Chapter 12
MICROECONOMIC AND DECISION-BASED TAX PEDAGOGY: CANADIAN APPLICATIONS

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Textbooks by Scholes and Wolfson (1992) in the United States and Thornton (1993) in Canada present theories that integrate taxes with decision making. This chapter applies the theories to two important tax planning strategies in Canada, one personal and one corporate. The objective is to illustrate how the theories can aid decision making in a wide variety of circumstances, in any tax jurisdiction.

The first example concerns renegotiations of payments of child support. These payments are amounts received by parents with custody of children from the noncustodial parents. Tax planning opportunities stemmed from the 1996 federal budget, lasting until new rules took effect on May 1, 1997. Although the example is now tax history, it is informative because it spawned research that illuminates several aspects of tax-based decision making.[1] Generally, a methodology that holds one, then the other party, indifferent after taxes dominates trial-and-error approaches. Splitting mutual gains between the parties is important yet seldom discussed in the Scholes-Wolfson framework. Though it is tempting to appeal to impartial benefit-splitting criteria such as 50/50 sharing, marginal tax rates complicate negotiations. It is difficult to calculate marginal tax rates because of "phase-outs" in the law and the fact that the strategy itself affects the parties' marginal rates, sometimes significantly. Moreover, uncertainty about the future makes reaching an agreement difficult and leads to "adjustment clauses" that depend on the parties' future marginal tax rates. Finally, and perhaps most importantly, nontax costs can render any agreement infeasible even if tax benefits are available for the taking.

[1] The main source for this child support example is Feltham and Macnaughton (1996). Only after writing that article did the authors realize the importance of nontax costs; this omission was corrected in Feltham and Macnaughton (1997a), which reports on the survey of family law practitioners. Policy aspects of the change in child support tax regimes, such as whether child support should be recognized in the tax system, are analyzed in Feltham and Macnaughton (2000).

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The second example concerns Canadian Pacific Limited, a major Canadian company that raised capital using "soft currency loans." Though it illustrates an influence of financial accounting on tax-based decision making, the emphasis here is not on "financial reporting costs." Financial reporting costs stem from the fact that in many situations the tax treatment of revenues and expenses is similar to, or influenced by, the accounting treatment. Thus, companies wishing to save taxes may need to reduce their reported income, adversely affecting their ability to raise capital and possibly attracting the ire of regulators.

In Canadian Pacific's case, the tax strategy in question (using a soft currency loan rather than a domestic loan) had some effect on book income, but that is not the primary issue discussed here. The main issue is that to achieve the desired tax result, the company had to use a method of accounting of the soft currency loan for tax purposes that was different from its method of accounting for book purposes. This was like shining a searchlight on the strategy, inviting the tax authority, Revenue Canada,[2] to issue a reassessment—which it did. Thus, a further influence of financial accounting on tax-based decision making is that tax strategies that require different accounting for tax purposes and financial reporting purposes increase the risk of reassessment.

RENEGOTIATION OF CHILD SUPPORT

The Setting

Two key public policy issues concerning child support are the determination of the amount under family law and its tax treatment. Before the federal budget (an annual statement on proposed tax policy changes delivered by Canada's Minister of Finance) of February 1996, child support payments were tax deductions for paying parents and increases to the recipients' taxable income. As for the determination of the amount, family law contained only vague statements saying that the costs of raising children should be split between parents in proportion to their incomes. Thus, negotiations were often lengthy and expensive; frequently they ended in failure—the parties had to go to court.

The 1996 changes affected both family law and tax law. First, by setting out the basic amount of support to be paid, the new guidelines substantially reduced judicial discretion in determining the amount of child support. The guideline amounts were different in each of Canada's ten provinces and varied with the number of children and the payer's income. The intent was to simplify negotiations and reduce parents' legal costs by setting out objective standards. Second, the budget repealed the tax deduction for the payer and taxable income inclusion for the recipient. Thus, Canada's tax treatment of child support became the same as that in the United States—no tax recognition for child support payments.

The interesting aspect of the Canadian situation was that transition rules allowed parents with existing awards to choose between the old and new tax/family law regimes.[3] Specifically, any party to an existing award could have caused the two changes described above to apply to that award by going to court and seeking a variation on or after May 1, 1997. Approval of these variation applications was automatic; the other party could not refuse. Barring such variation, the old rules continued in effect indefinitely.

Data supplied by Canada's Department of Justice suggested that moving to the new regime would have financially benefited at least one of the parents in 96 percent of child support cases.[4] Therefore, as a game theorist would point out, the parties to existing child awards could not

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[2] Revenue Canada, which was renamed the Canada Customs and Revenue Agency in November 1999, is the Canadian equivalent of the U.S. Internal Revenue Service.

[3] Most child support amounts were determined by private agreement between the two parties. While a minority of child support amounts were determined under court order, the term "child support award" is used to refer to both types in this article.

[4] This figure does not consider nontax costs. Important nonmonetary considerations discussed below in connection with renegotiation might also prevent variations.

assume that the old rules would continue to apply after May 1, 1997—generally one party or the other was likely to seek a variation. The analysis in this paper focuses on the implications of this situation for tax planning in the period between the 1996 federal budget and May 1, 1997.

In light of the action that one party to this "game" was expected to take after April 30, 1997, many parties to child support awards considered creating a new, renegotiated child support amount during this period. The advantage was that the deduction-inclusion tax regime would then continue to apply indefinitely to the renegotiated agreement. The amended agreement would be such that neither party would then wish to change to the new rules. The next section outlines the reasoning behind this strategy in more detail.

The Strategy

Renegotiating child support before May 1, 1997 was worthwhile only if both parties preferred a renegotiated amount to the guideline amount. Otherwise, the party that preferred the guideline amount would have had the incentive to invalidate the renegotiated amount after April 30, 1997 by seeking a variation. Two conditions would ensure that parents would have preferred a deductible/taxable child support payment to the guideline amount.

1. There must have been a government subsidy for the ex-couple (i.e., the payer's tax rate pertaining to the support payment must have been higher than the recipient's). The parents could have split this subsidy so that each would be better off than they would have been under the new regime. Roughly half of extant awards satisfied this condition.
2. At least one party must have preferred the guideline amount to the current payment. Otherwise, there would be no "threat" that one of the parties would seek to invoke the new rules.

Statistics from a Department of Justice database suggested that 42 percent of awards satisfied both conditions; therefore, they were likely candidates for renegotiation before May 1, 1997. The following example shows how renegotiation worked.

Example

Exhibit 1 contains information for a hypothetical, divorced couple living in Ontario, Canada in 1997. Clearly the recipient preferred the guideline amount to the then current payment—a nontaxable $679 was far better than a taxable $250—so there was a "threat" that the recipient would seek to apply the new rules if nothing was done before May 1, 1997. The challenge was to determine if there was a taxable/deductible child support amount that both parties would have preferred to the nontaxable/nondeductible guideline amount. The traditional approach, as illustrated by commercial software such as DIVORCEmate Software's VARYmate Variation Optimizer, involves trial and error.

Two questions needed an affirmative answer for renegotiation to work.

1. Would the payer prefer to pay a renegotiated amount with a tax deduction to paying the guideline amount of $679 without a deduction; and

EXHIBIT 1
Assumptions

Payer's pre-support income	$50,000
Recipient's pre-support income	$15,000
Children	2 children, aged 3 and 7
Current payment	$250 per month
Guideline amount	$679 per month

2. Would the recipient, given his or her tax circumstances, prefer to get a renegotiated amount instead of the nontaxable $679?

Exhibit 2 shows three proposed payments and the results for the payer and the recipient, after taking into account all tax considerations.

Clearly, a proposed payment of $1,000 would cause the payer to say "yes" in answer to the first question, as it would cost him or her less than the guideline amount of $679. The recipient, however, would say "no" to the second question, as the amount retained ($666) was less than the guideline amount. The proposed payment of $1,200 was also unsatisfactory because, while the recipient would get more ($761) than the guideline amount, the payer's cost of $726 was too high. Therefore, the payment needed to be somewhere between $1,000 and $1,200. An amount that would suit both parties is $1,100. The payer would prefer this to the $679 guideline amount as the after-tax cost of $665 is less; the recipient would also prefer it as the after-tax benefit is $713, which is more than the $679 guideline amount. Therefore, a renegotiated amount of $1,100 was mutually beneficial to these parents. Of course, the payer would not be happy making a payment that was much higher than the then current amount of $250. Still, paying a tax deductible $1,100 was better than paying the guideline amount of $679 with no tax deduction.

MULTILATERAL TAX PLANNING

The process of trial and error is inefficient. Scholes and Wolfson (1992) and Thornton (1993) suggest a more systematic approach to tax-oriented negotiation problems involving two or more parties, which the two sources call "multilateral tax planning" and "the Pareto principle," respectively. It involves holding one party indifferent between alternatives and determining if the other party can be made better off. The key to the approach is to determine the amounts that hold each party indifferent.

To apply this method to the renegotiation of child support, we need to calculate two amounts:

1. The amount that would hold the recipient indifferent. This is the minimum child payment that he or she would be willing to accept in order to forgo receipt of the guideline amount.
2. The amount that would hold the payer indifferent. This is the maximum payment that he or she would be willing to pay in lieu of the guideline amount.

The first two lines of Exhibit 3 illustrate the results. The amount that would make the recipient indifferent was $1,028 per month, while the amount that would make the payer indifferent was $1,123 per month. Any amount between these two figures, such as $1,100, was a Pareto improvement (i.e., would have made both parties better off relative to the guideline amount) and therefore

EXHIBIT 2
Determining Payment Amounts by Trial and Error

Proposed Payment	Cost to Payer	Benefit to Recipient	Interpretation
$1,000	$605	$666	Too low Recipient will reject
1,200	726	761	Too high Payer will reject
1,100	665	713	Acceptable to both

EXHIBIT 3
Determining Payment Amounts by Multilateral Tax Planning

Proposed Payment	After-Tax Cost to Payer	Recipient Retains After Tax	Interpretation
$1,028	$622	$679	Recipient indifferent
1,123	679	724	Payer indifferent
1,075	650 ($29 better than guideline)	701 ($22 better than guideline)	Midpoint of bargaining range
1,081	654 ($25 better than guideline)	704 ($25 better than guideline)	50/50 split

was a possible settlement. The parties' choice of an amount within this bargaining range is the next question.[5]

Determining the Final Settlement

As noted above, splitting mutual gains between the parties is important yet seldom discussed in the Scholes-Wolfson framework. However, this issue is extensively discussed in the nontax literature on negotiation (Fisher et al. 1983; Neale and Bazerman 1991; Brams and Taylor 1996). Research in this area notes that in practice, negotiators try to resolve such conflicts by positional bargaining—each party stakes out a position defining what he or she is willing and unwilling to accept. The negotiation can then degenerate into a contest whose outcome depends on which party is more stubborn or has more power in the negotiations. This "hard-ball" bargaining is costly, especially if the parties need to maintain an ongoing relationship.

An alternative is to negotiate on some basis other than the will of either side (i.e., using objective criteria such as market value, tradition, precedent, scientific judgment, or what a court would decide). This approach frames each issue as a joint search for objective criteria. For example, in the area of international employee transfers, many companies pursue a policy of "tax equalization" whereby they guarantee employees that they will enjoy the same after-tax income or standard or living as before the transfer. This is an objective criterion, resolving the question of the employee's compensation in the new work location (Yager 1995).

A particularly attractive objective criterion for the child support example was the 50/50 mutual gain point (i.e., the set of terms that would evenly split the benefits of the agreement between the parties). The value of this point was that it was an objective criterion, which can leave both parties feeling satisfied that they were fairly treated.

Reconsider the example above. The final line of Exhibit 3 shows the 50/50 point, $1,081. Each party would have gained $25 per month relative to the guideline amount. The payer's cost was $654 ($25 less than the $679 cost of the guideline amount), while the recipient's after-tax receipt was $704 ($25 more than the $679 receipt under the guideline). This amount may be seen to be "fairer" than any other choice of payment amount. For example, the $1,100 amount arrived at by trial and error from Exhibit 2 would have resulted in more of the renegotiation benefits going to the recipient.

[5] In some situations, the amount that would have made the recipient indifferent exceeded the amount that would have made the payer indifferent. In this situation, there was no bargaining range and renegotiation was impossible. As discussed below, this occurred where the payer's tax rate on the support payment was lower than the recipient's.

Note that the 50/50 point is not the midpoint of the bargaining range of $1,028 to $1,123. The midpoint, $1,075, is shown on the third line of Exhibit 3. This amount would have disproportionately benefited the payer. He or she would have received $29 of the benefit ($679 − $650), in comparison to $22 ($701 − $679) for the recipient. In general, choosing the midpoint of the payment range for any tax issue involving a deduction and an inclusion will give more of the benefit to the party with the higher marginal tax rate.

Marginal Tax Rates

As noted above, fewer than 50 percent of child support awards were candidates for renegotiations. The major condition required for renegotiations to work is that there existed a deductible/taxable child support amount that both parties would have preferred to the nondeductible/nontaxable guideline amount. This occurred only if there was a government subsidy that the parents could split. That is, the payer's tax rate on the support payment needed to be higher than the recipient's tax rate.

The question, however, is whether tax and family law practitioners could have used that condition as a screening mechanism to identify suitable candidates for renegotiations. Instead of doing the calculations in Exhibits 2 or 3 above for every child support award, such an approach would have allowed them to consider only awards that satisfied the marginal tax rate condition. If that were possible, it would save time and make the business of tax planning more efficient.

Problems, however, impeded the implementation of this rule. First, although under Canada's progressive personal income tax system one would expect that the party with the higher income would have the higher marginal tax rate, this was not always the case. For example, in one situation the payer had an initial (before child support) income of $53,000 and a marginal tax rate of 40 percent, whereas the recipient had a $24,000 initial income but a 54 percent marginal tax rate (Feltham and Macnaughton 1997b, 409). The reason for this discrepancy is that although the normal tax rate tables indicated a marginal tax rate for the recipient of 30 percent, income testing of government transfer payments and phase-outs of credits contributed an additional 24 percent. For example, for every dollar of extra income, the recipient's annual child tax benefit (a payment to parents by the Canadian federal government to cover the costs of raising children) was reduced by 9 cents. Reductions in cash benefits from the government are as much an economic loss as are increases in taxes. Therefore, a taxpayer's "effective marginal tax rate" was the effect of extra income on the taxpayer's net transfers from government, which consist of benefit payments less taxes paid (Joint Committee on Taxation 1998; Enis and Christ 1999; Macnaughton et al. 1998). Although one might think that such factors could be ignored because they would affect both parties equally, this was not the case because the Canadian tax system contained many child-related provisions that applied to child support recipients but not child support payers.

A second problem is that the relevant marginal tax rate for the child support issue was not the one that applies to a $1 change in income (as used in the conventional definition of the marginal tax rate). The correct marginal tax rate was the average or "interval" marginal tax rate applying to the actual amount of child support to be paid.[6] For example, in Exhibit 3, the 50/50 child support amount was $1,081 a month, or almost $13,000 a year. Using a marginal tax rate based on a $1 change in income would overstate the payer's true marginal rate if the payment decreased his or her taxable income by thousands of dollars, shifting him or her to a lower tax bracket. Similarly, the $1-based marginal tax rate would understate the recipient's true marginal tax rate if the receipts increased substantially his or her taxable income.

[6] Esenwein and Kiefer (1993) call the average marginal tax rate an "interval" marginal tax rate. Clinch and Shibano (1996) employ this type of marginal tax rate in empirical work.

Another way to view this second problem is that the marginal tax rate is "strategy-dependent" (Scholes and Wolfson 1992, 174). That is, the marginal tax rate is not exogenous or given from some table of rates, but is influenced by the taxpayer's decisions, such as the amount of child support and whether that amount is deductible/taxable or nondeductible/nontaxable. The effect of these two problems is that comparing the two parties' marginal tax rates was a necessary step, but one in which "back of the envelope" calculations often could not be trusted. Thus, there was no alternative to performing detailed calculations such as those reported in Exhibits 2 and 3.

Dynamic Considerations

A difficulty in renegotiating child support was that post-negotiation changes in the parents' circumstances could have altered the split of the benefits from renegotiations between the parents, or even made one or both prefer the guideline amount. For example, the guideline amounts might change due to inflation adjustments, changes in statutory provincial tax rates, or political factors. Moreover, the parents' marginal tax rates could change due changes in their incomes. Changes in the payer's income were particularly germane, since it was a key determinant of the guideline amount. These factors needed to be considered since if either parent grew unhappy with the agreement after April 30, 1997, he or she could have sought a variation to obtain the guideline amount, thereby canceling the renegotiated agreement. Scholes and Wolfson (1992, 166) call such a tax plan "reversible."

The main way of handling such concerns was to include an "adjustment clause" in the agreement. For example, the renegotiated child support agreement might provide that the payment would be adjusted annually according to the parties' tax returns for the previous year, to ensure that the desired (e.g., 50/50) split of benefits was maintained. An accounting firm or other neutral agent could be appointed to determine the revised payment. An alternative approach, which might be used if it was considered too difficult to draft or enforce an adjustment clause, would be to commit to making periodic side payments from one parent to the other to compensate the aggrieved party. Both of these were means of making the tax plan "adaptable" to changing circumstances (Scholes and Wolfson 1992, 168).

Nontax Costs

In 1996 (as was noted above), 42 percent of the ex-couples with extant child support awards could have benefited from renegotiations in the period between the 1996 budget and May 1, 1997. However, informed observers surmised that less than 1 percent of awards were actually renegotiated in this period. The explanation lies in nontax costs, which fell into three categories: social assistance, legal costs, and nonmonetary costs (Feltham and Macnaughton 1997a).

The effect of social assistance (the official name in Canada for welfare payments) was straightforward. For payers and recipients on social assistance, any change in the amount of child support paid or received, net of any associated tax effects, would have been fully offset by changes in social assistance payments. This removed the incentive for renegotiation. In Ontario, it was estimated that approximately 50 percent of child support recipients were also receiving social assistance.

Legal costs were also a deterrent. A telephone survey of family law practitioners established that the expected cost of a typical negotiation was about $1,400. Government subsidized legal aid was not available for child support matters (Feltham and Macnaughton 1997a). Approximately half of all child support litigants were expected to represent themselves in court and therefore would experience similar costs exacted by time, aggravation, and increased uncertainty about the outcome.

Finally, and probably most importantly, nonmonetary considerations prevented negotiations. A survey of family law practitioners revealed that the emotional wounds of the failed relationship

were often still fresh and hence it was painful to enter discussions with the other parent, even indirectly through advisers. In addition, some recipients and payers may not have wanted to raise the issue of the child support award with the other party because of a concern that custody, visitation rights, or the level of spousal support might have then come into question.

In summary, the renegotiation of child support payments illustrates several aspects of the integration of taxes into decision making: (1) trial-and-error approaches to identifying positions of mutual gain between two parties are not as effective as multilateral tax planning, which explicitly holds one party indifferent; (2) splitting mutual gains through impartial rules such as 50/50 sharing is more likely to produce a quick agreement between parties than traditional, positional bargaining; (3) marginal tax rates often determine the benefits to be received by each party, but care must be taken in their calculation because of phase-outs and the problem of strategy dependence; (4) dynamic considerations need to be taken into account through adjustment clauses in the agreement; and (5) even when all tax considerations have been resolved, nontax costs can torpedo an agreement. Thus, all of the principles of microeconomic and decision-based tax planning apply.

SYNTHETIC DEBT AND TAXES: CANADIAN PACIFIC LIMITED

The Setting

Canadian companies, like their counterparts in other developed countries, can raise capital at home or abroad. Where they find the best deal abroad, they borrow funds in foreign currency. Then they convert the funds to Canadian dollars.

Interest rates abroad often differ substantially from Canadian rates. Such rate differences are closely linked to inflation. The Fisher equation in economic theory states that 1 plus the market interest rate is equal to 1 plus the real interest rate multiplied by 1 plus the rate of inflation. (For example, if the real rate is 3 percent and the rate of inflation is 5 percent, the market interest rate, r, is given by the equation $1 + r = 1.03 \times 1.05$, so that $r = 8.2$ percent.) Thus, countries with higher rates of inflation than Canada's tend to have higher nominal interest rates. Since Canada's inflation rate in the 1990s was about 1 percent to 2 percent, many countries did have higher rates. At first glance, then, it might seem that it would be cheaper for Canadian companies to borrow in Canada.

The nominal rate of interest in the foreign country is only one consideration, however. Another key factor is the likely value of principal to be repaid. Countries with higher rates of inflation than Canada expect to see their currencies devalue in the future against the Canadian dollar, and hence are called "soft currencies." Thus, a Canadian company borrowing in a high inflation country would expect to repay less than it borrowed in terms of Canadian dollars. If capital markets were frictionless and there were no taxes, the company would be indifferent between borrowing at home and borrowing abroad through such soft currency loans, since it would expect depreciation in foreign currency values to compensate for higher foreign interest rates. In economics, this relation is known as "covered interest parity."

The amount of the depreciation of the foreign currency over time is uncertain. To the extent that the depreciation is less than expected, the future cost of repaying the loan in Canadian dollars would be higher than expected. Hence, borrowing abroad without taking any steps to offset the foreign exchange risk is like speculating in foreign currency markets. To eliminate this risk, Canadian companies borrowing abroad take long positions in forward currency contracts. Any gain (loss) on the amount of principal to be repaid is then exactly offset by a loss (gain) on the forward contract. With such forward contracts in place, the net cash flows relating to prospective coupon and principal payments, expressed in Canadian dollars, can be about as certain as if they were payments on comparable domestic debt. Thus, by borrowing abroad and hedging the foreign

exchange risk through the use of derivative contracts, the company can create synthetic Canadian debt. For nontax purposes, such synthetic Canadian debt is not substantively different from actual Canadian debt.[7]

The Strategy

Canadian Pacific Limited (CP) is one of several major Canadian companies that saw a tax-saving opportunity in soft currency loans in the late 1980s and 1990s. The favored source of borrowing was New Zealand (NZ), which had an especially high inflation rate. CP believed NZ bonds were superior to Canadian bonds for tax purposes because NZ bonds spawned interest deductions that exceeded those that were available on Canadian bonds. In one instance, CP paid 16.8 percent for NZ financing, while the Canadian interest rate on comparable bonds was only about 11 percent.

A possible concern was that this increase in interest deductions would be offset by tax on the foreign exchange gain on repayment, which would result from the devaluation of the amount of the principal repayment in Canadian dollar terms. But CP did not see this tax liability as being onerous for two reasons. First, it occurred a long time in the future. Second, CP argued that the gain was a capital gain. Thus, although interest payments were 100 percent deductible, the foreign exchange gain was only 75 percent taxable in Canada. As subsequent calculations will show, these two factors can produce substantial tax savings.

The strategy did entail several hard-to-quantify costs that offset the tax savings, however. Because the company hedged the foreign exchange risk regarding the future value of NZ dollars, CP had to use a specific treatment for this transaction on its financial statements—hedge accounting. Under this treatment, the hedged foreign currency gain would neither be deferred until maturity of the loan nor labeled as a capital gain. Rather, some portion of the gain would go to CP's income statement each year, offsetting the high nominal interest deductions. CP's annual expense would then reflect the effective Canadian interest rate on the debt. There was, therefore, a substantial difference between the book and tax treatments. Taxable income was much lower than book income because of the greater interest deductions taken for tax purposes.

On income tax returns, Canadian corporations compute taxable income by starting with the net income reported to shareholders ("book income"). Then, on form T2S(1), they add or deduct items that reconcile book income with taxable income. CP's use of soft currency loans generated a large reconciling item, which had to be shown explicitly on the tax return. Many tax practitioners believe that such reconciling items "wave a red flag" at tax authorities, drawing their attention to any aggressive or questionable tax treatments. A survey of 72 senior U.S. tax professionals found that most believe that this attention increases the probability of audit (Cloyd et al. 1996). In CP's case, Revenue Canada did challenge the interest deductions obtained through the use of soft currency loans. It seems likely that this challenge resulted from the prominent reconciling item for soft currency loans on CP's tax return.

Transaction Details

Because of the court case resulting from CP's use of soft currency loans, extensive information on CP's use of the strategy is available. Exhibit 4 summarizes this information. On December 1, 1987, with the help of Manhattan investment bankers Goldman Sachs & Co., CP issued NZ$125,000,000 face-value debentures due on December 1, 1994. The debentures were issued at

[7] A key assumption behind the assertion that the hedged obligation is equivalent to a domestic obligation is that the counterparties to the forward agreements will remain solvent and honor the agreements.

EXHIBIT 4
CP Loan
New Zealand Issue Cash Flows and Forward Rates

	New Zealand Dollars			Canadian Dollars	
6-Month Period	Principal	Coupon 16.80%	Forward Exchange Rate	Pretax Cash Flow	After-Tax Cash Flow (t = 45%)
0	$ 126,553		0.8153	$ 103,179	$ 103,179
1		$ (10,500)	0.7830	(8,222)	(4,522)
2		(10,500)	0.7564	(7,942)	(4,368)
3		(10,500)	0.7518	(7,894)	(4,342)
4		(10,500)	0.7072	(7,426)	(4,084)
5		(10,500)	0.6881	(7,225)	(3,974)
6		(10,500)	0.6689	(7,023)	(3,863)
7		(10,500)	0.6538	(6,865)	(3,776)
8		(10,500)	0.6387	(6,706)	(3,688)
9		(10,500)	0.6351	(6,669)	(3,668)
10		(10,500)	0.6316	(6,632)	(3,647)
11		(10,500)	0.6293	(6,608)	(3,634)
12		(10,500)	0.6271	(6,585)	(3,622)
13		(10,500)	0.6248	(6,560)	(3,608)
14 (interest)		(10,500)	0.6225	(6,536)	(3,595)
14 (principal)	(125,000)		0.6225	(77,813)	(86,374)*
Sum, undiscounted	$ 1,553	$(147,000)		$ (73,526)	$ (37,586)
Computations					
Semiannual IRR				**5.78%**	**2.83%**
Annual IRR (= 2× semiannual IRR)				**11.55%**	**5.67%**
Equivalent annual pretax IRR = (after tax IRR)/(1 − corporate tax rate)					**10.30%**

*The final cash flow is computed as follows:

Pretax cash flow		$(77,813)
Tax on capital gain:		
Original capital ($NZ)	$ 126,553	
Times opening spot rate	0.8153	
Original capital ($Cdn)	103,179	
Capital repaid	(77,813)	
Capital gain	$ 25,366	
Taxable capital gain (× .75)	19,025	
Corporate rate	45.00%	
Tax owing	$ 8,561	(8,561)
After-tax cash flow		**$(86,374)**

a premium of $1,553,000, so the total proceeds were $126,553,000. The domestic equivalent amount, expressed in 1987 Canadian dollars, was $103,179,500. The NZ$125,000,000 face value was to be repaid on maturity, while interest, expressed in NZ currency as a percentage of NZ-denominated balances, was payable semiannually at a rate of 16.80 percent per annum.

CP simultaneously entered a number of forward transactions governed by a Master Forward Agreement. At inception of the loan in 1987:

1. CP obtained Canadian dollars by exchanging the NZ-dollar loan proceeds for Canadian dollars, at the then current spot rate of exchange: 0.8153 (i.e., CP would get Cdn$0.8153 for every NZ$1 that it borrowed).
2. By means of forward transactions, CP committed to buying New Zealand dollars from Sumitomo (a Japanese bank) in exchange for Canadian dollars based on the forward New Zealand dollar-Canadian dollar exchange rates for the dates on which CP would need New Zealand currency. The forward transactions provided CP with enough New Zealand dollars to meet its semiannual interest obligations of NZ$10,500,000 and the principal repayment of NZ$125,000,000 that was due on maturity. The seven-year forward rate of exchange was 0.6225. Thus, CP could commit to buying NZ$1 seven years later, in 1994, for only $0.6225,[8] and instead of repaying Cdn$125,000,000 at maturity, CP would repay only $77,813,000.

Sumitomo would have to buy NZ dollars at the prevailing spot rate in December 1994 and sell them to CP for Cdn$0.6225; therefore, *ex post* Sumitomo would either win or lose its bet that the spot rate would be below $0.6225. But with the help of Goldman Sachs, Sumitomo spread this risk among more than 100 other financial institutions, each of which took a small position in the forward agreements. Also, in forging many contracts relating to other transactions, Sumitomo would hope to win such bets at least 50 percent of the time and lose at most 50 percent of the time, but make money by charging transaction fees (nontax costs). Finally, Sumitomo and Goldman Sachs could possibly share some of CP's tax savings by charging higher fees and setting a forward rate that was slightly higher than the competitive rate. If CP paid a premium for the forward contract, the premium could be viewed as an implicit tax.

Sharing of Tax Benefits

Exhibit 4 shows the bond's cash flows in New Zealand dollars, the forward currency rates, and the resulting locked-in cash flows in Canadian dollars. These Canadian-dollar cash flows are then used to compute the internal rate of return, or yield to maturity on the bond. Notice that the bond's pretax yield to maturity is 11.55 percent, 55 basis points more than the 11 percent rate that CP was quoted for a domestic bond issue. This suggests that CP was paying an implicit tax by arranging the hedged foreign currency issue. The after-tax cost of borrowing, however, was only 5.67 percent. Assuming a 45 percent corporate tax rate, the after-tax cost of a domestic issue would have been 6.05 percent (i.e., 11 percent $\times$ [1 $-$ .45]); or, the equivalent pretax yield on the hedged foreign currency bond could be viewed as 10.30 percent (i.e., 5.67 percent $\div$ [1 $-$ .45]), 70 basis points lower than the 11 percent cost of a domestic issue. Arguably, then, CP paid implicit taxes and transaction costs to garner these explicit tax savings.

Financial Accounting Treatment

Whatever the distribution of the gains among the parties, CP locked in a gain equal to the discount on the forward contract times the face amount of the loan, which would be accounted for as follows under hedge accounting rules as follows.

[8] The difference between the forward rate and the spot rate is normally called the "premium" on a forward contract. Here, the difference is negative, so it is called a "discount."

	Canadian dollars
Assets	
Increase gross cash proceeds from loan	
NZ$125,000,000 × .8153 spot rate	$101,912,500
Liabilities and Equity	
Increase deferred (or unrealized) gain on forward contract:	
NZ$125,000,000 × (.8153 spot rate − .6225 forward rate)	$ 24,100,000
NZ$125,000,000 × .6225 forward rate	$ 77,812,500
Total	$101,912,500

The subsequent accounting would then be as follows:

1. Each year, recognize as income some portion of the $24,100,000 deferred (or unrealized) gain on the forward contract, so that its balance would be zero at maturity.
2. Ignore any further fluctuations in the spot rate of exchange, since any gains and losses on the debt occasioned by such fluctuations would be offset by losses and gains on the forward contracts.

Thus, the accounting at maturity of the loan in 1994 would be as follows:

	Canadian dollars
Assets	
Decrease cash	
NZ$125,000,000 × .6225 (the forward rate at inception)	$77,812,500
Liabilities and Equity	
Remove deferred (or unrealized) gain on forward contract	$0
Decrease long-term debt—amount payable at maturity	$77,812,500
Total	$77,812,500

Note that just before CP made the final principal payment, the balance sheet account "deferred (or unrealized) gain on forward contract" would have a balance of zero. The reason is that CP would have recognized, as income for accounting purposes, the entire original $24,100,000 by taking it into income gradually, year by year as it was realized. It is included in the final accounting only to indicate that an item with a balance of zero would not be left on the right hand side of the balance sheet.

In 1988, CP's financial statements showed the following:

Reduce cash—two semiannual coupon payments	$16,079,350
Increase balance sheet asset "unrealized exchange gain"	$5,620,294
Increase expense (and ultimately decrease retained earnings)	$10,459,056
	$16,079,350

This accounting continued over the seven-year life of the bond. The sum of all such "unrealized exchange gains" was $24,100,000, the entire amount of the deferred gain.

The Court Case—Implications for the Future

As the preceding section shows, the amounts of interest that CP deducted for tax purposes greatly exceeded the amounts charged in its financial statements. For tax purposes, the company simply deducted the full coupon payments each year. This tax accounting treatment produced tax benefits but was not in accordance with generally accepted accounting principles (GAAP) and did not reflect the economic substance of the loan.[9]

In reporting to shareholders, CP recognized significant deferred exchange gains each year under the hedge accounting rules. As was already mentioned, the appearance of this difference between taxable income and net income for accounting purposes on the company's form T2S(1) reconciling schedule probably attracted the attention of Revenue Canada. The tax authority reassessed the company, enjoining it to take the deferred exchange gains into income for tax purposes each year instead of recognizing a capital gain at maturity of the issue. It also reassessed a second soft currency loan that CP had undertaken in Australia and similar transactions by Shell Canada, another large public company.

CP suffered a initial setback when lower level courts disallowed amounts equal to the "unrealized exchange gains" as deductions for tax purposes (*Canadian Pacific*, 98 DTC 2021 (TCC) and 99 DTC 5132 (FCA)). However, Shell Canada appealed a similar tax court ruling and the Supreme Court of Canada ruled in its favor in the Fall 1999. As of the time of this writing, CP's situation was uncertain. Further adding to this environment of legislative uncertainty was a February 2000 federal budget proposal to remove most of the tax benefits associated with soft currency loans.

CONCLUSION

The basic principles of microeconomic decision making in an environment with complex taxes are similar in the United States, Canada, and other developed countries. Nontax costs, uncertainty, multilateral tax planning opportunities, and the ability to gain tax benefits through the interaction of nonharmonized tax systems are present everywhere. The examples in this chapter use two diverse examples in Canada to illuminate these principles and extend their generality to the international arena.

[9] Goldman Sachs & Co. suggested in a letter dated November 18, 1987 that the deferral of the gain on the discount, coupled with capital treatment, would push CP's effective after-tax interest cost for the New Zealand bond issue to less than the yield on ten-year government bonds.

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