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The Recent Corporate Income Tax Reform Proposals in Canada and the United States

Patrick Grady*

PRÉCIS

En mai 1985, le Ministre des Finances du Canada et le Président des États-Unis ont tous deux proposé la réforme du régime des impôts sur les bénéfices des sociétés de leurs pays respectifs. Les deux propositions portaient sur l'élargissement de l'assiette fiscale et l'élimination de crédits d'impôt à l'investissement. La proposition américaine comprenait aussi l'indexation des allocations d'amortissement et du coût des inventaires relatifs aux stocks. Ces deux propositions sont examinées dans l'étude résumée dans cet article, en faisant ressortir leur portée pour le Canada. La notion du taux marginal effectif d'imposition des investissements est utilisée pour analyser les conséquences possibles des mesures proposées quant à l'incidence et à la répartition de l'impôt direct des sociétés. L'article compare ensuite l'effet des propositions sur les taux réels d'imposition effectifs au Canada et aux États-Unis. L'analyse est effectuée selon plusieurs hypothèses différentes quant au taux d'inflation et au niveau du financement des investissements par emprunt.

Selon la proposition canadienne, le taux d'imposition de base du revenu des sociétés diminuerait, passant de 46 à 39 pour cent (taux combiné des impôts fédéraux et provinciaux); pour les petites entreprises il passerait de 25 à 21 pour cent, pour la fabrication et la transformation de 40 à 33 pour cent et pour les petites sociétés de fabrication de 20 à 16 pour cent. La diminution de l'amortissement fiscal accéléré et l'élimination du crédit d'impôt à l'investissement (sauf pour les frais de recherche scientifique) compenseraient la réduction des recettes fédérales causée par la diminution des taux d'imposition. La radiation sur trois ans des biens de la catégorie 29 utilisés pour la fabrication et la transformation serait effectuée par amortissement dégressif et ramenée à 25 pour cent. Cette réduction à 25 pour cent s'appliquerait aussi à l'amortissement des biens des catégories 24, 27 et 34 servant à la lutte contre la pollution et à la conservation de l'énergie, à l'amortissement du matériel d'extraction de ressources, des automobiles et d'autres biens des catégories 10 et 28, et à l'amor-

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tissement du matériel de construction lourd compris dans la catégorie 22. En ce qui concerne les allocations d'inventaire, il est proposé d'éliminer l'abattement de 3 pour cent qui avait été institué pour contrebalancer partiellement l'impôt sur les gains en capital résultant de l'inflation.

Certains avantages de la proposition sont énumérés dans les documents budgétaires. D'abord, le facteur fiscal influerait moins sur les décisions relatives à l'investissement, car le fardeau fiscal serait réparti plus uniformément entre les secteurs industriels ainsi qu'entre les différentes catégories de biens d'investissement. Ensuite, en diminuant le taux d'imposition des sociétés, le financement par actions deviendrait plus avantageux qu'actuellement par rapport au financement par emprunt. Cette modification contribuerait à l'amélioration des bilans des sociétés. Enfin, l'élimination de crédits d'impôt endiguerait le cumul considérable de déductions et de crédits fiscaux inutilisés figurant dans les comptes des sociétés.

La principale analyse de l'étude est la comparaison des effets des deux séries de mesures proposées sur le taux marginal effectif d'imposition qui s'applique aux grandes sociétés canadiennes et américaines de fabrication. Le secteur de la fabrication a été analysé parce que c'est dans ce secteur que la concurrence entre les entreprises est la plus vive dans les deux pays. C'est en outre probablement dans ce même secteur que l'influence du taux d'imposition des sociétés quant à l'emplacement de l'investissement et des possibilités d'emploi est la plus grande.

En vertu des régimes actuels, au Canada le taux effectif réel d'imposition de l'investissement dans le matériel et l'outillage de fabrication est inférieur de plusieurs points de pourcentage au taux américain s'il est financé par actions ou n'est financé qu'à 25 pour cent au moyen d'emprunts. Dans le cas d'un financement par emprunt de 50 pour cent la différence n'est que très légèrement à l'avantage du Canada.

Si les deux régimes proposés étaient instaurés, le taux effectif réel d'imposition au Canada de l'investissement dans le matériel et l'outillage financé par actions serait beaucoup plus élevé (plus de 10 points de pourcentage) qu'aux États-Unis. Cet avantage irait croissant avec la proportion du financement par emprunt. Au taux d'inflation actuel de 4 pour cent, cet avantage dépasserait 20 points de pourcentage dans le cas de l'investissement dans le matériel et l'outillage financé à 50 pour cent au moyen d'emprunts. Dans le cas d'un taux d'inflation de 10 pour cent, l'avantage des États-Unis serait de 30 points de pourcentage.

La mise en oeuvre des deux propositions ferait augmenter dans les deux pays le taux effectif réel d'imposition de l'investissement financé par actions dans la construction non résidentielle. Cependant la hausse des taux canadiens serait moindre que celle des taux améri-

cains, diminuant donc l'avantage actuel des États-Unis au niveau du taux réel d'imposition de ce type d'investissement. La diminution du taux d'inflation et l'augmentation du niveau du financement par emprunt auraient pour effet d'accroître cette diminution. Par contre, cette réduction de l'avantage américain aurait moins d'effet en termes de concurrence sur le secteur canadien de la fabrication que l'augmentation relative du taux réel d'imposition de l'investissement en matériel et en outillage.

L'analyse fait ressortir trois considérations dont il faudrait tenir compte lors de la discussion des changements proposés pour le régime des impôts sur les bénéfices de sociétés au Canada: (1) le risque de porter au-delà des taux effectifs américains les taux réels d'imposition de l'investissement dans le matériel et l'outillage destinés à la fabrication; (2) la portée au niveau du fardeau fiscal relatif, au Canada et aux États-Unis, de l'indexation du régime des impôts sur les bénéfices des sociétés telle qu'elle a été proposée aux États-Unis, et (3) l'effet de l'élimination des stimulants fiscaux spéciaux pour les investissements dans les régions moins développées du Canada en termes de politique d'expansion régionale.

Abstract

In May 1985, Canada's Minister of Finance and the President of the United States each put forward a proposal for reforming his country's corporate income tax system. Both proposals called for a broadening of the tax base and the elimination of investment tax credits. The U.S. proposal also included indexation of depreciation allowances and inventory cost. The study reported in this article examines these two proposals, focussing on their significance for Canada. The study uses the concept of the marginal real effective tax rate on investment to analyze some of the possible effects of the proposals on the burden and the distribution of the corporate tax; it then compares the effects of the proposals on real effective tax rates in Canada and the United States. The analysis is carried out under several different assumptions about the rate of inflation and the extent to which the investment is debt financed.

The Canadian proposal calls for a reduction in the standard combined federal and provincial corporate tax rate from 46 to 39 per cent, in the small business rate from 25 to 21 per cent, in the rate for manufacturing and processing from 40 to 33 per cent, and in the rate for small manufacturing corporations from 20 to 16 per cent. A reduction in accelerated capital cost allowances and an elimination of the investment tax credit (except for scientific research expenditures) would offset the resulting reduction in federal revenues. The proposal would reduce the three-year write-off for manufacturing and processing assets in class 29 to 25 per cent on a declining-balance basis. The reduction to 25 per cent would also apply to write-offs for energy-saving and pollution control assets in classes 24, 27, and 34; for resource ex-

traction equipment, automobiles, and other assets in classes 10 and 28; and for heavy construction equipment in class 22. In addition, the proposal would eliminate the 3 per cent inventory allowance, which was introduced to compensate partially for the tax levied on inflation-induced capital gains on inventory holdings.

The budget paper sets out some of the advantages of the proposal. It would reduce tax-induced distortions in investment decision-making by distributing the tax burden more evenly among industries and different types of investment assets. The reduction in the corporate tax rate would make equity financing more attractive than it is at present relative to debt financing; this change would help to improve the balance sheets of corporations. Finally, the elimination of tax credits would stem the substantial build-up of unused tax deductions and credits on corporate books.

The key analysis contained in the study is a comparison of the effects of the two sets of proposals on marginal real effective tax rates applicable to large manufacturing corporations in Canada and the United States. The analysis uses the manufacturing sector because it is the sector in which competition between companies in the two countries is most intense and in which the corporate tax rate probably has its greatest potential impact on the location of investment and employment.

Under the current systems, the real effective tax rate on investment in machinery and equipment in manufacturing is several percentage points lower in Canada than it is in the United States if the investment is equity financed or only 25 per cent debt financed. For investment that is 50 per cent debt financed, the difference is only marginally in favour of Canada.

If both of the proposed systems were implemented, the Canadian real effective tax rate on equity-financed investment in machinery and equipment would be substantially (more than 10 percentage points) higher than the U.S. rate. The advantage would increase with the degree of debt financing. At the current 4 per cent rate of inflation, this advantage would exceed 20 percentage points for investment in machinery and equipment that was 50 per cent debt financed. Given 10 per cent inflation, the U.S. advantage would be 30 percentage points.

Implementation of the two proposals would increase the real effective tax rate on equity-financed investment in nonresidential construction in both countries, but the increase in Canadian rates would be smaller than the increase in U.S. rates. Implementation of both proposals would therefore reduce the current U.S. advantage in real effective tax rates on investment of this kind. The lower the rate of inflation and the greater the degree of debt financing, the greater the reduction would be. This reduction, however, would have less effect on the competitiveness of Canada's manufacturing sector than the

relative increase in the real effective tax rate on investment in machinery and equipment.

The analysis raises three neglected issues that should be taken into account in discussions of the proposed Canadian corporate tax changes: (1) the prudence of raising real effective tax rates on manufacturing investment in machinery and equipment above rates in the United States; (2) the implications for the relative tax burdens in Canada and the United States of the proposed indexation of the U.S. corporate tax system; and (3) the implications for regional development policy of eliminating special tax incentives for investment in less developed regions of Canada.

INTRODUCTION

In May 1985, Canada's Minister of Finance and the President of the United States each put forward a proposal for reforming his country's corporate income tax system. Both proposals called for a broadening of the tax base, the elimination of tax credits, and a reduction in tax rates. The U.S. proposal also included indexation of depreciation allowances and inventories.

The process of corporate tax reform is at a more advanced stage in the United States than it is in Canada. When President Reagan submitted his proposal to the Congress, with a request for prompt enactment,[1] the Congress and the administration had already extensively discussed a preliminary proposal presented by the Treasury Department in November 1984.[2] The Canadian proposal, set out in one of the many discussion papers issued with the May 23, 1985 budget,[3] was intended to be illustrative rather than definitive. Its purpose was to serve as a basis for discussion and to suggest some ways in which the operation and the impact of the corporate tax system could be improved.

The study reported in this article examines the two proposals, focussing on their significance for Canada. The study uses the concept of the marginal real effective tax rate on investment to analyze some of the possible effects of each proposal on the burden and the distribution of the corporate tax; it then compares the effects of the proposals on real effective tax rates in Canada and the United States. The analysis is carried out under several dif-

[1] United States, *The President's Tax Proposals to the Congress for Fairness, Growth and Simplicity* (Washington, D.C.: U.S. Government Printing Office, May 1985). The corporate tax reform proposal contained in this document is only part of a broader package of tax reforms encompassing all aspects of the income tax. Note that the analysis in this study deals with the President's proposals, which are currently under consideration by the Congress. Any reforms that eventually emerge from the legislative process may differ significantly from the original proposals.

[2] United States, Treasury Department Report to the President, *Tax Reform for Fairness, Simplicity, and Economic Growth* (Washington, D.C.: Department of the Treasury, November 1984).

[3] Canada, Department of Finance, *Budget Papers,* The Corporate Loss Transfer System: A Direction for Change, May 1985.

ferent assumptions about the rate of inflation and the extent to which the investment is debt financed.

The analysis of real effective tax rates and the examination of the U.S. proposal raises a number of issues that should be considered in discussions of the Canadian proposal. These issues are reviewed in the concluding section of the article.

THE CANADIAN CORPORATE TAX PROPOSAL AND REAL EFFECTIVE TAX RATES

The illustrative proposal presented in the budget discussion paper calls for a reduction in the standard combined federal and provincial corporate tax rate from 46 to 39 per cent, in the small business rate from 25 to 21 per cent, in the rate for manufacturing and processing from 40 to 33 per cent, and in the rate for small manufacturing corporations from 20 to 16 per cent. A reduction in accelerated capital cost allowances and elimination of the investment tax credit (except for scientific research expenditures) would offset the resulting reduction in federal revenues. The proposal would reduce the three-year write-off for manufacturing and processing assets in class 29 to 25 per cent on a declining-balance basis. The reduction to 25 per cent would also apply to write-offs for energy-saving and pollution control assets in classes 24, 27, and 34; for resource extraction equipment, automobiles, and other assets in classes 10 and 28; and for heavy construction equipment in class 22. In addition, the proposal would eliminate the 3 per cent inventory allowance, which was introduced to compensate partially for the tax levied on inflation-induced capital gains on inventory holdings.

Table 1 summarizes the current and the proposed corporate tax rates, investment tax credit rates, and capital cost allowance rates for representative industry groups and broad categories of investment. These rates provide the basis for the calculations of real effective tax rates presented below.

The budget paper sets out some of the advantages of the proposed reforms. Because the proposal offers broader tax incentives than does the existing corporate tax scheme, it would reduce the degree of tax-induced distortion in investment decision-making. This change could lead to increased economic growth and employment by redirecting investment to the areas of greatest return. For example, the proposal would end the current emphasis on inducements to investment in the manufacturing sector and thus encourage increased investment in sectors such as utilities, construction, transport, wholesale trade, retail trade, and services. This reallocation of investment would increase employment, since the nonmanufacturing industries tend to be more labour intensive than the manufacturing industries. One important way in which the proposal would encourage a reallocation of investment is by equalizing the marginal tax rates on investments in buildings, land, and machinery: the shift in the pattern of incentives away from machinery and toward structures would increase demand in the construction-related industries.

The proposal has other advantages. The reduction in the corporate tax rate would make equity financing more attractive than it is at present rela-

Table 1 Tax Parameters Used in Calculating the Real Effective Tax Rate for Various Industry Groups and Categories of Investment Under the Current and Proposed Tax Regimes in Canada

	Current			Proposed		
	Corporate tax rate	Investment tax credit	Capital cost allowance	Corporate tax rate	Investment tax credit	Capital cost allowance
	per cent					
Large, non-Atlantic region						
Nonmanufacturing						
Machinery and equipment	46	7	20	39	0	20
Nonresidential construction ..	46	7	5	39	0	5
Large, Atlantic region						
Nonmanufacturing						
Machinery and equipment	46	20	20	39	0	20
Nonresidential construction ..	46	20	5	39	0	5
Large, non-Atlantic region						
Manufacturing						
Machinery and equipment	40	7	50	33	0	25
Nonresidential construction ..	40	7	5	33	0	5
Large, Atlantic region						
Manufacturing						
Machinery and equipment	40	20	50	33	0	25
Nonresidential construction ..	40	20	5	33	0	5
Small, non-Atlantic region						
Nonmanufacturing						
Machinery and equipment	25	7	20	21	0	20
Nonresidential construction ..	25	7	5	21	0	5
Small, non-Atlantic region						
Manufacturing						
Machinery and equipment	20	7	50	16	0	25
Nonresidential construction ..	20	7	5	16	0	5

Note: Only one-half of the indicated capital cost allowance can be claimed in the first year.

tive to debt financing; this change would help to improve the balance sheets of corporations. The elimination of tax credits would stem the substantial build-up of unused tax deductions and credits on corporate books—a source of much complication for tax administrators when corporations seek to transfer the unused write-offs.[4]

The budget paper presents much useful analysis of the impact of the proposal. The purpose of the present study is not to criticize this analysis but to supplement it. The concept used in this study to shed light on the impact of the proposal is the marginal real effective tax rate on illustrative investment projects. This concept has the virtue that it captures in one number the com-

[4]Another discussion paper issued with the May 1985 budget proposes a system that would allow the transfer of losses between commonly owned firms. See Canada, Department of Finance, *Budget Papers*, A Corporate Loss Transfer System for Canada, May 1985.

bined tax effect on new investment of changes in corporate tax rates, capital cost allowances, and investment tax credits.

The analysis calculates the real effective tax rate by dividing the present value of real (inflation-adjusted) tax payments by real income. It computes real income by deflating by the price level the income from the investment less indexed capital consumption allowances and real interest payments on any debt incurred to finance the investment. The analysis uses real rather than nominal taxes and income because in the absence of money illusion, it is real rather than nominal magnitudes that influence business decisions. The real discount rate used in the calculations is 10 per cent. This rate is the same as the assumed before-tax rate of return and cost of debt financing. The calculations assume economic depreciation of 7.89 per cent for machinery and equipment and 3.45 per cent for nonresidential construction.[5] A more detailed discussion of the calculation of the real effective tax rate appears in the appendix.

The calculations of real effective tax rates used in this article have several limitations as indicators of the effect of corporate tax changes. First, the calculations obviously do not capture all aspects of the corporate tax system. Second, they do not measure the overall impact of corporate taxation on corporations but only its impact on illustrative new investment projects. Third, the calculations assume that the corporations subject to tax are able to take full advantage of all write-offs and credits—an assumption that does not strictly apply to the roughly two companies in three that are only sometimes taxable. Since losses can be carried backward three years and forward seven years, the tax benefits flowing from write-offs and credits are not necessarily lost altogether by firms in a non-tax-paying position, but they may be substantially reduced in value. These limitations must be borne in mind in interpreting the analysis of real effective tax rates.

Table 2 shows the calculated real effective tax rates by industry groups and by type of investment, assuming a continuation of inflation at its recent level of 4 per cent, under both the current and the proposed corporate tax regimes. Under the current system, real effective tax rates are in all cases substantially lower than the statutory rates. For machinery and equipment, the real effective tax rates are actually negative for large Atlantic region manufacturing corporations and small non-Atlantic-region manufacturing corporations. This circumstance reflects the generosity of the three-year write-off for manufacturing and processing and the high value of the investment tax credit, particularly in the Atlantic region.[6] Under the proposed tax regime, real effective tax rates would be brought more in line with statutory

[5]These depreciation rates are those estimated by Lloyd Kenward for use in RDX2, the Bank of Canada's econometric model. They are based on data from Statistics Canada's annual estimates of fixed capital flows and stocks. The methodology is described in Lloyd Kenward, "Business Investment and Output: Sector 3," in *Sectoral Analysis of RDX2 Estimated to 4Q72*, Technical Report 6 (Ottawa: Bank of Canada, 1977), 52-54.

[6]The tax credit rate in the Atlantic region is 20 per cent; in the rest of the country, it is 7 per cent.

Table 2 The Real Effective Tax Rate on Investment by Industry Group in Canada Under the Current and the Proposed Tax Regimes, Assuming 4 Per Cent Inflation

	Current	Proposed
	per cent	
Large, non-Atlantic region		
Nonmanufacturing		
Machinery and equipment	34.6	36.7
Nonresidential construction	39.5	39.9
Large, Atlantic region		
Nonmanufacturing		
Machinery and equipment	18.4	36.7
Nonresidential construction	25.5	39.9
Large, non-Atlantic region		
Manufacturing		
Machinery and equipment	6.7	29.8
Nonresidential construction	33.2	33.7
Large, Atlantic region		
Manufacturing		
Machinery and equipment	−7.0	29.8
Nonresidential construction	19.0	33.7
Small, non-Atlantic region		
Nonmanufacturing		
Machinery and equipment	13.6	19.8
Nonresidential construction	17.6	21.5
Small, non-Atlantic region		
Manufacturing		
Machinery and equipment	−2.3	14.5
Nonresidential construction	12.3	16.4

rates, an outcome that would result in significantly higher effective tax rates in the manufacturing sector and in the Atlantic region.

Since neither the current nor the proposed corporate tax regime is indexed, the real effective tax rate under both regimes is influenced by the rate of inflation. Inflation affects the real effective tax rate in two ways. First, it erodes the real value of capital cost allowances and thus tends to raise the real effective tax rate. Second, it increases the inflation premium in the nominal interest rate and hence the value of nominal interest payments; because these payments are deductible, the increase in their nominal value tends to lower the real effective tax rate.[7]

Table 3 shows the combined impacts of inflation and debt financing on the real effective tax rate for large non-Atlantic-region corporations under

[7] A paper prepared by the author for the Economic Council of Canada's Study on Taxation provides a detailed discussion of the issues involved in indexation and the impact of inflation on the taxation of business and investment income. See Patrick Grady, *Indexation and the Taxation of Business and Investment Income,* Discussion Paper no. 283 (Ottawa: Economic Council of Canada, December 1984).

both the current and the proposed tax regimes.[8] The table clearly reveals the tendency of inflation to raise real effective tax rates in the absence of debt financing. This tendency is slightly more pronounced under the current system than it is under the proposed system, except in the case of manufacturing investment in machinery and equipment. The proposed lowering of tax rates would reduce the erosion by inflation of the real value of capital cost allowances. In the case of manufacturing machinery and equipment, however, the proposed lengthening of the write-off period would more than offset the impact of lower tax rates, making the increase in the effective tax rate greater under the proposed system than it is under the current system.

If investment involves debt financing, inflation will reduce real effective tax rates. The greater is the reliance on debt financing, the larger is the reduction. The reduction arising from the interaction of inflation and debt financing, however, would be much less under the proposed system than it is under the current system. Under the current system, given 10 per cent inflation, the effective tax rate is translated into significant subsidies at the margin for both manufacturing and nonmanufacturing investment in both machinery and equipment and nonresidential construction. Under the proposed system, a subsidy results only for manufacturing investment in machinery and equipment. Thus the proposed changes would mitigate the adverse impact of inflation on the dispersion in effective marginal corporate tax rates. This mitigation, however, would stop far short of the relief that would result from a comprehensive indexation of the corporate income tax.

THE U.S. CORPORATE TAX PROPOSAL AND REAL EFFECTIVE TAX RATES

The current corporate tax system in the United States imposes a tax rate of 46 per cent on all income in excess of $100,000. The rates on income under $100,000 are

- 15 per cent on taxable income up to $25,000,
- 18 per cent on taxable income between $25,000 and $50,000,
- 30 per cent on taxable income between $50,000 and $75,000, and
- 40 per cent on taxable income between $75,000 and $100,000.

The graduated tax rates are phased out for corporations with taxable incomes over $1,000,000; corporations earning more than $1,405,000 pay a flat rate of 46 per cent.

Under the proposed tax system, the tax rate would be 33 per cent on all income above $75,000. The following rates would apply to income under $75,000:

- 15 per cent on taxable income up to $25,000,

[8]The table shows the real effective tax rates for illustrative cases where the proportion of the investment assumed to be financed by debt is zero per cent, 25 per cent, and 50 per cent. On average, about one-third of all investment is debt financed.

Table 3 The Impact of Inflation and Debt Financing on the Real Effective Tax Rate in Canada Under the Current and the Proposed Tax Regimes

	Current, % debt financed			Proposed, % debt financed		
Large, non-Atlantic region	0	25	50	0	25	50
			per cent			
Nonmanufacturing						
Machinery and equipment						
4% inflation	34.6	24.0	2.9	36.7	30.2	17.3
10% inflation	39.3	20.2	−18.0	41.0	27.4	0.1
Nonresidential construction						
4% inflation	39.5	30.6	12.8	39.9	34.4	23.6
10% inflation	42.7	24.7	−11.2	42.8	29.7	3.6
Manufacturing						
Machinery and equipment						
4% inflation	6.7	−10.2	−44.1	29.8	23.9	12.2
10% inflation	9.4	−15.4	−65.2	33.1	21.0	−3.2
Nonresidential construction						
4% inflation	33.2	25.1	8.9	33.7	29.1	20.0
10% inflation	36.0	20.0	−12.0	36.2	25.1	3.1

- 18 per cent on taxable income between $25,000 and $50,000, and
- 25 per cent on taxable income between $50,000 and $75,000.

The graduated rates would be phased out on taxable incomes over $140,000, and corporations with incomes over $360,000 would pay a flat tax of 33 per cent.

The proposed system would eliminate the investment tax credit. Under the current system, the investment tax credit rate is generally 10 per cent except in the case of three-year property, for which the applicable rate is generally 6 per cent. The investment tax credit reduces the basis of depreciable property by 50 per cent of the credit. A taxpayer may elect a 2 per cent reduction in the value of the credit instead of the basis reduction.

The current system of depreciation allowances in the United States, which is called the accelerated cost recovery system (ACRS), is not based on the useful economic lives of assets and provides greatly accelerated depreciation schedules. In brief, the ACRS classifies all personal property (except public utility property) as three-year or five-year property. The main three-year properties are cars, light trucks, and research and experimentation property. Most other personal property, including machinery and equipment, may be written off over five years. Real property, except low income housing, is classified as 18-year property.

Under the proposed regime, a new capital cost recovery system (CCRS) would replace the ACRS. The CCRS would index depreciation allowances and would thus allow the cost recovery of the real (inflation-adjusted) cost of depreciable assets, rather than just the original, nominal cost. Also, depreciation allowances would be based more closely than they are at present on

economic depreciation, an arrangement that would establish a more neutral system of investment incentives. Under the CCRS, all investment assets would be assigned to one or another of six classes, where they would qualify for declining-balance rates of depreciation ranging from 55 per cent to 4 per cent for specified recovery periods ranging from 4 to 28 years.

Table 4 compares the depreciation allowances under the ACRS and the CCRS for three classes of assets, assuming zero inflation. The two classes that are of most interest are class 4, which includes most machinery and equipment and has a 22 per cent rate, and class 6, which covers most non-residential construction and has a 4 per cent rate. The table shows clearly the extent to which the CCRS system would temper the front-end-loaded nature of accelerated depreciation allowances. The table does not reveal the

Table 4 Depreciation Allowances Under Current and Proposed Depreciation Methods in the United States

	Class 1 asset		Class 4 asset		Class 6 asset	
Year	ACRS, 3 years	CCRS, 55%	ACRS, 5 years	CCRS, 22%	ACRS, 18 years	CCRS, 4%
			per cent			
1	25.0	27.5	15.0	11.0	5.0	2.0
2	38.0	39.9	22.0	19.6	9.0	3.9
3	37.0	17.9	21.0	15.3	8.0	3.8
4	0.0	8.1	21.0	12.0	8.0	3.6
5	0.0	6.6	21.0	12.0	7.0	3.5
6	0.0	0.0	0.0	12.0	6.0	3.5
7	0.0	0.0	0.0	12.0	6.0	3.5
8	0.0	0.0	0.0	6.0	5.0	3.5
9	0.0	0.0	0.0	0.0	5.0	3.5
10	0.0	0.0	0.0	0.0	5.0	3.5
11	0.0	0.0	0.0	0.0	5.0	3.5
12	0.0	0.0	0.0	0.0	5.0	3.5
13	0.0	0.0	0.0	0.0	4.0	3.5
14	0.0	0.0	0.0	0.0	4.0	3.5
15	0.0	0.0	0.0	0.0	4.0	3.5
16	0.0	0.0	0.0	0.0	4.0	3.5
17	0.0	0.0	0.0	0.0	4.0	3.5
18	0.0	0.0	0.0	0.0	4.0	3.5
19	0.0	0.0	0.0	0.0	2.0	3.5
20	0.0	0.0	0.0	0.0	0.0	3.5
21	0.0	0.0	0.0	0.0	0.0	3.5
22	0.0	0.0	0.0	0.0	0.0	3.5
23	0.0	0.0	0.0	0.0	0.0	3.5
24	0.0	0.0	0.0	0.0	0.0	3.5
25	0.0	0.0	0.0	0.0	0.0	3.5
26	0.0	0.0	0.0	0.0	0.0	3.5
27	0.0	0.0	0.0	0.0	0.0	3.5
28	0.0	0.0	0.0	0.0	0.0	3.5
29	0.0	0.0	0.0	0.0	0.0	2.7
30	0.0	0.0	0.0	0.0	0.0	0.0

Note: Depreciation is computed on an asset placed in service by a calendar-year taxpayer on July 1 of year 1.

degree to which inflation would cause depreciation allowances to rise over time under the indexed CCRS system.

Another aspect of the proposed corporate tax system that is designed to offset inflation is a proposal to allow taxpayers the use of an indexed first in, first out (FIFO) method of inventory accounting in addition to the current last in, first out (LIFO) and FIFO methods. Indexing would be based on the increase in a general price index such as the consumer price index, and it would be allowed only for inflation that occurred after the proposal was implemented. A related proposal calls for dropping the requirement that those who use the LIFO method for tax purposes also use it in financial statements.

The proposed corporate tax reforms in Canada and the United States differ strikingly in their approaches to indexation. The U.S. administration is proposing to enact an almost comprehensive indexation of the corporate income tax (it would cover depreciation allowances and inventories but exclude interest income and expense). The Canadian government, for its part, is tentatively proposing the elimination of the 3 per cent inventory allowance on the ground that the decline in inflation makes the allowance unnecessary.

Table 5 shows the marginal real corporate effective tax rates on most new investment in machinery and equipment and nonresidential construction under both the current and the proposed U.S. systems, given 4 per cent inflation; these rates were calculated in the same manner as the Canadian tax rates discussed earlier. The real effective tax rates are higher under the proposed system than they are under the current system—a result that is only to be expected from a reform designed to tip the tax regime away from accelerated write-offs and investment tax credits and toward a lower general tax rate. The reform would not, however, significantly alter the existing bias in favour of shorter-lived assets. The effective rate on new investment in machinery and equipment would remain substantially below the rate on investment in structures.

Table 6 shows the combined impact of inflation and debt financing under both the current and the proposed corporate tax systems in the United States. The indexation of depreciation allowances under the proposed system would stop inflation from raising effective tax rates for equity-financed investments, as it does under the present system. On the other hand, the proposed reforms would curtail the inflation-induced reduction in real tax rates associated with debt financing. The tendency of

Table 5 The Real Effective Tax Rate on Investment by Asset Class in the United States Under the Current and the Proposed Tax Regimes, Assuming 4 Per Cent Inflation

	Current	Proposed
	per cent	
Class 4 asset (machinery and equipment)	11.3	18.0
Class 6 asset (nonresidential construction)	25.4	30.2

Table 6 The Impact of Inflation and Debt Financing on the Real Effective Tax Rate in the United States Under the Current and the Proposed Tax Regimes

	Current, % debt financed			Proposed, % debt financed		
	0	25	50	0	25	50
			per cent			
Class 4 asset						
4% inflation	11.3	−7.0	−43.7	18.0	8.2	−11.5
10% inflation	16.5	−10.1	−63.5	18.0	0.9	−33.2
Class 6 asset						
4% inflation	25.4	11.8	−15.5	30.2	24.4	12.8
10% inflation	30.3	8.2	−36.0	30.2	17.1	−8.9

the indexation of depreciation allowances to reinforce the reduction in real effective tax rates as the degree of debt financing increased would be more than offset by the dampening effect of the decrease in the statutory general tax rate.

A Comparison of Effective Tax Rates in Canada and the United States Under the Current and Proposed Tax Systems

This section compares the marginal real effective tax rates applicable to large corporations in the manufacturing sector in both Canada and the United States.[9] The analysis uses the manufacturing sector because it is the sector in which competition between companies in the two countries is most intense and in which the corporate tax rate probably has its greatest potential impact on the location of investment and employment. Table 7 compares real effective tax rates in the two countries under both the current and the proposed systems.

Under the current systems, the real effective tax rate on investment in machinery and equipment in manufacturing is several percentage points lower in Canada than it is the United States if the investment is equity financed or only 25 per cent debt financed. For investment that is 50 per cent debt financed, the difference is only marginally in favour of Canada.

If both of the proposed systems were implemented, the Canadian real effective tax rate on equity-financed investment in machinery and equipment would be substantially (more than 10 percentage points) higher than the U.S. rate. The U.S. advantage would increase with the degree of debt financing. At the current 4 per cent rate of inflation, this advantage would

[9]The results described in this section exclude Canada's Atlantic region. Only a very small part of the Canadian share of the manufacturing sector qualifies for the higher investment tax credit rate allowed to firms in the Atlantic region; consequently, exclusion from the calculations of manufacturing investment in the Atlantic region does not significantly distort the comparison.

Table 7 Comparison of the Real Effective Tax Rates, at Different Levels of Inflation and Debt Financing, for Investment in Manufacturing in Canada and the United States Under the Current and the Proposed Tax Regimes

	Current, % debt financed			Proposed, % debt financed		
	0	25	50	0	25	50
			per cent			
Machinery and equipment						
4% inflation						
Canada	6.7	−10.2	−44.1	29.8	23.9	12.2
United States	11.3	−7.0	−43.7	18.0	8.2	−11.5
Difference	−4.6	−3.2	−0.4	11.8	15.7	23.7
10% inflation						
Canada	9.4	−15.4	−65.2	33.1	21.0	−3.2
United States	16.5	−10.1	−63.5	18.0	0.9	−33.2
Difference	−7.1	−5.3	−1.7	15.1	20.1	30.0
Nonresidential construction						
4% inflation						
Canada	33.2	25.1	8.9	33.7	29.1	20.0
United States	25.4	11.7	−15.5	30.2	24.4	12.8
Difference	7.8	13.4	24.4	3.5	4.7	7.2
10% inflation						
Canada	36.0	20.0	−12.0	36.2	25.1	3.1
United States	30.3	8.2	−36.0	30.2	17.1	−8.9
Difference	5.7	11.8	24.0	6.0	8.0	12.0

exceed 20 percentage points for investment in machinery and equipment that was 50 per cent debt financed. Given 10 per cent inflation, the U.S. advantage would be 30 percentage points.

Implementation of the two proposals would increase the real effective tax rates on investment in nonresidential construction in both countries, but the increase in Canadian rates would be smaller than the increase in U.S. rates. Implementing both proposals would therefore reduce the current U.S. advantage in real effective tax rates on investment of this kind. The lower was the rate of inflation and the greater was the degree of debt financing, the greater the reduction would be. This reduction, however, would have less of an effect on the competitiveness of Canada's manufacturing sector than the relative increase in the real effective tax rate on investment in machinery and equipment.

It is important to understand the reasons why the implementation of the two sets of tax proposals would cause the real effective tax rates on manufacturing investment in machinery and equipment to be so much higher in Canada than in the United States, even though the applicable statutory rate would be 33 per cent in both countries and both countries would eliminate their investment tax credits. One reason is that the Canadian proposal to substitute a 25 per cent capital cost allowance rate for the three-year write-off for manufacturing investment in machinery and equipment would have a much greater effect than the U.S. proposal to replace the ACRS's five-year write-offs with the applicable write-offs in the CCRS's class 4. A second

reason is that the indexation of depreciation allowances called for in the U.S. proposal would prevent the allowances from being eroded by inflation. Indexation would have a significant effect even at 4 per cent inflation.

Table 8 shows some present values of the depreciation allowances under the current and the proposed systems in both Canada and the United States, given various rates of inflation. Under the current systems, the present value of capital consumption allowances is greater in Canada than it is in the United States for manufacturing machinery and equipment and less in Canada for manufacturing nonresidential construction. Under the proposed systems, the present value of capital consumption allowances for manufacturing machinery and equipment would be substantially less in Canada than in the United States. Moreover, since the proposed U.S. system would be indexed, the gap between the present values of the capital consumption allowances in the two countries would increase with the rate of inflation. For nonresidential construction, on the other hand, the gap between the present values of the capital consumption allowances in the two countries would be narrower under the proposed systems than it is under the existing systems, and the narrowness would be more pronounced the lower was the rate of inflation.

CONCLUSIONS

The preceding examination of the proposed corporate tax changes in Canada and the United States and analysis of their implications for real effective tax rates raises several neglected issues that should be taken into account in discussions of the Canadian proposal.

The analysis has shown that the Canadian proposal would raise the real effective tax rate on manufacturing investment in machinery and equipment. The first issue may be expressed by a question—would it be prudent to raise the tax burden on Candian manufacturing now, when Canada is embarking on negotiations for freer trade with the United States and when the manufacturing sector may be called on to bear the brunt of any required industrial restructuring? This question arises whether or not the United

Table 8 Comparison of the Present Values, at Different Rates of Inflation, of Capital Cost Allowances for Manufacturing in Canada and the United States Under the Current and the Proposed Tax Regimes

	Current, rate of inflation			Proposed, rate of inflation		
	0%	4%	10%	0%	4%	10%
	cents per dollar of investment					
Machinery and equipment						
Canada	84.7	81.7	77.6	59.4	54.1	48.2
United States	82.5	76.6	69.2	76.0	76.0	76.0
Nonresidential construction						
Canada	31.0	24.5	18.9	30.9	26.4	20.3
United States	54.9	45.4	36.2	35.2	35.2	35.2

States implements its proposal. Indeed, if the Canadian proposal was enacted but the U.S. proposal was not, the increase in the relative corporate tax burden on new investment in Canada would be even greater.

A second issue is indexation. The United States is definitely proposing to move toward a comprehensive indexation of the corporation tax system (except for treatment of interest expense and interest income). Although the proposed reforms would reduce the distortions in effective tax rates that result from inflation, distortions would still exist because of the tax treatment of the inflation premium in interest income and interest expense. Nevertheless, certain advantages would accrue to U.S. industry from this incomplete indexation even if inflation remained around the current level of 4 per cent. If inflation returned to double-digit levels, the advantages would be more telling. For Canada, the key question is whether to follow the U.S. lead on indexation. There would be advantages in the form of improved resource allocation and increased tax harmonization. The disadvantage would be the increase in the complexity of the tax system that indexation would entail. This increase would be minimized if, following the U.S. example, Canada did not extend indexation to interest income and expense.[10]

A third issue raised by the proposed changes is whether a withdrawal of the tax incentive for investment in the less developed regions of Canada should be part of any general reform of the corporate tax system. Unfortunately, discussion of this issue is hampered by a lack of evidence about the effectiveness of the incentives in promoting regional development.

These three issues deserve consideration before we draw any final conclusions about the merits of the proposed corporate tax changes and the desirability of their implementation.

APPENDIX: THE CALCULATION OF EFFECTIVE CORPORATE TAX RATES

The effective tax rates shown in Tables 2, 3, 5, 6, and 7 were calculated by computing the ratio of the present value of taxes to the present value of real income expressed in current dollars. The calculation of present values used a discount factor equal to the product of 1 plus the real interest rate (assumed to be 10 per cent) and 1 plus the rate of inflation.

Real income expressed in current dollars was calculated as the return on the investment minus real interest and indexed depreciation. Return on investment in year N was calculated as follows:

$$\text{RETURN}[N] = 100*[(1 + \text{PDOT})\hat{}\,(N - 1)]*[(1 - \text{DEP})\hat{}(N - 1)]*(R + \text{DEP}),$$

where RETURN is return on investment; N is the year; 100 is the initial investment; PDOT is the rate of inflation; R is the real rate of return (assumed to be 10 per cent); and DEP is the depreciation rate (set equal to 7.89 per cent for machinery and equipment and 3.45 per cent for nonresidential construction).

[10]For a fuller discussion of these issues, see Grady, supra footnote 7.

Taxes were calculated as follows:

TAXES = (T*RETURN) – [(T*INTDEDUCTION) + (T*CCA) + (ITC*100)],

where T is the corporate tax rate; INTDEDUCTION is nominal interest payments, calculated as the nominal interest rate times the stock of bonds issued to finance the investment; CCA is the capital consumption allowance on the initial investment of 100, either indexed or unindexed as applicable; and ITC is the investment tax credit.

Table 1 shows the values of the parameters used for the tax rate, T, and the capital cost allowance rate and investment tax credit rate for Canada. Table 4 shows the depreciation allowance rates for the United States. The text provides the values of T and the investment tax credit rate.

An alternative methodology for calculating effective tax rates, based on a comparison of before-tax and after-tax internal rates of return, was tried but rejected because of the extreme sensitivity of the results to what were considered to be unreasonably high internal rates of return.