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2 Impacts of Canadian and U.S. Tax Reform on the Financing of Canadian Subsidiaries of U.S. Parents

Roy D. Hogg and Jack M. Mintz

During the past decade, Canada and the United States undertook significant reforms that affected the income tax treatment of corporations in each country. Arguably, one of the most significant changes introduced by these reforms was with respect to the Canadian and U.S. tax treatment of U.S. multinationals operating in Canada.[1] In this paper, we examine the impact of U.S. and Canadian tax reforms on the financing of U.S. multinationals operating in Canada prior to and after Canadian and U.S. tax reform in the years 1986–87.

The data developed for this examination are based on a cross-section time-series file of twenty-eight companies for the years 1983–89 that was compiled by Arthur Andersen & Co. The virtue of this data set is that it is longitudinal, since current data are only one-year cross-section snapshots or aggregate time series. Also, we have been able to incorporate 1988 and 1989 data that would otherwise be unavailable at this time. However, the data are limited by the number of observations.[2] We cannot, therefore, vouch that the data are representative of all U.S. companies, although we have checked the comparability of our data with aggregate calculations found for all U.S. multinational companies operating in Canada. Aggregate 1980 data are reported in table 2.1.

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1. For a documentation of the U.S. treatment of foreign source income under the new tax reform law, see U.S. Congress, Joint Committee on Taxation (1987) and Ault and Bradford (1990). A review of Canadian tax reform measures and their impacts may be found in Canada, Department of Finance (1987), Bruce (1989), and Jog and Mintz (1989).

2. Total assets in 1984 equaled to $1.2 billion. This is approximately 1 percent of the 1984 assets of U.S. companies operating in Canada, as reported by Frisch and Goodspeed (1990) and in the Statistics Canada, CALURA no. 61-210.

Table 2.1 **U.S.-Controlled Foreign Corporations in Canada, 1980: By Selected Industry of Incorporation in Canada (U.S.$ millions)**

Industry	Percent of U.S. Corporations (1)	Percent of Foreign Corporations (2)	Total Assets (3)	Business Receipts (4)	Current Earnings or Profits before Tax (5)	Foreign IncomeTaxes (net, paid in Canada) (6)	Distributions		Payout Ratio (%) (8)≠(5)
							Total (7)	Out of Current Earnings or Profit (8)	
All industries	2,527	5,415	$90,044	$100,773	$8,285	$3,143	$1,988	$1,559	18.8%
			(35.6)	(39.9)	(3.28)	(1.24)	(0.786)	(0.617)	
Mining	139	240	7,605	4,309	1,212	416	252	202	16.7
			(54.7)	(31.0)	(8.72)	(2.99)	(1.81)	(1.45)	
Construction	74	114	1,092	2,387	85	32	27	8	9.4
			(14.8)	(32.3)	(1.15)	(0.43)	(0.36)	(0.11)	
Manufacturing	1,179	1,741	43,581	66,335	5,039	2,017	1,274	1,026	20.3
			(37.0)	(56.3)	(4.27)	(1.71)	(1.08)	(0.87)	
Transportation and public utilities	89	172	5,908	4,556	338	112	113	83	24.5
			(66.4)	(51.2)	(3.80)	(1.37)	(1.27)	(0.93)	
Wholesale trade	536	677	3,850	8.525	722	235	166	136	18.8
			(7.18)	(15.9)	(1.34)	(0.44)	(0.31)	(0.25)	
Retail trade	92	260	2,942	8,042	289	102	130	87	30.1
			(32.0)	(87.4)	(3.14)	(1.11)	(1.41)	(0.95)	

Note: Numbers in parentheses are, for each category, the average number of U.S. dollars per corporation.

These numbers roughly compare to the aggregate data of our sample for earlier years.

Section 2.1 of this paper describes the changes to Canadian and U.S. tax law during the period 1983–89. U.S. tax reform provisions began to apply to U.S. companies in 1987, while Canadian Phase I tax reform measures applied to Canadian companies in 1986, Phase II reforms in 1988.

Section 2.2 outlines various hypotheses that would be drawn from theory regarding the impact of Canadian and U.S. reforms. The hypotheses we are concerned with deal with changes in financial behavior: in particular, dividend payouts, cross-border charges (nondividend payments to the parent), and debt.

Section 2.3 presents data that are a preliminary confirmation or rejection of the hypotheses. The results are interesting, but we have to be cautious with respect to interpretation. Some of the trends that we notice may be explained by both tax and nontax factors. Only further data development and statistical testing would allow us to disentangle the factors that influence financial behavior.

Subject to this caution, we obtain the following main results:

- A dramatic increase took place both in the number of companies issuing dividends and in dividend payout ratios from the 1983–85 subperiod to the 1987–89 subperiod. In the latter, the average ratio of dividends paid to net income was close to 100 percent when companies chose to pay out dividends. The observed growth in dividend payments for this data set is consistent with the 50 percent real growth in dividends remitted abroad as reported on a national income accounts basis.[3] Both tax and nontax factors can explain this significant increase in dividend payouts.
- Companies that tended to pay dividends also paid more of their income to U.S. parents in the form of cross-border charges. As discussed below, this is consistent with a tax-minimizing strategy on the part of the parent and its subsidiary.
- Little change occurred in aggregate debt-asset ratios over the two subperiods. However, on a firm-by-firm basis, the debt-asset ratios increased for a majority of companies, falling for the remainder. The increase in debt-asset ratios was found to be significant. Both tax and nontax factors can explain these results.

2.1 Tax Changes during the Period 1983 to 1989

Since 1985 in Canada and 1984 in the United States, significant changes have occurred in the tax systems of both countries. The focus here is exclu-

3. Computed in table 2.2. During the 1975–82 period, dividends remitted abroad were, on average, $2.7 billion per year. During the years 1983–85, dividends remitted abroad were $3.7 billion per year. In the 1987–89 period, dividends remitted abroad were $6.4 billion per year. Corrected for inflation, the growth in dividends was 50 percent from 1983–85 to 1987–89.

Table 2.2 **Dividends Paid to Nonresidents and Canadian Exchange Rates, by Year**

Year	Dividends ($ billion)	Canadian Exchange Rate (U.S. Cents, Average Closing Prices)
1983	$2.5	80.4 cents
1984	3.9	75.7
1985	4.6	71.5
1986	5.8	72.4
1987	4.7	77.0
1988	8.5	83.9
1989	5.9	86.3

Source: Bank of Canada, 1990, *Review.*

sively on the provisions that affect wholly owned Canadian subsidiaries of U.S. parent companies.

2.1.1 Statutory Tax Rates

Table 2.3 shows the changes in the statutory rates of both countries between 1985 and 1989. For purposes of illustration and to make the table meaningful, both Canadian federal and provincial rates are combined, and both U.S. federal and state rates are shown, using the Canadian provinces of Quebec and Ontario and the U.S. states of Illinois and New York to illustrate the rate comparisons, in addition to reporting weighted average corporate tax rates. In Canada, the lower effective statutory tax rate on manufacturing, both federal and provincial, has been segregated. The rates of tax imposed by provinces other than Quebec are very close to the Ontario rates.

Prior to 1986, as table 2.3 indicates, statutory rates were generally lower in Canada than in the United States. Getting money "home" by way of dividends did not lead to additional taxes paid because the 10 percent Canadian rate of withholding on dividends was creditable against other taxes.[4] From a tax viewpoint, little attention was paid to cross-border charges, and therefore there was a limited focus on whether proper charges were made for such things as management and administration fees (particularly "specific expense reimbursements") and royalties, and transfer prices for goods. Attention had to be paid, however, to the provisions of the Internal Revenue Code of the United States (the "code"), and its regulations governing the deductibility of costs and expenses that may otherwise relate to the business of a subsidiary or related entity and be appropriately chargeable to that other entity.[5]

It is arguable that beginning in 1986, outside of Quebec, some tax incentive

4. Article X (2)(a) of the Canada–United States Income Tax Convention 1980 (the "treaty").
5. Section 482 of the code and the detailed rules found in regulations 1.482-1 and 1.482-2 to the code.

Table 2.3 Comparative Tax Rates*

Year	United States			Canada				
						M&P‡		
	New York	Illinois	Average for All States†	Quebec	Ontario	Quebec	Ontario	Average for All Provinces and Industries†
1985	51.4%	49.51%	50.05%	42.41%	51.93%	36.26%	44.78%	46.69%
Rate including 10 percent dividend withholding tax				48.17	56.74	42.63	50.30	53.02
1989	39.94	38.59	38.95	34.9	44.34	32.37	40.81	40.50
Rate including 10 percent dividend withholding tax				41.41	49.91	39.13	46.73	45.45

*Rates, provided for comparative purposes only, may not be entirely accurate due to surtaxes or special taxes/credits for certain types of income or use of capital.

†Weighted average of state/provincial corporate tax rates, with the weights based on the distribution of corporate taxable income.

‡Manufacturing and processing credit applied.

exists to increase cross-border charges and transfer pricing so as to take advantage of the tax rate arbitrage that now exists in favor of the United States.

2.1.2 Statutory Changes in the System—Canada

For the most part, recent corporate tax reform in Canada was proposed in 1985, and implementation began in February 1986. Significant technical amendments have been introduced almost every year since, and presently Bill C-18, dated May 30, 1991, consolidates amendments released in draft form in July 1990 and again, after extensive consultation, in February 1991. The amendments proposed in Bill C-18, yet to be passed into law (i.e., given "royal assent"), relate not only to federal budget initiatives, the traditional ways of introducing tax changes in Canada, but also to various other initiatives introduced by Canada's minister of finance by way of press releases and other pronouncements.

The major statutory changes in the system in Canada in the period 1983 through 1989, as they might affect Canadian subsidiaries of U.S. parents, are as follows:

- Rates of tax (see table 2.3)
- Capital cost allowance (tax depreciation)
- Repeal of the inventory allowance
- Corporate surtaxes
- Increase in the effective statutory tax rate on manufacturing profits

- Investment tax credits
- Scientific research and experimental development tax credit
- Tax avoidance—general antiavoidance rule (GAAR)

Rates of Tax

As referred to earlier, table 2.3 indicates what happened to statutory rates of tax in Canada between 1985 and 1989. More important, however, the average rates of corporate income tax (tax divided by book profits) in Canada have increased as a result of a number of initiatives. These initiatives are discussed below.

Capital Cost Allowance

Capital cost allowance has been curtailed by way of reduced rates on specific categories of assets. For example, manufacturing and processing machinery and equipment, with certain exceptions, falls into a 25 percent declining balance class after tax reform, as opposed to the former 50 percent straight-line rule.

Repeal of the Inventory Allowance

In taxation years commencing before February 26, 1986, the Income Tax Act (the "act") provided for a deduction in computing income from business or property of an amount equal to 3 percent of tangible property held in inventory for sale and for the purposes of being processed, fabricated, manufactured, incorporated into, attached to, or otherwise converted into or used in the packaging of property for sale in the ordinary course of business. The inventory allowance, an effective rate reduction for taxpayers with inventories of tangible property was to compensate for inflation given the use of first-in, first-out accounting for tax purposes in Canada.

Corporate Surtaxes

Canada has a relatively long history of corporate surtax as a means of temporarily adjusting the statutory rate of corporate income tax as it applies to specific categories of taxpayers. Initially, the corporate surtax applied only to taxable production profits from a mineral resource and manufacturing and processing profits, to the extent that profits exceeded a percentage (30 percent) of the corporation's Canadian manufacturing and processing profits, at a rate of 10 percent of tax otherwise payable. For the year 1983, the rate of surtax was basically 2½ percent of tax otherwise payable.[6] For the year 1984, the rate of surtax was 5 percent.[7] In 1985 and 1986, Canada had a break from surtax, but in 1987, the corporate surtax was reintroduced for taxation years

6. Section 123.5 of the act, repealed by 1985, c.45, S.69(1).
7. Section 123.3 of the act, repealed by 1985, c.45, S.69(1).

ending after 1986 at a rate of 3 percent of tax otherwise payable.[8] That rate of surtax continues to be applicable.

Various provinces have also used a corporate surtax as a means of temporarily adjusting their effective rates of corporate income tax. Quebec for example, introduced a corporate surtax at a rate of 7.25 percent, beginning May 1, 1986.

Increase in the Effective Tax Rate on Manufacturing Profits

As an incentive to expanding manufacturing and processing in Canada, as opposed to the export of raw materials from Canada's rich natural resource base, Canada introduced in 1972 a favorable rate of tax on "Canadian manufacturing and processing profits" determined as part of income according to a formula set out in regulations to the act. Initially, the rate of reduction in the corporate tax rate otherwise applicable was 9 percent, reducing to 7 percent for taxation years ending after June 1987. (Canadian-controlled private corporations were permitted an even greater reduction.) After June 1988, the rate of reduction was reduced to 5 percent of Canadian manufacturing and processing profits.

Investment Tax Credits

Complex provisions have provided for investment tax credits in Canada since the mid-1970s as a means of encouraging capital investment. The rates in Canada vary according to region. The general rate of credit is 7 percent but can vary up to 60 percent (before 1989) and 45 percent (after 1988) for an "approved project property." To the extent of a taxpayer's "annual investment tax credit limit" (basically, for Canadian subsidiaries, the aggregate of $24,000 plus three-fourths of the tax otherwise payable in excess of $24,000), a taxpayer may deduct the investment tax credit from tax otherwise payable. Because of the variation in rates, regions, projects, and circumstances, any comparison of investment tax credits allowable in the years 1983–89 is difficult. Suffice it to say that rates of credit were declining in the period.

Scientific Research and Experimental Development Tax Credit

Canada permits an immediate deduction of both *current* expenditures on scientific research (as determined to be qualified according to detailed regulations) made both in and outside Canada and *capital* expenditures on scientific research made in Canada.[9]

In the period 1983–89, the rules with respect to what qualified as "scientific research and experimental development" were tightened several times. However, outside of the province of Quebec, the general statement can be made

8. Section 123.2 of the act.
9. Sections 37 and 37.1 of the act.

that Canada's rules do not provide sufficient tax incentive, relative to the U.S. rules on research and development, to shift major research projects and the costs and tax effects thereof from Canada to the United States.

Tax Avoidance—GAAR

The general antiavoidance rule, commonly referred to as the GAAR, is applicable with respect to transactions entered into on or after September 13, 1988, other than grandfathered transactions.[10] Much has been said and written about the GAAR, and no paper on corporate income taxation can be considered complete without at least some reference to its existence. Like most good antiavoidance provisions in any taxing statute, the GAAR does its job most effectively by just being there.

Specific transactions may be attacked by Canada using the GAAR, but the act has always had avoidance provisions[11] and provisions which specifically address transactions between persons not dealing with each other at arm's length.[12] Therefore, it does not appear likely that the GAAR will have any dramatic impact upon parent/subsidiary behavior from a tax viewpoint.

2.1.3 Nonstatutory Changes—Canada

Administrative procedures and assessing practices are becoming much more focused and efficient in terms of tax collection. In the area of transfer pricing of goods sold between parent and subsidiary or between any related nonresident entities and the Canadian subsidiary, Canada is considerably more active and diligent than in the past in reviewing the basis for the transfer pricing. Tax cases which, as a result of review of transfer pricing issues by Revenue Canada, Taxation, have proceeded to the courts evidence mixed results.[13] It is safe to say that taxpayers are much more aware of the need to adequately support transfer prices used in intercompany transactions, even though there is clearly a tax motivation (at least since 1986) to charge the Canadian subsidiary the highest price justifiable for the goods. To some degree, this tax motivation is countered by customs duties, payable on transaction value for the goods.

Our study makes no attempt to focus on the issue of transfer pricing.

Revenue Canada, Taxation, is also focusing more sharply in recent years on other cross-border charges such as interest, rents, royalties, and management and administration fees and charges that are supportable as reimbursement for specific costs and expenses incurred by the parent on behalf of and for the benefit of the Canadian subsidiary. Specific expense reimbursements are de-

10. Section 245 of the act.
11. Former subsections 245(1) and 245(2) of the act, amended by 1988, c.55, S.185(1).
12. For example, see section 69 of the act.
13. *The Queen* v. *Irving Oil Ltd.*, (1991) DTC 5106 (F.C.A.); *Dominion Bridge Co. Ltd.* v. *The Queen,* (1977) DTC 5367 (F.C.A.); *Spur Oil Ltd.* v. *The Queen,* (1981) DTC 5168 (F.C.A.); *Aluminum Co. of Canada Ltd.* v. *The Queen,* (1974) DTC 6408 (F.C.T.D.)

ductible in Canada and can be paid to nonresidents without any Canadian withholding tax being applied. (The income received by the parent is treated as U.S.-source income.) There is therefore a tax motivation for charging the Canadian subsidiary the maximum for such costs. During the period 1983–89, the rules in this regard remained unchanged except for the change in the treaty in 1985 which effectively removed the requirement that management fees be a reimbursement of costs and included such fees as part of business profits.

However, what might be referred to as the "tax tension" between Canada and the United States has increased significantly with respect to cross-border charges. Although Revenue Canada, Taxation, admittedly struggles at the assessing level to ascertain exactly what it should be asking for in the way of factual support for cross-border charges, it is nevertheless much more active in reviewing and questioning the deductibility of such costs. From a U.S. perspective, on the other hand, there may be a strong need in many cases to bring funds back to the United States (to repay high interest rate debt, to fund expansion in the United States and elsewhere, to eliminate exchange risks on potential devaluation of the Canadian dollar, etc.). In addition, the Internal Revenue Service (IRS) is equally becoming more diligent in applying the provisions of the code[14] to costs and expenses which from a U.S. tax standpoint are legitimately chargeable to the Canadian subsidiary.

Interest, rents, and royalties are fully deductible for tax purposes in Canada (assuming that reasonableness and capitalization tests are met) and subject only to Canadian nonresident withholding tax upon payment or credit (15 percent in the case of interest and 10 percent in the case of royalties when paid or credited to the United States).[15]

The discussion needs to be taken further. During the period studied, some U.S. parents that were substantially indebted as a result of leveraged buyout and other acquisition financing took steps to move some of the debt out of the United States and into Canada and other foreign subsidiaries. Arrangements were made with Canadian lenders, sometimes with the guarantee of the U.S. parent, to provide financing to the Canadian subsidiary. This allowed the subsidiary to repatriate more dividends or other funds to the U.S. parent.

In more recent years, acquisition debt has actually been arranged in Canada for the acquisition price related to the Canadian subsidiary. As a result, interest that might in previous years have been included in the total cross-border charges paid or credited by the Canadian subsidiary may now be directly paid to Canadian lenders and the statistics on cross-border charges affected accordingly. To what degree this has occurred can only be determined by more detailed analysis.

14. Section 482 of the code.

15. Paragraphs 212(1)(b) and 212(1)(d), respectively, and Article XI with respect to interest, Article VI with respect to rents, and Article XII with respect to royalties, of the treaty.

2.1.4 Statutory Changes in the System—United States

The United States experienced significant reform of its corporate income tax system in both 1984 and 1986. Those reforms affected not only domestic U.S. operations and income but also the determination of foreign-source income for U.S. purposes and the allowable foreign tax credits for income taxes paid outside the United States.

1984 Reforms

Prior to the reforms introduced in 1984, earnings and profits of a foreign corporation were generally classified and maintained on an overall basis. A U.S. corporation, in the determination of the foreign tax credit limitation, had the opportunity of averaging high- and low-taxed income in one overall foreign tax credit limitation calculation. Only certain interest income and dividends from domestic international sales corporation (DISC) required the calculation of separate foreign tax credit limitations.

In addition, prior to 1984, a U.S. taxpayer corporation could create foreign-source income simply by earning income through a foreign corporation. Interest income, otherwise subject to separate limitation, could be converted into income subject to the overall foreign tax credit limitation by earning the interest income through a foreign corporation.

The 1984 tax reform act introduced two very important changes with respect to the determination of U.S. foreign tax credits:

1. U.S.-source treatment was prescribed for certain income regardless of the fact that such income would otherwise be classified as foreign-source income (only for the purposes of the foreign tax credit limitation).
2. "Look-through" rules were introduced, which provided that interest income generated by certain foreign corporations retained its character as interest income upon an actual or deemed distribution or when paid out as interest. Foreign corporations could no longer be used as a vehicle for transforming into foreign-source income what would otherwise be U.S.-source income.

Interest retained its character as interest. Such interest income and associated foreign taxes, commonly referred to as "separate limitation interest," were subject to their own separate foreign tax credit limitation.

Separate "baskets," or pools, of foreign earnings, for purposes of determining the foreign tax credit limitation, were created for foreign sales corporation (FSC) dividends and for taxable income of an FSC attributable to foreign trade income.

1986 Reforms

The Tax Reform Act of 1986 (1986 TRA) maintained the basic principle of the overall (as opposed to separate-country) foreign tax credit limitation. However, the 1986 TRA added a number of separate baskets for determining the total foreign tax credit limitation. This expanded system of baskets was designed to prevent averaging of low-tax foreign-source income with high-tax

foreign-source income. The foreign tax credit rules, as amended by the 1986 TRA, provide that deemed-paid foreign tax credits should be applied separately with respect to each foreign tax credit limitation basket. Five foreign tax credit limitation baskets were increased to at least nine by adding separate baskets for financial services income, shipping income, high withholding tax interest, and dividends from each noncontrolled code section 902 foreign corporation.

Look-through rules were expanded to ensure that the character of the earnings and profits and foreign taxes paid were preserved for purposes of determining the foreign tax credit.

In addition, foreign income taxes paid or accrued with respect to a separate category of income now include, under the amendments of the 1986 TRA, only those taxes that are "related" to income falling into a separate basket. For example, if foreign law exempted a particular type, or category, of income from tax, then no foreign income taxes would be allocable to that income.

The foreign tax credit limitation regulations, as amended in the 1986 TRA, prescribe detailed rules for the allocation of expenses, including interest, against income in each separate basket. Interest paid to related persons is first netted against foreign personal holding company income; the excess, along with other expenses, is allocated to the income included in each separate basket.

Under the law, as it existed prior to the 1986 TRA, taxpayers could minimize the expenses allocated against foreign-source income by applying the expense allocation regulations on a separate-company basis. Using this method, if the debt was incurred by a Canadian subsidiary that had only U.S. income or assets, the interest expense would be entirely allocable to U.S.-source income, regardless of the income or assets of other members of the group. The regulations, as they then existed, also allowed taxpayers to allocate interest expense on the basis of U.S. or foreign gross income relative to total gross income as an alternative to allocating expenses on the basis of U.S. or foreign assets relative to total assets.

It was a common practice for U.S. companies to hold all foreign subsidiaries in a U.S. holding company with no debt, so that all U.S. interest expense was allocated against U.S. income.

The 1986 TRA amended the law so that interest expense of an affiliated group of corporations must be apportioned between U.S. and foreign sources by taking into account all assets of the U.S.-affiliated group as if it were one corporation. The gross income method for computing the amount of interest expense that can be allocated to foreign and U.S. sources is no longer available.

This new rule for allocating interest applies to interest expenses incurred in tax years beginning after 1986, but only with regard to the interest associated with the increase in the aggregate amount of indebtedness outstanding on November 16, 1985. Specific phase-in rules apply to interest expense associated with the debt outstanding on or before November 16, 1985.

General and administrative expenses, which under prior law were allocable on a separate-company basis, under the 1986 TRA are also allocable by treating an affiliated group as one taxpayer.

Rents and royalties, however, are treated as income in a separate category to the extent that such rents or royalties are allocable to the income of a foreign corporation in the separate category.

Rules first published in 1977 with respect to the allocation of research and development expenditures but subject to a moratorium introduced in 1982 were reenacted by the 1986 TRA. Under these rules, most research and development expenses are allocated to U.S. foreign sources either on the basis of U.S. or foreign sales over total sales or under the optional gross income method. The new rules were applicable for the taxable year beginning after August 1, 1986, and on or before August 1, 1987.

The combination of the expansion of the number of pools, or baskets, and the allocation of expenses, including interest, to each separate pool of income generally resulted in U.S. corporate taxpayers with excess foreign tax credits in the active-income basket and excess limitations in the other separate baskets. Requiring earnings and profits and related foreign taxes to be maintained in separate pools based on income categories prevents taxpayers from taking advantage of varying effective rates of foreign tax on different types of income in order to maximize the foreign tax credit.

The 1986 TRA changed what was an elective method of computing earnings and profits (referred to as the "partial section 946 method") to a required method (functional currency method). The "functional" currency is the currency used for calculating subsidiary earnings and profits. After 1986, the functional currency method required assets and liabilities as well as profits to be maintained in foreign currency, except for currencies of hyperinflationary countries and contiguous countries. One new requirement, however, was added. Foreign taxes, under the 1986 TRA, are maintained in U.S. dollars rather than in local currency.

Maintaining earnings and profits in a functional currency and foreign income tax in U.S. dollars can have a significant impact on the effective foreign tax rate. When the Canadian dollar has appreciated vis-à-vis the U.S. dollar from the date the earnings were generated to the time the earnings were distributed or deemed distributed, then the effective tax rate on the earnings of the Canadian corporation decreases.[16] Table 2.2 shows the Canadian dollar exchange rates for the years 1983–89.

Prior to the 1986 TRA and effective for years prior to 1987, earnings and profits for purposes of the foreign tax credit limitation rules were determined on a year-by-year basis. Foreign taxes paid were also allocated year by year. It was possible for some taxpayers to structure effective foreign tax rates by

16. For example, assume that income earned in 1989, at a time when the Canadian dollar was at 80 cents (relative to the U.S. dollar), is repatriated by way of dividend to the U.S. percentage in 1991, when the Canadian dollar has appreciated to 90 cents. Assume further a Canadian federal and provincial income tax rate of 40 percent on the 1989 earnings of the Canadian subsidiary.

not claiming discretionary deductions in one year and maximizing discretionary deductions in another taxation year (sometimes referred to as the "rhythm method"). The discretionary deductions often used in Canada for such purposes were capital cost allowances (discretionary as opposed to the U.S. "claimed or claimable" rule) and specific reserves and allowances (e.g., allowance for doubtful accounts). Such discretionary deductions, determined according to U.S. rules, would reduce earnings and profits for U.S. purposes.

Rather than paying dividends, say, of equal amounts, in two successive taxation years, a dividend of the same aggregate amount might be paid in the year of higher Canadian taxes. When measured as a ratio of that year's earnings and profits, the aggregate dividend (the numerator in the foreign tax credit limitation formula) would represent a higher proportion of that year's foreign taxes paid and creditable according to the limitation formula. Because the deductions were discretionary, the only additional Canadian tax cost involved in the process would be the imputed interest cost of the timing difference of the deductions.

By replacing the year-by-year calculation of U.S. earnings and profits with an accumulation-of-years, or pooling, basis, the 1986 TRA eliminated any advantage of the use of the rhythm method in claiming foreign tax credits.

The 1986 TRA made other changes that had an indirect, if not direct, effect on foreign tax credit imitations. Effective July 1, 1987, the top rate of corporate income tax was reduced from 46 percent to 34 percent (for a calendar-year taxpayer, the rate for 1987 would be 40 percent). Although the rate of tax was reduced, a number of measures were adopted to broaden the base upon which tax was imposed. Some of the more significant amendments adopted were:

1. The replacement of the existing "add-on minimum tax" with a new corporate "*alternative* minimum tax," in an attempt to ensure that all corporations with financial statement income pay some tax currently on that income.

2. The revamping of the accelerated cost recovery system (ACRS) introduced in 1981. The new ACRS rules were designed to more evenly match

	Income of Canadian Subsidiary		Dividend Paid to U.S. Parent		Canadian Income Taxes Paid (40%)*		Effective Tax Rate Applicable to Dividend
Year	Canadian	U.S.	Canadian	U.S.	Canadian	U.S.	
1989	$1.00	$0.80			$0.40	$0.32	
1991			$1.00	$0.90			$0.32/$0.90 = 35.6%

*Not including Canadian withholding taxes on dividend to U.S. parent.

The Canadian income taxes paid, in U.S. dollars equal to 40 percent of $.80, or $.32, are measured relative to a dividend of U.S. $.90 in 1991, and the effective rate of Canadian income taxes, exclusive of applicable Canadian withholding taxes on the dividend, decreases from 40 percent to U.S. $.90 ÷ U.S. $.32, or 35.6 percent.

class lives with economic or useful lives of particular assets and were effective mainly for property placed in service after July 31, 1986. The new system of ACRS, generally speaking, is less generous than the combination of the old ACRS and the investment tax credits.

3. The introduction of new limitations on the use of net operating loss carryovers, effective where there is more than a 50 percent ownership change, by value, of a loss corporation.

4. The introduction of new rules with respect to the measurement and timing of taxable income (for example, new uniform cost capitalization rules).

2.1.5 Nonstatutory Changes—United States

In a mature tax environment such as the United States, it should not be surprising that tax collectors become more sophisticated, knowledgeable, and hence more aggressive. As expected, the IRS has focused considerable attention on costs and expenses allocable to the earning of income from Canadian subsidiaries and repatriated to the U.S. parent by way of dividends. Rules which have existed for a long time (e.g., the provisions of section 482 of the code) are now more consistently and more stringently applied. Audit teams are trained in the area of international operations, and sophisticated techniques such as functional analysis as being applied to the issue of transfer pricing. The capacity of the IRS is enhanced by the same technology available to private business, and the exchange-of-information provisions of various treaties form the basis for a joint audits of international operations and much more detailed knowledge of foreign subsidiaries of U.S. parents.

2.2 Predictions regarding Tax Reform Impacts

This section outlines the predicted responses in behavior of U.S. multinationals following the tax changes discussed in section 2.1.[17] The U.S. and Canadian reforms are expected to affect three financial variables: debt, cross-border charges, and dividends. We do not try to investigate the impact of tax reform on investment decisions.

Hypothesis 1: Tax Reform Measures Adopted in 1986–87 Favor Local Debt Finance of U.S. Subsidiaries in Canada

As cited in section 2.1, two tax factors would particularly encourage more debt being issued in Canada by U.S. subsidiaries. First, the higher statutory tax rate in Canada relative to the United States encourages debt finance in Canada, where nominal interest deductions have greater tax value to the

17. The discussion in this section refers to earlier theoretical work, particular that developed by Bruce (1989) and Leechor and Mintz (1990). See also Horst (1977), Jun (1990), Slemrod (1990), Grubert and Mutti (1989), and Hines and Hubbard (1990), who have tested the effects of tax policy on investment or financial variables.

firm.[18] Although particularly true for U.S. companies in an excess credit position, it also applies to companies in a deficient credit position.[19] Second, the new U.S. rules for the allocation of interest costs encourage debt to be issued by the Canadian subsidiary (and discourage debt to be issued by the parent to finance investments in Canada). As noted above, the 1986 U.S. reform requires parents to allocate U.S. borrowing costs to the subsidiary based on the allocation of assets of a corporate group.

Although these tax factors suggest that the Canadian and U.S. reforms encourage more debt finance taken in Canada rather than in the United States, there is at least one tax factor that would point to a reduction in the use of debt finance by both the subsidiary and the parent. Reform-induced lower statutory corporate tax rates in both countries encourage the parent and subsidiary to reduce leverage.[20] On the other hand, the broadening of tax bases in both the United States and Canada reduces the incidence of potential tax losses, thereby encouraging more leverage as interest deductions become more valuable to companies that were previously not paying taxes despite the reduction in statutory corporate tax rates.

Other economic factors also have affected leverage over this period. The 1981–82 recession in Canada led to a significant increase in debt ratios due to shortages of cash flow.[21] As a result, leverage ratios were high in 1983, falling over time as economic recovery took place. Also, the recession may have increased bankruptcy risk (captured by the past variance in rates of return on capital), thereby discouraging leverage by Canadian firms after 1982.

Hypothesis 2: Cross-Border Charges Would Increase as a Result of U.S. and Canadian Tax Reform in 1986–87. They Would Also Be Positively Correlated with Remitted Dividends Paid to the U.S. Parent as Parents Average Excess and Deficient Credits on Remitted Income to Reduce Canadian and U.S. Taxes Paid.

As remarked above, after U.S. and Canadian reforms, Canadian corporate tax rates were generally higher than U.S. rates. To take advantage of the

18. See Halpern and Mintz (1991) for specific calculations on the impact of the higher corporate tax rate in Canada on the cost of debt finance of U.S. multinationals. These calculations do not take into account Canadian "thin capitalization" rules that limit interest deductions of non-arm's-length debt held by foreign parents in their subsidiaries.

19. See Leechor and Mintz (1990) for a derivation of the cost of issuing debt when a company is in a deficient tax credit position. Additional debt taken in Canada could increase or reduce the rate of U.S. tax on remitted dividends, depending on the differences between the tax bases as well as between statutory rates of tax of the two countries.

20. See Bartholdy, Fisher, and Mintz (1989) and MacKie-Mason (1990) for evidence that a reduction in tax benefits of interest deductions from corporate taxable income reduces the incentive to issue debt. Of course, as remarked in section 2.1, the significant rise in leveraged buyout (LBO) debt in the United States had increased leverage there for many parents, including some in our sample. We are not able to investigate this matter because we do not have matching data for the parent companies.

21. Bartholdy, Fisher, and Mintz (1989), MacKie-Mason (1990), and readings in Hubbard (1990) confirm the importance of cash flow in reducing leverage.

higher Canadian corporate tax rate, there would have been an incentive to take deductions for interest, management fees, royalties, and specific expense reimbursements, especially those items that are not subject to withholding tax or are taxed at low withholding rates in Canada.

In addition, the U.S. reform did not broaden the tax base for the calculation of earnings and profits, but it did lower the corporate tax rate on earnings and profits. Thus, many parents found that they moved from a deficient to excess credit position. When companies are remitting income to the United States, excess credits are not desirable from a tax-minimizing point of view since they are not being applied to taxes on other forms of income earned by the parent. The tax cost of remitting dividend and other sources of income is the Canadian withholding tax, which cannot be credited when the parent is in an excess credit position. This tax could be more than U.S. tax (net of deemed-paid foreign tax credits) paid on remitted income when the parent is in a small deficient tax credit position.

To minimize excess tax credits on remitted income in Canada, the parent could try, by taking more deductions in Canada, to reduce taxes paid in Canada. If they qualify under U.S. basket rules, the remitted cross-border charges would also generate a deficient credit position on income taxed at the U.S. rate, soaking up any excess credits, particularly on dividends. This form of averaging reduces taxes paid in Canada without increasing the amount of taxes paid to the U.S. government on remitted income.

During this period, nonstatutory tax factors also affected the use of cross-border charges by multinationals. As remarked in section 2.1, administrative practices by tax authorities in Canada and the United States changed with respect to the auditing of U.S. parent and subsidiary accounts. Cross-border charges were particularly subject to diligent review by authorities, and companies were less apt to use them.

Hypothesis 3: Tax Reform in the Period 1986–87 Reduces the Incentive to Reinvest Earnings in Canada. Dividend Payouts Would Increase after Tax Reform.

The impact of tax reform on U.S. subsidiary dividend payouts is quite difficult to determine theoretically. In theory, the tax cost of remitting dividends is the Canadian withholding tax rate when the parent is in an excess credit position and the U.S. tax rate (net of foreign corporate and withholding credits) when the parent is in a deficient tax credit position. It is commonly accepted that the incentive for a subsidiary is to defer payment of taxes by reinvesting profits to avoid payment of taxes on remitted income.[22] However, the tax cost of paying dividends is zero when the deficient tax credit position is

22. This is due to Hartman (1985), who models the "new," or "trapped equity," view that dividends are simply surplus over investment needs. The result applies for the excess tax credit case only when host country corporate income and withholding taxes are solely paid on income

equal to withholding taxes payable on dividends.[23] In this case, the parent is indifferent to paying out dividends or to reinvesting earnings from a tax point of view. Thus, the tax deterrent to paying out dividends is minimized as long as the parent can average excess credits on some sources of income with deficient tax credits on other sources.

Prior to tax reform in Canada, many companies faced relatively low average corporate tax rates. Thus, the U.S. tax on remitted income could be quite high, significantly deterring repatriation of dividends to the U.S. parent. However, there were two important methods that could be used to minimize taxes paid on remitted earnings. First, parent companies could remit income from other sources (e.g., dividends from high-tax countries, cross-border charges) and virtually eliminate any U.S. tax on remitted earnings.[24] Second, when dividends were remitted, Canadian subsidiaries could delay claiming capital cost allowances, resource write-offs, and investment tax credits and push up their average tax rates, thereby eliminating any U.S. tax on remitted dividends (the so-called rhythm method).[25]

Canadian and U.S. tax reforms changed the tax positions of the subsidiary and parent in several ways. The increased Canadian corporate tax payments expected to result from Canadian tax reform (and reduced U.S. average tax rate on earnings and profits in Canada) reduced, if not eliminated, the difference between Canadian and U.S. average tax rates. This subsequently reduced the tax incentive to reinvest earnings in Canada.

On the other hand, as discussed in section 2.1, U.S. tax reform also restricted the ability of U.S. parent companies to minimize U.S. taxes on dividend repatriations by "basket clause" provisions and by the requirement to pool earnings over time. To the extent these provisions are effective, the incentive to reinvest earnings is increased. Although these limitations are important, the scope for averaging excess and deficient tax credits to eliminate U.S. taxes on foreign-source earnings has not been fully curtailed. However,

remitted to the parent. Hartman, however, modeled the multinational investment decision for a deficient tax credit position assuming that the U.S. tax rate minus the Canadian tax rate is exogenous. As Leechor and Mintz (1990) point out, this result only holds when tax bases are similar across countries. If the tax base in the host country is larger than in the home country, it may be optimal to finance investment with local debt and pay out dividends to the parent.

23. See Hines and Hubbard (1990) for a test of the effect of taxes on the dividend payout of U.S. subsidiary companies. They assume the tax price of remitted income to be zero when the parent is in an excess credit position. This is not correct because the true tax cost is the withholding tax imposed by the host country. In a similar way, the tax price for the deficient tax credit case is the U.S. tax, net of foreign tax credits, plus withholding tax paid on remitted dividends. If the amount of tax is negative (and credited against offset U.S. tax), the tax price of dividends may be less in the deficient tax credit position than in the excess credit position.

24. See Hines and Hubbard (1990) for evidence of this for 1984.

25. Indeed, in the year that the dividends are not remitted, the subsidiary could create a tax loss by claiming stored-up deductions and credits and carry back the loss without affecting its previous foreign tax credit for U.S. tax purposes.

the incentive to use the rhythm method described above has been virtually eliminated.

The above discussion suggests that tax reform only reduced the incentive to reinvest earnings, not eliminated it entirely. So why should dividend payouts increase? Two related answers are provided for this. First, companies may have had nontax reasons to remit dividends (Hines and Hubbard 1990). As discussed above, many U.S. parents faced cash flow shortages due to increased leverage (e.g., LBOs). Cash flow from foreign subsidiaries would alleviate the need to raise funds in the United States. Second, the interest allocation rules, discouraging leverage in the United States, induced U.S. parents to remit income from Canada to buy down U.S. debt.

Other nontax factors might explain changes in dividend payouts. Exchange rate risk, the increase in the value of the Canadian dollar (beginning in 1987), and perceived lower profitability in Canada would induce an outflow of dividends from Canada to the United States commensurate with a reduction in subsidiary investment in Canada.

In the following section, we provide some evidence on the impact of tax reform with respect to the above three hypotheses.

2.3 Data and Empirical Results

2.3.1 Description of Data

As remarked above, selected data were compiled for twenty-eight companies on a confidential basis. In some years, data were missing for ten of the twenty-eight companies.

Of the companies chosen, most were in manufacturing and resource industries. The companies also varied considerably by size. In 1989, two were in the range of $5 million to $10 million total assets, ten were in the range of $10 million to $25 million of assets, eight were between $25 million and $100 million, and eight had assets of more than $100 million.

Except for five companies, the U.S. parents of the Canadian subsidiaries were in an excess credit position for all years. We have not yet been able to determine the status of the other five over the whole period, although they were in a deficient tax credit position for the latter part of the period. In the past few years, three of the deficient tax credit companies were of the largest size. Three of the five companies issued dividends, and all five had cross-border charges in the past three years. Given the lack of data at this point regarding the deficient tax credit position, we are unable to do further analysis of this case.

With the data, we calculated several variables that are of particular interest in this paper:

1. DIV: Dividends remitted to the parent
2. CBC: Cross-border charges (royalties, management fees, interest, and specific expense reimbursements)

3. Z: After-tax book income prior to the deduction of cross-border charges
4. NI: Net income—after-tax book income net of cross-border charges
5. ATR: The average tax rate computed as federal and provincial corporate income taxes paid dividend by before-tax income
6. RE: The return to equity computed as after-tax book income divided by equity reserves plus minority interest
7. D/A: The debt-asset ratio computed as debt liabilities divided by total assets[26]
8. DIV/NI: The dividend payout ratio computed as dividends divided by net income
9. CBC/Z and DIV/Z: The cross-border charges and dividend ratios expressed as a proportion of net income prior to the deduction of cross-border charges

The data set also had other information related to tax information (e.g., investment tax and foreign tax credits), which is not reported below for the purposes of this paper.

2.3.2 Presentation of Aggregate Data for Companies

In tables 2.4 through 2.6, we provide some descriptive data indicating the financial behavior of the companies on an aggregate basis. For this purpose, we have dropped data in those years in which companies incurred a loss for book purposes (4 of 155 observations). Otherwise, some of the variables, particularly the dividend payout and cross-border charge ratios, would be negative in value. In terms of the aggregate value of ratios (DIV/NI, DIV/Z, and CBC/Z), the ratios are somewhat understated by eliminating the years in which companies had book losses.

Table 2.4 presents year-by-year and subperiod ratios for financial variables, aggregated across companies. We note that the dividend payout ratio from 1983 to 1989 more than doubled over the years, while the CBC and leverage ratios hardly changed. Somewhat surprising to us, Canadian average tax rates declined rather than increased after tax reform, and the rate of return to equity rose significantly. Results in this table seem to reject most of the hypotheses offered in the previous section. Only the dividend payout ratio increased. Certainly, the higher dividend payout ratio is not indicative of poor economic opportunities in Canada, given the high returns to equity.[27] Instead, it seems the U.S. parents needed to get money home, perhaps arising from the need to buy down debt issued by the parent.

Table 2.5 separates companies according to whether they paid dividends or

26. We also measured leverage as debt divided by fixed assets. There are few differences in these results, compared to that obtained below. Leverage ratios and rates of return to equity are not corrected for inflation.

27. We found that the unweighted mean growth rate in fixed assets during the 1987–89 period was close to 15 percent, 3.6 percent above the 1983–85 mean. The average growth in fixed assets of companies that paid dividends sometime in the years 1987–89 increased 3.9 percent over the 1983–85 time period. Only three companies reduced investments in Canada and remitted dividends.

Table 2.4 **Average Financial Ratios for All U.S.-Owned Companies Operating in Canada—1983–89 with Positive Net Income**

Year	Number of Companies	Dividend Payout Ratio (DIV/NI)	Cross-Border Charges (CBC)* Ratio	Leverage*	Average Tax Rate (ATR)	Return to Equity (RE)	Mean Asset Size ($ million)
83	18	.31	.18	.47	.31	.19	
84	20	.33	.16	.33	.35	.22	
85	22	.27	.12	.44	.30	.20	
86	24	.54	.14	.42	.32	.21	
87	24	.48	.17	.38	.37	.24	
88	23	.82	.17	.44	.27	.25	
89	20	.70	.17	.41	.17	.31	
83–85	60	.30	.15	.42	.32	.20	$72.9
87–89	67	.68	.17	.42	.27	.27	99.6
83–89	151	.56	.16	.42	.29	.24	88.2

Source: Authors' computations.

Note: See Sec. 2.3.1 of text for explanation of variables.

*Leverage = Debt-asset ratio, or D/A.

Table 2.5 **Average Financial Ratios for Companies Paying Dividends or Not***

Financial Ratio	1983–85			1987–89			1983–89		
	DIV > 0	DIV = 0	DIV = 0 CBC = 0	DIV > 0	DIV = 0	DIV = 0 CBC = 0	DIV > 0	DIV = 0	DIV = 0 CBC = 0
Dividend payout (DIV/NI)	.75	0	0	1.00	0	0	.97	0	0
CBC/Z	.10	.18	0	.12	.26	0	.11	.22	0
DIV/Z	.67	0	0	.88	0	0	.87	0	0
Leverage (D/A)	.44	.42	.54	.44	.36	.70	.45	.39	.57
ATR	.36	.29	.22	.22	.35	.47	.27	.32	.26
RE†	.22	.19	.19	.28	.25	.21	.26	.21	.19
Percent of total number†	16.7	83.3	33.9	44.8	55.2	26.5	33.1	67.9	30.9
Percent of total assets†	34.7	65.3	19.5	68.9	31.1	56.4	53.3	46.7	14.8
Mean asset size ($ million)	$164.5	$54.7	$38.8	$153.3	$56.0	$17.0	$142.5	$61.3	$36.1

Source: Authors' computations.

Note: See Sec. 2.3.1 of text for explanation of variables.

*In years with positive net income.

†Percentage = Number or assets of firms issuing dividends, or net dividend ÷ Number or total assets of all firms in that period.

not. There are three interesting results to glean from this table. First, there was a substantial increase in the percentage of companies (both in number and weighted by assets) that issued dividends after 1986 compared to the earlier period. In fact, most companies did not remit dividends prior to 1986, while the majority began paying dividends afterward. We also note that dividend-paying firms tended to be more leveraged and larger in size, and their rate of return to equity was higher on average compared to non-dividend-paying companies.

Second, we note that dividend-paying firms, on average, relied less on cross-border charges than did non-dividend-paying firms in each period. This suggests that cross-border charges and dividend remissions were substitutes rather than complements, contradicting hypothesis 2.

Third, the average tax rate prior to 1986 was higher when companies paid dividends than when companies were non–dividend paying (36 percent versus 29 percent). This trend seems to confirm the use of the rhythm method. After tax reform, the situation reversed, and dividend-paying companies had lower average tax rates than non-dividend-paying companies.

In table 2.6, we compare ratios for companies that paid corporate income taxes to federal and provincial governments and those that did not. Most companies were taxpaying, although more tax-loss companies appeared in the prereform years compared to the period afterwards. We found that companies that did not pay income taxes did not remit dividends (although they remitted income through cross-border charges). The preference for cross-border charges arises from the lower withholding taxes on certain cross-border charges, particularly specific expense reimbursements.

These aggregate calculations (and the lack of statistical testing) do not provide the information needed to assess the impact of tax reform on financial variables. Given the small number of companies (twenty-eight), aggregate numbers are sensitive to just a few cases of firms switching categories (e.g., from non–dividend paying to dividend paying). For example, the fall in the average tax rate from the period 1983–85 to the period 1987–89 reflects just two large firms significantly lowering their taxes paid. Firm-by-firm statistical analysis is thus warranted.

2.3.2 Empirical Results

Below, we present some empirical results that test the three hypotheses presented in section 2.2. Table 2.7 provides correlation coefficients and tests of significance for various financial variables, using the individual company data. Several important results arise from this analysis.

First, when companies pay dividends, the correlation coefficient between DIV/Z and CBC/Z is positive (.53) and significant.[28] Unlike the aggregate

28. The correlation coefficients for DIV/Z and CBC/Z were .85 and .52 for the two subperiods 1983–85 and 1987–90, respectively.

Table 2.6 **Average Financial Ratios for U.S. Companies Operating in Canada, by Taxpaying Status in Canada***

	1983–85		1987–89		1983–89	
Financial Ratio	Tax > 0	Tax = 0	Tax > 0	Tax = 0	Tax > 0	Tax = 0
Dividend payout (DIV/NI)	.30	0	.69	0	.56	0
CBC/Z	.15	.22	.17	.26	.16	.23
DIV/Z	.25	0	.57	0	.47	0
Leverage (D/A)	.42	.67	.42	.35	.42	.57
ATR	.32	0	.27	0	.29	0
RE	.20	.13	.27	.07	.24	.10
Percent of total number†	90.0	10.0	98.5	1.5	94.7	5.3
Percent of assets†	98.4	1.6	99.1	0.9	98.5	1.5
Mean asset size ($ million)	$79.8	$11.6	$100.2	$55.4	$92.2	$17.7

Source: Authors' computations.

Note: See Sec. 2.3.1 of text for explanation of variables.

*In years with positive net income.

†Percentage = Number or assets of firms issuing dividends, or net dividend ÷ Number or total assets of all firms in that period.

time-series information presented in tables 2.4 and 2.5, this seems to indicate that companies that remit income to the United States view dividends and cross-border charges as complements rather than as substitutes. This evidence confirms hypothesis 2, that companies, when remitting income to the United States, average excess tax credits on dividends with deficient tax credits on cross-border charges to minimize U.S. tax payments.

Second, we find that the average tax rate is positively and significantly correlated with both dividend and cross-border charge ratios (for dividend-paying companies only). In addition to calculations shown in table 2.7, the correlation coefficients for ATR and DIV/Z and ATR and CBC/Z were also calculated for each subperiod. For ATR and DIV/Z, the correlation coefficients, also significant, were .56 and .53 for the 1983–85 and 1987–89 periods, respectively. For ATR and CBC/Z, the correlation coefficients were .57 and .24 for each period, respectively (both significant). In the earlier period, the positive correlations between DIV/Z and CBC/Z with ATR is consistent with a tax-minimizing strategy of using the rhythm method prior to tax reform. When companies remitted income, they increased both their Canadian taxes paid on dividends and the amount of cross-border charges to reduce U.S. taxes paid. After 1986, minimizing U.S. taxes or reducing Canadian excess credits on foreign-source income required companies to increase cross-border charges with remitted dividends, particularly if the companies were high-taxed firms.

These correlation coefficient results of table 2.7 contradict conclusions sug-

Table 2.7 Correlation Coefficients of Selected Financial Ratios, 1983–1989†

	D/A	DIV/Z	CBC/Z	ATR	RE
All companies					
D/A	1.0				
DIV/Z	−.01	1.0			
CBC/Z	−.08	.19	1.0		
ATR	.10	.31*	0.17	1.0	
RE	.46*	−.05	−.16	−.08	1.0
Companies with DIV > 0					
D/A	1.0				
DIV/Z	−.10				
CBC/Z	−.28*	.53*	1.0		
ATR	.12	.49*	.47*	1.0	
RE	.54*	−.19*	−.29*	−.21*	1.0
Companies with DIV = 0					
D/A	1.0				
DIV/Z	0	1.0			
CBC/Z	.01	0	1.0		
ATR	.07	0	.09	1.0	
RE	.41*	0	−.09	−.05	1.0

Source: Authors' computations.

Note: See Sec. 2.3.1 of text for explanation of variables.

*Significance of the 95 percent confidence level.

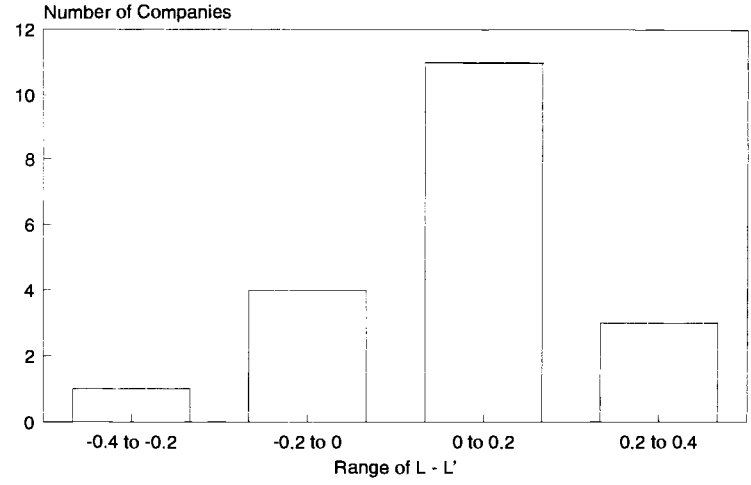
†For companies in years with positive net income.

gested by the aggregate calculations of table 2.5. Instead of average tax rates falling for dividend-paying firms after 1986, we find a positive correlation between the dividend ratio and average tax rate. Also, we find a positive correlation between cross-border charges and dividends, not the negative one suggested by the numbers of table 2.5.

The aggregate calculations of tables 2.4–2.6 also mask variation in the financial behavior of individual companies. Over the two subperiods, some companies increased certain types of financings, while others did not. To what extent has there been a significant change in financial behavior in the two subperiods 1983–85 and 1987–89? To answer this question, we calculated, for each company, the mean ratios of D/A, DIV/NI, CBC/Z, ATR, and RE for the two subperiods and subtracted the 1983–85 mean from the 1987–89 mean. A frequency distribution for each case was plotted (see the histographs in figs. 2.1–2.3)[29] and a t-test was performed to determine whether there was a significant increase or decrease in the level of each variable.[30] (The test was conducted on unweighted mean increases across all companies.)

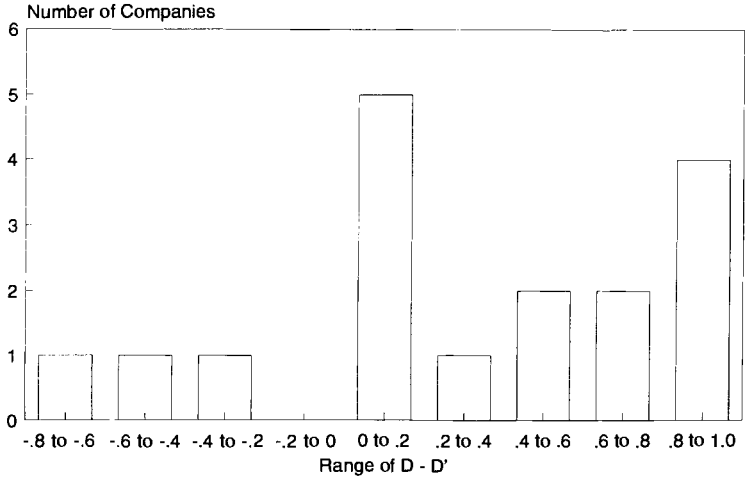
29. The histographs are presented with a restriction that the change in the ratio lies between −1.0 and 1.0. (This eliminates certain outlying data points that would otherwise show a frequency distribution with most values falling in a small range.)

30. The t-test is based on all values that are computed except for the case of the dividend payout ratio that had two outlying values above or below 15.0 and −15.0, respectively.



L is for 1987-89, and L' is for 1983-85.

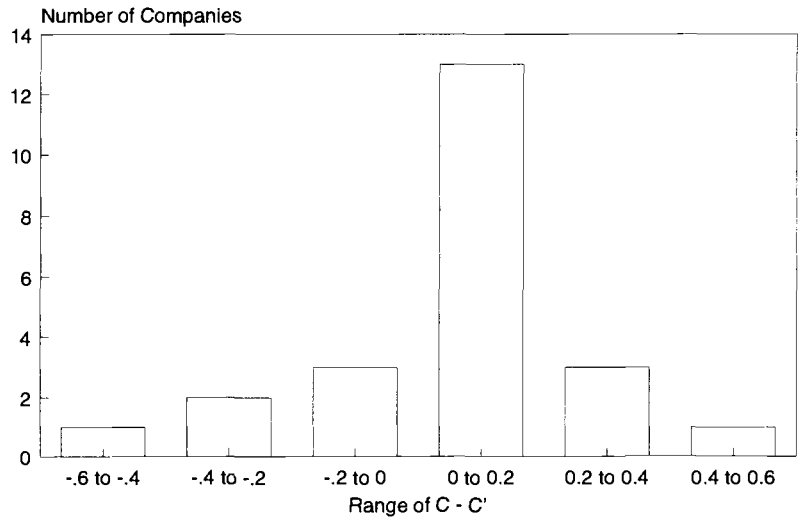
Fig. 2.1 Changes in debt-asset ratios (L) pre- and postreform



D is for 1987-89, and D' is for 1983-85.

Fig. 2.2 Changes in dividend payout ratios (D) pre- and postreform

The frequency distributions are presented below for the changes in the levels (pre- and post-1986) of debt-asset ratio (D/A), dividend payout ratio (DIV/NI), cross-border charge ratio (CBC/Z), average tax rate (ATR), and return to equity (RE). Tests on the mean change in the level of ratios were based on a 95 percent confidence test (one-tail test for value greater or less than zero). The following results were obtained:



C is for 1987-89, and C' is for 1983-85.

Fig. 2.3 Changes in cross-border charge ratios (C) pre- and postreform

Hypothesis 1. The debt-asset ratio increased by .06 and for a majority of companies (about 70 percent). A one-tail t-test indicates that the mean average debt-asset ratio increased significantly (t-value of 2.27). This is consistent with hypothesis 1 that the debt-asset ratio of U.S. multinationals increased after 1986, given the higher statutory corporate tax rate in Canada relative to the United States and the effects of the new U.S. interest allocation rules.

Hypothesis 2. The cross-border ratio fell slightly, by less than .1 percent. Only 25 percent of the companies reduced their cross-border charge ratio. The decrease was found to be insignificant (t-ratio of $-.05$). This result is not consistent with hypothesis 2, which predicted an increase in cross-border charges. However, as discussed in section 2.1, there has been a change in the auditing practices of Canadian authorities that might have discouraged the use of cross-border charges to remit income.

Hypothesis 3. The dividend payout ratio was found to increase by .72 and for a majority of companies (55 percent increased the dividend payout ratio, 25 percent remained non–dividend paying throughout the period, and the remainder reduced their dividend payout ratio). A test that the dividend payout ratio increased was found to be significant (t-value of 5.1). This is consistent with the aggregate calculations shown in tables 2.4–2.6 and with hypothesis 3 that dividends remitted to U.S. parents would possibly increase, perhaps to pay down debt in the United States.

In addition, we calculated the mean increase in average tax rate and return to equity ratios. The average tax rate increased by .09 on average and was found to be significant (t-value of 2.0). The average profit rate increased .07 and was found to be significant (t-value of 2.0).

2.4 Conclusions

In summary, we find that the hypotheses seem to be confirmed by the data; in particular, the dividend payout ratio and, to a lesser extent, the debt-asset ratio of U.S. subsidiaries have increased. We also find a positive correlation between dividend and cross-border charges ratios, indicating that U.S. multinationals average excess and deficient tax credits on sources of income to minimize taxes paid to Canadian and U.S. authorities. We have not, however, found a significant increase in cross-border charges, which would have been expected after 1986 as Canadian companies restructure their payments to take advantage of the higher statutory corporate tax rate in Canada.

Much of the statistical testing in this paper was rudimentary. As discussed above, there are a number of tax and nontax factors that explain debt, dividend, and cross-border charge ratios. A full statistical analysis includes the modeling of the financial decisions of the companies so that the effects of exogenous factors, including tax reform, could be disentangled from each other. In future work, we intend to explore further this data set, as it is sufficiently rich to see how tax policy in Canada affects the financial and investment behavior of U.S. multinationals.

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Comment Neil Bruce

Ultimately, corporations investing abroad desire to repatriate the earnings of their investments. Tax considerations are likely to be an important influence both on the decision of how much to repatriate in a particular year and on the method—dividends, cross-border charges, and other—to be used. Hogg and Mintz make an important contribution to our knowledge of the importance of such tax considerations by examining the repatriation behavior of a select number of U.S. subsidiaries operating in Canada. They examine these firms over a time period that brackets some important tax reforms and changes that are likely, in theory, to have a substantial impact on repatriation behavior.

They begin by discussing in detail the changes in Canadian and U.S. tax law between 1984 and 1986 that would probably alter repatriation behavior.

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Primarily, (1) U.S. statutory corporate tax rates declined relative to Canadian rates, reducing the overall foreign tax credit (FTC) limitation relative to FTCs generated; (2) additional separate limitations ('baskets') were introduced, limiting the ability to average high- and low-taxed foreign income; (3) in determining the deemed-paid FTC, foreign taxes and affiliate earnings were to be pooled over time, eliminating the advantage of the "rhythm method" of dividend repatriation; (4) sourcing and look-through rules were imposed and/or tightened to prevent U.S. parents from creating foreign income simply by redirecting passive income through foreign affiliates; and (5) U.S. parents effectively were required to allocate more expenses, particularly domestic interest expenses, to foreign income.

Hogg and Mintz proceed to formulate three hypotheses about the effect of these changes on financial and repatriation behavior: first, affiliates would be more likely to issue their own debt rather than to obtain such funds through the parent; second, cross-border charges (nondividend payments to U.S. parents) would increase; third, dividend repatriations would increase. The second and third hypotheses imply that total repatriations increase and that the firm would balance dividend and nondividend payments in order to minimize the tax liability generated.

Although no formal model of firm repatriation behavior is developed, the authors motivate their hypotheses by pointing to the changes in tax prices and tax arbitrage opportunities resulting from the tax changes. This is somewhat helpful, but I think it is instructive to consider the repatriation decision in more detail.

The decision to repatriate is a decision not so much of *whether* to repatriate but of *when* to repatriate. That is, the firm faces a choice whether to take the income home now or to reinvest its earnings in the host country for a period of time and take them home in the future. In this regard, anticipations about future tax rates become important, and observed repatriation levels may well reflect these anticipations rather than the level of taxes applying to repatriations. Although the 1986 changes probably reduced repatriation tax rates significantly, a firm need not be motivated to repatriate now if future tax rates are expected to be lower or, at least, no higher. The distinction is important because it bears on the question of whether the extraordinary increase in dividend repatriations that the authors observe in their sample can be expected to continue.

In other words, the empirical question is whether the increased repatriation levels observed occurred simply because existing tax rate levels on repatriations were lower after 1986, because firms prior to 1986 had anticipated the reduction in tax rates and postponed repatriations, or because firms believed the current tax rate applying to repatriations is abnormally low and could be expected to rise in the future, inducing them to repatriate now rather than wait. (This of course is similar to the problem faced when trying to determine how the *level* of the capital gains tax rate affects realizations.) I do not know that

the Hogg and Mintz data set will be able to cast any light on this issue, but I believe it is worth examining.

Turning to the empirical part of their paper, I am struck by the fact that their results do not always relate to their hypotheses. As noted by the authors, the aggregate descriptive data seem to contradict the first and second hypotheses, with only the significant rise in dividend repatriations after 1986 supporting the hypothesis that tax changes motivated changes in repatriation behavior. The authors then report correlations of variables across firms paying dividends, a rather small sample (I believe nine firms), but they do not say whether these correlations are across pooled time-series and cross-section observations or across firms averaged over time. If the latter, the results do not directly test the hypotheses—which are about the 1984–86 changes' effects on firm behavior. The authors do report confirming evidence using *unweighted* average (across firms) values of the relevant variables over the two subperiods; but why should the unweighted averages be better than the weighted averages (i.e., aggregate data)? If one huge firm were to decrease its cross-border charges over the subperiods while two tiny firms increased theirs, I wouldn't necessarily see this as a confirming observation.

Finally, I would like to raise one concern about the representative nature of the sample. The authors state that the parent companies of twenty-three of the twenty-eight subsidiaries in their sample were in excess credit positions throughout the period studied. How representative is this? Deutsch and Jenkins (1982, 230) found that, in the 1970s, U.S. parents of Canadian subsidiaries were typically in excess limitation position, except in the petroleum and wholesale trade industries. I bring this up because companies that are in excess credit positions both before and after tax reform can be expected to respond less to the tax changes than do companies that are in excess limitation, and even less than companies that are switched from excess limitation to excess credit by the tax changes. Perhaps this contributes to the apparently contradictory nature of the aggregate data in the authors' sample.

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