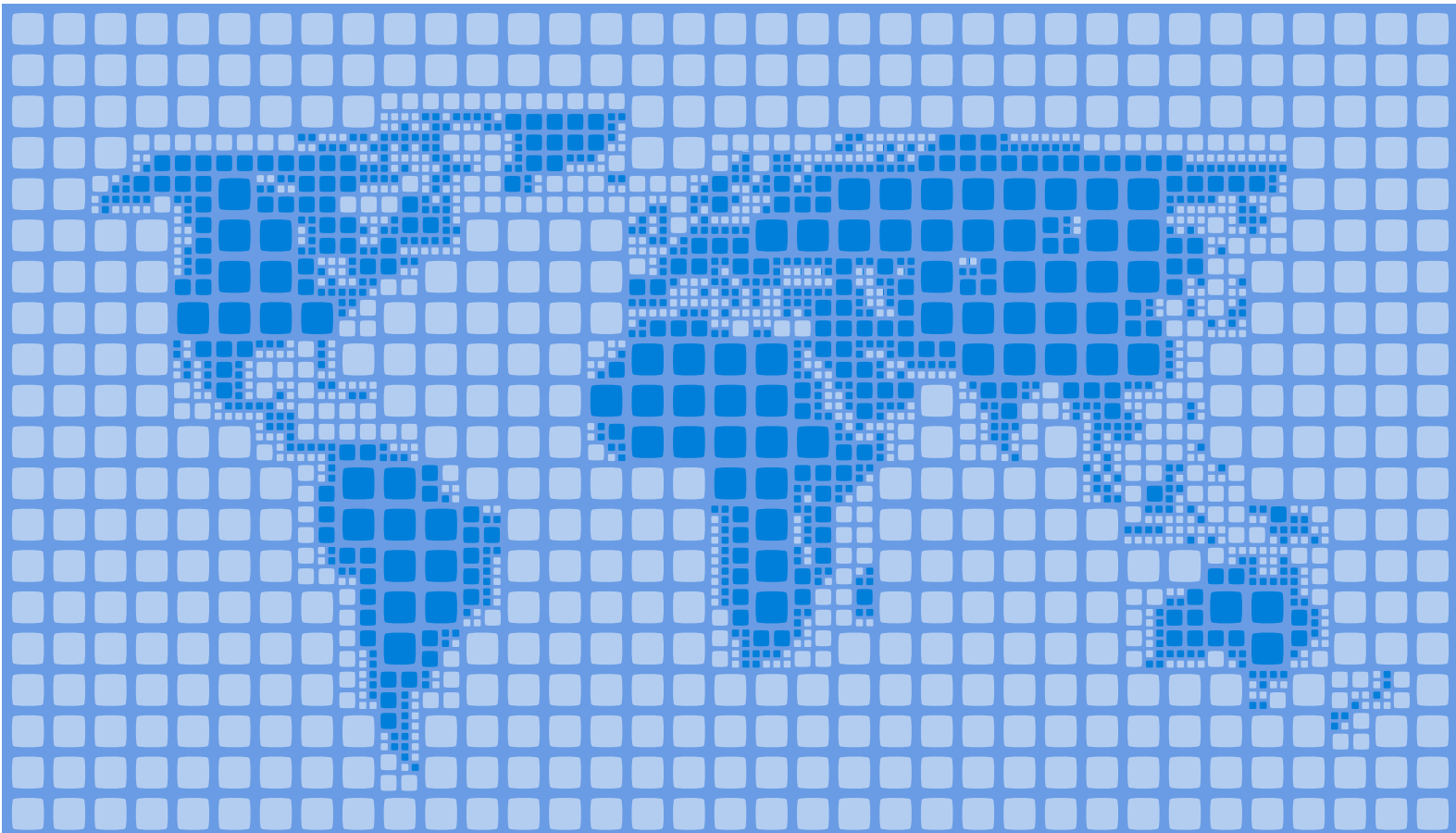


The Tax Treatment of Expenses Incurred to Earn Foreign Source Business Income: Principles, Policies, and Options

James R. Hines Jr.

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System of International Taxation

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Table of Contents

| | | |
|-----------|---|----|
| 1. | Introduction and summary | 1 |
| 2. | Domestic expense deductions in practice | 5 |
| 2.1 | U.S. expense allocation rules and their impact..... | 5 |
| 2.2 | Reform proposals | 8 |
| 3. | The taxation of foreign income | 10 |
| 3.1 | Capital export neutrality and national neutrality | 10 |
| 3.2 | Ownership neutrality | 11 |
| 3.3 | Implications for domestic expense deductions..... | 12 |
| 4. | Analysis of domestic expense deductions | 14 |
| 5. | Conclusion | 17 |
| | References | 18 |

1. Introduction and summary

Income tax systems, such as that used by Canada, permit taxpayers to claim deductions for expenses incurred in the course of earning income. Thus, a taxpayer who spends \$500 on labor and materials to produce output subsequently sold for \$700 will be taxed on income of only \$200, since the \$500 expense is deductible for tax purposes. Any sensible income tax must permit expense deductions, since otherwise it becomes a form of turnover tax, taxing gross rather than net income, overstating the incomes of some taxpayers, and reducing the efficiency of the economy by misallocating tax burdens, prompting excessive vertical integration, and discouraging other activities that add economic value.

In an open economy a taxpayer may incur expenses in one jurisdiction that contribute to producing income in other jurisdictions. It is therefore necessary for the governments involved to establish clear rules concerning the extent to which expenses can be deducted. In principle these rules must be established by all affected parties: if a firm incurs an expense in country A that ultimately contributes to earning income in country B, the governments of both countries A and B must determine whether, and to what extent, they will permit the expense in country A to be deducted against taxable income in their own country.

It is natural to want to match expense deductions against revenue attributable to the expenses. As a practical matter, however, considerable challenges arise in matching deductions against income for certain types of expenses, such as interest expense, or general and administrative expense, that are general to a firm and difficult to attribute to particular activities. If a large multinational firm headquartered in Canada and with operations in 20 other countries spends \$20 million on headquarters activities in Canada, the foreign countries typically do not permit the firm to take local tax deductions for any portion of the \$20 million headquarters expense. What then should be the policy of the home country — should the firm be permitted to deduct the \$20 million against its Canadian income, or should that deduction be limited by apportioning some fraction of the \$20 million against its income in other countries?

The purpose of this study is to evaluate the efficiency properties of alternative expense deduction rules for countries in which expenses are incurred. This puts aside the different, and also important, question of how expenses incurred in other countries should be treated by countries in which income is earned. In practice, countries generally do not permit taxpayers to claim deductions for expenses incurred in other countries. For the purpose of this study, it is sufficient simply to take the treatment of foreign expenses as given, so that whatever policy a country adopts concerning the ability of its firms to claim deductions for expenses that may generate income abroad does not affect the deductibility of the same expenses in foreign countries.

One common answer to the question of the extent to which taxpayers should be permitted to deduct domestic expenses that contribute to producing foreign income is that the appropriate treatment depends on the nature of the home-country tax regime. So this reasoning goes, the firm should be permitted to claim home-country deductions only for that part of an expense that produces income taxed by the home country. Hence if a firm is resident in a country such as Canada that taxes domestic income while generally exempting active foreign income, it follows from this logic that the portion of domestic expenses incurred to produce active foreign income should not be deductible in the home country.

The analysis in this study comes to a different conclusion, finding that the only efficient policy, viewed through the lens of home-country welfare, is to permit full domestic deductibility of expenses incurred in the home country. Full domestic deductibility is a feature of any efficient tax regime, including residence-based worldwide tax systems with and without provision of foreign tax credits, and a system in which the home country exempts active foreign business income from taxation. All that is necessary is that the home-country tax regime be tailored to promote home-country welfare efficiently, and if it is, then full domestic deductibility is also an efficient policy from the standpoint of the home country.

The study's finding that full domestic deductibility of home-country expenses promotes home-country welfare is perhaps unintuitive. In order to appreciate why full domestic deductibility is efficient it is necessary to understand why countries have the international tax systems they do. This is particularly important in the cases of countries that exempt foreign income from taxation. Such tax systems appear inefficient from the standpoint of single investment decisions in isolation, since from this perspective they seem to give excessive incentives to invest in low-tax foreign countries. Hence if an exemption system is efficient, it must be that its efficiency stems from considerations, such as competitiveness with firms from other countries, that are omitted by considering just one investment at a time. Since new investments trigger reactions by investors and their competitors, it is important to incorporate these reactions in evaluating the welfare properties of exempting foreign income from home-country taxation. It is from the standpoint of all of the induced reactions that permitting full domestic expense deductibility makes considerable sense, since the failure to permit deductibility would distort asset ownership patterns and thereby reduce the productivity of domestic business operations.

On careful reflection it should not be surprising that a fully efficient tax system permits complete deductibility of domestic expenses. It is an efficient, and virtually universal, practice to permit full deductibility of domestic expenses incurred by firms that earn only domestic income, since efficient taxation preserves incentives to spend \$1 to create more than \$1 of pretax economic return. But a tax system that maximizes the welfare of the residence country also taxes foreign income in a way that makes the residence country indifferent between a marginal dollar of activity undertaken by one of its firms at home or abroad. If this were not so — if, for example, the home government would prefer that its firms concentrate more of their activity at home at the expense of activities abroad — then the tax treatment of foreign income must not be optimal in the first place. Hence with optimal tax systems the value of foreign activity at the margin is the same as the value of domestic activity, so if an expense is properly deductible when producing domestic income, efficiency requires that it also be deductible when producing foreign income.

Despite this abstract reasoning, many thoughtful observers are likely to find it puzzling that it could be in a country's interest to permit its firms to claim tax deductions for expenses that are used to produce exempt foreign income. For example, a Canadian firm might borrow \$10 million domestically, using the funds to invest in a foreign business operation that produces income that is taxed by the foreign country but not taxed by Canada. At an eight-percent rate of interest, the \$10 million of borrowing entails \$800,000 per year of interest expense that, if fully deductible, would reduce taxable income in Canada by that amount. In the absence of offsetting considerations, why would Canada want to permit these interest deductions?

The answer to the puzzle lies in understanding why Canada (along with every other country) permits an interest deduction in the first place, and why Canada exempts foreign income from taxation. The tax deduction for business interest is often criticized for introducing a disparity between the taxation of equity-financed investments and the taxation of debt-financed investments, though the obligatory nature of interest payments together with the clear business purpose that motivates borrowing have made a compelling case for permitting interest deductions. The exemption of active foreign business income is a somewhat different matter, the typical justification for which lies in the competitive nature of the international business environment.

The same argument that is invoked in objecting to deductions for interest on borrowed funds used to finance foreign investments would apply with equal force as a criticism of exempting active foreign business income from Canadian taxation under any circumstances. Consider, for example, a Canadian firm that raises additional investment funds with new equity issues, unaccompanied by any additional borrowing. The firm considers whether to invest the new funds either in Canada or in a foreign country. If these are exclusive choices, then the cost to Canada of foreign investments by this firm is that any of the new funds used for foreign investment are unavailable for new Canadian investment. In this scenario, the opportunity cost of foreign investment includes the tax revenue that Canada would have obtained if the investment had gone to Canada instead. If the firm's profit rate equals the prevailing interest rate at which firms borrow, then the tax revenue that Canada loses when a firm undertakes additional (equity-financed) foreign investment at the expense of Canadian investment equals the tax revenue that would be lost by permitting a different Canadian firm to claim tax deductions for a debt-financed foreign investment of the same size.

What this exercise illustrates is that the general tax treatment of foreign income embodies a choice that is relevant to evaluating the deductibility of domestic expenses by multinational firms. Likewise the decision to permit domestic taxpayers to deduct interest expenses on borrowing used to finance purely domestic investments embodies a choice. One potential criticism of permitting unlimited domestic expense deductibility is that it might encourage Canadian multinational firms to concentrate their group borrowing more heavily in Canada, at the expense of, say, borrowing the same funds in a low-tax foreign country.

There is no doubt that the higher Canadian tax rate would give firms such an incentive, and there is ample evidence (e.g., Desai, Foley and Hines, 2004b) that firms respond to international tax rate differences by concentrating their borrowing in high-tax countries. But this pattern simply reflects the implication of tax rate differences and the deductibility of interest expense. Firms would be more heavily indebted in high-tax countries even if there were no group finance within multinational corporations, so that operations in all countries obtained their funding independently: in such a world, we should expect to see higher debt-to-equity ratios in high-tax countries. This pattern is perhaps more vivid when the choice of where to borrow is made by a single firm selecting among many countries, but it is ultimately the same as the decision taken by the market in all contexts when confronted by differing national tax rates.

It may seem odd to permit a Canadian firm to deduct an expense that contributes to producing income that is exempt from Canadian taxation, but this decision must be evaluated in light of the criteria that motivated the exemption of foreign income in the first place. Similarly, the ability of multinational firms to deduct interest expenses must be understood in the context of the general preference for debt finance embodied in most corporate tax systems. Both of these policies, the exemption of active foreign business income and interest expense deductibility, have strong conceptual foundations, and it is noteworthy that together they also imply that a country promotes its own welfare by permitting taxpayers with foreign income to deduct all of their domestic interest expenses.

2. Domestic expense deductions in practice

Most of the world exempts active foreign business income from taxation and also effectively permits taxpayers full domestic tax deductions for general domestic business expenses such as interest expense and general and administrative expenses. The details of these policies differ among countries; some permit blanket domestic expense deductibility, whereas others use tracing rules that require taxpayers to identify the income streams that deductible expenses are incurred to produce.¹ As a practical matter, tracing rules are largely equivalent to blanket domestic deductibility (Shaviro, 2001), since the unwillingness of foreign governments to grant tax deductions for domestic expenses gives taxpayers incentives to arrange their tracing to maximize domestic deductions. Most countries limit the deductibility of domestic interest expenses with “thin capitalization” rules of one form or another (Buettnner et al., 2008), and while these typically apply even to purely domestic firms, there may be additional restrictions on interest deductions taken by foreign-owned firms and firms whose foreign affiliates have capital structures that differ greatly from those of their parent companies. In addition, there are countries that exempt slightly less than 100 percent of active foreign business income (France exempts only 95 percent, for example) to compensate, in some very rough sense, for permitting full domestic deductibility of home-country expenses.

The United States is the most prominent example of a country that restricts the tax deductibility of domestic expenses incurred by firms earning foreign income, so it is instructive to consider the U.S. rules and their impact. It is noteworthy in reviewing U.S. practices and their effects that the United States also taxes active foreign income earned by its resident companies.

2.1 U.S. expense allocation rules and their impact

The United States currently allows full deductibility of domestic expenses, but also requires taxpayers to allocate domestic expenses against foreign income for purposes of calculating foreign tax credits, thereby effectively limiting the deductibility of these expenses in some cases. Different rules apply to research and development (R&D) expenses, interest expenses, and other expenses that are supportive in nature, including overhead, general and administrative expenses, supervisory expenses, advertising, marketing, and other sales expenses. In the case of supportive expenses such as general and administrative expenses, firms are entitled to deduct expenses incurred in the United States, but must allocate a portion of these expenses against foreign income based on the fraction of total income from foreign sources or activity undertaken in foreign countries. The significance of allocating these expenses against foreign income is that doing so reduces the foreign tax credit limit, thereby reducing the taxpayer’s ability to offset its U.S. tax liability on foreign income with credits for foreign income tax payments. This is consequential only for taxpayers with excess foreign tax credits, since for those without excess foreign tax credits the limit does not bind. American taxpayers have excess foreign tax credits if their average foreign tax rates exceed the U.S. rate, and in the absence of expense allocation these taxpayers would owe no U.S. tax on their foreign incomes. For these taxpayers, reducing by one dollar the net foreign income used to

¹ U.S. Congress, Joint Committee on Taxation (2008) and Slaats (2007) offer reviews of recent international developments in the deductibility of interest and other expenses.

calculate the foreign tax credit limit increases their U.S. tax liability by an amount equal to the marginal U.S. tax rate. This exactly offsets the value of the original deduction, so the U.S. system effectively denies domestic expense deductions for the allocated portion of general and administrative expenses incurred by taxpayers with foreign income taxed so heavily by foreign governments that it winds up untaxed by the United States. Taxpayers whose foreign income is lightly taxed by foreign governments, and who therefore owe residual U.S. tax on that income, receive the benefit of full domestic deductibility of expenses incurred in the United States.

Different, and rather more strict, rules apply to the allocation of interest expenses and R&D expenses, though with similar effect. Interest expenses are allocated against foreign source income based on relative values of domestic and foreign assets as calculated using a method that is widely criticized (e.g., Shaviro, 2001) on several grounds, including that it ignores foreign borrowing; this system is currently scheduled to change in 2009. Half of a multinational firm's U.S. R&D expense is allocated against U.S. income, with the remaining half apportioned between domestic and foreign source based on relative sales or income. For all of these expenses the allocation rules matter only if taxpayers have excess foreign tax credits, in which case they are tantamount to denying domestic deductions for that portion of expenses allocated against foreign income. Different rules prevailed prior to passage of the Tax Reform Act of 1986, and the evidence indicates that American firms with excess foreign tax credits responded to the tax reform by changing their domestic borrowing patterns and domestic R&D spending around the end of 1986 in reaction to the higher after-tax cost of domestic borrowing and domestic R&D activity.²

These rules significantly influence the tax positions of American firms. Table 1 presents data on the aggregate volume of corporate expense deductions allocated against foreign income between 1992 and 2004. In 2004, American corporations allocated \$110.8 billion of domestic expenses against foreign income, of which interest expenses accounted for \$42.0 billion and R&D expenses accounted for \$13.5 billion. Total allocated domestic expense represents more than 45 percent of the \$241.5 billion taxable foreign income of American firms in that year, and was even higher fractions of taxable foreign income in other years.³

Table 2 provides an industry breakdown of these allocated domestic expenses in 2004. Manufacturing corporations allocated \$46.1 billion of total domestic expenses against foreign income of \$154.6 billion. Service industry corporations and those in the finance, insurance and real estate industries allocated a total of \$52.9 billion of domestic expenses against total foreign income of just \$53.5 billion, the allocated expenses representing a much larger fraction of foreign income than in manufacturing. Manufacturing firms accounted for \$10.9 billion of the \$13.5 billion total allocated R&D expense, but significantly smaller fractions of other expenses.

2 Collins and Shackelford (1992), Froot and Hines (1995) and Altshuler and Mintz (1995) analyze responses to the interest allocation rules introduced in 1986, and Hines (1993) analyzes the response of R&D activity to changes in the R&D expense allocation rules. These studies provide greater detail on the reforms and the incentives they created.

3 Expense allocation matters only if a firm has excess foreign tax credits, which not all American firms do, so it would be inaccurate to conclude that allocating \$110 billion of expenses to foreign income at a tax rate of 35 percent increases the U.S. tax liabilities of American firms by \$38.5 billion. But since a taxpayer's foreign tax credit status is itself the product of many purposeful choices that are influenced by the expense allocation rules, it is not correct either to take the foreign tax credit status as given in evaluating the cost of expense allocation.

Table 1: U.S. domestic corporate expenses allocated against foreign income, 1992-2004

| Year | Number of returns | Deductions not allocable to specific types of income | | | | Taxable foreign income (less loss) before adjustment | Foreign tax credit claimed |
|------|-------------------|--|--------------------------|------------|------------|--|----------------------------|
| | | Total | Research and development | Interest | Other | | |
| 1992 | 5,147 | 46,074,597 | 3,322,556 | 22,125,537 | 17,546,722 | 86,924,737 | 21,532,736 |
| 1993 | 6,322 | 56,490,849 | 3,031,964 | 26,319,175 | 26,706,975 | 94,687,024 | 22,894,610 |
| 1994 | 7,199 | 60,002,879 | 4,937,048 | 26,629,892 | 26,872,347 | 101,521,278 | 25,418,684 |
| 1995 | 6,710 | 79,650,578 | 8,198,150 | 35,916,338 | 34,779,814 | 120,517,753 | 30,415,605 |
| 1996 | 6,100 | 88,355,742 | 9,232,584 | 35,536,186 | 41,326,284 | 150,826,345 | 40,254,937 |
| 1997 | 6,569 | 94,428,510 | 9,565,637 | 43,342,264 | 40,176,836 | 157,989,290 | 42,222,743 |
| 1998 | 5,927 | 94,247,133 | 9,876,318 | 49,478,293 | 32,808,117 | 147,116,869 | 37,338,380 |
| 1999 | 5,789 | 102,542,312 | 9,539,700 | 51,322,499 | 41,287,061 | 165,712,961 | 38,271,294 |
| 2000 | 5,917 | 125,377,761 | 11,364,335 | 63,781,017 | 49,133,088 | 196,675,289 | 48,355,433 |
| 2001 | 5,478 | 109,909,312 | 9,122,373 | 52,679,130 | 47,638,165 | 164,753,343 | 41,358,458 |
| 2002 | 4,767 | 79,729,471 | 9,118,649 | 32,748,184 | 36,911,292 | 160,855,609 | 42,419,115 |
| 2003 | 5,409 | 93,226,238 | 11,961,592 | 32,120,658 | 47,669,031 | 205,129,663 | 49,963,270 |
| 2004 | 5,502 | 110,817,387 | 13,485,504 | 42,001,568 | 54,391,211 | 241,493,136 | 56,593,276 |

Note: Entries are drawn from information reported by corporations claiming the foreign tax credit. Figures in the table are thousands of current U.S. dollars.

Source: Statistics of Income Division, U.S. Internal Revenue Service.

Table 2: Industry detail of U.S. foreign expense allocation, 2004

| Industries | Number of returns | Deductions not allocable to specific types of income | | | | Taxable foreign income (less loss) before adjustment | Foreign tax credit claimed |
|--|-------------------|--|--------------------------|------------|------------|--|----------------------------|
| | | Total | Research and development | Interest | Other | | |
| All industries | 5,502 | 110,817,387 | 13,485,504 | 42,001,568 | 54,391,211 | 241,493,136 | 56,593,276 |
| Agriculture, forestry, fishing and hunting | 210 | *21,971 | *673 | *10,534 | *10,633 | 107,736 | 11,559 |
| Mining | 112 | 1,022,125 | *23,501 | 482,400 | 482,337 | 4,418,975 | 1,434,081 |
| Utilities | 7 | *54,649 | 0 | *29,501 | *25,026 | *89,888 | *29,961 |
| Construction | 235 | 21,810 | *101 | *890 | *20,493 | 108,170 | 21,821 |
| Manufacturing | 1039 | 46,096,041 | 10,906,052 | 15,239,527 | 19,617,336 | 154,593,276 | 37,151,333 |
| Wholesale and retail trade | 658 | 2,686,030 | 70,576 | 1,019,125 | 1,445,641 | 11,669,584 | 2,985,951 |
| Transportation and warehousing | 68 | 1,335,443 | *25,432 | 8,600 | 1,295,194 | 2,444,326 | 197,508 |
| Information | 607 | 6,660,160 | 2,145,207 | 704,809 | 3,753,108 | 14,580,764 | 2,764,509 |
| Finance, insurance, and real estate | 965 | 23,114,114 | *15,804 | 11,017,958 | 11,823,907 | 29,584,426 | 5,745,227 |
| Services | 1,603 | 29,805,044 | 298,157 | 13,488,225 | 15,917,537 | 23,895,992 | 6,251,328 |

Note: Entries are drawn from information reported by corporations claiming the foreign tax credit in 2004. Figures in the table are thousands of 2004 U.S. dollars. Entries in cells marked by an asterisk (*) are based on such small numbers of significant reporting firms that the figures may be unreliable.

Source: Statistics of Income Division, U.S. Internal Revenue Service.

The U.S. expense allocation rules influence the demand for R&D, administrative, and other activities in the United States, since firms with highly taxed foreign income do not benefit from full tax deductibility even in cases in which they incur expenses in order to earn income in the United States. The reason is that the allocation method does not attempt to identify the location of income generated by each expense, but instead implicitly attributes location on the basis of total foreign and domestic income and activity. More importantly, the expense allocation rules discourage foreign activity and foreign income production by firms with excess foreign tax credits, since the scope of its foreign operations affects the ability of a firm to benefit from tax deductions for a given amount of domestic expense. This limit on the effective deductibility of domestic expenses acts as a type of tax on marginal foreign activity, one whose rate depends on the firm's excess foreign tax credit status and the magnitude of its allocable domestic expenses. This tax encourages firms to substitute domestic for foreign activity, with greater substitution incentives for firms with significant domestic expenses.

2.2 Reform proposals

Numerous recent reform proposals would change U.S. taxation of foreign income by exempting active foreign business income from U.S. taxation. As proposed, schemes such as those analyzed by Graetz and Oosterhuis (2001), Grubert and Mutti (2001), and Altshuler and Grubert (2008) would exempt from U.S. taxation dividends received from foreign subsidiaries. At the same time, these reforms would limit the ability of American firms to deduct domestic expenses for interest and supportive activities such as general and administrative activities. These expenses would be allocated between domestic and foreign income based on measures of domestic and foreign assets or incomes, with the portion allocated to foreign income effectively nondeductible for domestic (or foreign) tax purposes. The same treatment of domestic expenses appears in the territorial tax reform proposals considered by the U.S. Congress, Joint Committee on Taxation (2005), the President's Advisory Panel on Federal Income Tax Reform (2005), and the U.S. Treasury (2007). Hence from a U.S. tax reform proposal standpoint, exempting foreign income from taxation appears to be closely associated with limiting the deductibility of domestic expenses.

This is a curious association, since exempting foreign income from home-country taxation while limiting the deductibility of domestic expenses based on levels of foreign and domestic activity essentially replaces one tax on foreign operations with another. An expense allocation method that permits taxpayers to claim domestic tax deductions for only a fraction of domestic expenses, with the fraction equal to the ratio of domestic to total income, penalizes earning foreign income and rewards earning domestic income. The implied tax rate on foreign income is the product of the statutory tax rate, the ratio of domestic expenses to worldwide income, and the ratio of domestic to worldwide income. The implied rate of subsidy for producing

domestic income is the product of the statutory tax rate, the ratio of domestic expenses to worldwide income, and the ratio of foreign to worldwide income.⁴ Replacing a tax on foreign income with an exemption system that limits the deductibility of domestic expenses does not remove the tax burden on foreign business activity, but instead merely changes the form of the tax burden and makes it less transparent.

There is an understandable appeal to limiting the deductibility of domestic expenses when the foreign portion of a firm's income is exempt from domestic taxation, and indeed, tax systems commonly restrict expense deductibility if the underlying income is untaxed. A prominent example, frequently cited by international tax reform proposals, is the restriction preventing American taxpayers from deducting interest payments if the borrowed capital is devoted to tax-exempt investments such as state and local bonds. This restriction on interest deductibility is intended to prevent arbitrage, though it is widely believed that, in the case of state and local bonds, its net effect is actually to create arbitrage opportunities by restricting demand for tax-preferred assets to a limited clientele of high tax rate potential buyers. Critics (e.g., Shakow, 1987) have called for repealing the restriction on interest deductibility to eliminate this problem, which might serve as a cautionary tale for those who would limit domestic expense deductibility in a territorial tax system.

4 This is apparent by writing the firm's cost of domestic expense allocation as $Rt(F/F+D)$, in which R is the level of allocable domestic expense, t is the domestic tax rate, F is foreign income, and D is domestic income. Differentiating this expression with respect to F produces: $[R/(F+D)]t[D/(F+D)]$. Similarly, differentiating the expression with respect to D yields: $-[R/(F+D)]t[F/(F+D)]$.

3. The taxation of foreign income⁵

The older wisdom in the international tax policy area is that worldwide taxation of business income with provision of foreign tax credits promotes world welfare, whereas worldwide taxation of business income without foreign tax credits (instead permitting taxpayers to deduct foreign tax payments in calculating taxable income) promotes domestic welfare. These claims about the underlying welfare economics, introduced by Peggy Musgrave (1963, 1969) and subsequently quite influential, have come under considerable academic fire in recent years. Modern economic thinking parts company with Musgrave's analysis in incorporating the effects of world capital markets, and in particular, the impact of ownership on capital asset productivity.

3.1 Capital export neutrality and national neutrality

The Musgrave notion of capital export neutrality is the doctrine that the return to capital should be taxed at the same total rate regardless of the location in which it is earned. If a home-country tax system satisfies capital export neutrality, then investments that maximize after-tax returns also maximize pre-tax returns, and there are then circumstances in which decentralized profit-maximizing behavior is consistent with global economic efficiency. The capital export neutrality concept is frequently invoked as a normative justification for the design of tax systems similar to that used by the United States, since accrual taxation of worldwide income with provision of unlimited foreign tax credits satisfies capital export neutrality. This does not describe the U.S. tax system, however, since taxpayers are permitted to defer home-country taxation of certain unrepatriated foreign income, and foreign tax credits are limited, but the capital export neutrality notion is nevertheless the basis of the argument that systems of taxing foreign income similar to that used by the United States enhance world welfare. The argument can then be extended to say that, due to international cooperative bargaining, countries that adopt tax policies advancing world welfare thereby may ultimately advance even their own welfares (Shaviro, 2007).

The Musgrave analysis implies that governments that seek to maximize national but not necessarily world welfare should tax the foreign incomes of their resident companies while permitting only deductions for foreign taxes paid. Such taxation satisfies what is known as national neutrality, discouraging foreign investment by imposing a form of double taxation, but doing so in the interest of the home country that disregards the value of tax revenue collected by foreign governments. From the standpoint of the home country, foreign taxes are simply costs of doing business abroad, and therefore warrant the same treatment as other costs, for which it is appropriate to give deductions and not credits against home-country taxes. In this analysis, the home country's desired allocation of capital is one in which its firms equate marginal after-tax foreign returns with marginal pretax domestic returns, a condition that is satisfied by full taxation of foreign income after deduction of foreign taxes. This line of thinking suggests that the American policy of taxing foreign income while granting foreign tax credits is far too generous from the standpoint of the United States. In this view there is a tension

5 This section draws on material in Desai and Hines (2003, 2004) and Hines (forthcoming).

between tax policies that advance national welfare by taxing after-tax foreign income, and those that advance global welfare by taxing foreign income while permitting taxpayers to claim foreign tax credits. The practice of most of the world in effectively exempting most foreign income from taxation is, by this reasoning, difficult to understand, since it is inconsistent with either national or global interests.

3.2 Ownership neutrality

Investment by domestic firms at home and abroad is likely to influence investment by foreign firms, which is inconsistent with the logic underlying capital export neutrality and national neutrality. If greater investment abroad by home-country firms triggers greater investment by domestic or foreign firms in the home country, and there is considerable evidence that it does,⁶ then it no longer follows that the home country maximizes its welfare by taxing foreign income while permitting only a deduction for foreign taxes paid. The reason is that, from the standpoint of the home country, greater foreign investment by domestic firms does not come at the cost of reduced domestic investment, so there is no longer a welfare loss associated with reducing investment that is already excessively discouraged by domestic taxes. From the standpoint of global welfare, if home and foreign firms compete for the ownership of capital around the world, and the productivity of an investment depends on its ownership, then it is no longer the case that the taxation of foreign income together with the provision of foreign tax credits necessarily contributes to global productive efficiency.

The importance of ownership to productivity is reflected in the modern theory of foreign direct investment, which is based on a transaction-cost approach whereby the market advantages of multinational firms stem from the benefits conferred by joint ownership of assets across locations. It is also consistent with the scale of operation of the large and extremely active worldwide market in mergers, acquisitions, and asset divestitures, with participating firms willing to bear the costs of the associated ownership realignments in return for the advantages that are associated with them. The modern property rights approach to the theory of the firm, as developed in Grossman and Hart (1986) and Hart and Moore (1990), suggests that the prevalence of incomplete contracts justifies particular configurations of ownership arrangements. It is the ability to exercise power through residual rights when contracts cannot prespecify outcomes that makes ownership important, and such settings are particularly likely to characterize multinational firms investing abroad. Desai, Foley and Hines (2004a) analyze the changing ownership decisions of multinational firms, finding that globalization has made firms reluctant to share ownership of foreign affiliates, given the higher returns to coordinated transactions inside firms.

Tax systems satisfy capital ownership neutrality if they do not distort ownership patterns (Desai and Hines, 2003, 2004). Capital ownership neutrality is important to efficiency only insofar as ownership is important to efficiency, a notion that is ruled out by assumption in the Musgrave framework that serves as the basis of capital export neutrality and national neutrality.

6 This includes aggregate time-series evidence of the behavior of U.S. multinational firms (Desai, Foley and Hines, 2005), aggregate evidence for Australia (Faeth, 2006), industry-level studies of Germany (Arndt, Buch, and Schnitzer, 2007) and Canada (Hejazi and Pauly, 2003), and firm-level evidence for the United States (Desai, Foley and Hines, forthcoming), the United Kingdom (Simpson, 2008) and Germany (Kleinert and Toubal, 2007).

If the productivity of a business asset depends on who owns it together with other assets, then tax systems promote efficiency if they encourage the most productive ownership of assets within the set of feasible investors.

Capital ownership neutrality is satisfied if all countries exempt foreign income from taxation, since taxation would then not favor one set of potential investors at the expense of another, but the exemption of foreign income from taxation is not necessary for capital ownership neutrality to be satisfied. If all countries tax foreign income (possibly at different rates), while permitting taxpayers to claim foreign tax credits, then ownership would be determined by productivity differences and not tax differences, thereby meeting the requirements for capital ownership neutrality. In this case the total tax burden on foreign and domestic investment varies between taxpayers with different home countries, but every investor has an incentive to allocate investments in a way that maximizes pretax returns.

The same circumstances that make capital ownership neutrality desirable from the standpoint of world welfare also imply that countries disregarding world welfare have incentives to exempt foreign income from taxation no matter what other countries do. The reason is that, from an ownership standpoint, additional outbound foreign investment does not reduce domestic tax revenue, since any net reduction in home-country investment by domestic firms is offset by greater investment by foreign firms. With unchanging domestic tax revenue, home-country welfare increases in the after-tax profitability of domestic companies, which is maximized if foreign profits are exempt from taxation. Tax systems that exempt foreign income from taxation are therefore said to satisfy national ownership neutrality. Hence it is possible to understand why so many countries exempt foreign income from taxation, and it follows that, if every country did so, tax systems would conform, capital ownership would be allocated efficiently, and global output would thereby be maximized.

3.3 Implications for domestic expense deductions

Competing efficiency concepts carry differing implications for efficient taxation of foreign income, which in turn influence the desirability of permitting taxpayers to take deductions for domestic expenses. If international investors do not compete for potential ownership of the same assets, and greater foreign investment comes at the cost of reduced domestic investment, then governments promote national welfare by taxing foreign income on accrual while providing only deductions for foreign income tax payments. Under the same circumstances governments promote global welfare by permitting taxpayers to claim tax credits for foreign tax payments, a policy that may also advance national welfare if nations cooperate to share the benefits of international economic policies. In both of these cases full deductibility of domestic expenses is consistent with efficiency. Governments that tax foreign income while permitting only a deduction for foreign income tax payments subject after-foreign-tax returns to home-country taxation, and expenses incurred to produce these returns are properly deductible. Governments that tax worldwide income while providing foreign tax credits do so to promote global efficiency; since domestic plus foreign returns are cumulatively taxed at the domestic tax rate, efficiency requires that the expenses incurred to produce these returns should be deductible at the domestic tax rate.

If greater foreign activity is accompanied by higher levels of domestic activity, and the ownership of active business assets influences their productivity, then countries benefit from exempting foreign income from taxation, and global efficiency requires that all nations tax foreign income in the same way. In this setting it follows that the exemption of foreign income should be accompanied by permitting full deductibility of domestic expenses, since doing so advances national welfare, and is consistent with global efficiency if it is also the practice of other countries. A policy that instead limits domestic expense deductions based on indicators of relative foreign and domestic activity or income would effectively tax foreign income, thereby introducing ownership distortions. For example, if a country permits only a portion of domestic expenses to be deducted by firms owning foreign assets, the affected firms have incentives both to shed some of their foreign assets and to acquire other firms that have significant domestic assets. Firms unable to claim full deductions for their domestic expenses would also become attractive targets for foreign takeovers structured so that the combined firm was not subject to the expense allocation rules. Indeed, a tax system inevitably influences business ownership decisions whenever the tax treatment of domestic expenses is contingent on the ownership of foreign assets or the receipt of foreign income.

Firms with foreign income that is exempt from home-country taxation have incentives to allocate capital, management attention, and other resources between foreign and domestic production so that the after-foreign-tax marginal productivity of resources devoted to foreign production just equals the after-home-tax marginal productivity of the same resources devoted to domestic production. This marginal productivity condition is efficient because it reflects the tradeoffs made by most of the world's investors and is therefore capitalized into market prices. It follows that efficiency also requires that firms choosing among domestic expenses that contribute to domestic and foreign profitability similarly equate after-foreign-tax marginal foreign profitability with after-home-tax domestic profitability, since otherwise productivity could be augmented by altering the mix of capital and current expenditures. This marginal productivity condition for expenses is satisfied only if domestic expenses are fully deductible and therefore not contingent on the locations in which the corresponding income is earned.

4. Analysis of domestic expense deductions

This section analyzes the extent to which domestic expense deductibility is consistent with efficient tax treatment of foreign income, as captured by each of the norms described in Section 3. It is most straightforward first to consider the case in which a home government treats foreign taxes simply as costs of doing business, and therefore permits only a deduction for foreign income tax payments, unmindful of the ownership distortions associated with such a policy. An individual firm spends R at home to produce both domestic and foreign income, the value of its domestic production (net of other expenses) being denoted $Q(R)$, and the value of its production through a wholly-owned foreign affiliate being denoted $Q^*(R)$. In order to abstract from issues of discounting and the taxation of capital returns, it is helpful to think of R as a current expense, such as administrative cost, that contributes to income production this year only. The home country taxes business income at rate τ , and the foreign country taxes income at rate τ^* . The home country permits the firm to deduct a fraction α of its expenditures on R against home-country taxable income, and the foreign country permits the firm to deduct a fraction γ of its expenditures on R against taxable income in the foreign country. Critically, γ is assumed to be unaffected by α (and in practice is typically zero).

The firm's after-tax profit is denoted π , which with this regime of taxing foreign income takes the value:

$$(1) \quad \pi = [Q(R) + Q^*(R)(1 - \tau^*) + \tau^*\gamma R](1 - \tau) - R + \tau\alpha R.$$

A profit-maximizing firm chooses R to maximize the value of π in equation (1), for which the first order condition is:

$$(2) \quad [Q'(R) + Q^{*'}(R)(1 - \tau^*) + \tau^*\gamma](1 - \tau) = 1 - \tau\alpha.$$

Taking foreign taxes to be costs, the home country's return is $Q(R) + Q^*(R)(1 - \tau^*) + \tau^*\gamma R - R$, the difference between domestic profits plus after-tax foreign profits and the cost of domestic inputs. The first-order condition for maximizing the home country's return is then:

$$(3) \quad Q'(R) + Q^{*'}(R)(1 - \tau^*) + \tau^*\gamma = 1.$$

Together, equations (2) and (3) imply that $\alpha = 1$. Hence the home country maximizes its total return by permitting taxpayers to deduct all of their domestic expenses, even though some of these expenses may contribute to productivity in the foreign country, and even though (although this is rarely the case) some of the expenses might be deductible in the foreign country.

The implication that $\alpha = 1$ is consistent with the intuition that a home country that taxes foreign income should also permit full deductibility of domestic expenses associated with producing that income. Partial deductibility excessively discourages expenditures that create net value for the home country, so aligning taxpayer and national incentives therefore requires full deductibility. It is noteworthy that γ does not influence the implication that the home country

maximizes value by permitting full deductibility, since a positive value of γ not only increases a firm's incentive to spend on R but also increases the home country's return, which includes any foreign tax savings.⁷

It is rare for a country to tax active foreign business income while providing only deductions for foreign income tax payments; instead, countries that tax foreign income typically provide foreign tax credits. The paradigmatic case of worldwide taxation with foreign tax credits is a system in which the home country taxes foreign income without deferral and with unlimited provision of foreign tax credits (including the possibility of a rebate if foreign tax rates exceed the home-country rate). From the standpoint of home-country firms facing such a regime of taxing their foreign investments, the foreign tax system becomes irrelevant, since any reduction in foreign taxes is immediately offset by greater home-country taxes. The firm's after-tax profit therefore can be represented as:

$$(4) \quad \pi = [Q(R) + Q^*(R)](1 - \tau) - R + \tau\alpha R.$$

The first order condition corresponding to the profit-maximizing choice of R is:

$$(5) \quad [Q'(R) + Q^{*'}(R)](1 - \tau) = 1 - \tau\alpha.$$

The standard rationale behind having a system of worldwide taxation and unlimited foreign tax credits is to maximize world welfare by promoting capital export neutrality, as discussed in Section 3. In this framework, world economic welfare is given by the difference between world output and the cost of world inputs, without regard to tax considerations. Maximizing world welfare in this context therefore corresponds to maximizing $Q(R) + Q^*(R) - R$, for which the first order condition is:

$$(6) \quad Q'(R) + Q^{*'}(R) = 1.$$

It is clear from inspection of equations (5) and (6) that once more the welfare maximizing policy is $\alpha = 1$, full domestic deductibility of domestic expenses, and again this is unaffected by whether or not the foreign country permits partial deductibility with a positive value of γ .

The implication that domestic expenses should be fully deductible against domestic income may not conform exactly to the common intuition that expenses incurred to produce foreign income should be deductible against home-country taxable income to the extent that foreign income is taxed by the home country. Certainly in the case of worldwide taxation with foreign tax credits the home country taxes foreign income, but the tax rate is zero if the average foreign tax rate equals the home-country tax rate, and the home-country tax rate on foreign income is negative if the foreign tax rate exceeds the domestic tax rate. In all of these cases the analysis of equations (5) and (6) implies that efficiency requires the home government to permit full deductibility of domestic expenses. The reason is that the policy of worldwide taxation is premised on the notion that a country benefits by enacting domestic tax rules that maximize the world allocation of resources. Since both domestic and foreign returns are effectively taxed at the domestic tax rate, efficient incentives to devote resources to R require that the expense

⁷ Recall that γ is assumed to be fixed; if international cost sharing agreements or other arrangements were to make the level of γ contingent on α , then it would no longer necessarily follow that full domestic deductibility maximizes home-country returns.

be fully deductible at the domestic tax rate also. By taxing foreign income and providing foreign tax credits the home-country tax system removes any incentives created by foreign deductibility of expenses incurred in the home country, so it is necessary to provide full domestic deductibility to get the incentives right.⁸

Perhaps the most telling case is that in which the home country maximizes national welfare by promoting efficient asset ownership through exempting foreign income from taxation. With foreign income exempt from home-country taxes, the firm's after tax profits are:

$$(7) \quad \pi = Q(R)(1-\tau) + Q^*(R)(1-\tau^*) + \tau\alpha R + \tau^*\gamma R - R.$$

A profit maximizing firm chooses R to satisfy:

$$(8) \quad Q'(R)(1-\tau) + Q^{*'}(R)(1-\tau^*) + \tau^*\gamma = 1 - \tau\alpha.$$

It is important to identify the government's objective in this situation. Exempting foreign income from taxation makes sense from the standpoint of encouraging efficient asset ownership, given the importance of ownership to productivity. Exempting foreign income from taxation implies that the government values equally one dollar of after-tax domestic income earned by home country firms and one dollar of after-foreign-tax foreign income, since home-country firms make this tradeoff at the margin. This relative valuation is sensible in a world of shifting ownership, since it is effectively imposed by the world capital market. Then the government chooses international tax policy to maximize:

$$(9) \quad Q(R) + \frac{Q^*(R)(1-\tau^*) + \tau^*\gamma R}{(1-\tau)} - R.$$

The term $(1-\tau)$ appears in the denominator of the second term of (9) to reflect the fact that after-home-tax domestic income and after-foreign-tax foreign income are valued equally. Then maximizing the value of (9) implies:

$$(10) \quad Q'(R)(1-\tau) + Q^{*'}(R)(1-\tau^*) + \tau^*\gamma = 1 - \tau,$$

from which, together with equation (8), it is clear that yet again the welfare maximizing policy is $\alpha=1$, or full domestic deductibility of home-country expenses.

The conclusion that the home country maximizes welfare by permitting taxpayers to deduct all of their domestic expenses follows from the relative valuation of foreign and domestic pretax incomes. This relative valuation is driven by the world market, which values after-tax income equally in every country, and which allocates capital and other resources in a manner consistent with this valuation. Individual countries benefit from adopting policies that are consistent with world valuations of after-tax income, which is why it is attractive to exempt foreign income from taxation and also why it is attractive to permit full deductibility of domestic expenses.

8 It is worth noting that, in the unlikely event that the foreign government permits deductibility of a portion of home-country expenditures on R through a positive value of γ , the home government immediately recoups the value of the deductibility by granting the home-country taxpayer fewer foreign tax credits. Hence from a government budgetary perspective, the cost of full deductibility of home-country expenses is offset to whatever extent that foreign governments permit partial deductions for these expenses.

5. Conclusion

Why should a country that exempts foreign income from taxation nevertheless permit full domestic deductions for expenditures that contribute to foreign profitability? The rationale for domestic expense deductibility is the same as the rationale for exempting foreign income from taxation: that tax systems with these features foster productivity associated with efficient ownership. The intuitive criticism that it is wrong to permit a deduction for an expense that generates untaxed income overlooks the important role of foreign investors and begs the question of why the home country exempts foreign income from taxation in the first place. The plain fact is that most countries in the world both exempt active foreign business income from taxation and permit full domestic deductibility of home-country expenses; and there are sound economic reasons why these policies go together and make sense in a world of shifting ownership.

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