of investment allocation of the tax, it is clear that this option tends to minimize the importance of tax-induced capital outflows and the revenue losses attributable to transfer pricing and other financial and accounting manipulations. In addition to being attractive to countries that have a strong political commitment to source-based taxation in the form of a relatively "pure" income taxation applied uniformly to both domestic and foreign firms, this approach is most viable if (1) a significant fraction of domestic and especially foreign businesses in the economy earn large location-specific rents and are thus relatively immobile,[47] (2) a significant fraction of foreign direct investment comes from (or is expected in the future to come from) multinationals based in countries that offer foreign tax credits but are not in an excess foreign tax credit position, (3) tax administration is relatively well developed so that transfer pricing and other financial manipulations can be monitored effectively, and (4) the function of the corporate tax as a backstop to an effective personal income tax is perceived to be important. On the last point, the data presented by Gordon and Slemrod (2000) suggest that, at least in the US, income shifting between the personal and corporate taxes is quite sensitive to tax differentials so that the backstop function of the corporate tax may be quantitatively important; specifically, they estimate that a one percentage point decrease in the corporate-individual rate differential, controlling for effects on the use of debt finance and the amount of non-corporate assets, reduces reported personal labor income by 3.2 percent. Although these results are not transferable across countries, full taxation of capital income may be desirable to the extent income tax rate reductions in a particular country would lead to similar responsiveness, and their effects cannot be offset by more thorough integration of the business and individual taxes or improved tax administration.

On the other hand, the Nordic dual income tax strikes a balance between full taxation of capital income and the tax exemption implied by the "zero tax" argument. It is

المنارة للاستشارات

viable only for countries that are politically willing to abandon the Schanz-Haig-Simons notion of uniform taxation of a comprehensive measure of real economic income and to relax any perceived entitlement to income taxation at source in the interest of attracting larger levels of foreign direct investment and minimizing revenue losses due to transfer pricing and other financial accounting manipulations. Similarly, the dual income tax approach results in some taxation of location-specific rents, but at the cost of driving out some highly mobile international capital. Indeed, a capital income tax rate between the maximum rate applied to labor income under the personal income tax and a rate of zero may reflect an "optimal" response to these offsetting pressures, with the key factors being the share of capital income accounted for by location-specific economic rents and the elasticity of supply of international capital. For example, Gugl and Zodrow (forthcoming) analyze optimal capital income taxation in a model of a relatively small open economy in which one type of capital (e.g., capital that earns location-specific economic rents or some domestic capital) is imperfectly mobile while another type of capital (e.g., foreign capital and some domestic capital) is perfectly mobile. In this context, they show that if the tax rate on both types of capital is constrained to be the same, the optimal tax rate falls between zero and the rate in the unconstrained case—in their numerical example, the optimal tax rate varies between roughly 40–80 percent of the "full taxation" rate.[48] In addition, the dual income tax is more likely to be the preferred approach in countries that feel confident that limitations on the reclassification of labor income as capital income can be designed and enforced effectively, and are willing to accept a some arbitrariness in the definitions of capital and labor income.[49] Moreover, the relatively low capital income tax rate under the dual income tax implies that the efficiency costs of remaining distortions are reduced, and that at least some of any revenues available from treasury transfer effects will be realized. Finally, it should be noted that in some cases the implication of the rate-lowering arguments that underlie the dual income tax may be that a zero tax rate, rather than the intermediate capital income tax rate utilized under the dual income tax, may be optimal. In particular, if the treasury transfer effect can be dismissed as being quantitatively insignificant, limitations on the shifting of labor income can be designed and effectively enforced, and production within a country is characterized by relatively limited location-specific rents, the revenues obtained from taxing economic rents at a relatively low rate may simply not be worth the considerable administrative costs of attempting to tax capital income—that is, complete elimination of source-based taxation may be the optimal policy.

Finally, the advantages of consumption-based taxation for a small open economy are significant, especially for a developing country with scarce administrative resources that is attempting to attract foreign direct investment. A consumption-based business tax eliminates the many distortions of the corporate income tax and meets the concerns underlying the "zero tax" argument in the sense that it exempts the normal return to capital. At the same time, both labor income shifted to the business level and location-specific economic rents are taxed at the statutory business tax rate, so that the backstop and rent taxation criteria are satisfied (although firm-specific economic rents are also taxed even though international mobility of capital suggests that tax exemption would be the preferable policy for a small open economy). Countries contemplating this option face two main obstacles, in addition to the issues of whether the tax exemption of the normal returns to capital, for both domestic and foreign capital owners, is politically feasible

المنارة للاستشارات

and transitional issues are manageable. The first is the issue of whether a consumption tax would be creditable in the U.S.[50] Although this issue has commonly been viewed as a “show stopper” for consumption tax reforms, recent developments suggest that certain forms of consumption taxation (which have some additional advantages as well) would be partially or fully creditable, thus at least tentatively removing a huge obstacle to the enactment of such reforms. Second, the differences in the tax treatment of various transactions under consumption and income taxes can create significant opportunities for tax avoidance in a world where a country’s trading partners continue taxation on the basis of income. Again, however, recent developments suggest that with the appropriate modifications of the standard consumption tax approaches these issues might be manageable. Accordingly, the consumption tax option deserves serious consideration as a potential solution to the tax policy design problem facing a small open economy that is subject to a highly elastic supply of international capital and increasing tax competition.

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Notes

1. For a comprehensive discussion of the tax policy issues raised by increased globalization, see Tanzi (1995).
2. The open economy arguments that are the focus of this paper supplement the case for capital income tax exemption or consumption taxation that is often made in the context of a closed economy; for recent examples, see Gordon (2000) and Judd (2001). See also Gordon (2003), who discusses some recent caveats to these arguments, and Zodrow (2005) for a recent review.
3. The discussion in this paper focuses on the use of source-based taxes on capital income in small open economies. Although the alternative of residence-based taxation has considerable theoretical appeal (Wilson, 1999; Bucovetsky and Wilson, 1991), its practical significance is severely limited by difficulties in effective enforcement (Tanzi, 1995; Blumenthal and Slemrod, 1995).
4. The pressures for more favorable tax treatment of relatively more mobile foreign capital within the context of an apparently uniform corporate income tax structure may lead to investment incentives that are targeted, either explicitly or implicitly, to foreign firms (Gugl and Zodrow, forthcoming). Similarly, Devereux, Griffith and Klemm (2002) suggest that recent base-broadening, rate-lowering reforms in the EU may reflect tax competition focused on relatively profitable and relatively mobile multinationals, as such reforms disproportionately lower the effective tax rate on high profitability investments.
5. The analysis does not consider the well-known case for source-based taxes on capital in the form of benefit taxes for public services received or environmental taxes. Although both forms of taxation are being used increasingly around the world, especially in the form of direct user charges, they still raise relatively little revenue and are often difficult to administer well. Note that the corporate income tax, at least at the levels typically imposed, cannot be justified as either a benefit tax or a system of effluent fees, since corporate profits are not directly related to either benefits received or effluents generated.
6. For an application of this analysis to the case of Colombia, see Echavarría and Zodrow (forthcoming).
7. This argument ignores any foreign tax credits for host country taxes that might be granted in the home country, an issue that is discussed below.
8. These efficiency costs arise due to an inefficiently low overall capital intensity of production and a tax bias favoring production of labor-intensive goods (Gordon and Hines, 2002).

المنارة للاستشارات

9. The "zero tax result" is typically interpreted as a zero marginal effective tax rate, as would arise not only under complete exemption of capital income but also under the cash flow tax option (discussed further below) that exempts the normal rate of return to capital while taxing economic rents.
10. These models often suggest a "race to the bottom" as tax competition eliminates capital income taxes, although this could just as easily be labeled a "race to the top" as countries are forced to use efficient benefit taxes to finance their public services rather than inefficient non-benefit taxes on mobile capital (McLure, 1986). For recent reviews of both negative and positive aspects of tax competition, see Wilson (1999), Oates (2001), Zodrow (2003a), Fuest, Huber and Mintz (2003), Wildasin and Wilson (2004), and Mintz and Chen (2000).
11. Location-specific rents are discussed below. It should be noted that distinguishing between firm-specific and location-specific rents, e.g., in the case of low source country wages, is not always straightforward. See Markusen (1995) for a recent review of the theory of multinational enterprises, including a discussion of the characteristics of multinational investments that may generate location-specific and firm-specific economic rents.
12. The effectiveness of this "backstop" function of the corporate income tax should not be overstated. Self-employment income (reported as corporate income or as business income on an individual return) is notoriously under-reported, and attempts to improve enforcement in this area have met with only limited success.
13. Note, however, that the US is also a major capital importer, so that it has a significant interest in its own source-based taxation of foreign multinationals.
14. Note that in some cases special treatment provided to certain countries under tax treaties blurs the distinction between residence-based countries that offer foreign tax credits and territorial countries that exempt foreign earnings. For example, Germany extends tax exemption treatment only through treaties.
15. Grubert, Randolph and Rousslang (1996), using 1992 data on foreign source income for US corporations, estimate that 35 percent of general basket foreign source income is attributable to firms in an excess credit position, with virtually all US firms engaged in the petroleum and mineral extracting industries in an excess credit position.
16. This argument is basically the same as that made in the "trapped equity" view of the effects of dividend taxation, which argues that dividend taxes at the individual level are irrelevant for investments financed with retained earnings; see Zodrow (1991) for a discussion of theoretical and empirical aspects of the debate between proponents of the trapped equity view and the "traditional" view of dividend taxes, which argues that dividend taxes increase the cost of investments financed with retained earnings.
17. Of course, a country may be sufficiently large that the "small open economy" arguments presented above may not be entirely relevant. For example, a capital-importing country that has some market power in the international capital market may wish to impose a source-based capital income tax to reduce demand for capital imports and drive down the interest rate. Similarly, a country with market power in its export markets may utilize a source-based capital income tax as an indirect means of driving up the world price of its exports (Burgess, 1988). Alternatively, a country that presents unique investment opportunities may impose a source-based capital income tax as a means of "charging" for the risk-spreading services it provides to multinationals (Gordon and Varian, 1989). For most economies, however, especially developing and transition economies, the quantitative significance of these arguments is open to serious question.
18. Bird (1996) offers three other potential but less compelling economic justifications for a corporate income tax. First, a corporate tax might be used to offset other production inefficiencies (Hartman, 1986; Findlay, 1986); however, in practice it would be difficult to structure the tax to do so effectively. Second, given the results presented above on the incidence of a source-based tax on capital income in a small open economy, such a tax may be a means of increasing taxes on immobile local factors beyond the level politically possible through the direct individual tax system (Sorensen, 1995) if such increases are deemed desirable and cannot be implemented through alternative means. Third, a corporate tax facilitates government intervention in the economy in the form of corporate tax preferences for various types of activities which, if implemented for economically justifiable reasons (e.g., demonstrable external benefits to additional research and development activity) rather than for purely politically advantage, may be socially desirable; of course, direct government expenditures can achieve the same goal in a more transparent fashion and without incurring the distortions of the corporate tax.

المنارة للاستشارات

19. It should be noted, however, that a limitation of this empirical evidence is that most of it examines either investment in the US or foreign investment by US firms and pools investments in developed and developing countries, which may limit its general applicability. For example, Blonigen and Wang (2004) find that the determinants of FDI are different across developed and developing countries, and that FDI is much more likely to spur economic growth and domestic investment in developing countries than in developed countries.
20. Due to a wide variety of econometric and data problems, the results summarized below are necessarily tentative. These problems include difficulties disentangling the relationships of interest between various types of investment decisions and tax policy from the many other factors that affect such decisions, and obtaining accurate measurements of the key variables. Moreover, there is considerable controversy over whether the appropriate measure of tax rates should be a marginal effective tax rate to reflect investment incentives at the margin (King and Fullerton, 1984) or an average tax rate to capture the effects of discrete incremental investments that generate economic rents and tax avoidance activities (Devereux and Griffith, 1998; Devereux and Hubbard, 2003), and how FDI should be measured (e.g., whether capital acquired through mergers and acquisitions or financed with local debt should be included). For further details, see Hines (1999), Gordon and Hines (2002), de Mooij and Ederveen (2003), and Devereux and Griffith (2003).
21. For a similar view, see Ballard (2002) who surveys the literature on international capital mobility and concludes that capital is highly but imperfectly mobile and that this mobility is increasing over time.
22. Note that this evidence is difficult to interpret, as average corporate effective tax rates may fall for many reasons other than changes in the corporate tax structure, including variations in profit rates, cyclical factors, interactions between the corporate and individual tax systems when individual rates change, changes in inflation rates, and changes in the extent to which multinationals engage in income shifting activities (Mintz and Chen, 2000).
23. Grubert notes that rates in the EU have not converged over this period, and argues that this suggests an absence of tax competition. However, this interpretation is open to question—if the long run implication of increased tax competition is that corporate income tax rates will converge to zero, it is not clear that convergence about intermediate rates during the transition to this equilibrium should necessarily be expected.
24. The worldwide reforms that followed the US and UK reforms are described by Cnossen and Messere (1990).
25. Alternatively, these factors suggest that capital income tax coordination may be desirable if feasible; for a discussion of tax competition and tax coordination in the EU context, see Bond (2000) and Zodrow (2003a).
26. Thus, the discussion precludes tax holidays (or other tax preferences) designed solely for investments by multinationals which, in theory, could be successful in attracting highly mobile foreign investment while still applying corporate income tax to domestic firms and perhaps old investment by foreign firms (Gugl and Zodrow, forthcoming). However, in addition to the perception of unfairness toward domestic firms, such tax holidays have many disadvantages; for discussions of the advantages and disadvantages of the use of investment incentives, see Mintz (1992), Zodrow (1995), Boadway and Shah (1995) and Zee, Stotsky and Ley (2002).
27. Although uniform or neutral taxation of all business activities is not theoretically optimal under all circumstances, it is likely to approximate the efficient outcome, especially when the administrative and political costs of differential tax treatment are taken into account.
28. On the other hand, some public choice theorists argue that enactment of a base-broadening, rate-lowering reform merely creates new opportunities for special interest lobbying for preferential tax treatment (Buchanan, 1987).
29. This prevailing view is not, however, unanimous, primarily because under the "trapped equity view" of dividend taxation noted above dividend taxes do not affect marginal incentives for investments financed with retained earnings; as described in Zodrow (1991), this implies that integration results in relatively small efficiency gains but confers a large windfall gain to the owners of existing capital.
30. The alternative shareholder credit approach has been criticized for its "home bias" for domestic investment since credits are typically not provided for dividends earned on foreign investments (Gordon and Hines, 2002).

المنارة للاستشارات

31. See also Sorensen (1994) and Nielsen and Sorensen (1997).
32. Dual income taxes in practice differ to varying degrees from this pure version; see Cnossen (2000) for a comprehensive discussion of the details of the dual income taxes in Denmark, Finland, Norway and Sweden.
33. Note also that, unlike some of the competing consumption-based tax alternatives, especially the Flat Tax, the dual income tax meshes well with existing income tax systems around the world.
34. In addition, in the EU context, widespread adoption of a dual income tax might be viewed as a precursor to greater tax coordination among EU members, including a uniform withholding tax rate applied to interest payments (Cnossen, 2000; Zodrow, 2003a).
35. Note, however, that Sorensen (forthcoming) argues that in practice it appears that considerable income shifting by the owners of proprietorships and closely-held companies has nevertheless occurred, a phenomenon he describes as the "Achilles Heel of the dual income tax." He describes a recent Norwegian proposal to remedy this problem by replacing the income splitting approach with individual-level taxation of returns in excess of a normal rate of return (termed the rate-of-return allowance).
36. Cnossen (2000) notes, however, that in practice the level of withholding on interest payments under the Nordic dual income taxes falls considerably short of the ideal of full taxation at the capital income tax rate.
37. The US Department of the Treasury (1992) estimated that adoption of the Comprehensive Business Income Tax would allow a rate reduction from 34 to 31 percent.
38. Of course, many countries rely to a significant extent on indirect consumption taxes, generally the VAT.
39. Earlier versions of similar proposals appeared in US Department of the Treasury (1977) and Institute for Fiscal Studies (1978).
40. These systems differ primarily in their treatment of loans. The Flat Tax ignores loans, the Aaron-Galper plan treats loans on cash flow basis with the proceeds of a loan included in the base and repayments of interest and principal deductible, and the McLure-Zodrow plan recommends that loans be ignored at the individual level but treated on a cash flow basis at the firm level. See McLure and Zodrow (1996a) for further details.
41. These arguments are discussed at length by Bradford (1986) and Zodrow and McLure (1991); see also the articles in Rose (1990), Boskin (1996), Aaron and Gale (1996), and Zodrow and Mieszkowski (2002b).
42. Note that tax exemption of normal returns occurs only if bequests are not taxed, as is appropriate under a "dynastic" view of equity; by comparison, under the "lifetime endowment" view of equity, bequests are taxed as consumption, resulting in positive taxation of normal returns to capital (Zodrow and McLure, 1991).
43. Jorgenson and Wilkoxen (2002) obtain even larger results for the implementation of a flat rate national retail sales tax with no personal rebates.
44. Although consumption taxes have been advocated for at least the past twenty-five years, no industrialized country has yet adopted such a reform. Zodrow and Mieszkowski (2002a) discuss several issues that remain to be resolved before a consumption-based tax reform is likely to be enacted.
45. The primary issue is that a cash flow tax does not have the "predominant character" of an income tax in that it either disallows interest deductions or includes the proceeds of loans in the tax base (McLure and Zodrow, 1998).
46. See McLure and Zodrow (1996a) for further discussion.
47. This argument suggests that the income tax reform option is especially well-suited for countries with significant amounts of natural resources. Note, however, that the rents generated by such resources could be (and typically are) taxed with alternative tax instruments, such as severance taxes.
48. These results are only suggestive that an intermediate tax rate as under the dual income tax rate may be optimal, as the Gugl-Zodrow model does not determine the tax rate on labor income. They also investigate the role of tax incentives for mobile capital in determining the optimal capital income tax structure.
49. The extent to which capital and labor income are identified accurately under the Nordic dual income taxes is unclear, as Cnossen (2000) believes that the presumptive approach described above is reasonably effective while Sorensen (1994) is less optimistic and advocates an alternative approach (Sorensen, forthcoming).
50. Recall that an additional, but arguably relatively unimportant issue, is that any treasury transfer effect associated with the taxation of the normal returns to capital would be lost under a consumption tax.

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