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1 Pressures for the Harmonization of Income Taxation between Canada and the United States

Robin Boadway and Neil Bruce

1.1 Introduction: The Question of Tax Harmonization

The determination of tax policy is among the most sovereign functions of governments. The choices to be made include of the level of tax revenues to be collected (and hence the level of public sector spending), the economic activities to be taxed (the tax bases and the tax mix), the distribution of the tax burden over different groups and income classes in the country, and the distribution of the tax revenues to different levels of government in the country. From an economic point of view, there are a number of criteria that might be used in formulating tax policy. These include minimizing the burden on the population of raising the given amount of revenue, minimizing the administrative costs of the tax system both to the government and to the taxpayers, achieving the desired amount of income redistribution, increasing the stability and predictability of the revenue base, and using tax policy as an instrument of industrial and regional policy. These objectives are conflicting to some extent. The way in which the conflicts are resolved is through the political process of the country.

The question of tax harmonization concerns the conflict between the demand for different tax policies across countries and the pressure for tax uniformity that arises because economies are highly integrated due to international mobility of capital, goods and services, and, perhaps, labor. The question would not arise if economies were segregated so that differences in the tax systems were irrelevant (except perhaps through a "demonstration effect"), nor would it arise if there were no incentives for countries to have different tax systems. (But countries with identical policy objectives might

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still attempt to differentiate their tax structures, in order to shift the burden of taxation to other countries.) However, economies are becoming increasingly integrated in terms of the cross-border flow of goods, services and, especially, capital. Although there are still substantial barriers to the free movement of labor, these too are likely to fall—in Europe in 1992, and possibly between Canada and the United States as their economies become more tightly entwined as the free-trade agreement is phased in.

Despite this trend toward economic integration, national governments maintain the viewpoint, possibly an illusion, of setting independent tax policies, although the constraints imposed on such policy making by international considerations have been increasingly recognized. Among the most important pressures for tax harmonization in the presence of economic integration are the following:

i. *International mobility of factors and income.* In the presence of different tax burdens, which are not compensated by equivalent benefits (that are somehow conditional on taxes paid), factor owners will locate their factors across tax jurisdictions so as to minimize the tax burden. Moreover, such international "tax planning" may not require the physical movement of factors. Multinational corporations can readily shift capital income across international borders through accounting procedures.[1]

ii. *Overlapping tax jurisdictions.* The fact that the residence of a factor owner may differ from the factor's location gives rise to the possibility that more than one country will perceive itself as having taxing authority. This is particularly likely if countries adopt, as most do, the world income of their residents as the appropriate income tax base. It also arises because of the existence of multinational corporations that operate in both tax jurisdictions.

iii. *International tax avoidance and tax arbitrage.* While tax avoidance and arbitrage can occur within a country, the scope for such activities is expanded greatly when economies are highly integrated. The ability of residents in a country to locate income-generating activities abroad reduces the ability of the domestic tax authority to monitor taxable income and therefore to enforce taxation, since it is a general rule of law that one country does not take cognizance of the revenue laws of another country. Also, differences in the tax rates and bases of different countries open tax arbitrage opportunities, perhaps beyond the ability of a single country to close, especially where there are multinational corporations whose activities span the different tax jurisdictions.

iv. *Strategic considerations in the setting of tax policies.* With integrated economies, the best tax policies chosen by an individual country depend on the tax policies chosen by other countries or, in the case of policy "leadership," the policy reactions of the other countries. Thus, different tax policy instruments may be "strategic substitutes" (i.e., involve positive spillovers)

1. Gordon (ch. 2 in this volume) looks more closely at the economic pressures for tax harmonization arising from the mobility of goods and factors.

or "strategic complements" (negative spillovers) in the setting of tax policies by other countries. A special example of such strategic considerations is the temptation facing the individual country to try to shift the tax burden to foreigners. This may occur either through the standard tax incidence channels, whereby each country attempts to choose its tax policy so as to improve its terms of trade, or through "Bertrand competition" in tax rates, in which each country tries to attract taxable income from other countries (and hence revenue from other countries' treasuries) by offering lower tax rates. These types of policies are of the "beggar-thy-neighbor" sort and more often than not lead to a situation in which all countries are worse off.[2]

It should be apparent that these same issues arise to some extent within a country that has multiple levels of government, each having taxing powers, such as within a federation. Internal harmonization, however, is more likely to be accomplished through coordinated arrangements, since the scope for cooperation is greater. Not only are the powers of the governments involved separated or subordinated constitutionally, but the ability to make intergovernmental transfers exists. In contrast, harmonization of tax systems across countries is more likely to come about through actions taken by countries individually with limited amounts of cooperation. Among the issues to be addressed in this paper are the extent to which such "noncooperative" harmonization is sufficient for countries to obtain their tax objectives, and the extent to which further benefits can be gained through extending the cooperative harmonization arrangements that prevail internally to the international sphere.

We focus on harmonization issues related to the corporate and personal income tax systems of the United States and Canada. An essential distinction, which is made necessary by the openness of a national economy, is between income taxes levied on the basis of *residence* of the recipient and income taxes levied on the basis of the *source* of the income, that is, the jurisdiction in which the income is generated. The issues involved are not unlike those raised by the distinction between indirect (sales) taxes levied on a destination basis and on an origin basis. However, the income tax systems of countries typically contain elements of both residence and source bases, unlike sales taxes, which tend to be one or the other.

The ultimate objectives of the paper are to assess the extent to which interdependencies between the Canadian and U.S. economies impose pressures on the governments to adopt similar income tax systems and to consider whether coordinated measures could be desirable. On the first question, we conclude that the pressures for harmonization exist largely at the level of the corporate tax. Given the limited degree of labor mobility across countries, residence-based taxes like the personal income tax can be, and are, considerably different across the two countries. Nor are there likely to be great pressures to change this. At the corporate level, pressures for harmonization are consider-

2. Strategic considerations are only important if countries have market power. It could be argued that they are not important for the Canada-U.S. case.

ably stronger. These arise from the free mobility of capital across countries, the fact that firms can operate simultaneously in several jurisdictions, the difficulty in taxing corporations on the basis of residence, and the existing method of crediting foreign tax liabilities of corporations. These imply that corporations are effectively taxed on a source basis and that there will be strong pressures for countries, especially small capital-importing ones, to design their tax systems to conform with those of their creditor nations. In the case of Canada, there is considerable pressure to adopt a corporate tax system close to that of the United States. While the United States might seem to have more leeway, the fact that it operates in a wider world economy implies that its independence in setting corporate tax policy is also limited. Not surprisingly, the corporate tax systems of the United States and Canada are much more similar than are the personal tax systems, and are unlikely to become less so in the future. Given this, and given the difficulties of implementing a coordinated system of tax harmonization between sovereign countries, it is not likely that the gains from a more explicit form of corporate tax harmonization between the two countries would be sufficient to warrant instituting it. Further substantive gains might only be accomplished if the entire world changed the basis for taxing corporations. We document these arguments more fully in the rest of the paper.

We begin in the next section by discussing the advantages and disadvantages of tax harmonization. We then describe the differing fiscal structures of the Canadian and American economies in section 1.3. We first examine the broad fiscal differences between the countries and then focus on the detailed differences in the personal and corporation income tax systems. We also examine differences in the internal tax harmonization arrangements between the two countries, and finally we examine how cross-border income flows are currently treated by each country. In section 1.4 we analyze the extent to which pressures for income tax harmonization are likely to impinge on independent income tax policy making in the two countries as a result of increasing economic integration. We consider the specific issue of taxing income to capital, which is distinguished from factors such as labor and land by its high degree of mobility across the international border. Specifically we analyze the difficulties in using the corporation and personal income tax systems in conjunction with each other (say, as an integrated income tax system) in order to tax income to capital as it accrues. The difficulties arise because of the cross-border investments of multinational corporations. In section 1.5 we offer some brief conclusions and recommendations and extend the discussion to the broader perspective of worldwide corporate tax harmonization.

1.2 The Costs and Benefits of Tax Harmonization

It will be useful at the outset to define what we mean by harmonization, since it is a fairly general term whose meaning can vary from one context to

another. Harmonization is a qualitative term which refers generally to the degree of uniformity of the tax system across jurisdictions—here, countries.[3] Departures from uniformity could be in terms of the tax base or the rate structure, or both. As well, harmonization may involve jurisdictional and enforcement provisions. The jurisdictional provisions involve how to divide the tax base among jurisdictions when the same tax unit is operating in both jurisdictions. For example, if income is to be taxed on the basis of source, a common means for determining the source of income must be adopted. Similarly, if taxation is based on residence, an agreed-upon means of determining the residence of the taxpayer must be established. These agreements reduce the possibility of the double taxation of income, or its zero taxation; to do so fully may require agreeing to a common base as well. Enforcement involves agreeing to enforce each other's laws and to exchange information.

Tax harmonization can come about through cooperative or noncooperative means. Cooperative harmonization involves an agreement between jurisdictions to adopt certain measures of uniformity, such as a common base, rate structure, allocation rules, and exchange of information for enforcement. This is the form of harmonization in existence in many federal states, including Canada, and to a lesser extent, the United States. The European Economic Community, as part of the attempt to remove fiscal frontiers within Europe, is trying to agree to some measures of tax harmonization, particularly in the VAT area. In the case of Canada and the United States, income tax harmonization has been largely noncooperative. That is, the countries decide their own tax policies in a decentralized fashion, taking as given the tax policies of other countries (or, in the case of a "leader" country, taking as given a reaction function of others). Competitive pressures may nonetheless induce some uniformity in the tax systems. And some agreement on the taxation of cross-border income flows exists in the form of the tax treaty provisions.

Evaluating the benefits and costs of tax harmonization requires distinguishing among objectives. From a worldwide perspective, it could be argued that a single tax system with a single tax collecting authority would be optimal. However, for a decentralized world in which different countries have different sizes of public sectors and place different weights on equity versus efficiency objectives, a fully uniform tax would not be optimal. There will always be a conflict between worldwide objectives and national objectives of tax systems.

In the context of a decentralized world with separate tax collection systems, it is possible to enumerate several beneficial effects of tax harmonization. The main ones are as follows:

3. Defining harmonization with reference to the degree of uniformity in tax structures achieved is not the only possibility. One could instead define harmonization in terms of the behavior of governments. For example, Mintz and Tulkens (1991) define tax harmonization "as any agreements undertaken by jurisdictions to correct, in a cooperative way, the effects of fiscal externalities resulting from noncooperative behavior". We wish to use the concept in a way that allows for noncooperative harmonization, so we have chosen to define it in terms of the results achieved.

i. *Production efficiency.* Reductions in the differential tax treatment of different factors of production will reduce production inefficiency in the allocation of resources across countries. Differential effective tax rates across countries, ceteris paribus, may provide an incentive for factors to move to lower-taxed jurisdictions. The economic costs of this will be higher the more mobile are the factors of production. Given the fact that capital tends to move freely among countries while labor does not (e.g., because of immigration laws), this problem is more serious for capital than for labor. Thus, the benefits from harmonizing personal taxes levied on a residence basis (including personal capital income) are relatively low, except perhaps for certain categories of persons who may be internationally mobile. For indirect taxes levied on a destination basis, the benefits from harmonization may be somewhat larger. The reason is that the destination principle may be difficult to enforce for certain types of transactions, such as services and cross-border shopping. To the extent that these can be controlled, the benefits from harmonizing are low. The real problems arise in the taxation of corporations. There are serious difficulties in attempting to tax corporations on a residence basis, whether residence is defined on the basis of the owners of the corporation or not. Thus, in practice, corporation income, at least equity income, is taxed on an origin basis. Since corporate capital is internationally mobile, different effective tax rates in different jurisdictions will lead to productive inefficiency, or international inefficiency in the allocation of capital. Much of our discussion in this paper will focus on the issue of harmonizing of the corporation income tax.

ii. *Avoidance of tax arbitrage.* The more harmonized are corporate tax bases and rates, the fewer are the opportunities for avoidance of tax by international tax arbitrage by corporations operating in more than one jurisdiction. This can take many forms. One is via transfer pricing in vertically integrated firms. Related to this is setting up subsidiaries or residence in low-tax jurisdictions and arranging to have much of taxable income taken in that jurisdiction. Another is by purely financial transactions, such as raising debt in countries of high tax rates to take advantage of interest deductibility provisions. The use of formula apportionment for determining the origin of tax bases avoids some of these problems, especially those involving financial transactions, since the formulas are typically based solely on real variables such as location of sales, wages, and capital assets.

iii. *Simplicity of administration and compliance.* Tax harmonization can lead to savings in the cost of tax collection and compliance. This is especially true if jurisdictions use a common tax base and formula apportionment rules. Then a single set of accounts will suffice, rather than separate accounts for each jurisdiction. Even greater savings can be obtained if there is a single tax collection authority, as is sometimes the case among jurisdictions in federal countries (e.g., Canada).

iv. *Avoidance of double taxation.* Another advantage of tax harmonization

arrangements that include tax base allocation rules is that the same income will not be taxed twice, or not taxed at all. To avoid fully the possibility of double taxation or nontaxation requires both a common base and a common allocation formula. Of course, it will still be the case that income will be taxed at different rates in different jurisdictions, but it will not be taxed by two jurisdictions at the same time (or by none).

v. *Avoidance of tax competition.* Different jurisdictions setting their tax systems in a decentralized manner will naturally be in a competitive situation, if only implicitly. If income is taxed on a source basis, there may be an advantage to each from reducing its tax rate to increase its tax base, given the behavior of the other. Since each will be acting in the same manner, the net effect will be to compete tax rates to a suboptimal level, to the detriment of both. If the countries are of different sizes, the gains may accrue more to one country than to another. Of course, some tax competition may be a good thing, in the sense that it leads to more uniform rates. However, if it also leads to rates that are too low for the purposes of fulfilling the withholding function of the corporation income tax or if it eliminates the taxation of economic rents, that will be a disadvantage. The seriousness of this problem clearly depends upon the role of the corporate tax. If the world consisted of nations levying personal taxes on consumption, so that the corporation income tax was not needed for domestic withholding purposes, and if there were no economic rents or profits, it might be desirable for nations to compete the corporate tax away entirely.

These beneficial effects, whether they come about cooperatively or noncooperatively, must be set against the costs of harmonization. The latter are simply the constraints imposed on the ability of nations to pursue their own independent tax policy objectives. For example, as we argue below, a corporate income tax designed purely for domestic reasons might be viewed primarily as a withholding device for the personal income tax. In this case, its base and rate structure would be chosen to complement that of the personal tax, and the two taxes would be integrated by a method such as imputation. However, in an open economy, there are good reasons why the corporate tax might be forced to conform with corporate taxes levied elsewhere, even in a noncooperative setting. This will constrain the use of the corporate tax as a domestic withholding device and may also compromise the design of the personal income tax. Thus, the pressures for harmonization, where they exist, will compromise domestic policy objectives. In other cases, harmonization may not conflict with domestic policy. This is especially the case where cooperative harmonization schemes are negotiated to reduce tax competition and evasion. In these cases, there are net gains to be shared among the parties to the agreement. In the end, any conflicts between the benefits and costs of harmonization will have to be resolved by political judgment, since value judgments about tax policy will be involved.

1.3 Differences in the Fiscal Systems of the United States and Canada

The problem of harmonizing tax systems arises because countries want to pursue different tax structures and policies. Different tax structures and policies in turn may reflect differences in the amounts of government spending desired, the types of government spending, and the levels of government responsible for the spending. In this section we briefly examine the different fiscal environments of the United States and Canada and describe in some detail how the income tax systems and internal harmonization measures differ between the two countries. We also examine the existing provisions governing the taxation of cross-border income flows. This will serve to put our analysis into perspective.

1.3.1 The Differing Fiscal Environments: Some Stylized Facts

Although both the Canadian and U.S. governments are federal in nature, they differ in many key respects. The roles that the governments have assumed, the division of responsibilities between federal and state or provincial governments, the fiscal relations between the two levels of government, and the tax systems all differ considerably across the two countries. From an economic perspective, responsibilities are far more decentralized in Canada than in the United States, as reflected by greater relative spending by the provinces as compared with the states. For example, as seen in tables 1.1 and 1.2, the fraction of total spending by all levels of government in Canada accounted for by provincial and local governments averaged 60% during the period 1980–89, while for the United States the comparable fraction is 38%. Moreover, this fraction has been growing steadily in Canada, whereas it has remained relatively constant in the United States since the 1960s.

In Canada, the provinces assume responsibility for basically all health, education, and welfare expenditures. They finance these with a combination of their own revenues and substantial transfers received from the federal government. The exceptions are public pensions and unemployment insurance, for which the federal government has acquired responsibility by constitutional amendment. The federal government also makes extensive redistributive transfers to the needy provinces, and is now obliged by the constitution to continue to do so.[4] In the United States, a larger proportion of health and welfare expenditures is federally financed, although, of course, the level of public intervention remains much smaller in the United States than in Canada in the areas of health, education, and welfare. Surprisingly, transfers to persons are slightly more important than spending on goods and services by the U.S. government relative to the Canadian. In the United States, transfers to persons as a percentage of total expenditures averaged 35% for all govern-

4. Section 36 of the Constitution Act, 1982, imposed such an obligation formally, essentially writing the existing practice into law.

Table 1.1 **U.S. Tax and Expenditure Structure (Decade Averages)**

Years	(1)	(2)	(3)	(4)	(5)	(6)
1950–59	.68	.31	.10	.19	.32	.22
1960–69	.68	.22	.14	.22	.38	.25
1970–79	.72	.16	.19	.32	.43	.29
1980–89	.74	.11	.21	.35	.38	.35

Notes: (1) Total income taxes/total revenues, all levels of government; (2) Corporate income taxes/total income taxes, all levels of government; (3) Total income taxes (state and local)/total income taxes (all); (4) Transfers to persons/total expenditures, all levels of government; (5) State and local expenditures/expenditures all levels; (6) State and local income taxes/total state and local revenue. "Total income taxes" include personal income taxes, corporate income taxes, and social insurance contributions.

Table 1.2 **Canadian Tax and Expenditure Structure (Decade Averages)**

Years	(1)	(2)	(3)	(4)	(5)	(6)
1950–59	.35	.54	.05	.18	.45	.05
1960–69	.33	.41	.17	.20	.53	.13
1970–79	.38	.26	.33	.31	.59	.21
1980–89	.37	.20	.39	.33	.60	.23

Notes: (1) Total income taxes/total revenues, all levels of government; (2) Corporate income taxes/total income taxes, all levels of government; (3) Total income taxes (provincial and local)/total income taxes (all); (4) Transfers to persons/total expenditures, all levels of government; (5) Provincial and local expenditures/expenditures all levels; (6) Provincial and local income taxes/total provincial and local revenue. "Total income taxes" include personal income taxes, corporate income taxes, and social insurance contributions.

ments combined over the decade 1980–89, while for Canada the comparable figure is 33%. This is true despite the larger component of defense spending in the U.S. budget. In both countries, the percentage of expenditures accounted for by transfer spending has grown rapidly during the postwar decades.

Governments in both countries obtain their revenues from a tax mix that includes both indirect and direct taxes. Direct taxes, including personal and corporation income taxes plus payroll tax contributions to the public pension plan, averaged 37% of combined government revenues in Canada over the decade 1980–89. In the United States, the comparable share was 74%. Thus, the U.S. government is much more dependent on income taxes for revenues than is Canada. The relative importance of total income taxes in both countries has risen over the postwar decades. Despite this, the corporation income tax has declined in relative importance in both countries. In the decade 1950–59, the corporation income tax accounted for 54% of total income tax revenues of all governments in Canada and 31% in the United States. By the 1980s, this fraction had declined to 20% and 11%, respectively. This trend is

remarkably similar for both countries, suggesting that harmonization pressures with respect to corporation income taxes may be considerable. Income taxes on persons have accounted for the growth in direct taxation in both countries. However, in the United States growth in the social security payroll tax has been much greater than in Canada, particularly in the past decade.

The U.S. federal government uses only direct taxes as major tax sources, while the Canadian federal government also levies an indirect sales tax, the manufacturers' sales tax, which was replaced with a 7% value-added tax in January 1991 (the so-called Goods and Services Tax). The provinces and most states use both direct and indirect taxes, the latter being a retail sales tax. Income taxes are a more important source of revenue for the provinces than for the states, with income tax revenues collected by provincial governments averaging 39% of total income taxes over the 1980s; in the United States, state and local governments collected 21% of total income taxes over the same period.

1.3.2 Differences between the Canadian and U.S. Income Tax Systems

While the Canadian and U.S. personal and corporate income tax systems have many features in common, they also have some important differences, both in the tax base and the tax rate structure. The personal income tax systems in both countries are accurately described as "hybrid" annual income and consumption taxes, although some features are inconsistent with either pure base. Both countries tax at least some components of capital income accruing to households, and both have well-developed corporation income tax systems, which act as backstops for the personal tax systems. Canada follows a modified imputation approach, which allows for some integration between the personal and corporate tax systems, while the United States has a classical system in which no credit is given to shareholders for corporate taxes paid. In this part, we discuss the major differences between the income tax systems of the two countries. These differences are summarized in table 1.3.

Differences in the Personal Income and Payroll Tax Systems

The Tax Base and Unit. Both countries tax annual employment income, broadly defined to include most cash market transactions. In Canada, most payments in kind, such as employer-paid fringe benefits, are included in taxable income. The main exception is contributions to pension plans. In the United States, many fringe benefits remain tax exempt. Government transfer payments are, for the most part, fully taxed in Canada.[5] Most transfer receipts were untaxed in the United States until the second half of the 1980s, when unemployment insurance benefits and half of social security benefits to high-

5. The exception is the Guaranteed Income Supplement paid to low-income persons aged 65 and over, which is nontaxable. However, persons receiving it are unlikely to be taxable in any case.

Table 1.3 Notable Differences in the Canadian and U.S. Federal Income Tax Systems

	Canada	U.S.
Pertaining to the Tax Unit:		
Personal		
Liability	Resident and deemed resident persons	Citizens and resident persons
Rate Structure	Individual income	Family income
Dependents	Tax credits	Tax exemptions
Child Care Expenses	Deductible to limit	Declining tax credit
Capital Gains on Bequests	Realized at death	Stepped up
Income Splitting	Subject to regulation	"Kiddie tax"
Corporate		
Liability	Incorporated in Canada	Incorporated in U.S.
Consolidation	No	Affiliated domestic corporations and foreign branches permitted
Intercorporate Dividends	Exempt	Exempt between affiliated corporations, 20% included otherwise
Pertaining to the Tax Base (Receipts):		
Personal		
In-kind Compensation (Employer paid)	Taxable, except employer-paid pension contribution	Most employer-paid fringe benefits exempt
Private Pension Benefits	Taxable with credit	Taxable
Social Insurance Benefits	Taxable	Unemployment benefits and ½ Social Security benefits taxable
Income Accruing on Pension Funds	Exempt (including RRSPs)	Exempt
Interest	Taxable	Taxable, except qualifying state and local bonds
Capital Gains (Realized)	¾ included with $100,000 life-time exemption and unlimited exemption for residence	100% included with exemption for residence (limited)
Lottery Winnings	Exempt	Taxable
Gifts	Exempt	Taxable over $600,000
Corporate		
Foreign Income	Exempt from active income of controlled foreign affiliate	Taxable when repatriated with FTC (controlled foreign affiliate)
Intercorporate Divs.	Exempt	Exempt from controlled affiliate, 20% included otherwise
Capital Gains (Realized)	¾ taxable	Taxable

(*continued*)

Table 1.3 (continued)

	Canada	U.S.
Pertaining to the Tax Base (Deductions and Credits):		
Personal		
	Itemized deductions and credits	Standard or itemized deductions
Mortgage Interest	No	Deduction (large limit)
State and Local Taxes	No	Property and income tax deductions
Medical Expenses	Credit in excess of 3% net income	Deduction in excess of 7.5% of AGI
Charitable Donations	Credit	Deduction
Social Insurance Contributions	Credit	No deduction
Private Pension Plan	Deduction to limit	Deduction if through 401(k); IRA limited to low-income taxpayers
Dividends	Credit if from domestic corporations	No credit or deduction
Corporate		
State/Local Taxes	Property taxes deductible; resource allowance	Income taxes, property taxes, and royalties deductible
Depreciation	40 classes, elective, "in" ½ year rule	8 classes, mandatory, "in" and "out" ½ year rule Switch to straight line
Inventory Cost	FIFO	LIFO or FIFO
Depletion Allowance	None	Cost for large oil and gas firms, percentage for other
Investment Tax Credits	R&D, qualifying investment in Maritimes	Incremental R&D
Loss Carryover	Backward 3 years, forward 7 years	Backward 3 years, forward 15 years
AMT	No	Yes
Pertaining to Tax Rates:		
Personal		
Graduation	3 brackets, flat after $55,605 (1989)	3 brackets with "bubble"; flat after $200,000 (1989)
Highest Rate	29% in top bracket	33% in bubble
Indexation	Above 3%	Full
Surtax	4% and 5.5%	None
Social Insurance payroll Tax	9.4% (combined) to a maximum contribution of $3,000	15.3% (combined) to a maximum contribution of $7,000 (1990)
Corporate		
Tax Rate, Most Firms	28%, 23% on manufacturing and processing income	34%
Rate Concessions to Small Businesses	Smaller than $200,000	Smaller than $200,000, with 39% bubble midsize

income persons were subjected to income tax. In Canada, the tax unit is the individual, but there are tax credits based on family size, and some tax reliefs are based on family income. In the United States, the tax unit is the family, and income tax schedules depend on the taxpayer's marriage status. There are fixed exemptions for other dependents.

There are also significant differences between the countries in their taxation of the capital income of persons. Apart from that accruing in tax shelters, nominal interest income is fully taxed in Canada as it accrues. This is also true in the United States, except for the exemption on interest from state and local bonds. Nominal capital gains are fully taxed upon realization in the United States, but in Canada only three-quarters of realized gains are taxable and the individual taxpayer has a C$100,000 cumulative lifetime exemption (higher for small businesses and family farms). Capital gains on a taxpayer's personal residence are effectively exempt in both countries, although in the United States the exemption can only be taken once in a lifetime, can be taken only by taxpayers aged 55 or over, and is limited to $125,000 of gains. Dividends are fully taxed in both countries, but Canada allows a dividend tax credit (see below).

There are notable departures from the Haig-Simons definition of comprehensive income in both countries. Income to owner-occupied housing, nonrealized capital gains, and the accruing earnings on pension funds are exempt in both countries (and in Canada, Registered Retirement Savings Plans, known as RRSPs). Gifts and lottery winnings are excluded in Canada, but the United States taxes lottery winnings and gifts and inheritances over $600,000.

The tax systems of the two countries differ notably with regard to deductions from income. Expenses incurred in earning income and interest payments on money borrowed to make taxable investments are deductible in both countries. In Canada, all persons can deduct (from earned income only) contributions to RRSPs up to a specified total less pension plan contributions. Less generous deductions for contributions to IRA plans are available to low-income households in the United States. Employee contributions to pension plans are not deductible in the United States, although effectively the same thing can be arranged through 401(k) plans. Limited child care expenses are deductible in Canada, but are creditable at a declining rate of 30% to 20% in the United States. Moving expenses are deductible in Canada and in the United States, but only as an itemized deduction in the latter (see below).

The United States allows a choice between a standard deduction and an itemized deduction for mortgage interest, state and local taxes (except sales taxes), medical expenses in excess of 7.5% of adjusted gross income, moving expenses, casualty losses, and charitable donations. Canada allows tax credits for medical expenses in excess 3% of net income and for charitable donations. Canada Pension Plan contributions, unemployment insurance premiums, university tuition, and C$1,000 of pension income are also creditable. The United States allows exemptions for dependents. In Canada, personal,

spousal, and dependent tax credits are given, and there are also some "vanishing" tax credits available to lower-income taxpayers. The tax credit rate is equal to the lowest tax rate (17% federal), except for charitable donations over C$250, which are credited at 29% federal. These credits are matched at a corresponding rate under the provincial income tax systems, which also contain some province-specific tax credits.

Canada has a dividend tax credit to provide relief from double taxation at the personal and corporate levels on dividends. The dividend tax credit of approximately 22% (federal) is available on taxable dividends (received dividends grossed-up by one-quarter) from corporations resident in Canada against personal income taxes payable on dividends in Canada. Since provincial taxes are applied on federal tax liabilities, this is effectively increased by a further 52–62%, depending on the province, when provincial taxes are applied. The dividend tax credit rate supposedly is set so that the system is integrated "on average." However, it is underintegrated for dividends from a fully taxpaying corporation and overintegrated on dividends from nontaxpaying corporations. The implications of a dividend tax credit in the context of an open economy are discussed further in section 1.4.

The Tax Rate Structure. Canada and the United States both have graduated income tax structures with three brackets. The top rate in the United States is nominally 28% (federal), although it is actually 33% for incomes above $74,850 (married, filing jointly in the 1989 tax year) until the advantages of the lower initial tax bracket and the personal exemptions have been recaptured (at around $200,000, depending on taxpayer circumstances). The rate structure, including brackets, exemptions, and the standard deduction, is fully indexed to the previous year's inflation rate. State income tax rates vary widely, but the top rate in many states is around 10%. Since the state income tax is deductible from federal income tax, the combined top marginal rate is about 35% (nearly 40% in the phaseout bracket). For the purposes of cross-country comparison, we consider the state of New York, which has a top personal rate of 8.75%, yielding a combined top rate of around 34% (39% in the phaseout bracket).[6]

In Canada, the highest marginal rate is 29% (federal) on income above C$55,605 (1989 tax year) but there is also a "temporary" surtax of 4% (5.5% for high incomes). All provinces except Quebec set their income tax as some fraction of the federal income tax owing. In Ontario, it was 52% in 1989, rising to 53% in 1990. The highest gross-up occurs in Newfoundland, at 62%. There are also provincial surtaxes on high incomes (10% in Ontario). The combined top rate in Ontario (including federal and provincial surtaxes) in 1989 was 47%. Thus, it is clear that even after Canadian tax reform, the high-

6. In some states, federal income taxes are also deductible from state income taxes, so the combined rate is lowered still further.

est marginal income tax rate in Canada remains substantially higher (at least 8 percentage points in the case of Ontario versus New York) than that found in the United States. This reflects a higher average level of taxes on personal income in Canada, as revealed in tables 1 and 2. The tax structure is indexed in Canada as in the United States, but only by the excess of the previous year's inflation over 3%. Therefore, there is some degree of bracket creep operating for taxpayers below the top bracket in Canada.

Offsetting the higher Canadian tax rates to some extent are the higher social security taxes in the United States. In the United States, the Old-Age, Survivors, and Disability Insurance (OASDI) tax is 15.3% for the employee and employer combined, to a maximum contribution of around $7,000 (1990). The OASDI tax is deductible as a business expense for employers but is not deductible against income for employees. In Canada, the combined Canada Pension Plan and unemployment insurance contributions (employee and employer) are at 9.4%, up to a total of about C$3,000, but these taxes are deductible to employers and creditable at 17% for employees. There are also payroll taxes (approximately 2% in Ontario) or compulsory hospital plan premia at the provincial level to fund public health insurance programs that exist in all provinces. In making these comparisons, it should be recognized that public pension and unemployment insurance contributions are viewed, to some extent, as benefit taxes. To the extent that an offsetting benefit is perceived, these taxes are less likely to act as a disincentive than general income taxes are.

The other offsetting factor with respect to capital income is the partial integration measure in Canada, as compared to the classical corporate income tax system in the United States. When the combined top corporate and personal tax rates on dividend income are compared between New York and Ontario, taking into account the dividend tax credit, the rates are approximately equal (lower in Ontario if the 33% rate is used for New York). The rate is clearly lower in Ontario if the capital income is earned in manufacturing and processing, where the corporate tax rate is lower. It should be kept in mind, however, that the integration measures are available only to resident Canadians. Moreover, the impact of such measures may not be those expected (see section 1.4).

Differences in the Corporate Income Tax Systems

Differences between the Canadian and U.S. corporation income tax systems (CITs) are perhaps the most relevant for the purposes of harmonization, since capital is highly mobile between the two countries. Furthermore, many corporations are residents of both countries and can exercise some degree of discretion as to where they take their income.

The Tax Base. The CITs in both countries are similar in overall structure. Both are accrual taxes on what is essentially shareholders' income accruing within the corporation. Accruing revenue from both business and financial sources is

included in the tax base. In Canada, intercorporate dividends from domestic corporations are tax exempt. In the United States, the dividend tax exemption applies only to dividends from controlled domestic affiliates, with a 20% inclusion for dividends from noncontrolled corporations. Three-quarters of realized capital gains are included in Canada, whereas there is full taxation of realized capital gains in the United States.

Current expenses such as wages, fees, rents, and losses due to fire and theft are deductible as they accrue. Current expenses include employer payroll taxes and private pension plan and social insurance contributions. Interest on debt is expensed but may be capitalized in both countries. In some cases in Canada (e.g., real estate development), interest capitalization is required. In the United States, state corporate taxes, local property taxes, and royalties are deductible, whereas in Canada only property taxes, including the provincial corporate capital taxes, are deductible. There is a fixed abatement of tax points for the provincial corporate income tax, and a resource allowance equal to 25% of net profit is given in lieu of a deduction for provincial royalty payments and mining taxes. In the United States, there is a cost depletion allowance for large oil and gas firms and a percentage depletion allowance for small oil and gas firms and mining. Charitable donations are deductible in both countries within limits. In the United States, donations of appreciated capital property are deductible at assessed market value; in Canada the deduction is limited to the adjusted cost base.

Some capital costs are effectively expensed. In Canada, there is 100% write-off for resource exploration and development expenses in mining, exploration expenses in oil and gas, and all R&D expenses except land and buildings. In the United States, there is 100% write-off for mining and small oil and gas producers, 70% for large oil and gas producers, with the remainder capitalized. These write-offs are not elective, unlike the CCA in Canada (see below). Also, in some cases the fast write-off cannot be used to create a net operating loss. In the United States, exploration and development expenses for mining must be amortized for calculating the alternative minimum tax.

The tax depreciation provisions differ significantly between the two countries. Perhaps most significantly, the Canadian CCA is an elective deduction, whereas the U.S. deduction is mandatory. The Canadian regulations set maximum declining-balance recovery rates for around forty asset classes. In the United States, the postreform modified accelerated cost recovery system rates apply to eight recovery period classifications set out in the asset depreciation range classifications. On average, U.S. recovery rates are higher than in Canada (accelerated depreciation was reduced by less in the United States than in Canada under recent corporate tax reforms). Also, the United States allows the switch to straight-line depreciation when it becomes favorable to do so. On the other hand, the put-in-use rule in the United States is more effective than the pending Canadian rule, and the United States has half-year rules upon purchase and disposition of a capital asset, unlike Canada's purchase half-year

rule. There are recapture provisions in Canada. Recapture in the United States is automatic, since capital gains are fully taxed.

Another significant difference is in the costing of inventory. The United States allows firms to choose between FIFO and the more favorable LIFO conventions. In Canada, FIFO is mandatory. Further, the partly compensating inventory deduction of 3% was abolished in Canadian tax reform, so there is no compensation for purely inflationary changes in inventory valuation.

Both countries allow carryover for net operating losses. In the United States, they can be carried back three years and forward fifteen, while in Canada, the carryover is three and seven years, respectively. However, the elective CCA permits additional scope for loss carryover in Canada.

Another major difference between the corporate tax systems is the importance of the alternative minimum tax (AMT). In the United States, AMT income includes one-half of book profit, with the remainder based on taxable income adjusted to reduce various tax preferences. A significant factor is that foreign tax credits can be used to offset no more than 90% of the AMT liability, so for firms subject to the AMT there may not be full relief from international double taxation. In Canada, there is no AMT for corporate income, but the recently introduced large-corporation capital tax is credited against corporate income surtaxes and acts as a minimum tax. The base of this alternative tax is unrelated to corporate income and therefore immune to erosion because of income shifting by transnational corporations.

The Tax Rate Structure. In the United States, there is a graduated rate structure at the federal level. Nominally, the top rate is 34% for corporate income in excess of $75,000, but firms in the range of $100,000 to $335,000 pay 39%, as the benefits of the lower rates on corporate income below $75,000 are phased out. Forty-five states and the District of Columbia levy a local corporate income tax, and some follow the federal method of reporting income. The state tax rates are usually graduated and range from 1% to a high of 12% in Minnesota and Iowa. The major industrial states may have relatively low rates (2.5% in Illinois) or higher rates (9% in New York). Since the state tax is deductible, the combined top rate is about 41% (45% in the phaseout range) and about 40% in New York.

There are two main tax credits available to U.S. corporations—the R&D incremental tax credit of 20% on qualifying spending in excess of the average of the past three years, and the foreign tax credit (discussed in the next section). Also, there are some special investment tax credits for energy conservation investments and the like at the state level.

In Canada, the combined corporate tax rates are slightly higher, except on income derived from manufacturing and processing. The basic federal rate is 28%, with a lower rate of 23% on income derived from manufacturing and processing (when fully phased in by 1991), plus a corporate surtax of 3%. There are special low rates on the first C$200,000 of business income for

Canadian-controlled private corporations. All provinces levy a corporate income tax, basically using the federal definition of corporate income. The provincial rates are higher than the state rates in the United States and are not deductible from the federal tax. The Ontario basic rate is 15.5%, giving a combined basic rate inclusive of the federal surtax of 44.3%. On income derived from manufacturing and processing, the Ontario rate is 14.5%, so the combined rate on this type of income (1991) is 38.2%. The top rate is higher in some provinces. Overall, the rates are much closer to those in the United States than is the case for the personal income tax.

There are three main tax credits available to corporations in Canada—the investment tax credit of 15% for qualifying investments in the Atlantic region, the R&D tax credit of 20% (30% in Atlantic Canada), and the foreign tax credit.

1.3.3 Internal Income Tax Harmonization in the United States and Canada

In both the United States and Canada, the personal and corporate income taxes are co-occupied by the federal government and the states or provinces. Differing amounts of harmonization occur between the two levels of government in the two countries. In Canada, harmonization exists to a high degree, largely owing to the fact that the existing system evolved from a wartime situation in which the federal government was the sole occupant of income taxation and funded provincial expenditures through transfers. Starting in 1962, the federal government began turning over income tax revenue-raising capacities to the provinces. At the same time, it offered the provinces the opportunity to join tax collection agreements with the federal government, under which the federal government collects taxes on behalf of the provinces. These tax collection agreements are still in effect and form the basis for harmonizing the corporate and personal income tax systems in Canada.

Under the tax collection agreements, participating provinces agree to abide by the tax base used by the federal government but may set their own tax rates. In the case of the personal tax, the rate they choose is applied to federal taxes payable, thereby guaranteeing that the federal rate structure applies to both levels of government. For the corporate tax, provinces apply their tax rates to the federal tax base. As well, the federal government will administer provincial tax credits for a small fee, provided they are judged to be simple to administer and do not discriminate against residents of other provinces or distort investment decisions. The federal government for its part collects all taxes on behalf of the agreeing provinces and pays over to the provinces assessed tax liabilities. The federal government bears the cost of bad debts but retains all interest earned on the funds. For the corporate tax, the provinces agree to a formula apportionment method for allocating revenues among provinces. The formula is a simple one: the share of a firm's taxable income accruing to a province equals the average of its share of revenues of the firm and its share of the wage bill.

All provinces except Quebec have signed a tax collection agreement with the federal government for the personal income tax, while all except Alberta, Ontario, and Quebec belong for the corporate income tax. Despite this lack of universal coverage, all provinces, agreeing or not, have virtually the same corporate income tax base as the federal government and follow the same allocation formula. The personal tax system for Quebec does diverge somewhat from that in the rest of the provinces. Thus, there is a fairly high degree of harmonization among income tax bases, the main differences being in the levels of tax rates. Even here the differences are not great, owing to the extensive system of interprovincial fiscal equalization that exists in Canada. Presumably the historical evolution of the system has had an important impact on the degree to which harmonization has been achieved and maintained. The fact that the system was operated by the federal government alone during the war meant that a fully harmonized system was the starting point. Once a uniform system was in place, arbitrary deviations from it were unlikely to occur.

Nevertheless, there are increasing signs of strain and discontent among the provinces. The federal government retains unilateral control of the income tax bases and changes them from time to time on its own initiative. As the provinces come to occupy more and more of the tax room, they naturally would like to have more and more influence on their own tax structures. The main way open for them to exercise this desire is to implement provincial tax credits of various sorts. There has been a proliferation of provincial tax credits and rebates administered through the agreements in recent years, and this has fragmented the system somewhat. More significantly, the principle of maintaining a common base has been violated in three provinces with the introduction of flat-rate income taxes at the personal level alongside the ordinary income taxes. These are administered through the agreements. The basic legislation governing the agreements has remained unaltered since its inception. It may be reviewed and changed as the federal government enters the retail sales tax field and attempts to negotiate analogous agreements with the provinces for harmonization in this area.

The Canadian case is somewhat interesting from a broader perspective, since it is similar in form to the system of harmonization being proposed for the European Economic Community. We return to the pros and cons of this type of harmonization in a later section of the paper.

Income tax harmonization in the United States is much less structured than in Canada. Indeed, it is virtually nonexistent, in the sense that there are no formal tax collection agreements and all states collect their income taxes separately from the federal government. This is the case despite the fact that the Federal-State Tax Collection Act of 1972 empowers the federal government to enter into agreements with the states not unlike those that exist in Canada. No states have chosen to do so. The implicit harmonization that does exist involves states voluntarily adopting some aspects of the federal tax structure, such as the base. There is the additional complexity in the United States that

many local governments also levy an income tax at the personal level, while some states levy none. Only forty states levy a general personal income tax, while three others levy a tax on capital income only. As well, local income taxes are used by many local governments in eleven states.

The nature of state personal income taxes and their relation to the federal tax differ widely over states. Four states actually collect personal taxes as a percentage of federal tax liabilities (as in Canada). Eight states adopt the federal tax base as the state tax base but choose their own rate structures. Both of these systems obviously reduce compliance and collection costs for the states and the taxpayers. However, the states still maintain their own independent collection and audit machinery. Twenty-six states use the same definition of gross income as the federal government, but then apply their own systems of deductions and exemptions as well as tax structure. Finally, six states set their entire tax structures essentially independently of the federal government.[7]

The other difference between the Canadian and U.S. systems of personal taxation is that, whereas the Canadian tax system is based on the residency principle as regards income earned in different provinces, the U.S. system typically involves personal taxation at source. That is, states usually tax all income earned in the states by residents and nonresidents alike and then provide credits for tax paid in other jurisdictions. (Many states also provide a deduction for taxes paid at the federal level.) However, not all states apply the same rules, so there may be double taxation of personal income, or none, depending on the states involved. In any case, the system is considerably more complex than the Canadian one.

Forty-five of the states also levy a corporation income tax. All collect their own, and only six adopt the federal corporate tax base. As well, different states use different methods for allocating taxes to their jurisdictions. Most states use formula apportionment to do so, with the formulas typically involving proportions of sales, payroll, and property. Not all states use the three factors with equal rates. For example, some states give larger weight to sales, especially states for which sales are large compared with production. As with the personal tax, the possibility exists for double or under taxation of some sources of income. Also, because of the absence of a system of interstate fiscal redistribution, tax rate differentials may be higher across states than across provinces.

1.3.4 Taxation of Cross-Border Income Flows

While the United States and Canada have varying degrees of internal tax harmonization, there are no official arrangements for harmonizing their national tax systems, except through the provisions of the Canada-U.S. Tax Convention (1980), henceforth referred to as "the treaty." The tax laws in each

7. A more detailed analysis of tax rate differences across states and provinces may be found in Vaillancourt (ch. 11 in this volume).

country contain provisions determining whether a taxpayer is resident or not and provisions determining whether a particular income receipt is from a domestic source or not ("source rules"). These provisions are chosen independently in each country, with tax treaty provisions taking precedence over them in the event of a conflict, but only to the extent of the conflict.

Both Canada and the United States adopt the same general conventions regarding cross-border income flows. Residents (persons and corporations) in each country are taxed on the basis of their world income (i.e., domestic and foreign source income), while nonresidents are taxed only on the basis of income originating in the country (i.e., source income only). In Canada, residence of persons is determined mainly on the basis of the taxpayer living in the country, although persons may be "deemed residents" when some permanent attachment exists, even if they are not physically residing in the country. Corporations are considered resident if they were incorporated in Canada. The United States taxes its citizens on their world income irrespective of where they reside, although there is a $70,000 exclusion of foreign earned income for qualifying individuals residing abroad. Corporations are residents of the United States if incorporated there.

Source rules apply in both countries, but are more developed in the United States. Generally, income is considered to be from a domestic source if it is income derived from employment within the country, business income from "carrying on business" in the country (or "effectively connected" within the United States), rent and royalties from real property located within the country, interest from a domestic payer, or dividends from a firm incorporated within the country. Capital gains are considered domestic source only if they result from the disposition of real estate. Both countries exempt interest paid by domestic governments (the United States also exempts interest paid by U.S. chartered banks). Social insurance payments from the domestic government are also considered as domestic source income. In determining business income, expenses are deductible, but in the United States regulations governing the allocation of expenses apply where the taxpayer has both domestic and foreign source income. Among the most important of these regulations are those governing the allocations of interest and R&D (or other intangibles) expenses. In Canada, a thin-capitalization rule puts an upper bound on interest expenses, while in the United States interest expenses are allocated according to asset shares by location. In the United States, R&D expenses are allocated partly on the basis of where the research took place and partly on the basis of the location of sales. Canada allows for deductions for R&D conducted abroad if "related to Canadian business."

The taxation of domestic source income of nonresidents is essentially schedular in both countries. Employment income is taxed in the same way as it would be taxed in the hands of a resident, but with a more limited set of deductions, exemptions, or credits. Likewise, business income is taxed in the same way as for a resident, under the personal or corporate tax systems as

applicable. Gross-basis-type (i.e., no deductions) taxes are imposed by both countries on interest, dividends, royalties, and fees paid to nonresidents. The basic tax rate is 30% in the U.S. and 25% in Canada, but these rates are reduced by treaty. These taxes are enforced by withholding by the payer. Both countries have branch profit taxes at the same rate applying to nonretained earnings of branch firms (which replicate the dividend withholding taxes applying to dividend repatriations from subsidiaries).

The tax codes of both countries contain provisions designed to alleviate the double taxation of cross-border income flows, although the actual provisions differ. The U.S. allows a foreign tax credit up to the domestic tax liability for income-type taxes levied on foreign source income in the source country. A "deemed-paid" credit is allowed against U.S. corporation income taxes for foreign corporation income taxes paid by a controlled subsidiary (10% or more share ownership). In general, to be creditable, the foreign taxes must be net income taxes and similar to the U.S. taxes against which they are credited, although gross-basis withholding taxes are creditable under special rules. Resource royalty type taxes are explicitly excluded. Foreign tax credits may be extended to dissimilar foreign taxes under treaty. Where foreign tax credits are not applicable, a deduction can be taken. The foreign tax credit is subject to an overall limitation equal to the ratio of foreign source income to world income times the U.S. tax liability and also to ten different "basket" limitations according to type of income (active, passive, dividend, interest, etc.). From 1986 on, foreign earnings and taxes have been calculated on a cumulative basis in determining the foreign tax credit limitation. This is intended to prevent the acceleration of foreign tax credit eligibility through the use of the "rhythm method" of repatriation, which is possible when foreign depreciation deductions are optional, as in Canada.

In contrast, Canada employs a mixed system of exemptions, credits, and deductions to alleviate double taxation. Dividends paid out of "exempt surplus" (essentially the active business income of controlled foreign affiliates located in listed—mainly tax treaty—countries where Canadian ownership exceeds 50% or more) are exempt from the Canadian corporation income tax, while foreign tax credits of foreign corporation income taxes and gross-basis withholding taxes up to the Canadian corporation income tax liability are permitted against dividends received from foreign corporations in which the Canadian parent has ownership of 10%-50%. Foreign tax credits against Canadian personal income taxes are also allowed for personal income taxes and withholding taxes levied in the source country. Again, where foreign tax credits are not applicable, deductions of foreign taxes paid are usually allowed. The overall limitation is calculated in the same way as for the United States, although there are only two "basket" limitations—"business" and "nonbusiness" income.

Canada and the United States both adopt a "separate accounting" approach to determining the income of resident corporations and their foreign subsidi-

aries. This implies two things. First, foreign source income is not subject to taxation (if at all) in the residence country until it is received by the parent ("repatriated"). Thus, the parent-country taxes (if applicable) are said to be "deferred." Second, scope is opened for international tax planning by the multinational corporation because of its ability to manipulate the source of income. The tax laws in both countries contain provisions designed to prevent international tax avoidance made possible by the separate accounting approach coupled with the existence of "tax havens." These provisions take two forms: transfer pricing regulations enforcing arm's length prices on transactions between related corporations and provisions requiring what is effectively unitary tax treatment for passive income and other "tainted forms" accruing to controlled affiliates of resident corporations. Section 482 of the U.S. tax code allows the authorities to scrutinize transactions between related corporations and impute arm's length prices where feasible or attribute "commensurate income" to intangibles. Section 69(3) of the Canadian Income Tax Act allows the authorities to deem payments received from nonresidents that would have been reasonable in an arm's length transaction when inadequate compensation is found.

Passive income of controlled personal corporations and sales and service income passing between controlled subsidiaries in other countries is included in the current income of the U.S. parent under the Subpart F provisions (with a corresponding foreign tax credit and subsequent tax-free disposition). The equivalent Canadian provision is the so-called FAPI (foreign accrual property income) rule, which requires income from property and business income, other than from active business of a controlled foreign affiliate, to be included in the income of the Canadian parent. There is nothing equivalent under FAPI to the U.S. inclusion of sales and service income among related foreign affiliates, although income from services that would otherwise be active business income will be included in FAPI if the income is charged as a deductible expense to the controlling parent (or in some cases to an unrelated party).

Many of the above provisions are modified under the Canadian-U.S. tax treaty. The treaty contains "tie-breaker" provisions for determining residence in the case of dual residence persons and corporations. An important one is that a corporation resident in Canada may be taxed only on its Canadian source income (i.e., treated as a nonresident) if it was incorporated earlier in the United States. Both countries also agree to determining the source of business income on the basis of it being attributable to a "permanent establishment." There are also limits on gross-basis withholding tax rates. Nonresident withholding taxes on royalties, fees, and dividends paid to related corporations in the other country are limited to a maximum of 10%. A maximum withholding rate of 15% applies to interest and to dividends paid to unrelated corporations in the other country. Also, the branch profits tax rate is limited to a maximum of 10% in the case of branches of corporations resident in the other country. Pensions and annuities originating in one country and paid to a

resident of the other are subject to a maximum withholding tax of 15% by the source country, to the extent that such income would be included in taxable income of residents of that country.

The tax treaty also extends certain deductions and exemptions available to resident persons to nationals of the other country, prohibits discriminatory taxation of the other country's persons and corporations, mandates double-taxation relief through credits and exemptions, and authorizes competent authorities to alleviate individual cases of double taxation. The latter may arise through ex-post application of the transfer pricing regulations of each country.

1.4 General Analysis of Income Tax Harmonization between Countries

In this section we examine some general issues associated with income tax harmonization. Primarily we are concerned with how similar the income tax structures must be for countries whose economies are highly integrated, and the extent to which the need for similarity limits the pursuit of national tax policy objectives. Our discussion will be restricted to the case of two countries, though similar principles apply more generally. In the next section, we investigate in more detail the constraints imposed on tax-policy making in an individual economy. We begin here with a preliminary discussion of the way pressures for harmonization impinge on tax policy objectives.

1.4.1 Harmonization and the Objectives of Tax Policy

As mentioned in the introduction, there are several major objectives of tax policy. First and foremost is the revenue objective. A country's tax system must yield a predictable and stable source of revenue sufficient to finance planned government spending. In particular, the revenue base must be protected from widespread erosion due to tax avoidance and the shifting of the tax base into low-tax jurisdictions. Second, there is the distribution objective. The burden of the tax revenue obtained should be distributed across the population in some desired manner. While the distributive objective may be based on principles of vertical equity across income groups, regional factors also play an important role, especially in Canada. A third objective is to minimize the economic cost or burden of raising the desired level of revenue. This requires both administrative efficiency, meaning that the collection and compliance costs of obtaining the revenue are minimized, and economic efficiency, meaning that the deadweight costs of the distortions imposed by the tax system on the allocation of the economy's productive resources among competing uses are minimized. Finally, for our purposes, there is the industrial policy objective, whereby the government seeks to use the tax system to reallocate production to achieve noneconomic goals. Again, an important element here may be regional policy. Obviously, this last objective will usually conflict with the neutrality objective. Typically these objectives will conflict with one an-

other; a fully efficient tax system will not be equitable, nor will it be administratively feasible. Regional policy objectives will conflict directly with efficiency. Because of this, a judgment must be made about the optimal way to trade off these objectives, and this will differ from country to country.

While Canada and the United States undoubtedly share the broad objectives outlined above, section 1.3 indicated that there are important differences between the two countries. The combined levels of governments raise a proportionally larger amount of revenue in Canada than in the United States. Also, the distributional objectives of tax policy appear to be pursued more vigorously in Canada, both in terms of vertical redistribution and regional redistribution. The result is substantially higher top marginal tax rates in Canada than in the United States. The regional objectives of tax policy also contribute to the (perhaps) greater extent of production non-neutralities in the Canadian tax structure, since these are partly achieved by region-specific investment tax credits. Also, Canada continues to maintain a preferential corporate tax rate on corporations engaged in manufacturing and processing activities. On the other hand, the personal income tax in Canada appears to contain fewer consumption non-neutralities than that of the United States, mainly because mortgage interest and lower-level government taxes are not deductible, while most fringe benefits and transfer payments are included in taxable income.

The implications of economic integration for the tax policy choices made by a government may be significant. For one thing, the free flow of goods and factors across international borders may alter the desirability of certain objectives. For example, distributive objectives that require a high marginal tax rate on upper-income persons may be unattractive if labor markets for skilled and entrepreneurial persons are integrated across international borders, so that such individuals may leave the country in search of lower tax rates. Similarly, the taxation of capital income may be tempered by the mobility of capital between jurisdictions. In addition, the best method of achieving a policy objective may be altered by economic integration. Where it is possible, the burden of taxation on the population of an individual country can be reduced by actions that attempt to shift the burden to foreigners. While these beggar-thy-neighbor policies may appear efficient from the individual perspective of a country, they are not likely to be so from the collective perspective of all of the countries involved. Even when such policies are excluded, the best method of achieving a policy objective may be altered by openness. For example, attempts to pursue industrial policy objectives through corporate tax incentives may be ineffective if multinational corporations are very important in the production sector and tax relief simply transfers tax revenue to foreign treasuries rather than provides incentives for the taxpayer. Instead, a direct subsidy that does not alter the foreign tax liability of the corporation may be a more effective instrument. Similarly, if high-income persons are very mobile internationally while low-income persons are not, the negative income tax solution of using higher marginal tax rates to fund universal lump-sum tax

relief may be less desirable than income maintenance programs targeted on the (immobile) poor through the use of high "claw-back" rates.

Economic theory might suggest that the objectives of tax policy could best be achieved through direct taxes on persons or households, since the ultimate burden of all taxes falls on them in any case. The optimal tax literature has shown that if certain separability conditions are satisfied, indirect taxation is unnecessary. Given that these conditions are not unreasonable ones and that, in any case, we do not know in which way preferences actually vary from them, there is not a strong efficiency or equity argument for having a separate indirect tax system. The personal income tax would presumably be on a residence basis. The chosen base could be either consumption or income or, possibly, some hybrid. The residence income tax rate structure could be chosen to achieve domestic distribution objectives if persons are immobile across international borders. Otherwise, the caveats mentioned above apply.

Unfortunately, things are not so simple outside the world of pure theory. There are several reasons why governments may want to supplement the personal income tax with other forms of taxes. Direct taxes on corporate income fulfill several objectives. First, if accruing income to capital is to be included in the personal tax base, a corporation income tax is more or less necessary as a "withholding" tax against undistributed income accruing to shareholders within corporations. Second, it may be desirable to tax differentially pure profits or rents, where they exist. This can be done with a business income tax of correct design or, in the case of resource properties, by auctioning off property rights or levying severance taxes (or equivalently, charging royalties). Such taxes may be sector-specific, but need not be restricted to corporations. They might also be origin-based rather than residence-based. Another reason for levying a corporation income tax (and for similar provisions applying to business income of unincorporated businesses under the personal tax) is that such a tax is most useful as an instrument of industrial policy, since it applies at the level of the producer. Again, this objective suggests that an origin-type business income tax would be desirable if it were possible. Finally, a country that is host to a substantial amount of foreign-owned capital may wish to levy such a tax simply to capture revenue that would otherwise accrue to foreign treasuries. This is the case when the home country offers a foreign tax credit for corporation income taxes paid in the host country by the subsidiaries of its domestic corporations. Of course, this objective alone requires only that the host country tax income accruing to foreign-owned capital and not domestically owned capital. But singling out foreign capital would appear discriminatory and is likely to be ineligible for the foreign tax credit offered by the home country. For that reason, the corporate tax system would likely have to apply identically to both domestic and foreign-owned firms. Its design must take account of all the objectives of corporate taxation in a single tax system. We return in the next section to the specifics of the design of a corporate tax in an open economy.

In addition to direct taxation, governments also tend to levy broad-based indirect sales taxes. Such taxes are widely used by governments around the world, including state and provincial governments in the United States and Canada and the Canadian federal government. From a purely economic perspective, the effect of broad-based indirect taxes can be replicated by direct taxes. For example, as Shibata (1967) showed in his pioneering work on tax harmonization, destination-based general sales taxes on consumption are ultimately equivalent to residence-based direct taxes on consumption. Similarly, direct taxes on income are equivalent to sales taxes on consumption and net investment. Thus, despite popular arguments to the effect that destination-based sales taxes are useful because they avoid imposing barriers to trade, they are essentially redundant from a purely economic point of view.

Nonetheless, there is a compelling reason based on tax avoidance and evasion for a government to levy a broad-based sales tax in addition to a direct tax. Income that goes untaxed under the direct tax system due to avoidance or evasion can be taxed as it is spent by the means of broad-based sales taxes. Furthermore, the higher the personal income tax rate, the greater is the incentive to evade. This may be particularly important if residents of the country can "hide" accruing income by investing abroad. The existence of a general sales tax both brings the expenditures from evaded income into the tax net and lowers the incentive to evade by lowering the level of direct taxes. Of course, this may be at the expense of other (equity) objectives.

Two major economic differences between broad-based direct and broad-based indirect taxes are that the former are more commonly levied on income (though hardly on a comprehensive basis) while the latter are typically levied on consumption, and that direct tax rates can be made taxpayer-specific and therefore can be chosen in accordance with ability to pay while the latter are levied on transactions and are therefore "anonymous" (i.e., must be levied at the same rate on all taxpayers regardless of ability to pay). The first distinction seems artificial, since direct taxes can be levied on consumption by allowing saving to be deducted, while indirect taxes can be levied on an income basis by including in the tax base the sale of capital goods (net of depreciation) to producers. The second distinction seems more important, in that direct taxes appear to be better suited for achieving a government's distributional objective. Although the indirect tax could achieve some types of redistribution through the use of differentiated tax rates across commodities, there is not a great economic case for so doing, and it may prove to be a "blunt instrument" in use.

Despite the possible equivalences between direct and indirect taxes, a major consideration from the Canadian perspective is that the U.S. foreign tax credit is allowed for income taxes only and explicitly excludes indirect taxes. Thus, even if the objectives of Canadian governments could be achieved with indirect taxation, there are good revenue reasons for relying on income taxes to the extent that governments of creditor countries do, because of the substantial

presence of foreign-owned capital. In the remainder of this paper, we will focus on harmonization problems solely as they relate to income taxation.

1.4.2 Noncooperative Harmonization: How Similar Must the Tax Systems Be?

It is commonly thought that the pressures for tax harmonization resulting from economic integration inevitably lead to highly similar tax structures. Yet the income tax systems of the United States and Canada, and even the income tax systems of different states in the United States, do differ from one another in significant ways. The point is that economic integration does not necessarily force uniformity in fiscal systems. This is the case for several reasons. First, to the extent that tax differences are matched by fiscal benefit differences, there is no incentive for factors to move unless the benefits can be retained while the taxes are reduced by such movements. This is particularly true for persons who are likely to make fiscally induced migration decisions, not on the basis of their marginal tax rates or even their average tax rates, but rather on the basis of their appraisal of the net fiscal surplus (positive or negative) associated with living in a taxing (and spending!) jurisdiction.

A second reason why different income tax structures can be sustained is that there is considerable immobility of persons across international borders. Thus a government can levy its income tax on the world income of its taxpayers as determined by residence. Except for any differences in the ability to evade taxes on foreign and domestic income, the tax system exhibits "factor export neutrality," and there is no incentive for taxpayers to locate their factors on the basis of differing tax systems between countries, because they are subject to the same domestic taxes on all income. By the same token, because labor is free to migrate across jurisdictions within a country, personal tax systems should be less diverse within a federation than across countries, though even here, different tax levels may be offset by different levels of benefit from expenditures.

Third, even if a factor is taxed on the basis of the source of its income and even if it is perfectly mobile between different tax jurisdictions, different tax rates can still be imposed in different jurisdictions—they just may not have effects intended. Different tax rates can be imposed at source on the income of an internationally mobile factor if the before-tax factor return compensates for the tax differential. What is altered here is not the ability of a country to set a different tax rate, but the incentive for it to do so. Thus, for example, Canada (or a U.S. state) can differentially tax income to capital, say by levying a higher corporate tax rate, but the before-tax return to such capital must rise to compensate. Thus, if the purpose of the difference is to place a higher tax on owners of capital, the tax difference does not achieve its objective, despite its being fiscally possible, because the tax is shifted to noncapital (and non-internationally mobile) factors. Only if the before-tax return cannot change, so all of the factor is driven from the country by a positive tax differential,

would the country or state perceive itself as being forced into fiscal uniformity with the other. The point here is that the pressures for uniformity should be understood in terms of the way they alter the desirability to governments of choosing similar tax systems as much as the extent to which they are forced to do so.

Of course, the return to a highly mobile factor can rise so as to compensate for a jurisdictional tax difference only to the extent that returns to other immobile factors can fall. We are talking about real returns here, so returns can fall as a result of output prices in the country rising. Even in the case of traded goods for which world prices are fixed, domestic money prices and the exchange rate can rise while the money prices of immobile factors remain fixed so real returns decline. If the monetary authority resists pressure for depreciation, the price of nontraded goods can rise, shifting the burden to domestic consumers of such goods who own immobile factors. Thus there are several channels through which differential taxation of the income to mobile factors can be achieved.

The above discussion suggests the extent to which economic integration forces harmonization on the countries involved. As long as persons remain relatively immobile across the border, the residence-based personal income tax systems can be quite differentiated. We see this to be the case between the United States and Canada at the present time, and there is little reason to think that these differences cannot continue. However, one probable pressure for harmonization that is important on the personal income tax side is the pressure on Canada to keep the average tax rate on high-income persons from increasing any more relative to those that prevail in the United States.

Similarly, differences in benefit-related taxes, such as social insurance taxes, levied on a residence basis, are unlikely to pose problems of disharmony. Even where imposed on employers, such taxes are ultimately borne by households who, on average, enjoy equivalent value in benefits. It seems reasonable, however, that it would not be possible to try to "make the foreigner pay" by levying such taxes on foreign-owned capital income.

If pressures for uniformity exist anywhere, it is almost certainly with respect to corporation income taxes. The residence of a corporation is far more flexible than that of persons. As a result, corporation income taxes are likely to be more like source taxes. Since the source of income can be manipulated by the corporation, both in actuality and according to accounting records, differences in the corporate tax systems are likely to give rise to considerable cross-border tax shifting.

Indeed, the pressures for uniformity in corporation income taxes should be greater as a result of the 1986 reforms in the United States Prior to these reforms, a Canadian subsidiary of a U.S. multinational could utilize elective deductions such as the CCA so as to arrange to pay more Canadian corporation income taxes in years when repatriations of dividends to the U.S. parent occurred—the so-called rhythm method. The upshot of this method was that

harmonization pressures served mainly to equalize average corporation tax rates, but not necessarily statutory tax rates. A higher statutory rate could be offset by more generous deductions, since those deductions could be taken in years when dividends were not repatriated. As long as the average corporation income tax in Canada did not exceed the U.S. rate, the Canadian corporation income taxes could be fully credited, even though the deemed-paid corporation income taxes in Canada were (and still are) determined using a broad U.S. definition of taxable income that does not allow for the generous deductions in the host country. The method of calculating the deemed-paid corporation taxes in the host country was changed by the United States in 1986 to preclude widespread use of the rhythm method. As a result, higher statutory tax rates in Canada are likely to result in "excess" foreign tax credits for subsidiaries of U.S. multinationals. With excess foreign tax credits there is an enormous tax incentive for the multinational corporation to shift income from Canada to the United States. Thus, there will be great pressure for Canada to keep statutory corporate tax rates close to U.S. levels.[8]

There is also an important way in which the pressures to harmonize corporation income tax rates feed back on the personal income tax system. As mentioned, an important function of the corporation income tax is to act as a withholding tax for the personal income tax. It is no accident that the corporation income tax rate in both countries is approximately the same as the highest personal rate. If this were not the case, there could be widespread tax avoidance through corporate retentions. Thus, pressures to keep the Canadian corporation income tax rate no greater than the U.S. rate add to the pressures to keep the highest personal tax rate no higher as well.

The main conclusion we can draw here is that in the absence of high mobility of persons across the Canada-U.S. border, both countries should be able to pursue a fair amount of independent tax policy with respect to residence-based taxes. Source-based taxes on the income of highly mobile factors are another matter. Existing arrangements are likely to force a fair amount of uniformity, perhaps to the detriment of each country's ability to pursue its own tax policy objectives.

However, the corporation income tax need not be the source-based tax it has become. To convert it back into a residence-based tax may require modification of existing tax treaty arrangements. The main feature of the corporation income tax that makes it a source-based tax is the provisions used to relieve double taxation. In particular, home countries have offered tax credits on taxes paid abroad by their corporations. Consider the following alternative residence-based corporation income tax system, in which no foreign tax credit is offered. In this hypothetical scenario, the host-country corporation income tax is credited when distributions are made to foreigners. That is, dividends

8. For a complete discussion of how the deemed-paid corporation income tax is calculated and the implications for crediting Canadian taxes in the U.S., see Bruce (1989).

paid to nonresident owners are deducted from the corporate tax base. (Measures would have to be taken to prevent credits from being given to domestic-owned foreign "shell" corporations, if a classical separate-entity corporation income tax arrangement is desired with respect to domestic residents. If an imputation system is desired, dividends paid to domestic shareholders would be deductible from the corporate tax base as well.) Under this system, the local corporation tax is eliminated as far as the foreigners are concerned. If the foreign recipients are corporations, the income may then be subject to corporation income taxes in the home country. In this scenario, the corporation income tax is designed exactly like the personal income tax: it applies to resident recipients only (at least once the income is distributed). No double taxation occurs, and no double-taxation relief measures are needed.

In the absence of the foreign tax credit provision by the capital-exporting country, there is little cost to the host country from implementing such an arrangement, assuming that it has no market power in capital markets. Without a foreign tax credit, the cost of capital is increased to the capital-importing country by the amount of its corporation income tax, so eliminating the corporation tax on income distributed to foreign shareholders has distributive consequences only within the host country. All countries in the world would have to eliminate the foreign tax credit for this residence-based corporate tax system to be feasible. If the capital-exporting country allows a foreign tax credit for host-country corporation taxes paid, the capital-importing country would be silly to credit its own corporation income tax to foreigners, at least up to the level that is eligible for the foreign tax credit abroad. The elimination of the host-country corporation tax on income to foreigners will not lower its cost of capital, because the tax is paid in the home country anyway: it simply transfers the revenue to the home country.

Thus, if the desired corporation income tax rates are the same in the two countries, the foreign tax credit simply acts as a lump-sum transfer from the capital-exporting country to the capital-importing country, and no harmonization problems occur. The difficulty arises if the countries want to impose different tax rates. This would pose no problem if the differential part of the tax rate could be made residence-based. For example, if the capital-importing country wants to impose a higher corporate tax rate, no problems would occur if it credited the excess tax on distributions to foreigners. This would allow it to collect the revenue transfer from the capital-exporting country and follow an independent tax policy. It would also be complex and appear discriminatory if distribution credits were given only to foreigners or if distribution credits for the full corporation tax were given to domestics (i.e., an integrated domestic system) with partial credits to foreigners.[9] This topic is developed further in section 1.5.

9. Of course, the existing tax system in Canada, which gives a dividend tax credit to domestic shareholders but not to foreign shareholders, is even more discriminatory.

1.4.3 Spillovers in Determining Tax Rates

As long as some income taxes in a country are imposed on the basis of source or as long as there is some degree of mobility of persons across international borders, the setting of tax policy instruments in a country will involve spillovers into other countries. As a result, the independent (i.e., noncooperative) setting of tax policies in different countries may fail to achieve objectives that could be achieved if the countries were to coordinate (i.e., cooperatively harmonize) the setting of their tax policies. We illustrate this point in terms of the objective of taxing different activities in a manner that is economically efficient.

When the government of a country sets its tax policy instruments independently, it is unlikely to take account of any benefits or costs it imposes on the other countries with which it trades. Spillovers may arise through changes in external prices (the terms-of-trade effects that are analyzed extensively in the trade literature) or through the shifting of economic activity, actual or by accounting measures, between jurisdictions. In this section, we argue that such spillovers are likely to lead to tax rates imposed on the income of internationally mobile factors being too low rather than too high. Ironically, much of the tax harmonization literature focuses more concern on the danger of double taxation or discriminatorily high tax rates on cross-border income flows than on tax rates that are too low (except for the problem of outright tax avoidance through the use of tax havens).

The argument is developed in figure 1.1, where the domestic supply of an internationally mobile factor F to domestic production uses is given by the upward sloping supply curve labeled S. The supply curve S is drawn for given tax rates abroad. For simplicity, it is assumed that S is not perfectly elastic and that the before-tax return to the factor in domestic use is fixed at W_o. The return to the factor is taxed at rate t so the after-tax return to the factor in domestic use is $W_o(1 - t)$ and tax revenue *abcd* is collected.

Consider now the domestic government's decision as to whether to raise the tax rate on this type of factor income. If it raises the tax rate marginally, domestic tax revenue will rise by the rectangle *cfhg* (the increase in the tax rate *cg* times the amount of the factor still employed in domestic use *cf*) and fall by the rectangle *ebdf* (the preexisting tax rate *ef* times the amount of the factor that leaves domestic taxable uses *eb*). The latter is approximately equal to the area *ebdh*. Obviously, in order for the government to want to raise the tax rate, the area of *cfhg* must exceed *ebdf*. If the quantity of the factor leaving domestic employment (*eb*) goes into nontaxable uses (household production or leisure), the area *ebdf* (or *ebdh*) will also be the marginal "deadweight loss" incurred by raising the tax rate on income to factor F. Taxes would be set optimally (from an economic efficiency perspective) when revenue-increase rectangles (like *cfhg*) are the same multiple of the marginal deadweight-loss rectangles (like *ebdh*) across all factors of production.

Suppose rather than escaping to untaxed uses, factor F locates in another

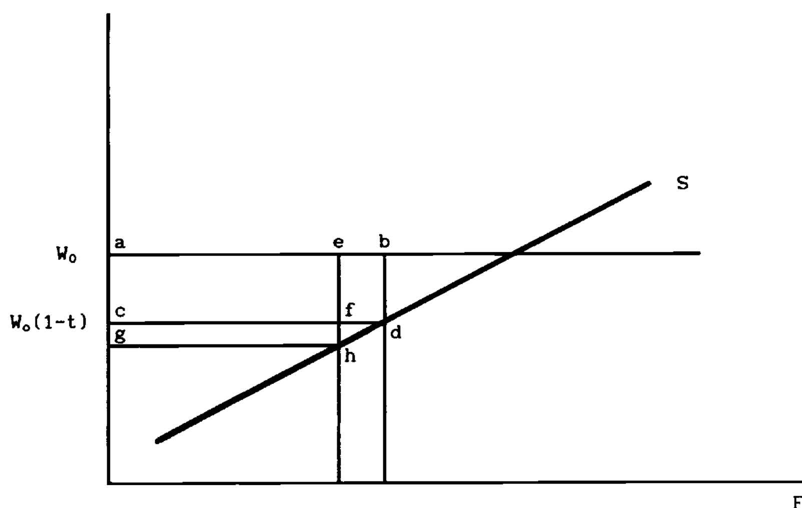

Fig. 1.1 Spillovers in the taxation of a mobile factor *F*

tax jurisdiction, which maintains the lower tax rate on its income. In this case the rectangle *ebdf* is not a deadweight loss to the world as a whole. Rather it is an increase in the tax revenue of the other country, which does not increase its tax rate on *F.* But the domestic economy in deciding on whether to raise the tax rate ignores the revenue increase in the other jurisdiction. It treats the loss of *ebdf* in the same way as it would if the factor escaped to untaxed uses. If the factor is in fixed supply to taxable uses in all jurisdictions, it could be a good thing to tax it from an efficiency perspective. But high factor mobility between tax jurisdictions is likely to make *F* appear a bad candidate to the individual country. Another factor of production which is immobile across international borders, but which has a less elastic supply curve to domestic taxable uses (the alternative use being untaxable), appears to be more attractive to tax from the point of view of the individual country. This is the case even though from the perspective of all countries combined, it may not be a good factor to tax at a higher rate.

What is being described here is the potential inefficiency of "tax competition" where a particular form of income is highly mobile between two tax jurisdictions. In the extreme case, a factor may be in perfectly elastic supply to each country but in perfectly inelastic supply to all countries combined. Bertrand-type competition in tax rates may eliminate the taxation of such a factor, desirable as it may be from a world perspective. Moreover, tax competition does not require that the factor actually be internationally mobile in a physical sense. Instead, income to that factor may simply be moved across borders to seek the lowest tax rate by the accounting procedures of multinational firms.

Surprisingly, there is far less of an incentive for countries setting tax rates

independently to end up taxing the income of a factor too much, as long as all countries take the tax rates in the other countries as given and countries do not perceive market power in the world markets for mobile factors. In order for a country acting independently to set a tax rate on a factor too high from the world perspective, the area of rectangle *ebdf* in figure 1.1 must be smaller than the marginal deadweight loss imposed on the two countries combined. Unless there is some unusual complementarity between factor F and taxed factors in the other country, this does not seem likely to occur. The individual country will have an incentive to tax a factor's income at a compensatingly lower rate if the other country taxes it at a higher rate, assuming each country takes the others' tax rates as given. If, however, one country is a strategic leader in setting its tax rates, it may tax a factor at too high a rate (from the point of view of world efficiency) because it recognizes that the other country will reduce its tax rate (partially) on the factor, thus affecting a revenue transfer to itself.

The above has illustrated the general principle that coordinated tax policies can lead to mutual improvements in the setting of tax policies across countries, even when economic pressures would otherwise force the tax structures toward uniformity. However, a recent article by Kehoe (1989) has identified a case in which the opposite may be true. Coordinated (or cooperative) setting of tax policies across countries may yield an outcome that is inferior to the noncooperative case. The example involves the time inconsistency involved in setting taxes on capital or income to capital. Fischer (1980) showed in a closed economy framework that the tax rate on capital that a government would choose (and therefore like to promise) before the private sector has made its saving decision is not the same as it would choose once the decision has been made. This is the case even if a government is motivated by economic efficiency, because once saving is committed it is in fixed supply and hence a good thing to tax. This time-consistent tax rate on capital income is inferior to the lower tax rate that would be imposed if the government could somehow commit itself.

Kehoe's point is that if capital is internationally mobile and its income can be taxed only at source, then tax competition results in a much lower tax rate than if countries cooperate in setting such rates. Suppose the optimal tax rate on capital income (with commitment) is zero or close to it. This outcome may be achievable with tax competition but not with cooperation. With cooperation, countries would agree to tax the fixed capital stock in the integrated economies at a higher (time-consistent) rate. This higher rate would be anticipated by the private savers and a less efficient level of capital accumulation would result. We return to the issue of cooperative harmonization between Canada and the United States after exploring in more detail the ways in which income tax policies are constrained by international pressures.

1.5 Some Implications of the Openness of the Economy for the Design of the Income Tax System

In this section, we consider the issue of income tax policy in an open economy, drawing on the principles that have been discussed above. The openness of an economy to the rest of the world, particularly to capital flows, imposes some constraints on policy and provides some opportunities as well. The objective of this section is to discuss how open economy considerations influence a country's independent choice of an income tax system, particularly the tax base. These considerations could be thought of as applying independently to the United States and Canada. Our discussion proceeds by first recalling the open economy setting and the constraints it imposes on attaining the objectives of tax policy, given the stylized facts about the existing circumstances. Then, the implications for tax design in a single country are discussed. In the next section, we will extend the analysis to consider the case for coordinating (integrating) the tax systems of the two countries, where they are taken to operate in a wider world economy.

1.5.1 The Open Economy Setting

The key defining feature of an open economy is the cross-border flow of goods and capital. For our purposes, it is the flow of capital that is most relevant. The flow of goods, tax-free or otherwise, is of limited relevance for the design of direct tax systems. We will assume that the economy's capital markets are fully open to the rest of the world, and that the economy can be viewed as essentially a small open economy on world capital markets. This implies that rates of return on capital are exogenous to the country, subject perhaps to country-specific risk differentials. We presume in our discussion that this is true for rates of return on unincorporated business capital as well as corporate capital, although in practice it might be argued that capital market imperfections might at least partly segment unincorporated businesses (and private corporations) from public capital markets. That is ultimately an empirical question, and one for which an answer is difficult to verify. While capital flows freely between countries, its owners need not. In fact, we assume that there is very limited international mobility of persons, so for all intents and purposes, residency of households can be taken as fixed.

Our interest is in the direct tax policies of an open economy such as Canada. The country takes personal and corporate tax policies as given elsewhere. What is important for our purposes is to recognize that the common practice in the rest of the world is for corporate taxes to be levied on an origin basis. Given that countries want to tax corporation income, taxing it on an origin basis seems to be the only alternative.[10] This is achieved in a variety of ways

10. The reasons for this are discussed, for example, in Kay and King (1990, ch. 14). Essentially, residency of corporations is quite arbitrary; they can choose to establish residence where

in different countries. For example, a country may tax the worldwide income of its resident corporations, including repatriated earnings of subsidiaries operating abroad, and the income of foreign firms operating within its boundaries. A credit is then granted for taxes paid in foreign countries. Alternatively, repatriated earnings may be allowed to flow tax-free into the domestic economy without credit. The effect in either case is that corporate income is approximately taxed on an origin basis.

At the same time, the personal tax is typically levied on some notion of income and on a residence basis.[11] Different countries apply widely differing personal tax rates to differing bases. However, given the relatively low degree of labor mobility between most countries, this is not a significant constraint. Countries are relatively free to set their own personal tax systems as they wish.

The real constraints arise in the treatment of capital income and particularly from the fact that while personal income is taxed on a residence basis, corporate income is taxed on an origin basis. As mentioned in section 1.4, the ideal tax from an economic point of view might be a tax on persons levied on a residence basis (perhaps supplemented by a consistent system of indirect taxes). If the personal tax base is to be income, it is useful to supplement it with a corporate tax for withholding purposes. In an open economy, a further withholding role for the corporate tax is implied by the existence of origin-based corporate taxes elsewhere in the world. Thus, the income tax system becomes one of residence-based personal taxation combined with origin-based corporate taxation.

It is this conflict between the use of residence and origin bases in the same system that leads to constraints in tax policy. The small open economy assumption effectively segments the savings side of capital markets from the investment side (i.e., savings and investment are independently determined and need not be equal in any given year). The implication of this mixture of residence and origin principles is that tax measures operating through the personal tax system affect only the savings side of the market, while corporate tax measures affect only the investment side. This makes it very difficult to implement the ideal personal tax system.

Suppose that income is the desired personal tax base. One would like to include in the base as many types of capital income as are feasible. This basically means income from business capital assets, since income from personal

they prefer. An alternative view has been put forward by Musgrave (1990), that some notion of "internation equity" provides countries with a right to tax income earned by corporations within their jurisdictions. In the concluding section of this paper we suggest that a residence-based system has certain advantages over a source-based system of corporate taxation, but that some international cooperation would be required to achieve it.

11. Again, this is only partially adhered to, given the system of withholding taxes and the practice of some countries (e.g., the U.S.) of taxing citizens on a worldwide basis regardless of residence.

assets such as human capital and consumer durables are difficult to tax. The tax should be levied on an accrual basis, which is difficult to do in the case of capital gains, so capital gains are typically taxed when realized. A corporate tax can then be supported as a means of taxing retained earnings as they accrue within the corporation, so that taxes cannot be postponed indefinitely by keeping them within the corporate sector.[12] The existence of origin-based corporate taxes elsewhere in the world further supports the use of a corporate tax as a withholding device.

The corporate tax will typically apply on all equity income in the corporation and not only retained earnings. Otherwise, the objective of withholding from foreigners would not be satisfied. In the absence of further measures, the tax system would still discriminate systematically in favor of retained earnings and against new share issues because of the so-called trapped equity effect. To avoid this, it has been argued, for example by the Carter Commission in Canada, that the corporate tax should be integrated with the personal tax. This would undo the discriminatory double taxation of equity income from new share issues under the two taxes and would put corporate and unincorporated income on a par. As a practical necessity, the integration must be done at the personal level. That is, it cannot discriminate between domestic and foreign corporations, since to do so would entail the loss of tax crediting by foreign governments and the consequent loss of the tax transfer from foreign treasuries.

However, integration of the two taxes by a measure such as the dividend tax credit at the personal level would affect primarily the savings side of the capital market. While full integration would eliminate the discriminatory treatment of new share issues relative to retained earnings (as well as unincorporated business income), it can be shown that it would do so by effectively removing the taxation of capital income on equity income at the personal level altogether.[13] The upshot would be a personal tax system in which only interest income is taxed, and a corporate tax system that serves to distort the investment side of the market by taxing equity income at source. In fact, the corporation would have a tax incentive to finance its investments by debt, while taxes would favor households holding equity.

Thus, it seems to be difficult to tax capital income properly at the personal level in an open economy, at least in the absence of accrual-based capital gains taxation. If the latter could be implemented, then a classical corporate income tax system might be used for withholding from foreigners. However, the differential tax treatment of corporate and unincorporated business income

12. Note that keeping funds within the corporate sector does not imply keeping them within the same corporation. Thus, a corporation with excess funds on hand could keep them in the corporate sector for the shareholders by, for example, acquiring shares of another corporation or even taking it over. Given the intercorporate tax-free flow of dividends, the funds can continue to accumulate free of additional tax. This is just the trapped-equity effect mentioned below, and it provides a strong incentive for takeovers by mature firms.

13. This is analyzed in detail in Boadway and Bruce (in press).

would remain. As well, debt would still be favored at the corporate level because of the interest deductibility provisions of the tax. This would be the case independent of the personal tax treatment of interest income, again because of the separation of the savings and investment side of the capital market.

1.5.2 Income Tax Policy in an Open Economy

What does all this imply for tax policy in a small open economy? Consider first the personal tax base. Fundamentally, the choice is between an imperfect income base and a consumption base. Equivalently, the issue can be put in terms of what types of asset income should be included in the tax base.[14] A consumption base would effectively include no asset income. It is well known how that can be achieved in a fairly exact and administratively feasible manner. An income base will typically include only some forms of asset income. Consumer durables and human capital income are typically excluded, as are many forms of assets yielding imputed returns (cash balances, insurance, etc.). That leaves mainly business assets in their many forms. These include real interest income on debt (with payments and receipts treated symmetrically) and all forms of accrued equity income (dividends, real capital gains, unincorporated business income, rents, royalties, etc.). Of course, in practice even many business assets go untaxed at the personal level, since they are financed from tax-sheltered pension funds.

Administratively, the full and proper taxation of income on business assets is difficult to achieve under a personal tax alone. Apart from the requirement to index capital income, there is the need to measure accrued capital income. This is difficult to do properly for unincorporated business income. It is also difficult to do for capital gains, so capital gains must for practical purposes be taxed on realization.

That being the case, in the absence of complementary tax devices, a significant part of capital income could accumulate in tax-sheltered form within the corporation by retaining and reinvesting earnings.[15] As discussed, one of the functions of the corporate tax is to act as such a complementary device for the personal tax. In the closed economy, it can do so more or less perfectly. A corporate tax on equity income of the corporation, with its rate set to the top marginal rate of the personal tax and fully integrated with the personal tax by means of a dividend tax credit with the same rate, will serve the purpose. It will succeed in taxing retained earnings on the same basis as new equity issues and will fully remove the differential tax treatment of new equity issues, retained earnings, debt, and unincorporated business assets. It was for this reason that the Carter Commission recommended such a system for Canada in

14. It is important to note that we are dealing only with the choice of base here. In principle, the rate structure can be chosen independently of the base. Therefore, whatever the base, a more or less arbitrary degree of progressivity can be achieved by appropriate choice of the rate structure.

15. Note that the reinvestment can take the form of purchasing shares in other corporations, or of keeping the funds within private corporations. As long as the funds are not taken out of the corporate sector as a whole, they are sheltered from personal taxation.

the mid-1960s. Note that with a fully integrated personal and corporate tax system, the need to tax capital gains disappears altogether, at both the corporate and the personal levels. If capital gains continue to be taxed, they too should be fully integrated with the personal tax. [16] The tax-free flow of intercorporate dividends should remain.

Even this seemingly simple system is complicated to administer in its ideal form. For one thing, capital income should ideally be included in the tax base on an real accrued basis. This implies that the base should be indexed. It also means that accrued equity income would have to be measured for both corporations and unincorporated businesses. As is well known, this is difficult to do. For another, the interest deductibility provision gives rise to certain anomalies. The fact that businesses (both corporate and noncorporate) need only be taxed on their equity income means that interest should be deductible from the tax base, at least in real terms. The unlimited ability of firms to deduct interest, combined with integration achieved via a dividend tax credit (and the absence of a capital gains tax), implies that there is a tax arbitrage opportunity that must be closed off, involving the ability of a shareholder to use the corporation as a device for tax arbitrage by using the interest deductibility provision. If the corporate tax rate exceeds the personal tax rate on interest income, shareholders can be made better off if the corporation borrows to pay out dividends.[17] Naturally, there will be a limit to the firm's ability to do this. Creditors may impose restrictions on the borrowing of the firm for this purpose because of the absence of collateral or the risks of bankruptcy. The arbitrage may be less direct than the above. For example, the borrowed funds may be used indirectly for the buying of shares of other corporations, as in the case of takeovers financed by debt. This tax advantage of takeovers is quite separate from that arising due to the trapped equity effect mentioned above. In the latter case, the takeover arises from the fact that the firm has excess funds on hand in the corporation already, while debt-financed takeovers (leveraged buyouts) may be viewed as pure tax arbitrage operations using outside funds.

This tax arbitrage opportunity arises because the debt the firm is issuing is not being used to purchase business capital-producing revenues for the firm, but is being used simply to pay out funds either directly or indirectly to equity holders. One obvious way to close it off would be by limitations on the deductibility of interest. For example, firms might be restricted to deducting interest on debt used to acquire business capital only, though presumably this might be difficult to enforce. Alternatively, there might be some restriction imposed

16. This is demonstrated analytically in Boadway and Bruce (in press).

17. For example, suppose the corporation borrows \$100 in perpetuity at an interest rate i and immediately pays out the proceeds as a dividend. If the effective personal tax on dividends is τ, shareholders receive $\$(1 - \tau)100$ after tax. In the future, dividends must fall each period by $\$i(1 - u)100$, where u is the corporate tax rate and interest deductibility is assumed. Thus, shareholders' dividends fall by $\$i(1 - u)(1 - \tau)100$ each period. From the point of view of the shareholder, the present value of this financial transaction is $\$(1 - \tau)100[1 - (- u)/(1 - t)]$, where t is the personal income tax rate. As long as $u > t$, shareholders will be better off. Similar principles apply if the firm is able to repurchase shares using the initial funds.

on the use of the dividend tax credit. For example, dividends might only be eligible for the dividend tax credit if they were paid from after-tax profits. Again, this might be difficult to administer. The Carter Commission (1966) recommended a similar scheme, whereby the total tax credited to shareholders would be restricted to taxes actually paid at the corporate level. This was rejected partly for administrative reasons. It could also be rejected for other reasons in an open economy, as discussed below.

Another, related, difficulty in integrating personal and corporate taxes with the dividend tax credit in the personal tax system concerns the fact that different corporations are liable to differing tax rates. Statutory tax rates differ for firms of different size, for firms in different industries, and for firms in different provinces (or states). To the extent that these differing tax rates are implemented explicitly for industrial policy reasons, the granting of a uniform tax credit is appropriate. To do otherwise would effectively undo the preferential treatment (at least in a closed economy; see below). However, in the case of differential rates across provinces, different dividend tax credit rates might be desired in an ideal world. Also, if firms face different effective tax rates because some are in a nontaxpaying position, full crediting would not seem to be sensible. This situation could be avoided by full loss offsetting in the tax system.

Finally, the use of corporate taxation by more than one level of government increases the complexity of integrating the corporate and personal tax systems, even in a system as highly coordinated as that of Canada—or even in a closed economy. The problem is that while the corporate tax is levied at source, the dividend tax credit is applied against personal taxes, which are levied on a residence basis. To the extent that shareholders in one province own corporate shares in another, the crediting will come at the expense of a different province, which collected the corporate taxes. Provinces that are net corporate capital importers from other provinces will benefit, and vice versa.[18] This is an unavoidable consequence in a system of integration applying to personal taxes. In a closed economy, it can probably be avoided by applying dividend relief at the corporate level, that is, by allowing firms to deduct dividends from their corporate tax base, with the so-called dividend-paid deduction. In an open economy such a remedy would not be available, as discussed below.

The upshot of this discussion is that even in a closed economy the task of designing a reasonable corporate and personal income tax system is not a straightforward one, even given that at the outset certain types of asset income are necessarily excluded (i.e., basically nonbusiness asset income). The problems of properly accounting for capital income and of using the corporate tax effectively as a withholding device are significant. It is partly for this reason

18. This will be at least partly offset by the system of equalization, which operates on both the personal and the corporate tax collections across provinces.

that many economists have argued in favor of using personal consumption or its equivalent as the tax base.

In an open economy, the problems are even greater. Suppose a country wants to tax its residents on their income, including accrued capital income. In addition, it wants to exploit any tax transfers from foreign treasuries that international tax crediting arrangements permit. If the personal tax system cannot tax capital gains on accrual, a corporation income tax is required for the purposes both of withholding at source against domestic residents and transferring taxes from foreign treasuries. The corporate tax will have to be a tax on equity income defined, not as the policy maker might ideally define it for domestic withholding purposes, but to conform with the tax systems of creditor nations. In the absence of integration provisions, the corporate and personal tax systems will favor retained earnings at the expense of new share issues, and will favor unincorporated businesses relative to corporations. An attempt to integrate must involve a dividend tax credit applied at the personal level. The dividend-paid deduction would not be a desirable instrument here, since it would apply to dividends paid both to residents and to foreigners, and that would effectively negate any withholding against foreign treasuries. Furthermore, assigning the dividend tax credit on the basis of corporate taxes paid (as suggested by Carter) would not be desirable in an open economy for the same reason.

All the problems mentioned above for designing an integrated corporate and personal tax system for the closed economy would continue to apply. In the open economy, there would be more. A fully integrated corporate and personal tax system achieved using the dividend tax credit would succeed in removing the differential tax treatment of new equity issues and retained earnings and would remove the differential tax treatment of corporate and noncorporate equity, but it would do so by removing the tax on equity income at the personal level altogether. Only personal interest income would remain taxed.

This system hardly constitutes taxing persons on an income basis. To do that would involve foregoing integration altogether (as in the U.S. case), plus taxing capital gains on accrual. Failure to do the latter would allow persons to shelter retained earning within the corporate sector. Given that it is difficult to tax capital gains on an accrual basis, the alternatives for personal taxation in an open economy would seem to be as follows:[19]

i. Tax capital income to the extent possible, which means in practice roughly the way it is taxed now. Interest, dividends, rents, and royalties are all taxed as received (with full loss offset). Unincorporated business income is taxed on accrual, albeit imperfectly. Capital gains are taxed on realization. The corporate tax is integrated with the personal tax. As mentioned, such a

19. In all these options, we presume that a corporate tax is in effect. Because of the segmentation of the savings and investment sides of the market, what is done at the personal level can be evaluated separately from what is done at the corporate level. We return to the corporate level below.

system effectively means that equity income goes untaxed at the personal level, while interest is taxed. Persons have an incentive to hold equity income, while firms have an incentive to finance with debt. There is no differential treatment of corporate and unincorporated forms, nor of these forms and personal assets. However, this outcome is achieved by essentially removing much of capital income from the personal tax base. (The Canadian system is like this, except that integration is not full, and pension and RRSP funds are sheltered.) The dividend tax credit provision does not apply on funds invested in sheltered form; that is appropriate in the open economy setting. It would, of course, be desirable to index capital income for inflation. As well, the problems with unlimited interest deductibility, mentioned above, remain.

ii. Tax capital income as in (i), but do not integrate the personal and corporate tax systems. In this case, part of equity income is taxed (i.e., new equity issues), but retained earnings are not. Persons have an incentive to accumulate wealth within the corporation rather than to hold debt or acquire new equity. As above, firms prefer to finance by debt because of the interest deductibility provisions. Corporate equity is discriminated against vis-à-vis unincorporated equity. The result is a tax system much like the U.S. system. It is far from an ideal income tax system, since it includes many interasset distortions.

iii. Use consumption as the base for the personal tax by following the prescription of the U.S. Treasury *Blueprints* (1977) as adopted for Canada by the Economic Council of Canada (1986). The corporate tax should not be integrated with the personal tax in this case. Unincorporated business assets are taxed on a cash-flow basis or its equivalent, as outlined in Boadway and Bruce (1984). This would avoid all the interasset distortions at the personal tax level as outlined above, leaving only the distortions caused by the corporate tax. Given the extent to which assets are currently sheltered in the Canadian personal tax system, this would not require a major departure from the present system.

Given these options for personal taxation, it could be said at the least that considerations of an open economy nature strengthen the case for consumption, as opposed to income, taxation at the personal level. Ultimately, the decision involves weighing these considerations against other equity and efficiency objectives of taxation.

Next, consider the corporate tax. In a closed economy, the main argument for a corporate tax follows from its role as a withholding device against earnings retained within the corporation. This role is considerably weakened in the open economy because of the segmentation of the investment side of the market from the savings side. In a small open economy, the corporate tax essentially distorts the investment decision without affecting the savings side at all. However, in an open economy, the corporate tax acquires another withholding role, against foreign corporations that can credit taxes at home (or are exempt from taxes at home on foreign income). This becomes the main role for the corporate tax in an open economy.

The exact design of the corporate tax for this purpose depends on two opposing considerations (from the perspective of the small open economy). On the one hand, the desire to extract as large a tax transfer as possible from foreign treasuries would suggest mimicking foreign tax regimes to the extent possible. On the other hand, taxing foreign corporations means unavoidably taxing domestic ones as well. This consideration implies that a distortion is imposed on domestic firms' investment decisions. It would support as low a tax rate as possible. Some judgment must be made as to the balance between these opposing objectives. Presumably, the greater the proportion of assets held by foreign-owned firms, the higher the corporate tax rate would be, and vice versa.

1.6 Cooperative Income Tax Policies between Two Open Economies

The above discussion concerned tax policy for an economy whose capital markets are open to international capital flows. Tax harmonization involves coordinating the taxes of more than one country. The question addressed now is whether there are any significant advantages to be gained from two countries, both operating in a wider world economy, coordinating their tax systems, given that each of them has its own tax policy objectives. We have already seen that there are certain pressures for a single country's tax system to conform in certain ways with those of other nations, even when it operates independently. The issue is whether there are additional gains to be had from further cooperation between two such countries.

The analogy with tax harmonization in a single country with a federal system of government might seem to be apt here. The Canadian case is instructive. In Canada (as in the United States), the federal and the provincial governments use both the personal and the corporation income taxes. Residents are subject to taxes at both levels of government. Furthermore, residents are free to move from one province to another. In these circumstances, explicit income tax harmonization makes a lot of sense. On the administrative side, harmonization can allow for a single tax collection authority and thereby reduce collection and compliance costs significantly. At the personal level, harmonization of the base and the rate structure reduces the possibility of inefficiencies in the allocation of labor across provinces by reducing the ability of the provinces to use the tax structure to attract desirable types of persons. However, the use of a common base and rate structure necessarily implies some loss of sovereignty of different units of government in tax policy. This is resolved in Canada heavily in the federal government's favor, though it is not clear that this situation will continue indefinitely, given the growing relative importance of the provinces in the collection of personal income tax revenues.

Harmonization of the personal tax structure also allows for a system of imputation applying across provinces, whereby tax credit is awarded for corporate tax revenues collected anywhere in the federation. As mentioned, since

the corporate tax is collected on a source basis, imputation at the personal level involves some interprovincial redistribution of tax revenues. However, this is likely to be offset considerably by the extensive system of interprovincial redistribution that occurs through the grant system, especially the system of equalization and Established Programs Financing transfers. Indeed, it is this system of equalizing transfers that also reduces the use of the personal tax system for tax competition.

At the same time, the fact that integration occurs at the personal level means that the rate of imputation is the same across provinces, despite the fact that corporate tax rates may vary from one province to another. This seems to be an unavoidable consequence of having to integrate at the personal level rather than the corporate level. Even if different provinces could select their own rates of imputation (and there is probably no reason why they should not be allowed to), there is no ideal rate. If the Canadian economy were a closed one, it would be better to apply the imputation at the corporate level, say, by a dividend-paid deduction against corporate taxes paid. But this is not a sensible alternative in an open economy, because it would effectively undo any withholding against foreigners whose own corporate tax systems operate on an origin basis.

Harmonization of the corporate tax also entails the potential benefits of a single tax collection authority (although three provinces take no advantage of it). The main advantage of tax harmonization is the use of a common base. In addition to reducing compliance costs, the use of a common base facilitates the use of formula apportionment for allocating corporate income to province of origin. The use of a formula, though to some extent arbitrary, limits the ability of a firm to engage in tax arbitrage activities, especially those involving financial transactions designed simply to change the province in which the firm takes its profits. Of course, since no allocation formula will be perfect, there will remain some incentives for conducting operations in one province relative to another. Those incentives will depend upon the differential in tax rates across provinces. Again, the system of federal-provincial transfers minimizes these differentials, though presumably it does not eliminate tax competition altogether.

When we move to the Canada-U.S. setting, there are several institutional differences that considerably weaken the case for extending a form of tax harmonization. First, there is no single higher level of government with a mandate to implement a tax policy according to a single objective. That is, there is no analogy with the federal government in a federal country. Second, though residents are mobile internally within a federation, they are essentially immobile internationally, unless the nations have agreed to a common market; this is not the case for Canada and the United States. Third, there is no system of redistributive grants between nations such as exists within a federation (e.g., Canada). These can reduce the pressures for tax competition and other-

wise offset the anomalies that can occur from the fact that while corporate taxes are levied at source, personal taxes are levied on a residence basis. Taken together, these considerations imply to us that the two countries are unlikely to benefit greatly from tax harmonization of the sort used in the Canadian federation.

Given the immobility of labor across the two countries, taxation of personal incomes on a residency basis allows each country to pursue its own domestic tax policy objectives with minimal constraints. Thus, the openness of the economy seems not to constrain one country from imposing a substantially different personal tax base or rate structure from the other. Canada could, for example, adopt a personal consumption base independently of the United States. Similarly, the decision whether or not to impute corporate tax liabilities against personal taxes could be taken independently by each country — as has been done. We have seen that this decision is effectively the same in an open economy as the decision as to whether to tax equity income fully at the personal level or not.

It is at the level of the corporate tax that international harmonization becomes more of a possibility, especially given the ability of capital to flow between countries more or less unrestricted. As mentioned, international capital mobility will already induce some harmonization in the tax system, since it will be in the interest of a given country to adopt a tax system similar to those operating abroad, under international tax crediting arrangements. Any further harmonization that can be achieved by agreement would involve at the least a common base. Since there is no natural ideal base for the corporate tax, this would remove the discretion that otherwise exists at the national level, thus reducing a country's independence to conduct tax policy with domestic objectives in mind. Similar arguments might be applied to the rate structure. There is already considerable pressure for harmonization of rates. It is not obvious that there is much to be gained from further explicit agreement.

Beyond this, the two countries may prefer to harmonize their integration systems. If this could be done at the corporate level by, say, a system of dividend-paid deductions, the ideal integration system could be achieved. Unfortunately, it would be difficult to do, since it would require treating firms resident in one of the two countries in a different manner from other foreign firms. Such discrimination would presumably not be compatible with existing international treaty conventions. Either the dividend deduction would have to apply to all firms, which would not be desirable from an international tax transfer perspective, or the integration would have to occur at the personal level, in which case there is little to be gained from harmonization of the corporate bases. We have already seen that when integration is applied at the personal level, there is no reason why different countries cannot pursue independently different policies, one integrating and the other not.

It might be thought that administrative gains could be had from coordina-

tion, especially in the form of reduced compliance and collection costs. Significant benefits would probably require implementing some form of formula apportionment system for allocating the tax base between jurisdictions. However, for this to be of real value, agreement on common base would be required. Then only one set of accounts would need to be compiled for the two countries. Of course, the need for separate accounting with other countries would not be avoided. A common base with formula apportionment would simplify the system for taxpayers, remove some incentives for wasteful tax planning, and avoid double-taxation problems within the two countries. At the same time, it would involve considerable loss in sovereignty to the agreeing governments, since both would have to accept the same tax base.

The chances of this outcome being achieved are remote indeed as far as Canada and the United States are concerned. While Canada's corporate income tax system is highly harmonized within the country among the various jurisdictions, the same is not true of the United States. A prerequisite to international harmonization is harmonization within each country. In the absence of this, the chance for adopting formula apportionment with a common base is limited. Of course, it would still be possible to apportion without using a common base, but many of the advantages would be lost.

Nevertheless, there are some partial measures that could be adopted to the mutual advantage of both countries. A good example of cross-border "complementarity" between measures undertaken to improve compliance is the use of withholding taxes on investment income. As mentioned earlier, a major disadvantage for the individual country in imposing such withholding taxes on domestic financial institutions is that residents can easily shift their savings abroad. Thus, the attempt to improve compliance may be counterproductive. If, however, the United States and Canada both impose withholding taxes on investment income, compliance is improved in both countries, providing savings cannot be shifted to third countries. Note that in this regard, tax treaty provisions that specify special low withholding-tax rates for partner countries would be undesirable.

Another potential area of cooperation is the use of the corporation income tax system to offer economic incentives to certain activities; for example, a corporation income tax credit for R&D spending could be offered. Under the existing system of taxation for cross-border income flows, the impact of such an incentive is blunted for R&D activities carried on by U.S. multinationals in Canada, because of the U.S. foreign tax crediting arrangements. Rather than offering these corporations tax relief for carrying out R&D expenditures, these arrangements mean that revenues are transferred to the U.S. Treasury. From the firm's perspective, lower taxes paid in Canada simply imply higher taxes paid when the income is repatriated to the United States. However, if the repatriation is far enough in the future, the Canadian tax relief can have some incentive effects. It is expected that the 1986 reforms in the U.S. taxation of

foreign source income are likely to reduce the effects of Canadian tax incentives.[20]

The United States could enable Canada to better use its corporation income tax to pursue industrial policy objectives by also adopting an exemption system, or by allowing qualifying Canadian tax incentives to reduce U.S. corporation income taxes on repatriated incomes (so-called tax sparing). The latter would be difficult to do on a bilateral basis, since the United States has steadfastly refused to offer tax sparing to developing countries, unlike some other capital-exporting industrial economies. This refusal is supported by the belief that unless a compelling market-failure rationale for the incentive exists, the incentive could cause an inefficient allocation of capital between countries, with the cost being borne by the United States. Also, it is believed that coupling the present deferral advantage with tax sparing will offer excessive relief.

The main argument against replacing the U.S. foreign tax credit with an exemption system is that the latter invites the capital-importing countries to attract income from the United States by offering a lower corporate tax rate—the typical negative spillover policy. However, this could be mitigated by allowing the exemption to apply only to particular forms of income in listed countries, such as Canada does. The main problem with this solution is that the Canadian system seems inordinately complex and is perhaps unmanageable for U.S. multinationals that operate in numerous countries. Also, as long as Canada and the United States each maintain certain corporate tax preferences that are perceived as working against the other country's interests, such as the special tax rate for manufacturing and processing income in Canada and the Foreign Sales Corporation provisions in the United States, agreement to recognize each other's corporate tax incentives will be difficult to obtain.

The market pressures for a high degree of uniformity in the corporation income tax structures of Canada and the United States probably constrain the abilities of both countries to pursue national tax policies, even when those policies do not interfere with the other country. It is less obvious that the disadvantages are so great that the two countries will find it desirable to adopt a coordinated approach to the taxation of multinational corporations operating in both countries.

1.7 Concluding Remarks: Worldwide Tax Harmonization

The previous discussion was predicated on the fact that Canada and the United States operate in a broader world context, in which certain tax institu-

20. A similar situation does not apply to the impact of U.S. corporate tax incentives on the activities of Canadian foreign affiliates operating there, because Canada exempts most income repatriated from the U.S. from corporate taxation. Thus, U.S. corporate tax reliefs act as tax incentives to the firms affected.

tions are taken as given. In particular, it has been assumed that, while personal tax systems adhere to the residence principle, corporate tax systems use the origin or source principle. That is, foreign tax liabilities of home country corporations on their income earned abroad is credited against domestic tax liabilities. In such a system, an ideal income (or consumption) tax system is impossible to achieve. The corporate tax becomes partly a device for withholding against foreign treasuries. The combination of the residence principle for personal taxation and the source principle for corporate taxation makes it impossible to avoid distortions on capital markets. For example, it is not possible to implement a proper imputation system so as to ensure that equity income is taxed only once and is treated equivalently to interest income.

If a way could be found to tax corporations on a residence basis, these problems could be avoided. In principle, such an outcome is possible; in this final section, we explore it briefly. Essentially all that is involved is for countries to adopt a deduction system for foreign tax liabilities, rather than a credit system. Under such a system, provided all countries behave as if they have no market power in international capital markets, the incentive would exist for them to adopt a residence-based corporate tax system.

Consider first a capital-importing country, in which capital imports come from countries in which a deduction system is used. In such a system it can easily be demonstrated that the transfer of revenues from the treasury of the creditor country is not possible. Any attempt to extract tax revenues from foreign corporations will result in an outflow of foreign capital until the tax is fully shifted back to the residents of the taxing country. In such a setting the home country could follow several different tax policies. If it wishes to tax income comprehensively at home, but is unable to tax capital gains on accrual, it could levy a general corporate tax on all corporations. Then, to impute the tax it could offer a dividend-paid deduction to corporations as dividends are paid out. It would want to do so both for domestically owned and foreign corporations. Not to do so for foreign corporations would simply drive out capital and impose a tax burden on domestic residents.[21] The income tax system would be properly integrated, and income would be taxed once in the hands of residents. Furthermore, there would be no incentive for capital to be misallocated internationally on account of the corporate tax system applying at source. Note also that no further withholding taxes would be desired, again assuming that the deduction system applied to them as well.

It would be somewhat more difficult to operate a classical corporate tax system, as discussed in section 1.4. To do so would require giving a dividend-paid deduction only to foreigners, and this would be difficult to administer. Furthermore, it would seem to provide incentives for evasion by domestic corporations.

21. One might think an alternative would be simply to levy that tax on domestic corporations alone. However, this would be difficult to administer, since it would be necessary to identify and treat properly corporations with some (or all) foreign owners.

If the country wishes to tax residents on a consumption tax basis, it could do away with the corporate tax as a withholding device altogether. There would be no need to withhold against domestic residents, since capital income would not be taxed. And because it is not possible to transfer tax revenues from foreign treasuries, it is unnecessary to withhold against foreigners. The role of business taxation would be reduced to that of collecting pure profits. For that some form of cash-flow tax or its equivalent would suffice.

From the point of view of creditor countries, such a system would seem to be preferable to the existing one, since it eliminates the transfer of tax revenues they now face under the credit system. Creditor-country tax policies could be constructed exactly as above. They could operate an integrated tax system by imposing a corporate tax and imputing at the corporate level by a dividend-paid deduction. Or they could operate a consumption tax system by avoiding the use of the corporate tax for withholding purposes at all. Again, a classical system is somewhat more difficult to administer for the same reason as above.

If both creditor and capital-importing countries adopted such a residence-based corporate tax system, international production inefficiencies could be avoided and all countries could adopt the residence-based tax structure that most accorded with their policy objectives. Bringing about such a system would seem to be difficult, since it apparently involves agreement by all countries simultaneously. However, it is not obvious why explicit agreement would be required. It would seem to be in the interest of creditor countries to move to a deduction system. If they did so, even one by one, capital-importing countries would be induced to follow suit. One of the great unsolved questions of international tax theory is why creditor countries continue to use the credit system, when it seems clearly to be in their interest to use the deduction system instead.

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