C.D. Howe Institute
Institut C.D. Howe

Communiqué

Embargo: For release *Tuesday*, December 15, 1998

Restore full indexation to personal income tax system, says C.D. Howe Institute study

Ottawa should restore full indexation to the personal income tax system. This is necessary if Canadian taxpayers are to avoid further tax increases of the sort they have been subjected to since partial indexation (the "consumer-price-index-minus-3-percent" rule) was introduced in 1985, argues a study released today by the C.D. Howe Institute.

The study, *Inflated Taxes, Deflated Paycheques*, was written by Finn Poschmann, a Policy Analyst at the Institute. Poschmann notes that, while consumer prices have increased by more than 30 percent in the past decade, the values of the personal amounts and bracket thresholds that determine federal income tax liability have increased by less than 8 percent. Since 1992, with inflation below 3 percent each year, there has been no inflation adjustment within the income tax system, despite an overall 11 percent increase in consumer prices.

Poschmann says that, because growth in the nonrefundable credit amounts on the tax return has failed to keep pace with inflation, more of taxpayers' income has become effectively subject to tax. The result is that the average Canadian family gives up about 2 percent more of its take-home pay in federal taxes net of transfers than otherwise would be the case. Other things being equal, this means that provincial taxes have been driven up by another 1 percent of income. This amounts to a net cost averaging about $1,000 per family in 1998 and almost $1,700 for couples with young children.

Moreover, says Poschmann, since the federal income tax has graduated rates and the income thresholds for those rates have also not been adjusted properly for inflation, the tax rate applying to taxpayers' income (the "average marginal tax rate") has been increasing. Higher marginal tax rates affect incentives to work, save, and invest, increasing the cost to the economy caused by income taxation. Through work disincentives alone, partial indexation may have increased the economic cost of taxation by about 13 percent.

Poschmann says that, although restoring tax credit and bracket amounts to their historical real values may be prohibitively expensive — the impact on the federal bottom line would be more than $10 billion for 1998 — repairing some of the damage need not be so expensive. Along with a return to proper indexation, one-time increases in the basic personal amount or decreases in federal tax rates can be chosen so that the projected federal balance remains on a prudent fiscal course. He cautions, however, that one-time or *ad hoc* adjustments of the tax system to

partially correct for past wrongs are no substitute for proper indexation policy. Full indexation is necessary if Canadian taxpayers are to avoid ever-rising taxes on an ever-rising share of their pre-tax incomes. If for no other reason, full indexation is required to ensure that income taxes do not increase every year whether or not the finance minister proposes legislation to that effect.

This is the second in a new series of C.D. Howe Institute Commentaries called "The Taxation Papers." The series deals with the tax policy opportunities presented by the rapidly changing Canadian fiscal environment — in particular, ways to reform personal income tax policy within a sound economic framework, rather than allowing policy to be driven by short-term political considerations. Papers in the series seek to establish the fiscal room for tax reduction; identify specific problems with past choices about the taxes used to finance government (the tax mix); estimate the impact of high tax rates on people and on economic efficiency; show how taxes interact with federal and provincial social support programs; and synthesize these issues within a rational framework for tax reform and tax reduction. The editors of the series are Jack M. Mintz, who is Arthur Andersen Professor of Taxation at the Joseph L. Rotman School of Management, University of Toronto, and Finn Poschmann, a Policy Analyst at the C.D. Howe Institute.

* * * * *

The C.D. Howe Institute is Canada's leading independent, nonpartisan, nonprofit economic policy research institution. Its individual and corporate members are drawn from business, labor, agriculture, universities, and the professions.

- 30 -

For further information, contact: Finn Poschmann,
Maxine King (media relations), C.D. Howe Institute
phone: (416) 865-1904; fax: (416) 865-1866;
e-mail: cdhowe@cdhowe.org; Internet: www.cdhowe.org

Inflated Taxes, Deflated Paycheques, C.D. Howe Institute Commentary 118, by Finn Poschmann (C.D. Howe Institute, Toronto, December 1998). 28 pp.; $9.00 (prepaid, plus postage & handling and GST — please contact the Institute for details). ISBN 0-88806-448-9.

Copies are available from: Renouf Publishing Company Limited, 5369 Canotek Road, Ottawa, Ontario K1J 9J3 (stores: 71 Sparks Street, Ottawa, Ontario; 12 Adelaide Street West, Toronto, Ontario); or directly from the C.D. Howe Institute, 125 Adelaide Street East, Toronto, Ontario M5C 1L7. The full text of this publication will also be available on the Internet.

C.D. Howe Institute
Institut C.D. Howe

Communiqué

Embargo : à diffuser le *mardi* 15 décembre 1998

Il faut rétablir la pleine indexation au régime d'impôt sur le revenu des particuliers, affirme une étude de l'Institut C.D. Howe

Ottawa devrait rétablir la pleine indexation du régime d'impôt sur le revenu des particuliers. Cette mesure est nécessaire pour éviter aux contribuables canadiens du subir d'autres hausses d'impôt du type de celles auxquelles ils sont assujettis depuis l'introduction en 1985 de l'indexation partielle (c'est-à-dire l'indexation basée sur l'indice des prix à la consommation moins 3 %). C'est du moins ce qu'affirme une étude publiée aujourd'hui par l'Institut C.D. Howe.

L'étude, intitulée *Inflated Taxes, Deflated paycheques (Impôts gonflés, chèques de paie dégonflés)*, est rédigée par Finn Poschmann, un analyste de politique à l'Institut. M. Poschmann souligne que, bien que les prix à la consommation aient augmenté de plus de 30 % au cours de la dernière décennie, les montants personnels et les tranches d'imposition qui déterminent les obligations fiscales d'impôt fédéral ont augmenté pour leur part de moins de 8 %, Depuis 1992, comme l'inflation a atteint moins de 3 % par an, aucun rajustement pour l'inflation n'a été apporté au régime d'impôt sur le revenu, alors que la hausse des prix à la consommation a atteint 11 %.

L'auteur affirme que, comme la croissance des montants de crédits non remboursables figurant sur les déclarations d'impôt ne s'est pas maintenue au niveau de l'inflation, une part accrue du revenu des contribuables est maintenant assujettie à l'impôt. Par conséquent, une famille canadienne remet en moyenne quelque 2 % de plus de son salaire net en impôts fédéraux, déduction faite des transferts, qu'il n'en serait autrement le cas. Toutes proportions gardées, ceci veut dire que les impôts provinciaux prennent un autre 1 % des revenus. Le tout produit un coût net d'environ 1 000 $ par famille en 1998 et de presque 1 700 $ pour des conjoints qui ont des enfants en bas âge.

De plus, indique M. Poschmann, étant donné que l'impôt fédéral prévoit des taux d'impôt progressifs et que les seuils de revenus afférents à ces taux n'ont pas été correctement redressés pour tenir compte de l'inflation, le taux d'imposition sur le revenu des contribuables (soit la moyenne du taux marginal d'imposition) n'a cessé d'augmenter. La hausse des taux marginaux d'imposition a des répercussions négatives sur le travail, l'épargne et l'investissement, ce qui augmente les coûts économiques des impôts sur le revenu. Rien qu'en contre-incitation au travail, l'indexation partielle a augmenté le coût économique de l'imposition d'environ 13 %.

Selon M. Poschmann, bien qu'il serait extrêmement onéreux de rétablir les crédits d'impôt et les tranches d'imposition à leurs valeurs historiques réelles — car leur effet rien qu'en 1998 serait de l'ordre de plus de 10 milliards de dollars sur les recettes nettes du gouvernement fédéral — il ne serait pas trop coûteux de réparer quelques-uns des dommages causés. Conjointement à un retour vers une indexation appropriée, on pourrait opter pour une hausse unique de l'exemption personnelle de base ou une diminution des taux d'imposition fédérale sans mettre en péril les finances fédérales. Il avertit cependant qu'un redressement unique ou ponctuel du régime fiscal afin de remédier en partie aux erreurs passées ne suffira pas à remplacer une politique d'indexation appropriée. Cette dernière est nécessaire afin que les contribuables canadiens cessent de subir des impôts constamment à la hausse sur une part sans cesse croissante de leur revenu avant impôt. Une pleine indexation s'impose, ne serait-ce que pour veiller à ce que les impôts sur le revenu n'augmentent pas année après année, que le ministre des Finances propose ou non des mesures législatives à cet égard.

Ce document marque le deuxième volet d'une nouvelle série de Commentaires de l'Institut C.D. Howe intitulée « Les cahiers de la fiscalité ». Elle traite des possibilités de politiques fiscales qu'offre la situation fiscale en évolution rapide au Canada — et plus particulièrement, des moyens de réformer les politiques de l'impôt sur le revenu des particuliers dans un cadre économique rationnel, plutôt que de laisser des raisons politiques à court terme dicter ces politiques. Les documents qui font partie de cette série chercheront notamment à établir la marge fiscale pour une réduction d'impôt, cerner les problèmes exacts qu'ont posé les choix de taxes et d'impôt pour financer le gouvernement dans le passé (soit la composition des recettes fiscales), établir les répercussions des taux d'impôt élevés sur les particuliers et sur l'efficience économique, démontrer l'interaction des taxes et des programmes d'aide sociale provinciaux et fédéraux, et mettre en rapport tous ces problèmes dans un cadre rationnel pour la réforme fiscale et la réduction des impôts. La série est dirigée par Jack M. Mintz, professeur Arthur Andersen de fiscalité à l'École de gestion Joseph L. Rotman de l'Université de Toronto et Finn Poschmann, un analyste de politique auprès de l'Institut C.D. Howe.

* * * * *

L'Institut C.D. Howe est un organisme indépendant, non-partisan et à but non lucratif, qui joue un rôle prépondérant au Canada en matière de recherche sur la politique économique. Ses membres, individuels et sociétaires, proviennent du milieu des affaires, syndical, agricole, universitaire et professionnel.

- 30 -

Renseignements : Finn Poschmann,
Maxine King (relations avec les médias), Institut C.D. Howe
téléphone : 416 865-1904, télécopieur : 416 865-1866
courrier électronique : cdhowe@cdhowe.org, Internet : www.cdhowe.org

Inflated Taxes, Deflated Paycheques, Commentaire n^{o} 118 de l'Institut C.D. Howe, par Finn Poschmann, Toronto, Institut C.D. Howe, décembre 1998, 28 p., 9,00 $ (les commandes sont payables d'avance, et doivent comprendre les frais d'envoi, ainsi que la TPS — prière de communiquer avec l'Institut à cet effet). ISBN 0-88806-448-9.

On peut se procurer des exemplaires de cet ouvrage auprès des : Éditions Renouf ltée, 5369, chemin Canotek, Ottawa ON K1J 9J3 (librairies : 71½, rue Sparks, Ottawa ON, et 12, rue Adelaide Ouest, Toronto ON) ou encore en s'adressant directement à l'Institut C. D. Howe, 125, rue Adelaide est, Toronto ON M5C 1L7. On peut également obtenir le texte intégral de ce document au site Web de l'Institut.

Inflated Taxes, Deflated Paycheques

by

Finn Poschmann

Canada's personal income tax system has not been adjusted properly for inflation since 1985, when the law was changed so that the most important dollar values would be increased only to the extent that inflation was above 3 percent.

The result is that, while consumer prices have increased by more than 30 percent in the past decade, the values of the personal amounts and bracket thresholds that determine federal income tax liability have increased by less than 8 percent. For Can-adian families, this means higher taxes on average — about $1,000 per family more than they might otherwise pay. For the Can-adian economy, it means more lost output owing to the efficiency cost of higher tax rates on each extra dollar of income earned.

Undoing this cumulative tax increase is more than Ottawa can immediately afford, while at the same time keeping the federal fiscal balance on a prudent course. But this is no reason not to start pointing in the right direction.

Ottawa must return to a full-indexing rule, which would in fact imply only modest future costs to the federal treasury. Such a rule is required, otherwise inflation will inexorably raise Canadians' tax burdens without the finance minister needing to go before Parliament for authority to raise taxes.

But a forward-looking return to indexation would not undo the already-built-in increases in tax rates and the erosion of the basic personal amounts that has already occurred. To partially correct past wrongs will require increases in the personal amounts and tax-bracket thresholds, or decreases in federal tax rates — actions that should be taken either before or at the same time as full indexation is restored to Canada's personal income tax.

Main Findings of the Commentary

- The rules for indexing the federal personal income tax system were changed in 1985: "to control the national debt," the fundamental parameters of the income tax system would no longer be adjusted to take full account of inflation. Since 1985, therefore, Canadian taxpayers have been subject to annual tax increases that have not had to be put before Parliament.
- The effect of partial indexation (the "consumer-price-index-minus-3-percent" rule introduced in 1985) has been cumulative; the consumer price level has gone up by more than 30 percent in the past decade, while the income tax thresholds and transfer benefits affected by partial indexation have increased by less than 8 percent.
- Since 1992, with inflation below 3 percent each year, there has been no inflation adjustment within the income tax system, despite an overall 11 percent increase in consumer prices.
- Because growth in the nonrefundable credit amounts on the tax return has failed to keep pace with inflation, more of taxpayers' income has become effectively subject to tax. The result is that the average Canadian family gives up about 2 percent more of take-home pay in federal taxes net of transfers than otherwise would be the case. Other things being equal, this means that provincial taxes have been driven up by another 1 percent of income. In dollars per family, this is a large amount: a net cost averaging about $1,000 per family in 1998 and almost $1,700 for couples with young children.
- Since the federal income tax has a graduated rate structure and the thresholds of those brackets have also not been adjusted properly for inflation, the tax rate applying to taxpayers' income (the "average marginal tax rate") has been increasing.
- The climb in the marginal tax rate caused by partial indexation has been more than two percentage points. Higher marginal tax rates affect incentives to work, save, and invest, and this increases the cost to the economy caused by income taxation. Through work disincentives alone, partial indexation may have increased the economic cost of taxation by about 13 percent.
- Ottawa must return to a full-indexing rule, to prevent the situation from worsening in future.
- Reversing the cumulative effect of partial indexation (restoring the credit and bracket amounts to their historical real values) may be prohibitively expensive: the impact on the federal bottom line would be more than $10 billion for 1998. But repairing some of the damage need not be so expensive: one-time increases in the basic personal amount or decreases in federal tax rates can be chosen so that the projected federal balance remains on a prudent fiscal course.
- Longer-term economic considerations — including encouraging saving, investment, and growth — militate for lower tax rates as the better option.
- However, one-off adjustments like these, or *ad hoc* adjustments of the tax system to partially correct for past wrongs, are not a substitute for proper indexation policy, necessary though they may be as interim measures. In order to prevent taxpayers' being subjected to ever-rising taxes on an ever-rising share of their pre-tax incomes, full indexation is the best option. If for no other reason, full indexation is required to ensure that the default action of tax policy is no annual tax increase; without indexation, income taxes increase every year whether or not the finance minister proposes legislation to that effect.

Canada's *Income Tax Act* has, since 1985, taken only partial account of inflation. Thus, the income brackets of the federal tax rate schedule and the values of the refundable and nonrefundable credits that are fundamental to the personal income tax have declined in their real (inflation-adjusted) value, with the result that the average income tax paid by Canadians has grown relative to their incomes.[1]

These silent annual tax increases have been cumulative. Canadian incomes have escalated in nominal terms since 1985, while the bracket structure, which establishes the tax liability associated with those inflated incomes, has moved hardly at all. An ever-larger share of taxpayers' real incomes has thus become exposed to tax, and as inflation has pushed their nominal incomes upward through the tax schedule, that income has been taxed at an increasing rate.

The cumulative impact of these increases is that Canadian taxpayers will give up in 1998 taxes an average of 3 percent more of their take-home income than they would if the act had taken full account of inflation; low- and middle-income taxpayers will give up more yet. A three percentage point rise in taxes as a share of income is not small — for families with incomes of $30,000 to $40,000, the net increase, inclusive of provincial taxes, will be more than $1,000, and that amount will increase with each passing year.

Moreover, because the federal tax has a graduated rate structure, rising taxable income each year lifts many taxpayers above the threshold at which their additional (inflated) income is subject to a higher rate. Thus, marginal tax rates (the tax paid on the next dollar of income earned) have been rising at the same time as average tax rates.

The effect of higher marginal tax rates is reduced incentives to work, save, and invest. The impact of partial indexation thus entails longer-term and farther-reaching harm than some other kinds of tax increases might be expected to produce; estimating the cost of these growth- limiting influences is part of the following analysis.

Laying Out the Issues

This *Commentary* first highlights the cost of partial indexation to individuals, as measured by the extra burden being imposed for 1998 by the inflationary erosion in the value of the affected tax brackets and credits since 1985. The impact is quite startling. The exercise herein — estimating the effect of taxing Canadians at the rates that would have prevailed for 1998 had taxes not been increased silently by way of inflation — reveals that, over the 1985–98 period, partial indexation will have increased the net federal tax take by an average 2 percent of take-home income and raised the amount paid in tax to provincial governments by about 1 percent.

The analysis then proceeds to the hypothetical cost to federal revenue if Canada had returned to full and retroactive indexation in 1998. The magnitude of the result — revenue from the federal personal income tax revenue will be almost 14 percent higher than it would have been with full indexing — and its implication for federal finances suggest that immediate rectification is an unlikely prospect.

It is more reasonable to consider the impact of a simple return to an inflation-indexed tax regime and look at its potential cost to government and benefit to taxpayers over the course of the next few years. The discussion turns therefore to the revenue outlook for the federal government should full annual indexing be restored without attempting to make up for ground already lost.

The *Commentary* concludes by noting that the impact of the lack of full indexation, because of its relative invisibility, has raised Canadians' tax burdens by more than government could have expected if it had used more

visible methods. Further, the scale of this increase is such that the cumulative effect cannot be undone affordably or quickly. Yet if nothing is done, inflation will drive income taxes to take up an ever-larger share of the economy, without federal or provincial governments' needing to put before their parliaments legislation granting the political authority to do so. For this reason alone, a return to full indexation of the income tax system is the only acceptable long-term option.

But a return to full indexation will not undo the expansion of the tax base or the tax rate escalation that has evolved under cover of partial indexation. For this reason, specific measures, chosen on their economic merits, need to be considered alongside indexation.

Simple changes that would undo some of the worst effects of the past years of inflated taxes include raising the basic personal exemption, which would mitigate the expansion of the share of taxpayers' income exposed to taxation, and reducing federal tax rates themselves, which would work to reduce the long-term damage caused by heightened marginal tax rates.

The impact of these options on the efficiency cost of taxation and on the distribution of the tax burden needs to be contrasted with the impact of a simple return to indexation in order to make the best policy choice, given limited resources. These other measures may be offered along with a return to indexation, or they may be viewed as intermediate fixes aimed at regaining ground pending a speedy return to indexation, but such *ad hoc* measures cannot be substitutes for proper indexation policy.

I rejoin these issues after providing some historical context.

A Taxing Trajectory

In his budget speech of May 23, 1985, Finance Minister Michael H. Wilson included a brief but far-reaching announcement.

As part of a broader package of spending reductions and tax increases, "(b)eginning next year, the indexation of personal exemptions and tax brackets will reflect only the annual increase in the consumer price index [CPI] greater than 3 percent" (Canada 1985b, 19). Similar restrictions were applied to selected transfer payments to individuals. This step undid the full annual indexing of the personal income tax that had been a formal part of the *Income Tax Act* since 1974.[2]

That taxes would be increased was expected at the time. The preceding years were then viewed as rather profligate on the part of the federal government, so the political atmosphere was conducive to higher taxes. But, it was not obvious that the principal vehicle for raising government revenue in the long run was going to be a change in indexation policy.

Why partial indexation? While a few arguments may be made in favor of not indexing the tax structure (see the appendix) we may assume safely that partial indexing was introduced for the simple reasons expressed by the finance minister at the time.[3] The federal fiscal deficit was in need of reduction; it could be accomplished in part by way of temporary tax increases, and decreasing indexation was a component of the package of those increases.

And temporary or not, deindexation was certain to cause tax increases. Failing to increase with inflation the bracket values (thresholds) above which individuals' taxable income is taxed at higher rates raises the share of income that attracts those higher rates. Thus, increases become inevitable in both the average tax rate (tax as a share of income) and the average marginal tax rate (the tax typically paid on a taxpayer's next dollar of income.)

What is also worth noting is that the progressivity of the incidence of a tax system that is less than fully indexed tax system declines inexorably with each passing year of rising consumer prices. The reason is the declining real value of the basic personal amount, which

represents the income threshold above which taxpayers begin to pay income tax. Because the basic personal amount figures large in calculating the tax liability of low-income taxpayers, their annual percentage increase in tax payable is larger than that of higher-income taxpayers.

How It Works

Overall, given any inflation in the economy, a cumulative downward shift in incidence is an inevitable feature of unindexed progressive-rate tax regimes, whether or not they include personal exemptions.[4] An explanation of the broad mechanism follows, as does an overview of the exemptions, credits, and bracket values involved in Canada's system. Stepping back to consider the mechanics of inflation adjustment helps us understand the impact, so I explain how the figures that appear on federal tax forms have or have not been changed to allow for inflation.

The key tax and transfer parameters that are (partially) indexed and play a role in the following analysis are:

- the values of the basic personal and spousal amounts, as well as the nonrefundable credit amounts for seniors and the disabled;
- the lower net income limit on deductible medical expenses;
- the taxable income thresholds of the income tax schedule itself;
- the thresholds at which surtaxes cut in;
- the value of the child tax benefit and the goods and services tax (GST) credit and their turndown thresholds (the family net income level above which the amount of the refundable credit is reduced), which also applies to the age amount;
- and the clawback threshold for unemployment insurance benefits and old age security (OAS) payments.

Between 1974 and 1985, the *Income Tax Act* required annual adjustment of the basic parameters of the tax system to take account of inflation as measured by the CPI. Specifically, for each tax year (always a calendar year, in the case of personal income tax), the value of each affected parameter was increased relative to its value in the previous year by the amount that the average of the CPI for the 12-month period ending the previous September increased relative to the average CPI of the 12-month period ending the September before that.[5] (The various exemptions were initially rounded to the nearest multiple of ten dollars, but the rule was later changed to rounding to the nearest dollar.)

Thus, the basic personal exemption, which was $3,960 for the 1984 tax year, was set at $4,140 for 1985, an increase of 4.5 percent. This rise matched the average growth in the CPI for the 12 months ending September 1984 *vis-à-vis* the average in the 12 months ending September 1983.

The 1985 budget amendments were simple enough: the values to be indexed pursuant to the *Income Tax Act* were to be adjusted only to the extent that inflation measured in the prescribed manner exceeded 3 percent. The new formula took effect for the following tax year, so that $4,140 was increased to $4,180 for 1986, an increase of 0.9 percent, rather than to $4,300, the amount that the 3.9 percent inflation in 1985 would otherwise have produced.

More changes, introduced in 1987, reduced the number of rates from ten to three, effective for 1988.

More far-reaching in that round of tax reform were changes to the tax calculation itself. Instead of deducting personal and dependant exemptions and the cost of contributions to unemployment insurance and the Canada and Quebec Pension Plans (CPP / QPP) in arriving at taxable income, the new method involved converting these and similar deductions into nonrefundable credits. That is, their sum was (and is) multiplied by 17 percent — the bottom

tax rate — and subtracted from basic federal tax payable. One result of this fundamental change in the schedule is that much of the inflationary erosion that took place between 1986 and 1988 disappears from the analysis here, in strictly practical terms, because many of the basic parameters of the tax calculation were reset as of the 1988 tax year.

In 1992, the family allowance, the child tax credit, and the credit for dependent children were subsumed by the more generous, but more thoroughly means tested, child tax benefit, so the inflationary erosion in their value between 1986 and 1992 has also become irrelevant today. The turndown point of the new child tax benefit, however, was derived from the old child tax credit structure, and that value may be viewed as having been undermined by inflation from 1985 through the present.

Since 1992, annual inflation has remained below 3 percent. Thus, the personal income tax has had no inflation adjustment at all, despite a cumulative 11.0 percent increase in the relevant CPI since that year. The actual values for 1999 tax forms will remain unchanged from 1998 (and from 1992, by implication) because the average inflation rate for the 12 months ending September 1998 was 0.9 percent.

Table 1 sets out the actual values of some of the key tax parameters for selected years. We can also hypothesize about the future value of these parameters, assuming either no policy change or a return to full indexing. To do so, we must also assume some particular inflation rate. For the sake of illustration in this table (and some of the simulations reported later), I assumed that inflation during for 1999 and 2000 will run at 2 percent per annum, the center of the Bank of Canada's target band for growth in the core CPI.

What Lack of Indexation Has Meant

The cumulative impact of Canada's partial indexation rule has been dramatic. Like the proverbial iceberg, the visible annual effect has been only the tip of the compound revenue gain to the federal treasury. For example, between tax years 1988 and 1998, when the relevant CPI moved up by 34.0 percent, the basic personal exemption increased by only 7.6 percent, from $6,000 to $6,456. As a result, someone who earned $6,000 in 1988, therefore owing no federal income tax in that year and whose earnings increased each year thereafter at exactly the rate of inflation, has had an increase in federal income tax payable in each and every year of the past decade, and now a fifth of his or her paycheque has become exposed to taxation.[6]

To look further forward from 1998 is to highlight the imperative of pursuing full as opposed to partial indexation. In 1988, a single-earner couple could earn $11,000 before the federal income tax kicked in. The partial indexation rule already has pushed the real value of that figure down to $8,898 (in 1988 dollars) for the 1998 tax year; by 2018, with 2 percent inflation, that value will drop to $5,988. By 2038, a single-earner couple will earn only $4,030 (still in 1988 dollars) before facing federal income tax. Another comparison: the top federal marginal rate, 29 percent, kicked in at $55,000 for the 1988 tax year. If one allows for such indexing as there has been (in 1988 dollars), the comparable numbers are $44,491 for 1998, $29,941 for 2018, and $20,149 by 2038. If this progress continues unabated, the entire adult Canadian population will eventually be paying income tax at the top marginal rate. That deterioration of this scale would persist indefinitely is more or less unimaginable.

What If?

It is simple enough to calculate the impact on representative individuals' tax liability of the declining real value of the credits and tax-bracket thresholds found on the tax form. More interesting, though, is to use the micro-

Table 1: ***Value of Selected Federal Income Tax and Transfer Parameters***

				2001[b]	
	1988	1992	1999[a]	Assuming No Indexing	Assuming Full Indexing from 1999 Onward
			(current dollars)		
Basic personal amount					
Actual	6,000	6,456	6,456	6,456	6,777
If never deindexed	6,000	7,252	8,055	NA	8,456
Spousal amount					
Actual	5,000	5,380	5,380	5,380	5,648
If never deindexed	5,000	6,043	6,713	NA	7,047
Age amount					
Actual	3,236	3,483	3,483	3,483	3,656
If never deindexed	3,236	3,910	4,343	NA	4,559
Maximum disability amount					
Actual (reset by 1991 legislation)	3,236	4,233	4,233	4,233	4,444
If never deindexed	3,236	4,357	4,838	NA	5,079
OAS clawback threshold					
Actual (began in 1989)	50,000	53,214	53,214	53,214	55,862
If never deindexed	50,000	58,045	58,045	NA	60,934
GST, child tax benefit, and age amount turndown point					
Actual	24,090	25,921	25,921	25,921	27,211
If never deindexed	23,500	30,865	34,286	NA	35,992
Basic federal child benefit					
Actual (began in 1993)		1,020	1,020	1,020	1,071
If never deindexed		1,020	1,110	NA	1,165
Federal income tax middle-rate threshold					
Actual	27,500	29,590	29,590	29,590	31,063
If never deindexed	27,500	33,235	36,918	NA	38,755
Federal income tax high-rate threshold					
Actual	55,000	59,180	59,180	59,180	62,125
If never deindexed	55,000	66,467	73,836	NA	77,510

Note: Other indexed items not shown here are the Alberta and Quebec configurations of the child tax benefit; the high-income surtax threshold; the working income supplement values and turndowns; the GST credit values; and the lower dollar limit on deductible medical expenses.

[a] These are known values determined by CPI inflation for the 12 months ending September 1998 relative to the 12 months ending September 1998.

[b] Given 1998 inflation of 0.9 percent and assuming 2 percent inflation during each of 1999 and 2000.

Source: Author's calculations.

simulation toolbox[7] to illustrate the national incidence of partial indexation, which allows us to see average impacts by family type and income level.

Static microsimulation of tax policy change is a what-if exercise: for example, all other things being equal, what if the basic personal amount had been increased at the lagged rate of inflation for each tax year from 1988 to 1998, rather than following the path that it has been given?

The qualification that all other things remain equal is an important simplification in that it reflects the assumption that taxpayers'

pre-tax incomes would be unaffected by the policy change being examined. This might not always be the case, especially if the policy change being considered was of a type particularly likely to influence behavior, but the assumption is necessary if we are to draw a baseline against which we can compare other policy options (with their own second-round impacts).

The approach also requires assumptions about government policy with respect to taxes and transfers other than those implicated directly in the exercise; the guiding rule I used is that neither the federal nor provincial governments introduce measures that offset the effects of the modeled changes. Thus, for example, in estimating the total impact on families, I assume that provinces do not raise taxes to recoup revenue lost because of declining basic federal tax[8] even though, under federal-provincial tax collection agreements, nine provinces — all except Quebec — set their own income tax as a percentage of basic federal tax.[9] (My simulations' implications for provincial governments are discussed later.)

Changes in indexation policy would cause two broad classes of impact. The first would be the effect on federal and provincial income tax revenue that would result from changes to the personal amounts and to the taxable income thresholds used in calculating basic federal tax.

The second class of impacts would be growth in transfers to individuals within the programs administered via the tax system. Notably, the child tax benefit would grow because of increases in both the basic dollar amount per child and the amount of family net income above which the value of the credit turns downward. The OAS program would also deliver greater benefits, because indexation would raise the individual net income threshold above which the benefit is clawed back.[10] In the summary results that follow, I first show the two classes of impact separately but then focus on their combined effects because these give a clearer picture of the financial impact on families.

In setting up the simulations, I also had to decide the units for which I would calculate the effects of changes in the status quo. I chose families — specifically, census families — for reasons described in Box 1.

Box 1: *Census Families*

For the microsimulation estimates reported in this *Commentary*, I chose the census family as the unit of analysis.

A census family is a group of individuals related by blood, adoption, or marriage (including common law marriage) and living in the same dwelling, excluding married children who may also be living in the dwelling. Everyone else — individuals who live alone and those who live with anyone other than their spouse, parents, or children — is an unattached ("nonfamily") person.

In the interests of brevity, even at the risk of some confusion, I use the phrases *census family* and *family* to signify both true census families and unattached persons.

The income of each member of a census family is included in the family total, as are the taxes paid by or imputed to each member and the direct and indirect benefits paid or imputed to each. Family totals are appropriate because they represent better than other measures the amount of income available for the benefit of all individuals in the family (and the value of consumption for all members that is forgone via taxes).

The Effects on Revenue and Transfers

The first scenario to ponder is retrospective. How has lack of indexation changed the tax and transfer distribution relative to a world in which full indexation had been maintained? How different are the taxes that Canadian families pay and the benefits they receive in contrast to what they would confront in the

1998 tax year for which all of the relevant values of federal income taxes and transfers had kept pace with inflation since 1985? Table 2 reports the simulation I designed to answer this question.

As hinted above, the effect on taxes has been large. The average Canadian census family will pay $583 more in federal tax in 1998 than if the credit and bracket structure had been indexed fully since 1985.[11] The simulation shows the amount increasing with income: from $100 for families with total income between $10,000 and $20,000 to more than $1,700 for families in the over-$100,000 income group (see panel A of Table 2).

The reason for this pattern is that, with indexing, higher-income earners would be able not only to take full advantage of increased personal credits (lower-income taxpayers may not have sufficient taxable income to do so) but also to benefit from increases in the income threshold above which they hit the top basic federal tax rate and the one above which they begin to pay the high-income surtax. In other words, there would be a decline in the share of their income taxed at the top federal marginal rate.

On the transfer side, the pattern is rather different. The *average* family will receive $208 less in federal transfer income than they would have if indexing had been maintained since 1985, but the maximum 1998 cost — $455 on this accounting — will be for families with total income of $30,000 to $40,000. The amount declines for better-off families (panel B of Table 2). The reason is that all federal transfers to individuals are means tested and, for most, the impact of the lack of indexation is that the peak value of the transfers themselves is at family incomes of about $26,000, whereas the peaks would be near $34,000 with full indexing.

This overall transfer pattern is a little different in the case of seniors, for whom the peak net benefit of indexing would be higher up the income scale. The reason is that the OAS clawback is keyed to individual income, and the clawback threshold is just above $53,000, instead of $64,000, where it would be with full indexing. For elderly couples, the peak impact is at a higher family income level than for individuals, again because the means testing is on the individual, not the couple.

Across family types, the pattern of the impact on transfers tilts significantly against families with children. Notably, families with young children will be $550 worse off owing to partial indexation, and those with incomes of $30,000 to $50,000 will have lost even more. This is the result of preferentially targeting refundable credits and other transfers at children (so these families lose relatively more when these transfers do not grow) and, as already mentioned, of having those credits and benefits reduced once family income rises above $26,000, as opposed to $34,000.

To make clearer the distribution of benefits, panels C and D of Table 2 show the percentage increases in federal tax payable in 1998 and the percentage decreases in federal transfers per family that will have resulted from deindexation.

This accounting clearly reveals the regressive impact of deindexation. The increase in federal taxes comes to 9 percent of tax for families with incomes between $10,000 and $50,000 but drops thereafter, so that families in the above-$100,000 group receive an implicit tax increase of less than 5 percent.

Considered from the viewpoint of the generosity of extant transfers, the costs of deindexation are imposed on families in a pattern ranging farther up the income scale — perhaps verifying the assertion that family benefits are something of a "middle-class entitlement" — but dropping off as incomes rise above $75,000 (panel D of Table 2). This pattern is a product of the failure to increase the thresholds above which transfers are reduced or clawed back; because of means testing, benefits trail away as

Table 2: ***The Cost in 1998 of Partial Indexation, Federal Impacts Only***

Census Family Category	Total Income Group									
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	All
					A. Average Dollar Increase in Federal Taxes *(current dollars per family)*					
Married couple										
With no children	11	117	339	478	640	794	979	1,309	1,772	825
With young children[a]	–	20	271	406	632	778	938	1,242	1,731	850
With older children[a]	96	67	198	416	627	768	946	1,259	1,809	1,035
At least one is elderly	–	7	229	634	851	1,077	1,173	1,358	1,846	575
Single parent										
With young children[a]	–	2	171	439	792	950	1,044	1,305	1,473	306
With older children[a]	30	94	245	381	492	754	914	1,217	1,589	497
Unattached individual										
Not elderly	15	141	220	438	773	830	908	1,267	1,264	335
Elderly	–	105	345	714	1,040	986	578	916	1,178	215
All	12	103	250	475	697	818	955	1,268	1,733	583
					B. Average Dollar Decrease in Federal Taxes *(current dollars per family)*					
Married couple										
With no children	44	44	64	277	102	12	3	–	1	63
With young children[a]	304	248	468	1,067	870	611	509	291	70	550
With older children[a]	63	67	70	200	202	147	111	66	71	109
At least one is elderly	44	45	56	257	96	69	254	418	926	150
Single parent										
With young children[a]	181	190	375	906	772	548	443	204	178	441
With older children[a]	38	30	36	98	133	148	108	245	93	96
Unattached individual										
Not elderly	11	13	47	220	72	6	3	1	–	56
Elderly	6	11	49	235	67	207	1,339	814	54	48
All	30	38	133	469	382	290	287	173	82	208

Table 2 - continued

Census Family Category	Total Income Group									All
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	
					C. Average Percentage Increase in Federal Taxes *(percentage of federal taxes per family)*					
Married couple										
With no children	1.6	9.2	12.0	9.3	8.7	7.9	7.6	7.5	4.7	7.0
With young children[a]	–	1.5	9.9	8.2	8.6	8.0	7.4	7.2	4.9	6.8
With older children[a]	4.1	4.6	8.3	9.9	9.6	8.8	8.1	7.8	6.1	7.3
At least one is elderly	—	0.7	16.9	22.4	17.9	15.9	12.0	10.0	4.0	12.4
Single parent										
With young children[a]	–	0.2	8.2	9.8	11.3	9.8	8.2	7.3	5.0	8.4
With older children[a]	3.8	8.7	10.0	8.1	7.5	8.4	7.8	7.3	5.2	7.6
Unattached individual										
Not elderly	3.0	9.3	5.5	6.7	8.7	7.3	6.6	6.5	2.8	6.6
Elderly	–	15.0	14.8	17.9	16.5	10.9	4.4	5.9	2.6	13.5
All	2.4	9.8	9.3	9.4	9.5	8.4	7.6	7.4	4.9	7.4
					D. Average Percentage Decrease in Federal Direct Transfers *(percentage of federal direct transfers per family)*					
Married couple										
With no children	3.3	1.6	1.3	6.4	3.1	0.5	0.2	0.1	0.1	2.4
With young children[a]	4.6	5.1	6.8	16.3	16.7	15.3	17.2	16.0	6.1	14.0
With older children[a]	2.0	1.8	1.7	4.3	4.7	3.3	3.1	2.1	3.1	3.1
At least one is elderly	1.6	0.3	0.3	1.3	0.5	0.4	1.4	2.3	6.0	0.8
Single parent										
With young children[a]	6.3	4.9	6.8	17.3	17.2	15.0	22.8	7.7	11.7	9.8
With older children[a]	1.3	0.4	0.4	1.3	1.4	2.1	1.5	2.4	1.8	1.2
Unattached individual										
Not elderly	1.3	0.5	1.8	11.9	7.7	0.6	0.2	0.1	0.0	3.1
Elderly	0.1	0.1	0.5	2.0	0.6	1.7	11.0	9.9	0.8	0.4
All	2.0	0.5	1.6	7.1	7.0	6.5	8.0	6.1	4.3	3.8

[a] Young children are those ages 0 to 17, older children are those age 18 and over.

Source: Simulation results derived via Statistics Canada, SPSD/M, release 6.1.

family income increases, whether or not the underlying transfer is indexed.

Notice, however, that the loss in benefits to higher-income families looks large when expressed as a percentage of benefits. Owing to the means test, these families receive a rather small cash benefit, and even a small dollar increase would seem large in percentage terms. The fact that the reduction rate associated with transfer benefits is important to the tax position of these relatively well-to-do families should draw our attention to the very broad impact of indexation policy with respect to the high and rising marginal tax rates faced by families throughout the income scale.

The Combined Impact

To paint the overall picture, I express the combined impact of decreased taxes and increased transfers as the *net* change in income after taxes and transfers. At this point, I bring in the impact on provincial taxes, the product of the postulated change in basic federal tax.[12] Because most provincial taxes piggyback on basic federal tax, and because my scenario presumes the lack of a policy response on the part of the provinces, the impact on them is a magnification of the federal income tax change described above. Therefore, the combined effect, expressed in average dollars per family, shows a pattern of increase as family income increases (see panel A of Table 3).

Once again, although the relative importance of the change in net benefits across the income scale is expressed handily in dollars per family, those amounts give neither the only nor necessarily the best view of the distributional impact. By way of comparison, panel B of Table 3 shows the same values expressed as percentage changes in income after all taxes and transfers — including the provincial share of each. This approach provides a clear summary of the current cost to families of partial indexation over the past decade.

For all Canadian families, the lack of full indexing imposes for the 1998 tax year direct costs averaging 3.1 percent of income after taxes and transfers. The amount rises with income to a peak of 4.1 percent of income for families with total incomes of between $30,000 and $40,000 and declines in the higher brackets so that families with incomes above $100,000 will lose 2.5 percent of post-tax, post-transfer income. The impact of deindexation on taxes and transfers combined is most burdensome on families with young children, for which the cost averages 3.8 percent of income.

Partial indexation also has pushed taxpayers onto and upward through the rate schedule at a surprising pace. I estimate the average income-weighted marginal tax rate[13] on the employment income of heads of household (between the ages of 18 and 64) in 1998 to be 45.8 percent. The restoration of the tax parameters to the real levels of the 1980s would lower the average marginal rate to 43.5 percent. This difference — fully 2.3 percentage points — suggests a significant efficiency cost to the economy; the magnitude of this deadweight loss depends on the marginal tax rate and increases in that rate, as discussed in Box 2. Following the method outlined there, I calculate that partial indexation has increased by about 13.1 percent the deadweight loss associated with personal income taxation.

The Bottom Line for Government

To note only the potential benefit to families that would follow from undoing partial indexation would be to ignore that the additional tax collected does go somewhere. If the real value of the various credits and brackets had not been allowed to decline, the government bottom line would look very different.

Partial indexation will have increased 1998 federal income tax revenue by about $8.3 billion (13.7 percent) and decreased federal transfers to individuals by about $2.7 billion (3.8 percent).

Table 3: ***The Cost in 1998 of Partial Indexation, Federal and Provincial Impacts***

Census Family Category	Total Income Group									All
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	
					A. Average Dollar Decrease in Income after Taxes and Transfers *(current dollars per family)*					
Married couple										
With no children	57	185	503	883	950	1,060	1,300	1,777	2,502	1,172
With young children[a]	295	263	787	1,560	1,680	1,632	1,746	1,957	2,502	1,679
With older children[a]	168	153	302	709	984	1,134	1,338	1,776	2,567	1,493
At least one is elderly	40	52	346	1,112	1,227	1,516	1,780	2,243	3,478	914
Single parent										
With young children[a]	164	185	572	1,479	1,843	1,783	1,782	1,846	2,293	832
With older children[a]	65	161	343	582	779	1,108	1,341	1,889	2,352	750
Unattached individual										
Not elderly	27	198	338	797	1,087	1,102	1,260	1,813	1,730	501
Elderly	15	144	515	1,165	1,447	1,510	2,051	2,179	1,818	330
All	43	168	453	1,081	1,293	1,365	1,549	1,888	2,506	983
					B. Average Percentage Decrease in Income after Taxes and Transfers *(percentage of income per family)*					
Married couple										
With no children	1.3	1.4	2.5	3.4	3.0	2.8	2.9	3.1	2.4	2.8
With young children[a]	–	2.0	3.7	5.7	5.1	4.2	3.8	3.4	2.6	3.8
With older children[a]	–	1.1	1.4	2.6	2.9	2.8	2.8	2.9	2.7	2.8
At least one is elderly	0.9	0.3	1.6	3.9	3.5	3.6	3.7	3.7	2.6	2.9
Single parent										
With young children[a]	2.7	1.3	2.7	5.4	5.7	4.7	4.2	3.4	2.6	3.6
With older children[a]	1.1	1.2	1.7	2.1	2.3	2.8	2.8	3.2	2.4	2.4
Unattached individual										
Not elderly	0.5	1.7	1.9	3.3	3.7	3.2	2.9	3.4	1.6	2.6
Elderly	0.1	1.1	2.6	4.6	4.6	4.0	4.9	3.6	1.5	2.1
All	1.1	1.3	2.3	4.1	4.0	3.6	3.4	3.3	2.5	3.1

[a] Young children are those ages 0 to 17, older children are those age 18 and over.

Source: Simulation results derived via Statistics Canada, SPSD/M, release 6.1.

Box 2: ***Marginal Tax Rates and Deadweight Loss***

"Deadweight loss" is the loss to the economy when something restricts output to less than the optimum level that would prevail in a world of perfect competition and no distortive taxes or other government intervention.

One potential source of deadweight loss is restriction of the labor supply in the presence of an income tax (because of the decreased return to work effort). It is usually assumed that the aspect of income tax that affects labor supply decisions is the marginal tax rate. The precise responsiveness of the labor supply to the marginal tax rate (its "elasticity") is a question on which there is conflicting evidence, but common sense — and a good dollop of empirical work — indicates to most people that some response exists.

How one chooses an elasticity — an estimate of the magnitude of the supply response one wishes to model — depends on how one reads the empirical literature. (The issues and evidence are discussed in Dahlby 1994 and critically revisited in Ragan 1994.) Once one chooses an elasticity, however, the estimation of the resulting loss to the economy is more or less a matter of arithmetic.

Taxation drives a wedge between an employee's net earnings from work and the employer's total payroll cost for that work. The size of that wedge determines the cost to the economy of taxation — the marginal deadweight loss (MDWL) of taxation — and this is a function of the employee's willingness to supply labor, n; the employer's elasticity of demand for labor, e; and the marginal tax rate set at m. This function, which is just a ratio of areas in the equilibrium diagram of the labor demand and supply curves (see Dahlby 1994), can be written:

$$\text{MDWL} = [n + (1 - m) \times e] \; / \; [n + (1 - m) \times e - nme] - 1.$$

If the market demand for labor e is elastic,* one can follow Dahlby (1994) and Davies (1998) and may write the cost to the economy of an extra dollar of taxation as

$$\text{MDWL} = 1 \; / \; [1 - nm \; / \; (1 - m)] - 1.$$

This is the form I used in producing the dead-weight-loss estimates. This method produces only a rough calculation (because it assumes all wage earners are essentially identical and imagines that the marginal rate is constant) but it is sufficient to give a sense of the cost of taxation and the difference between scenarios modeled in this *Commentary*.

For the purpose of illustration, I follow Davies (1998) in assuming a "compensated labor supply elasticity" of 0.3 is the right labor supply elasticity to use for this exposition. Doing so implies that the income effect (the extent to which higher taxes drive workers to seek earnings that offset their taxes) is more than fully offset by the substitution effect (the extent to which leisure looks more appealing than labor, given the existence of taxes that share in the return to labor but not leisure).

* The actual presumption is infinite elasticity, relying on the open-economy model of Canada as a price taker in product and labor markets.

The net impact — the amount that could have been subtracted from the federal surplus or added to the deficit for calendar year 1998 — will be $10.4 billion.[14] For provincial governments (outside Quebec), assuming no other policy change, the net revenue gain will have been $2.6 billion or 8.5 percent of their income tax revenue.

The literature on indexation, such as Allan, Dodge and Poddar (1974), sometimes mentions that the base case against which indexed taxes ought to be measured should properly include the *ad hoc* increases in credits and brackets that one would expect to occur in the absence of indexation.[15] The implication for my analysis is that the size of the costs and benefits of lack of indexation, as well as their distribution, should be assessed against some hypothetical tax structure (involving tax increases, rather than decreases) that one might imagine would have been imposed if indexing had been maintained. This sort of comparison is exactly what I

show in a later section of this paper in a comparison of several forward-looking options.

But in looking backward through time, I have not compared the incidences of different taxation options that never came to be. Instead, I offer several observations here.

First, deindexation was introduced in the full knowledge that it represented a method of increasing taxes over the long run in a relatively invisible way likely to attract minimum public opposition. The implication is that the government of the day (as well as successive governments) believed that proposing explicit tax increases was a strategy unlikely to achieve political success, given apparent public intolerance for openly legislated tax increases beyond those introduced at the time. In other words, without access to the shrouded mechanism of deindexation, governments would not have had the political fortitude to continue to increase total tax revenue by as much as they actually did.

Thus, deindexation allowed governments to delay earnest spending restraint for a longer time than they could have otherwise. If I am correct in guessing that Canadian governments trimmed spending only in the face of voter resistance to further explicit tax increases, then the corollary is that governments that had also forborne hidden tax increases would have been forced to trim spending or borrow more. But in the mid-1980s and early 1990s, the federal and provincial governments were already reaching new heights in their debt ratios, again suggesting that the path of least resistance, were deindexation to have been ruled out, would have been earlier attention to program spending. In sum, while it is arguable that the tax revenue won by deindexation could have been garnered via other tax increases, such a scenario was unlikely, given the economic forces and political dynamics that made deindexation attractive.

We can learn surprisingly little from speculating about alternative provincial policy reactions to a different federal indexation policy. Looking back, we can see that the provinces generally gained windfall revenue from the increase in basic federal tax payable. If they had not garnered this revenue, they would have been confronted with the same choices as was the federal government, and their likely response would have been to cut spending sooner than they did.

Why? Suppose Ottawa had not pursued its deindexation policy in 1985. Most provinces were at that time spending beyond their means[16] and were in the process of raising taxes as much as voters would allow. It is implausible that the provinces would have argued to their voters that the absence of the federal tax increase (the result of choosing not to limit indexing) represented provincial revenue forgone, which required a further, offsetting provincial tax increase. Even if the provinces had concluded that a tax increase was required and politically sustainable, that decision would have represented an independent fiscal policy decision and could not have been portrayed as a product of federal policy. For this reason, it is inappropriate to pretend here that a particular distribution of provincial tax increases has been or has not been the necessary product of federal indexation policy. (This point will come into play later in my examination of forward-looking options.)

What the scale of the numbers discussed above does suggest is that, whatever the short-run benefit to taxpayers of undoing the de- indexation policy, it is now impossible to contemplate the immediate and complete undoing of the cumulative erosion in the value of the various benefits and credits. The federal government's continuing need for fiscal probity would not allow such a move, and a pleasant future for Canadians' after-tax income depends on a continuing virtuous circle of public debt reduction and declining interest costs associated with that reduced debt, making possible *future* tax cuts. In brief, Ottawa

must pursue debt reduction either before or at the same time as modest tax reduction, rather than after (see Robson and Scarth 1997).

A Return to Full Indexation

Given the need for fiscal constraint but also the nasty impact of partial indexation compounded year after year, what can federal policymakers do? One natural answer is to return to full indexation but without an attempt to make up for ground lost since 1985. My next simulation was of the effects of pursuing such a policy.

The relevant CPI inflation rate for the 1999 tax year (that is, the CPI for the 12 months ending September 1998 relative to the 12 months ending September 1997) is 0.9 percent, and I have assumed throughout that future inflation is held at 2.0 percent, the center of the Bank of Canada's target range. For this simulation, I also assumed that the new policy takes effect in the 1999 tax year, so that the parameters of 1998, which would otherwise be increased according to the CPI-minus-3-percent rule (meaning not at all, given inflation of less than 3 percent), are instead increased by 0.9 percent for 1999 and 2.0 percent thereafter. The last column of Table 1 shows the resultant values.

In this hypothetical world, the effects, reported in Table 4, are more modest than in the scenario discussed above, but they add up in just a few years.

I discuss only summary figures here because the underlying pattern is the same as that produced in the first scenario. The dollar value of tax reductions increases with income but declines as a percentage of income and as a percentage of taxes for families other than those in the lowest brackets. Transfer benefits show significant increases, mainly for middle-income families. The net benefits (transfer gains less lowered taxes) expressed as a percentage of after-tax income, increase from the low- to middle-income brackets and decline thereafter.

In 1999, the average family is just $36 better off (excluding the impact on provincial taxes), although the value for high-income families is twice that amount. In 2000, the average benefit is $118, rising to $201 in 2001. Including provincial impacts would raise these numbers by about one-quarter. Although critics of minor tax reform have a penchant for deriding benefits of this modest scale, consider that the amounts of federal after-tax benefits alone are equivalent to the price of a small child's winter jacket in 1999, a new bicycle in 2000, and a new color printer in 2001 *for every single census family in Canada*. These amounts increase with each subsequent year.

The net changes as a percentage of income also begin slowly. For 1999, the average improvement with respect to net federal tax is 0.08 percent of after-tax income. The rise grows to 0.36 percent in 2000 and 0.60 percent in 2001; the peak in the latter year accrues to families in the $30,000 to $40,000 income group, their gain being 0.87 percent.

The static net revenue loss to the federal government likewise begins modestly, but it too naturally increases each year. In this scenario, the net cost is $0.5 billion in 1999, followed by $1.6 billion in 2000 and $2.8 billion in 2001. These figures represent 0.7, 2.1, and 3.6 percent of status quo federal income tax revenue.

The impact on average marginal tax rates seems modest because of the small increase in the CPI expected through 2001, but it is readily detectible all the same. For 1998, I estimate the average income-weighted marginal tax rate at 45.8 percent, as mentioned above. In the absence of policy change, the average income-weighted marginal tax rate in 2001 rises to 46.1 percent; with full indexing between 1999 and 2001, it drops to 45.7 percent. The minor falloff in this scenario is the result of scheduled reductions in provincial personal income taxes, which slightly more than offset the bracket creep otherwise likely to be induced by real income growth.

Table 4: ***The Benefits of a Return to Full Indexation in 1997***

	Total Income Group									
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	All
					A. Average Dollar Decrease in Net Federal Taxes[a] *(current dollars per census family)*					
1999	4	10	24	42	43	48	56	61	77	36
2000	13	30	75	135	139	153	179	198	247	118
2001	23	51	121	228	235	258	304	336	421	201
					B. Average Percentage Change[b] *(percentage of income after taxes and transfers per census family)*					
1999	0.11	0.07	0.12	0.16	0.13	0.12	0.12	0.11	0.08	0.11
2000	0.34	0.23	0.37	0.52	0.43	0.40	0.39	0.34	0.25	0.36
2001	0.65	0.39	0.60	0.87	0.73	0.68	0.67	0.59	0.43	0.60

Note: As explained in the text, the rates of inflation used here are 0.9 percent for 1999 and 2.0 percent for each of 2000 and 2001.

[a] Decrease is decrease in federal taxes net of increase in federal transfers.

[b] Calculated with net decrease as described in note a.

Source: Simulation results derived via Statistics Canada, SPSD/M, release 6.1.

As for the deadweight loss associated with income taxation described in Box 2, indexing from 1999 through 2001 decreases it by about 0.7 cents on the dollar, a 2 percent drop in the efficiency cost of taxation.

Some Alternatives

Certainly, a return to full indexation is not the only tax-reform option on the table. The fact is that many years of cumulative lack of indexation have increased the number of Canadians who are taxable and raised the effective rates at which they are taxed.[17] These effects would not be undone by a simple return to an indexed regime. The implication is that policymakers should investigate alternatives. Two competing possibilities are considered here.

In discussing these alternatives, I refer to impacts on federal taxes and transfers payable only. The reason is that part of the federal revenue potentially forgone through indexation would go to reductions in federal income taxes (including surtaxes) and increases in transfers, not all of which would imply reductions in the provincial net tax burden.

The tax options discussed below would, however, directly reduce the provincial income tax base (basic federal income tax payable), and given the assumption that provincial tax policy would remain unchanged, these reductions would reduce provincial taxes more than the indexing case. Thus, if evaluation of these tax-cutting options included provincial impacts, the larger reduction in provincial taxes would make the alternatives look more attractive to taxpayers than a return to indexation. But, as already mentioned, the response of the provinces is neither predictable nor necessarily relevant,[18] so I present only federal effects here.

Make Nonrefundable Credits Larger

A general alternative to full indexation is the *ad hoc* adjustment of selected credits or brackets in a manner calculated to keep tax revenue from growing faster than nominal incomes and to maintain or shift to some desired tax incidence.

One of the primary impacts of a failure to index the tax structure is that taxable income tends to grow faster than total income, the result being a rise in the share of the economy that goes to government revenue. This being the case, a rather direct route to reducing taxable income suggests itself: raising the personal amounts used to determine nonrefundable credits, with the immediate consequence of reducing for every taxpayer the proportion of income effectively subject to tax.

Since 1992, the basic personal amount has been $6,456, and the spousal amount just $5,380. These amounts are multiplied by 17 percent and subtracted from basic federal tax in the standard tax calculation, thereby approximating tax exemptions equal to the personal amounts.[19]

Recall from the previous scenario that a return to full indexing would have a net federal revenue impact of $2.8 billion in 2001. What would happen if the federal government were willing to forgo that amount, instead delivering the benefit by way of an increase in the personal amount and a proportionate increase in the spousal amount?[20]

To find out, I set up a scenario in which the assumptions remain the same as those in the previous simulations but in 2001 the basic personal amount is increased to $7,453, an implicit increase of about $1,000 in the income that an individual may earn before the income tax kicks in. In the case of couples, the combined amounts increase by more than $1,800 for single-earner families or $2,000 for dual-earner families (the difference owing to the fact that the spousal credit claimed by the single earner is smaller than the basic personal amount claimed by each earner in the two-earner family).

The effective decrease in the amount of income subject to tax — a change in the tax base — slightly decreases the average marginal tax rate to 45.9 percent (from the status quo rate for 2001 of 46.1 percent). That reduction amounts to a drop of about 1.2 percent in the deadweight loss from income taxation. This decrease is not as noticeable as in the indexing case, where taxpayers all across the income scale benefit from the higher thresholds for reducing benefits and for moving to higher tax brackets. In contrast, increasing the basic personal amount leaves the rate schedule itself unchanged; marginal tax rates are reduced only to the extent that low-income earners are freed from taxation and that fewer people are exposed to the high-income surtaxes (because their basic federal tax payable drops below the thresholds at which higher surtaxes kick in).[21]

Table 5 reports the net results and their distribution across families. The average benefit per family is equal that of the indexing case because I set the credit values to produce precisely the same impact on Ottawa's bottom line as would indexing. The distribution of benefits, however, is a little different across income levels and family types. The main difference in this scenario is that the benefits to families with incomes between $10,000 and $30,000 are slightly higher, whereas those to families elsewhere on the income scale are slightly lower in most cases.

The entire group of families with incomes of $10,000 or less benefits the least, but only because that group is dominated by families that are already nontaxable, and therefore could not benefit by having more income sheltered from tax. In fact, if we were to look exclusively at the upper end of this group — those whose taxable incomes are $6,456 to $10,000 — we would see extremely large relative benefits, since most or all of their federal income tax liability disappears.

Across family types, benefits as a share of income are somewhat less for families with children than in the indexing scenario. The reason is that transfers are unaffected by the increase in the basic personal amount, so the distribution of the total net benefit ($2.8 billion) has no particular preference for children, which it would do if refundable credits were targeted for increase.

Simply Lower Taxes

When the lack of indexation allows inflationary pressure on incomes to push taxpayers upward through the bracket structure, one result is an increase in average marginal tax rates, which distort resource allocation and cause serious long-run harm to the economy. One obvious solution is to increase the income thresholds on the tax table, but an alternative is simply to reduce the rates on the tax schedule.

The experiment here is to estimate the benefit of cutting each of the federal tax rates in 2001 so that net federal revenue is reduced by $2.8 billion. To model this case, I reduced the bottom rate from 17.0 to 16.4 percent, the middle rate from 26.0 to 25.1 percent, and the top rate from 29.0 to 27.9 percent. I also reduced the rate for federal nonrefundable credits to 16.4 percent to preserve the relationship between those credits and taxable income intended by the 1987 tax reforms.

Table 6 shows the results. Once again, the average benefit is equivalent to that of the indexing case by construction. But the distribution of net benefits is more skewed to higher-income families than is that of the other measures discussed here.

This approach is a fairly direct route to reducing average marginal tax rates, particularly since it reduces marginal rates for everyone within an existing bracket, rather than just for those whose income would be otherwise between the old and hypothetical new thresholds. Another reason for reducing the rates, rather than the thresholds, is that *real* growth in taxable income pushes taxpayers upward

Table 5: ***The Net Benefits of a $1,000 Increase in the Basic Personal Amount in 2001***

Census Family Category	Total Income Group									All
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	
	(decrease in net federal taxes as a percentage of income per family)[a]									
Married couple										
With no children	0.17	0.58	1.09	1.04	0.88	0.77	0.68	0.55	0.32	0.62
With young children[b]	–	0.13	0.87	0.99	0.85	0.77	0.68	0.57	0.36	0.62
With older children[b]	–	0.33	0.60	0.92	0.95	0.90	0.81	0.71	0.49	0.66
At least one is elderly	–	0.05	0.56	0.93	0.83	0.74	0.68	0.56	0.28	0.65
Single parent										
With young children[b]	–	–	0.55	0.93	0.85	0.80	0.73	0.58	0.39	0.59
With older children[b]	0.47	0.36	0.67	0.77	0.69	0.68	0.58	0.54	0.37	0.61
Unattached individual										
Not elderly	0.06	0.69	0.80	0.63	0.52	0.46	0.38	0.31	0.16	0.53
Elderly	–	0.36	0.73	0.59	0.47	0.43	0.39	0.25	0.13	0.45
All	0.11	0.43	0.73	0.84	0.77	0.72	0.66	0.57	0.36	0.60

[a] Decrease is federal taxes less federal transfers; income is after taxes and transfers.

[b] Young children are those ages 0 to 17, older children are those age 18 and over.

Source: Simulation results derived via Statistics Canada, SPSD/M, release 6.1.

Table 6: ***The Benefits of Decreasing Tax Rates in 2001***

Census Family Category	Total Income Group									All
	≥ $10,000	$10,001 –$20,000	$20,001 –$30,000	$30,001 –$40,000	$40,001 –$50,000	$50,001 –$60,000	$60,001 –$75,000	$75,001 –$100,000	≤ $100,001	
	(decrease in net federal taxes as a percentage of income per family)[a]									
Married couple										
With no children	0.06	0.04	0.18	0.35	0.46	0.57	0.66	0.77	1.07	0.71
With young children[b]	–	0.01	0.13	0.29	0.42	0.53	0.62	0.75	1.03	0.70
With older children[b]	–	0.04	0.09	0.23	0.34	0.42	0.51	0.61	0.83	0.64
At least one is elderly	–	–	0.05	0.21	0.34	0.43	0.55	0.68	1.06	0.38
Single parent										
With young children[b]	–	–	0.08	0.25	0.43	0.62	0.78	0.88	1.00	0.31
With older children[b]	0.13	0.04	0.15	0.28	0.34	0.47	0.60	0.68	0.83	0.45
Unattached individual										
Not elderly	0.01	0.15	0.39	0.55	0.70	0.87	0.94	1.10	1.29	0.61
Elderly	–	0.05	0.31	0.50	0.63	0.80	1.00	0.91	1.18	0.25
All	0.03	0.08	0.20	0.37	0.48	0.58	0.65	0.74	1.02	0.60

Note: Rate decrease is to 16.4, 25.1, and 27.9 percent as described in the text. In addition, the nonrefundable tax credit rate is decreased to 16.4 percent.

[a] Decrease is federal taxes less federal transfers; income is after taxes and transfers.

[b] Young children are those ages 0 to 17, older children are those age 18 and over.

Source: Simulation results derived via Statistics Canada, SPSD/M, release 6.1.

through the rate schedule, which means that even without inflation the government share of the economy would grow over time. Given a progressive rate schedule, cutting the rates themselves is one method of reducing the extent to which government might otherwise grow faster than the economy.

The average marginal income tax rate in 2001 is brought down to 45.1 percent (as compared to the status quo 46.1 percent). This reduces the deadweight loss of income taxation by more than 5 percent, which is a fairly big benefit relative to a small change. Bear in mind, however, that this reduction in the average marginal rate, as compared to the indexing case or the higher personal credits case, comes at equivalent cost to the federal treasury; the difference arising from the manner in which taxes are effectively reduced.

All in all, the distribution of benefits in this case make it look less attractive than the case of cutting tax rates, insofar as many people routinely and repetitively judge tax options according to the extent to which they deliver benefits to the poor, rather than to the well-to-do. But looks can be deceiving, and what this view does not address is the reason the rate cuts are proposed in the first place: to reduce otherwise rising marginal tax rates. This issue needs to be addressed squarely in making decisions on tax policy options.

Marginal Notes

The marginal tax rate is the bite taken in taxes on a given taxpayer's next dollar of income. From the taxpayer's perspective, it includes not only income taxes but also federal and provincial payroll taxes and mandatory insurance premiums.

As already noted in Box 2, taxes distort: they divert resources from their most efficient use in the marketplace. They make saving less attractive than consumption, thereby increasing the cost of investment and inhibiting future growth. In particular, taxes drive a wedge between the cost to employers of hiring workers and the return workers earn by being employed. Rising marginal tax rates broaden this wedge, driving down employment and imposing costs on the economy beyond the cost of the tax itself.

The details of this process are taken up elsewhere (see Dahlby 1994; Davies 1998), so here I just summarize some of the results and put them in an economic context.

Without policy change, the average income-weighted marginal tax rate in 2001 will rise to 46.1 percent. If, instead, Ottawa implemented full indexing between 1999 and 2001, the average marginal rate would drop to 45.7 percent. Of the equivalent-cost measures I selected for discussion purposes, raising the basic and spousal exemptions would leave the average marginal tax rate at 45.9 percent, while lowering the tax rates themselves would reduce it to 45.1 percent in 2001.

Would these apparently small differences in average marginal tax rates matter? Yes, because rising marginal tax rates reduce saving and investment (particularly because the income tax effectively taxes saving twice, except when it is carried out through tax-sheltered vehicles); the effects on potential long-term growth are necessarily negative. Moreover, as noted in Box 2, employees probably decrease the number of hours they dedicate to the labor market in the face of declining returns from working.

The cost of taxation to an economy is lost output: national income forgone because resources are steered away from their most efficient use. The typical cost measure is the dead-weight loss to the economy resulting from an extra dollar of taxation, a measure that allows that loss to be expressed as a function of the marginal tax rate.[22] Following the methods and assumptions outlined in Box 2 and recapping results above, I estimate the deadweight loss of an additional dollar of taxation in the

1998 tax year at 33.9 cents (ignoring the potential impact on saving and investment). If full indexing had applied, that number would be 30.1 cents. In other words, the economic cost of taxation is almost 13 percent higher than it would be without the effects of the 1985 budget. Small changes can add up to large differences.

For the 2001 tax year, continuation of the current taxation parameters will put the marginal deadweight loss at 34.5 cents per dollar in income tax, whereas indexing would bring that amount down to 33.8 cents. Alternatively, raising nonrefundable credits would leave the loss at 34.1 cents, whereas decreasing the federal income tax rates themselves would bring it down to 32.7 cents per dollar.

It is the prospect of lower marginal tax rates, implying higher output, income, and growth trajectories, that leads me to wonder whether arguments pointing merely at distributional impacts tell the best story in choosing between options. Tax reforms guided by a desire to lower average tax rates in search of demand-led stimulus, such as increasing basic credits might provide, are near-term fixes. A longer-term view suggests reforms that would provide supply-side stimulus; lower marginal tax rates would do so by improving the returns to saving and investment. This approach would, of course, improve incomes at all levels, and the improvements might be permanent (unlike those from demand stimulus), gains to lower-income families would be delivered only over a longer time span.

Concluding Notes

The failure to properly index the Canadian income tax system has steadily increased citizens' tax burden since 1985. Deindexation has allowed taxes to be increased annually without the endorsement of Parliament or the public; the implication is that the tax increase that has occurred would not have occurred to the same extent or in the same manner had a more transparent policy choice been made. The increase in the tax burden is significant, and it weighs on Canadian taxpayers of every income level.

A return to proper indexing would prevent the inexorable shrinkage in the share of income that Canadians are permitted to earn free of income tax. It would also avoid the upward creep in marginal tax rates and would, therefore, mitigate the collateral damage to the economy caused by these high and rising marginal rates.

Because the impact of partial indexation has compounded over many years, the distribution of Canada's income tax burden has changed. This effect cannot be undone by simply returning to indexation, so policymakers need to consider specific alternatives or adjuncts to reindexing.

C.D. Howe Institute Commentary© is a periodic analysis of, and commentary on, current public policy issues.

Finn Poschmann, the author of this issue, is a Policy Analyst at the C.D. Howe Institute. The text was copy edited by Lenore d'Anjou and prepared for publication by Wendy Longsworth and Barry A. Norris.

As with all Institute publications, the views expressed here are those of the author, and do not necessarily reflect the opinions of the Institute's members or Board of Directors.

To order this publication, contact: Renouf Publishing Co. Ltd, 5369 Canotek Rd., Unit 1, Ottawa K1J 9J3 (tel.: 613-745-2665; fax: 613-745-7660), Renouf's stores at 71 Sparks St., Ottawa (tel.: 613-238-8985) and 12 Adelaide St. W., Toronto (tel.: 416-363-3171), or the C.D. Howe Institute, 125 Adelaide St. E., Toronto M5C 1L7 (tel.: 416-865-1904; fax: 416-865-1866; e-mail: cdhowe@cdhowe.org). We also invite you to visit the Institute's Internet web site at: www.cdhowe.org.

$9.00; ISBN 0-88806-448-9

One possibility is to increase the value of selected personal amounts, which would directly increase the income threshold above which Canadians are subject to the income tax. If narrow focus on distributional issues is the decisive factor, this policy would dominate a return to indexing, without precluding an eventual return to proper indexation policy. Another possibility, given the powerful case for immediate marginal rate cuts, is to lower each federal income tax rate on the current schedule, quite directly reducing the damage done by tax rates that are simply too high. Tentative and conflicting moves along both these lines were introduced in the 1998 federal budget.

However, despite the attractiveness of targeted policymaking by way of selected increases in particular taxation parameters, the method remains *ad hoc*. Without indexing, each federal budget that does not introduce new measures has the effect of increasing both the tax base and tax rates. If full indexing were the rule, a federal budget that proposes nothing would not simultaneously but silently increase tax rates.

A general policy that has a desirable default action has merits over a general policy whose default action is a surreptitious tax increase. This being the case and given the salutary effects of indexation on the tax base and rates, a return to indexation would be the best long-run policy.

Appendix: The Case against Indexing

Economists and others have at various times advanced a number of arguments for not indexing the tax structure. None of these is today taken to be a highly defensible position, but it is worth running through them if only to reassure ourselves that no profound case exists for non-indexation.

The Keynesian Case

One position is that the explicit failure to accommodate inflation can be viewed as an annual "inflation tax" with potentially positive effects. The traditional view is that such such a tax augments the power of the income tax to work as an automatic stabilizer for the economy.

This line of thought is associated with the Keynesian school of economic ideas, which supposes that the level of economic activity is mainly driven by the demand for goods and services. When consumer confidence and aggregate income are high, consumers demand more goods and the industrial sector ratchets up production, in turn stimulating hiring and thereby raising aggregate income. Consumers are then possessed of more income, which further fuels demand for goods and services, and this process drives inflation, as producers discover that market conditions are supportive of higher consumer prices.

Thus, say Keynesians, inflation is the necessary product of strong economic growth. This sporadic process, they believe, drives the business cycle, whose damaging vagaries are hence in need of taming or tuning by way of government policy, which limits excessive growth and therefore inflation.

The inflation tax is held to work because when nominal incomes rise, taxpayers are confronted with higher tax rates as they step from one bracket to the next. Thus, an ever-larger share of income is diverted from the hands of

individuals to the maw of government, and the inflationary spiral is potentially broken.

This line of thinking has fallen into desuetude for obvious reasons,[23] but a few interesting points merit mention. First, the argument can apply only to a progressive income tax: flat-rate taxes and consumption taxes do not much increase their bite when nominal incomes increase (except to the extent that these taxes include exemptions). Thus, the stabilization effect is a product of the rate progressivity of the tax schedule and does not depend on non-indexation.

Second, rising income taxes increase the opportunity cost of saving, which produces pressure in a direction offsetting the stabilizing influence.

Third, in the Keynesian analysis, the stabilizing effect can function only if governments use the incremental revenue to reduce deficits or increase surpluses. Otherwise, the additional revenue generated by the inflation tax supports further government spending, the net effect of which is presumably a *more* stimulative impact than revenue left to fund the whimsical spending habits of individuals. The government savings rate is usually lower than that of individuals, and governments tend to import relatively fewer goods than do individuals; thus, the economy suffers less leakage when the public sector consumes more income than the private sector.[24]

The Costs of Low-Income Transfers

A different view focuses on the microeconomic impact of indexation. On the transfer side of the equation, indexing helps to maintain the value of, say, federal child benefits paid to low-income families. Thus, full indexing raises a household's benefit from federal transfers, relative to the return to working in low-wage jobs, if true inflation is less than the amount measured by the CPI or if pay happens to lag inflation in general. The resulting transfers become higher than they would be otherwise. More important, employment, output, and growth are pushed lower than they would be otherwise. Thus, indexation is costly not only to government but also to the economy at large and bears the long-run cost associated with maintaining a given level of transfer dependency.

This argument neglects the role of real growth in the economy. Because family wage incomes track economy-wide gains, they tend to grow at a rate approximating the sum of inflation plus real output growth. So if transfers track only the inflationary component of wage growth, the real value of transfers may, over time, be expected to lag the real returns to work. This view assumes, of course, that other things remain equal, particularly that broader transfer policy does not cause such benefits to grow in real terms as well. In any event, while maintaining an unwanted degree of transfer dependency has an inherent risk, it is reduced by the fact that real pre-tax incomes do grow.

Furthermore, the values of credits and deductions are set within the tax code in order to achieve a particular kind of vertical or horizontal equity, and the erosion of their values undermines whatever social policy function has been stitched into the tax structure. Whether or not this erosion is a good thing is in the eye of the beholder, but it is not politically honest to allow this erosion to take place without taking a clear public decision on the question.

Taxpayer Support for Anti-Inflation Policy

Another positive view of the inflation tax is that it might serve to heighten taxpayer resistance to inflation. The cost to taxpayers engendered by the inflation, proponents might argue, helps to maintain public support for sound central bank policy, smoothing the way for monetary policy tighter than might otherwise achieve broad public acceptance. Partial indexation — the CPI-minus-3-percent rule — may work well in this sense because it imposes an upper limit on the size of the inflation tax

and continues to be costly to taxpayers until inflation drops to zero or below. But in a low-inflation environment, consumer price expectations are already damped, and monetary policy may be allowed to carry on its work without the helping hand of (costly) fiscal policy.

All Citizens on the Tax Rolls

The political economy approach to tax theory offers a related argument: that the accountability of government is heightened when all citizens are in fact taxpayers. In this view, because inflation keeps low-income earners on the tax rolls and adds new ones,[25] each citizen's connection to government is maintained more tightly than it would be otherwise. Inflation is distasteful for its effect not only on pocketbooks but also on the level of tax; therefore, the level of government expenditure, which, in large measure, drives the level of tax, is kept in the forefront of voters' consciousness. Further, having all, or at least more, citizens exposed to any particular tax reduces the opportunity to foment class warfare by populist advocacy of an increase in a tax that bears on the few.

Desirable as this effect might be otherwise, it is impossible to quantify and thus not much accessible to hard analysis. Worse, it keeps government in the unenviable position of collecting tax revenue from individuals so low on the income scale that their tax liability competes with basic necessities in the household budget.[26]

The Government Coffers

Another view is that because the inflation tax is all but undetectable on an annual and individual basis, it may be regarded as an excellent tax indeed. Its stealth enables larger government expenditure without raising public opposition. Proponents of this argument necessarily, if only implicitly, view this situation as a net benefit, on which view I shall make no further comment.

Notes

In drafting this Commentary, I have benefited from the helpful advice and comments of Bob Brown, Ken Boessenkool, Angela Ferrante, Jack Mintz, and Bill Robson. The remaining errors are mine.

1 There is more to this story, particularly with respect to income from capital, whose measure has never been indexed against inflation. Whether or not the taxation of capital income should be adjusted for inflation is a difficult question, and one that will not be taken up in this note. Problematic issues surrounding the taxation of corporation income include how to measure net income when current revenues are inflated but input costs are deductible only on an historical cost basis, how interest payments should be valued in a world with inflation, and how to measure capital gains.

2 A significant but inconstant amount of inflation adjustment had been carried out at the whim of the legislature in the years before 1974. An ironic sidelight is that in 1985 the United States implemented more-or-less full indexation in its personal income tax calculations pursuant to the tax reforms President Ronald Reagan legislated in 1981.

3 Perhaps the only sustainable argument for partial indexation is that the Canadian consumer price index (CPI) overstates inflation, so that a tax system adjusted by less than the official rate of inflation could be regarded as fully indexed. Yet if Statistics Canada's index does overstate inflation, it certainly does so by less than one percentage point, which is obviously insufficient justification for a CPI-minus-3-percent rule. In any case, this argument, despite being mentioned in the Organisation for Economic Co-operation and Development's 1997 Canadian economic survey as motivation for the partial indexation rule, has never been pursued seriously as the reason for introducing or maintaining partial indexation. Certainly the 1985 federal budget made no such claim, saying only that partial indexation was part of a series of measures intended "to control the national debt" (Canada 1985a, 73).

4 By way of contrast, inflation does not increase the regressivity of *ad valorem* consumption taxes (assuming the consumption baskets of the rich and poor are similarly affected by inflation), except to the extent that inflation erodes the value of any offsetting credits that are provided. Also in contrast to progressive rate taxes, single-rate income tax regimes require indexing only to the extent that they are constructed with personal exemptions or credits. Progressive-rate regimes, to maintain constant distributional impact, require indexing both in their rate structures (brackets) and in their personal exemptions or credits as well as refundable amounts.

5 The choice of September as the end of the reference period created a lag that was justified by the need for tax forms to be finalized in time for distribution early in the year and for employers' payroll calculations to be adjusted to produce accurate source deductions. In practice, technical change would likely now permit a much shorter lag. Indeed, in theory, it would make more sense to adjust amounts to reflect the *current* year's inflation relative to the previous year's, which would require incorporating a forecast into source deduction calculations and reconciling any deviation from expectations at tax return time, a simple enough job.

This observation raises a question: why not instead index the tax structure by the rate of *expected* inflation (which could be determined, perhaps, as a function of the spread between federal real-return bonds and typical instruments of the same term) without later adjustment for forecast error? This route would be rational if one believes in the automatic stabilizer rationale described elsewhere in the text. Given the idea that expected inflation can have no impact on real growth, whereas unexpected inflation has at least theoretical capacity to do so, having the income tax remove additional spending power from the economy when that spending would be driven by unexpected output growth could help smooth the real growth trajectory. Many economists would consider this to be a good thing.

6 As in [($6,000 x 1.34) – $6,456] / ($6,000 x 1.34) = 19.9%. In fact, the 1998 budget introduced a convoluted *ad hoc* supplement to the basic personal credit, which would thus increase by $208 the amount of tax-free income allowed this taxpayer; see Poschmann (1998a).

7 The tool I used here is the Social Policy Simulation Database and Model (SPSD / M), Release 6.1, devised and maintained by Statistics Canada. Responsibility for all results and their interpretation lies with me. Discussion of the methodology and limits of the static microsimulation approach is found in Poschmann (1998b).

8 The assumption that provinces do not change their tax rates to make up for lost revenue has another second-round impact: that provincial fiscal equalization entitlements change with respect to the personal income tax base. The reason is minor differences across provinces in the presumed percentage decline in personal income tax revenue (these differences being a result of income distributions that differ across provinces). Although not discussed here, this effect is considered in Allan, Dodge, and Poddar (1974); the future impact would be quite small because the distribution of revenue losses among both "standard" and "receiving" equalization provinces would vary around the average provincial impact. To be precise, if the federal government had never stopped indexing and the provinces had made no change in their tax policies, net provincial income tax revenues (outside of Quebec) would be 8 to 12 percent lower than they are now.

9 Given the provinces' use of basic federal tax, the effective rate of the credit mechanism is more like 25 percent than 17 percent.

10 Since 1989, old age security benefits have been subject to a means test, in that the amount of the benefit is reduced by 15 percent of the amount by which the individual taxpayer's net income exceeds an arbitrary threshold, that point now being set at $53,214.

11 Or since 1988 or later, in the case of parameter values reset at other times.

12 Provincial transfers are not much affected in the direct sense. A significant number of provincial transfer parameters are, however, keyed to amounts on the federal tax and transfer schedule, and it is possible that many of these would follow the pattern of federal indexing. I have not allowed for this effect here, for the reasons described in the next section of the text.

13 I weight by income, not by head, because doing so produces the relevant number for the efficiency calculations described in Box 2 and later in the text.

14 The sum is not precise because there are incidental impacts on federal tax revenue other than personal income taxes.

15 The interesting thing to note here is that such changes have not occurred since 1985 — unless one counts the minor measures of the 1998 budget — a fact that makes the use of static microsimulation look especially appropriate.

16 Large provincial deficits were the norm, though not universal, in the mid-1980s. While the overall fiscal picture looked relatively good by 1989 / 90 (because of tax increases, but also because the economic recovery of the 1980s reached its peak), by the early 1990s every province was running a large deficit.

17 The Organisation for Economic Co-operation and Development (1997) reports that 18 percent of Canadian taxpayers have been either rendered taxable or pushed by inflation across a rate threshold as a result

of the deindexation; its estimate is that marginal tax rates increased by 1.5 percentage points between 1988 and 1997.

18 Consider the options for the provinces in the face of lower future revenue because of federal indexing. Either they would get by with less revenue, in which case taxpayers would be better off financially than is indicated here, or they would raise taxes sufficiently to offset their losses and keep provincial treasuries whole, in which case taxpayers would be no worse off than suggested by the figures shown.

19 For taxpayers with incomes of less than $29,590, the amount is precisely equivalent to an exemption of $6,456; for filers with larger incomes, the value is rather less because the amount is credited at the 17 percent rate, rather than at the taxpayers' true federal marginal rate.

However, these figures need a minor qualification, in that the 1998 budget introduced measures increasing by up to $500 the value of these credits for taxpayers with incomes less than about $20,000 and by up to $1,000 for single-earner couples with incomes of less than $40,000.

20 I use equal-cost scenarios to make the benefit comparisons more straightforward.

21 Because this result amounts to a lump-sum tax cut for many taxpayers, this change is less likely than others, especially the direct rate reduction that follows, to have a detectible (positive) supply-side influence. Indeed, since marginal rates do not change at all for taxpayers who are more than about $1,000 away from any particular tax or surtax threshold, the addition to post-tax income may lead to a decrease, rather than an increase, in labor supply.

22 This area is complex and full exposition would require balancing the effect of taxes on labor versus leisure, considering the likelihood that lowering tax rates may allow a given amount of consumption to be financed with less labor rather than more, and allowing for the tangled effects of taxes on saving and investment. These confounding influences are beyond the scope of this *Commentary*.

23 At the risk of stating the obvious: the belief that inflation is the necessary product of strong growth requires ignoring the role of productivity growth in driving economic improvement, the role of competition in establishing prices (especially when technological change is part of the process, enhancing the ability of productivity increases to limit price inflation), and the role of the supply side in general as a driver of economic activity. Further, the notion that government can indeed "manage" the business cycle through fiscal policy, rather than partially offset the worst effects of the cycle, is an idea notable for the lack of successful implementation.

24 On the other hand, many government expenditures directly impair economic growth, as in the case of strengthened regulatory services or higher transfers to individuals, which decrease work incentives, reminding us that public sector spending is not necessarily stimulative no matter how it is financed.

25 Although the mechanism by which non-indexation does so is more or less hidden to the average taxpayer.

26 That Canadian governments have for many years persisted in levying taxes on families living in low income is not a guarantee of the wisdom of the policy.

References

Allan, J.R., D.A. Dodge, and S.N. Poddar. 1974. "Indexing the Federal Income Tax: A Federal Perspective." *Canadian Tax Journal* 22 (July-August): 355–369.

Canada. 1985a. Department of Finance. *Budget Papers*. Ottawa, May 23.

———. 1985b. Department of Finance. *Budget Speech*. Ottawa, May 23.

Dahlby, Bev. 1994. "The Distortionary Effects of Rising Taxes." In William B.P. Robson and William M. Scarth, eds., *Deficit Reduction: What Pain, What Gain?* Policy Study 23. Toronto: C.D. Howe Institute.

Davies, James B. 1998. *Marginal Tax Rates in Canada: High and Getting Higher*. C.D. Howe Institute Commentary 103. Toronto: C.D. Howe Institute. March.

Organisation for Economic Co-operation and Development. 1997. *OECD Economic Surveys: Canada 1997*. Paris: OECD.

Poschmann, Finn. 1998a. "How Do I Tax Thee? Choices Made on Federal Income Taxes." *Backgrounder* (C.D. Howe Institute). February 25.

———. 1998b. *Where the Money Goes: The Distribution of Taxes and Benefits in Canada*. C.D. Howe Institute Commentary 105. Toronto: C.D. Howe Institute. April.

Ragan, Christopher. 1994. "A Comment on the Distortionary Effect of Rising Taxes." In William B.P. Robson and William M. Scarth, eds., *Deficit Reduction: What Pain, What Gain?* Policy Study 23. Toronto: C.D. Howe Institute.

Robson, William B.P., and William M. Scarth. 1997. *Out Front on Federal Debt Reduction: Programs and Payoffs*. C.D. Howe Institute Commentary 100. Toronto: C.D. Howe Institute. November.