2001 FRASER INSTITUTE

CRITICAL ISSUES

bulletin

Flat Tax

Principles and Issues

Joel Emes and Jason Clemens

with Patrick Basham and Dexter Samida

THE FRASER INSTITUTE

Critical Issues Bulletins

Critical Issues Bulletins are published from time to time by The Fraser Institute (Vancouver, British Columbia, Canada) as supplements to *Fraser Forum*, the Institute's monthly periodical. Critical Issues Bulletins are comprehensive studies of single issues of critical importance for public policy.

The authors have worked independently and opinions expressed by them are, therefore, their own, and do not necessarily reflect the opinions of the members or the trustees of The Fraser Institute.

To order additional copies of Critical Issues Bulletins, any of our other publications, or a catalogue of the Institute's publications, please contact the **book sales coordinator:**
via our **toll-free order line: 1.800.665.3558, ext. 580**
via telephone: 604.688.0221, ext. 580
via fax: 604.688.8539
via e-mail: sales@fraserinstitute.ca.

For media enquires, please contact **Suzanne Walters**, Director of Communications:
via telephone: 604.714.4582
or, from Toronto, 416.363.6575, ext. 582
via e-mail: suzannew@fraserinstitute.ca

To learn more about the Institute, please visit our web site at www.fraserinstitute.ca.

Date of Issue: April 2001

Printed in Canada

Canadian Publications Mail
Sales Product Agreement #0087246

ISSN 1480-3666

Editing and design:
Kristin McCahon and Lindsey Thomas Martin

The Fraser Institute

The Fraser Institute is an independent Canadian economic and social research and educational organization. It has as its objective the redirection of public attention to the role of competitive markets in providing for the well-being of Canadians. Where markets work, the Institute's interest lies in trying to discover prospects for improvement. Where markets do not work, its interest lies in finding the reasons. Where competitive markets have been replaced by government control, the interest of the Institute lies in documenting objectively the nature of the improvement or deterioration resulting from government intervention. The work of the Institute is assisted by an Editorial Advisory Board of internationally renowned economists. The Fraser Institute is a national, federally chartered, non-profit organization financed by the sale of its publications and the tax-deductible contributions of its members, foundations, and other supporters; it receives no government funding.

For information about membership in The Fraser Institute, please contact the Development Department
via mail to: The Fraser Institute, 4th Floor,
1770 Burrard Street, Vancouver, BC, V6J 3G7
via telephone: 604.688.0221 ext. 586
via fax: 604.688.8539
via e-mail: membership@fraserinstitute.ca.

In Calgary, please contact us
via telephone: 403.216.7175
via fax: 403.234.9010
via e-mail: paulineh@fraserinstitute.ca.

In Toronto, please contact us
via telephone: 416.363.6575
via fax: 416.601.7322.

Contents

About the authors

Patrick Basham is a Senior Fellow at The Cato Institute in Washington, DC. Formerly Director of the Social Affairs Centre at The Fraser Institute, he has written and edited books, studies, papers, and articles on a variety of policy topics for both general and academic audiences. Following Bachelor's and Master's degrees from Carleton University and the University of Houston, respectively, he completed a doctoral dissertation in Political Science and shortly will receive his Ph.D. from Cambridge University.

Jason Clemens is the Director of Fiscal and Non-Profit Studies and co-ordinator of the Survey of Investment Managers for The Fraser Institute. He has an Honours BA in Commerce and an MA in Business Administration from the University of Windsor as well as a post-Baccalaureate Degree in Economics from Simon Fraser University. His publications and co-publications for The Fraser Institute include *Canada's All Government Debt* (1996), *Bank Mergers: The Rational Consolidation of Banking in Canada* (1998), the *Non-Profit Performance Report* for 1998, 1999, and 2000, *The 20% Foreign Property Rule: Decreasing Returns and Increasing Risk for RRSPs and RPPs* (1999), and *Preserving Independence* (1999). His articles have appeared in *The Wall Street Journal*, *The National Post*, *The Globe & Mail*, *The Vancouver Sun*, *The Calgary Herald*, *The Winnipeg Free Press*, *The Ottawa Citizen*, *The Montreal Gazette*, *La Presse* and other newspapers. Mr. Clemens has been a guest on numerous radio programs across the country and has appeared on the *CBC National News*, *CBC Business Newsworld*, *Global TV*, *BCTV*, and *Report on Business TV* as an expert commentator and has appeared before committees of both the House of Commons and the Senate as an expert witness.

Joel Emes is a senior research economist at The Fraser Institute. He is a regular contributor to *Fraser Forum*, the Fraser Institute's monthly magazine, and co-author of *Tax Facts 10*, *Tax Facts 11*, and *Canada's All Government Debt* (1996, 1998, and 1999 editions). His articles have appeared in the *National Post*, *Globe and Mail*, the *Calgary Herald*, the *Vancouver Sun* and the *London Free Press*. Mr. Emes is also the primary researcher for Tax Freedom Day and the Institute's Provincial and State-Provincial fiscal comparisons, the *Budget Performance Index*, and the *Fiscal Performance Index*. He received his M.A. in Economics from Simon Fraser University in 1995.

Dexter Samida majored in economics at the University of Saskatchewan, from which he received his B.Comm. (high honours) with Great Distinction in 1997. He obtained his M.A. in Economics from the University of Toronto in 1998. In the summer of 1997, he worked as an intern at The Fraser Institute, where he did research on taxation in Canada and, from 1998 to 2000, held a position as Research Economist at the Institute. While there, he published *A Hand Out Instead of a Hand Up: Where Foreign Aid Fails* (Public Policy Sources 30) and was co-author of *Provincial Economic Freedom in Canada 1981–1998* (Critical Issues Bulletin) and the *1999 Private Charitable Generosity Index* (Public Policy Sources 34). He has written articles on economic freedom and poverty, child labour, foreign aid, the environment, international trade, and consumerism. He has published articles in both national newspapers as well as in regional papers such as the *Vancouver Province*. Mr Samida, a native of rural Saskatchewan, is currently living and working in South Korea.

Acknowledgments

The authors wish to thank Dr. Martin Zelder of The Fraser Institute, Dr. Kenneth McKenzie of the Department of Economics, University of Calgary, David Perry of the Canadian Tax Foundation, and Brian Murphy of Statistics Canada for their comments, suggestions, and criticisms. We would also like to express our appreciation to Liv Fredricksen for her post-production assistance. The authors, of course, take full and complete responsibility for any remaining errors or omissions and, as they have worked independently, their views do not necessarily represent the views of the trustees or members of The Fraser Institute.

Executive summary

The issue of tax cuts has overwhelmed the equally important issue of tax reform in the national debate. Further, any discussion of tax reform during the 2000 federal election was riddled with misinformation that effectively prevented an open and rational debate about tax reform. The study outlines many of the issues raised during the recent federal election and provides information on tax reform in order to provide a foundation for rational debate.

Flat tax versus single-rate tax

It is important to differentiate between reform based on a flat tax and the replacement of multiple tax rates with a single tax rate. The later constitutes the type of tax reform implemented in the Province of Alberta in 2001 and proposed by the Canadian Alliance in the 2000 federal election. The replacement of multiple tax rates with a single rate is but one step in the process of broad-based flat tax reform.

Hall-Rabushka flat-tax reform

There are a number of well-known flat-tax proposals but the most discussed is that developed by Robert E. Hall and Alvin Rabushka of the Hoover Institution. It taxes all types of income once and at one rate. In their most recent analysis of the United States, Hall-Rabushka (1995) recommended replacing the five personal federal rates (15%, 28%, 31%, 36%, and 39.6%) and the various business tax rates with a 19 percent federal tax rate for both individuals and businesses.

Simplicity

Hall-Rabushka contains no tax credits, deductions, or exemptions except for the personal, spousal, and child exemptions. In other words, the myriad of tax credits and deductions present in the current system and the attendant complicated and time-consuming paperwork are eliminated. Further, flat-tax reform significantly simplifies the determination of income, which constitutes much of the complexity associated with the current tax system. Hall-Rabushka clearly achieves one of the core criteria of tax policy, namely simplicity.

Equity

Hall-Rabushka is an integrated approach to taxation wherein both business income and personal income are taxed once and only once. This type of integrated approach to taxation achieves horizontal equity, the principle that people with similar incomes should bear similar tax burdens. The personal exemption ensures vertical equity is achieved; that is, as people earn more, they pay more. Thus, Hall-Rabushka achieves both measures of equity, the second criteria of tax policy.

Efficiency

Another benefit of Hall-Rabushka is that it effectively moves the income-tax system away from taxation of income towards taxation of consumption. A consumption tax is levied on any income that is consumed, i.e., spent rather than saved. Economists generally agree that the taxation of consumption is one of the most efficient manners in which to raise tax revenue.[1] The exclusion of savings (investments) under Hall-Rabushka effectively creates a tax system based on taxing consumption rather than income[2] and, thus, achieves the third of the tax criteria, efficiency.

Other gains

There are a number of other important economic improvements to be gained by implementing Hall-Rabushka. The net economic effect of the reforms proposed by Hall-Rabushka include improved incentives for work, increased entrepreneurial activity, and greater capital formation, all leading to a higher level of national output and standard of living.

Progessivity—why we have multiple rates

We have more than one tax rate in the current system to achieve progressivity, the principle that taxpayers should pay more income tax as a percentage of their income as they earn more. This has been achieved, traditionally, using progressively higher income-tax rates applied on progressively higher incomes.

Evidence regarding the negative effects of high and increasing marginal taxes is strong and growing. For instance, Marsden (1983), Koester and Kormendi (1989), Easterly and Rebelo (1993), Mullen and Williams (1996), Becsi (1996), and Engen and Skinner (1996) all conclude that high and increasing marginal tax rates have negative effects on rates of economic growth. Further, Carroll, Holtz-Eakin, Rider, and Rosen (1998) found that higher marginal tax rates reduce capital formation, a key ingredient in long-term economic growth. This literature, overall, concludes that high and increasing marginal tax rates contribute to lower rates of economic growth, reduced rates of personal income growth, lower rates of capital formation, aggregate labour supply that is lower than expected, and reduced social welfare. In short, high and increasing marginal tax rates reduce economic growth by creating strong disincentives to hard work, savings, and investment.

Progressivity without increasing rates

One of the many benefits associated with a flat tax is that it is able to achieve progressivity in the tax system—those earning more pay more in taxes as a percentage of income—while at the same time eliminating the damaging effects of high and increasing marginal tax rates. This is achieved by including a personal exemption in the tax system. In other words, by allowing individuals to earn a certain amount of money tax-free each year, the system incorporates progressivity without incurring the cost of increasing marginal tax rates.[3]

Flat-tax case calculations

Nine separate flat taxes scenarios were calculated using on Statistics Canada's Social Policy Simulation Database and Model (SPSD/M) with 2000 as a base year.[4] The flat-tax calculations in table ExSum1 range from a simple system with no exemptions or deductions to a system with generous individual and spousal exemptions, child exemptions, full RRSP and RPP exemptions, and charitable donation deductibility.

As one would expect, the value of the personal exemption has an enormous influence on the applicable

Table ExSum1: Flat-tax rates for Canada and the Provinces

Case	Personal & Spousal Exemption	Child Exemption	Change in Revenue Collected[1]	Deduction for RRSP & RPP[2]	Deduction for Charitable Donations[2]	Federal Flat-Tax Rate	Average Provincial Flat-Tax Rate	Ontario Provincial Flat-Tax Rate[3]
1	$0	$0	$0			12.7	7.0	5.8
2	$7,231	$0	$0			16.7	9.4	7.5
3	$8,766	$0	$0			17.8	10.0	7.9
4	$17,532	$0	$0			26.1	14.8	11.2
5	$8,766	$2,000	$0			18.3	10.3	8.1
6	$8,766	$2,000	$0	3		19.9	11.1	8.8
7	$8,766	$2,000	$0	3	3	20.1	11.2	8.9
8	$11,834	$2,000	–$13.4	3		19.0	12.9	10.0
9	$11,834	$2,000	–$22.3	3		16.5	12.9	10.0

1 Refers to the Federal Government only. Any change in the amount of revenue collected implies an expenditure and tax reduction at the federal level only. Stated in billions of dollars.

2 RRSP/RPP contributions and charitable donations, if present, are treated as they currently exist in the federal tax system.

3 Presented for illustrative purposes only.

flat-tax rates. The larger the personal exemption, the higher the required flat-tax rates. There is, therefore, a powerful trade-off between the value of the personal (and spousal) exemption and the applicable flat tax rates.

Five households were also analyzed in order to determine the tax effects of the various flat-tax proposals on specific households. The one major trend present in each of the nine flat-tax cases is the equalization of tax treatment for households with similar incomes, regardless of the employment status of the parents. In other words, the implementation of any of the nine flat-tax scenarios presented eliminates the current discrimination faced by two-parent households in which only one parent works outside the home relative to other households with similar incomes but in which both parents work outside the home.

Income dynamics and mobility

The main criticism levied against flat taxes is that they dramatically shift the burden of taxation from high-income earners to low-income and middle-income earners. To a certain extent, this shift in the tax burden is inevitable given the extremely progressive nature of Canada's current tax system. For instance, in 1997, the top 13 percent of tax-filers—those earning in excess of $50,000 per year—earned 40.7 percent of all the income declared to Revenue Canada for tax purposes but contributed 59 percent of all income taxes paid.

This shifting of the tax burden, however, is exaggerated by tax analysis based on a single year, an inappropriate tool for the task. The ability of individuals and households to move up and down the income spectrum demands that longer time horizons be incorporated into tax analysis in order to determine the real, long-term effect of tax changes.

A recent Canadian study found that, over a two-year period, 13.8 percent of households moved up one quintile in the income distribution and an additional 3.2 percent moved up more than one quintile. Put another way, of those households initially in the bottom two quintiles in 1995, 24 percent found themselves at least one quintile higher by 1996. This depicts a fairly dynamic picture of the ability of Canadians to move up the income scale.

The rates of upward income mobility increase significantly when the analysis is extended to cover a five-year period. Twenty-one percent of households moved up one quintile in the income distribution over a five-year period and an additional 8.2 percent moved up more than one income quintile. In other words, a total of 45 percent of those in the bottom two quintiles moved up at least one quintile over the five-year period of the study.

Research into income mobility in the United Kingdom and the United States corroborates the Canadian results. One American study covering a 15-year period from 1975 to 1991 concluded that only one-half of one percent (0.05 percent) was in the bottom quintile for every year of the study. In fact, only 5.1 percent of those in the bottom quintile in 1975 were still in the bottom quintile in 1991.

Another study, covering the period from 1979 to 1998, found that 86 percent of households in the lowest income bracket moved to a higher grouping over the period. Similarly, Census Bureau data for the 1980s consistently shows roughly 20 percent of the people in the bottom quintile moving up a minimum of one quintile within a one-year period. Finally, a 1992 study from the Urban Institute concluded that approximately one-half of those in the bottom quintile during the 1967-1976 period had moved up by the 1977-1986 period.

Such long-term analyses strongly suggest that individuals would gain under any of the nine flat-tax proposals presented above as any initial tax increase would more than be offset by later tax reductions during the individual's peak earning period.

International evidence

Tax systems based on a flat-tax model are not just theoretical abstractions discussed by tax practitioners. Several countries and jurisdictions maintain tax systems based on a flat-tax model. Section 4 presents the flat-tax systems operating in Hong Kong and the Channel Islands.

Hong Kong

Hong Kong has a 16-percent flat-rate tax on corporate profits and a property tax. It does not tax dividends, capital gains, wealth, or gifts. There is also no value-added tax, general sales tax, or payroll tax.

Hong Kong has a Salaries Tax on all employment income. The maximum tax on salaries and wages is a flat rate of 15 percent on gross income, less personal exemptions, expenses, and charitable donations. The Salaries Tax operates according to a sliding scale. The effective rates of income tax are: 10.2 percent for a single person; 5.7 percent for a single person with two dependent par-

ents; 3.5 percent for a married person with no children; 1.4 percent for a married person with two children; and 0.14 percent for a married person with two children and two dependent parents.

In Hong Kong, personal and child allowances are so high (including a maximum deduction of 10 percent of taxable income for charitable donations) that 70 percent of the population pay no income tax at all; a further 28 percent of the population pay at below the 15-percent flat rate. Consequently, the 15-percent flat rate is paid by only the most affluent two percent of Hong Kong residents.

The Channel Islands

The tax systems employed in the Channel Islands of Guernsey and Jersey are quite similar. Both islands employ a 20-percent standard rate of income tax for individuals and corporations. Neither island imposes a capital gains tax, a capital transfer tax, or a withholding tax, and refrain from taxing bank deposit interest. Nor does either Guernsey or Jersey collect a value-added tax.

Although the Channel Islands' 20-percent standard rate of income tax is very low by international standards, the 20 percent flat tax is reduced further by generous personal allowances and reliefs, which include both single and married person's allowances, as well as allowances for children and dependent relatives.

Conclusion

The fairest, most efficient, and simplest tax system upon which to base reform of the Canadian tax system is a flat tax based on the work of Hall-Rabushka. Such a system would provide enormous positive incentives for hard work, savings, and investment. The evidence suggests that the economic benefits of implementing a flat-tax system would include greater rates of economic and income growth, higher levels of capital formation and investment, and greater social welfare.

The flat-tax system would not, as many argue it would, eliminate the principle of progressivity. Rather, a flat-tax system that includes a personal exemption would enable Canada to maintain progressivity while by-passing the costs of high and increasing marginal tax rates.

Viewing such reform over the course of one's life rather than within a single year shows that nearly all taxpayers would gain from such a reform. In short, a flat-tax system of taxation presents enormous economic benefits with very few economic costs. The Hall-Rabushka flat tax should be the model upon which Canada begins to discuss and design real tax reform.

Notes

1 For a discussion of the marginal efficiency of different taxes see Jorgenson and Kun-Young 1991 and Kesselman 1997.

2 If RRSP or RPP contributions were included as eligible deductions from taxable income, then the tax system would approach a nearly pure consumption tax.

3 In a technical sense, the average tax rate increases as individuals earn more while the marginal tax rate remains flat, achieving progressivity without incurring increasing marginal tax rates.

4 The application of a flat tax within the tax cases presented is restricted to personal income due to limitations in the SPSD/M. It does not, therefore, include other major sources of tax revenue such as corporate income.

Introduction

During a period of balanced budgets accompanied by solid, if unspectacular, economic growth, public attention is increasingly turning again to a critical element of macroeconomic policy, namely taxation. A growing number of analysts and commentators currently advocate reforming the Canadian tax system. Agreement, however, ceases at this point as there are a myriad of specific proposals for tweaking, refining, even significantly altering our current mechanisms for collecting taxes.

This study offers a reassessment of the appropriate role of taxation in the contemporary Canadian economic environment. Consequently, our analysis is more definitive, comprehensive, and, most importantly, empirically rigorous than other fiscal remedies circulating throughout the Canadian body politic.

The authors of this study contend that the goal of tax policy should be to finance the desired level of government spending in the least distortionary manner. Unfortunately, governments of all political persuasions throughout Western nations have, over the course of the last half-century, implemented interventionist tax policies aimed at influencing the behaviour of individuals, families, and businesses. These tax policies distort the economy.

Distortion is created by the tax system through the use of exemptions, deductions, and tax credits, which effectively increase the costs of certain types of behaviour and decrease the costs of other types of behaviour. These tax-based distortions reduce economic efficiency and complicate the tax system beyond what is necessary.

In *Flat Tax: Principles and Issues*, we aim to clarify many of the issues and principles related to tax reform based on a flat tax as presented in section 2 and modelled in section 3. The study will examine a number of issues related to these types of tax reform, such as progressivity, marginal and average tax rates, income mobility, and international experience with the flat tax. In addition, a number of possible implementations of the flat tax are presented and analyzed.

This study should be viewed as a first step in the development of a comprehensive plan for the implementation of a broad-based, integrated flat tax on personal and business income. It discusses the principles and establishes a solid foundation upon which to build future research into the viability of implementing a flat tax.

Flat tax versus single-rate tax

There is a major difference between a reform of the tax system that would introduce a broad-based, integrated flat tax and the replacement of multiple rates of taxation with a single tax rate, as planned by the Province of Alberta for 2001 and as proposed by the federal Canadian Alliance Party.

Tax reform based on a flat tax involves broad-based change wherein all types of income, both personal and business are uniformly taxed once at one rate. In other words, every source of income is taxed once and at the same rate. The introduction of a flat tax also encompasses the elimination of all or most tax credits, deductions, and exemptions.

Tax reform based on a single-rate tax, on the other hand, simply involves replacing multiple rates of taxation with a single rate of tax. The reforms proposed by the Canadian Alliance affect only personal income and therefore retain differential rates of taxation on different types of income. They also retain all of the tax credits, exemptions, and deductions contained in the current system. The single-rate tax base is, therefore, less broad than a flat-tax base.

Outline of the study

The study contains five main sections that are complementary although not dependent upon one another. That is, each section can be read and understood independently of the other sections. Section 1 describes the basic differences between average and marginal rates of tax, explains the principle of progressivity and how it can be achieved with a flat tax or a single-rate tax, and summarizes the economic research on the negative effects of high and increasing marginal tax rates. It clarifies many of the issues that inevitably

arise when discussing tax reform in general and particularly tax reform based on either a flat tax or single-rate tax.

Section 2 summarizes one of the earliest and most prominent American proposals of a flat tax. Professors Robert E. Hall and Alvin Rabushka of the Hoover Institution were two of the earliest scholars formally to present plans for broad-based tax reform founded on the principles of a flat tax. Although the analysis studies tax reform in the United States, the principles that underlie the proposal are equally applicable to Canada.

Section 3 presents the results of a taxation model created by the authors based on Statistics Canada's Social Policy Simulation Database and Model (SPSD/M); it is highly quantitative in nature. The section presents nine possible cases ranging from a basic flat tax with no exemptions or tax credits to a flat tax with a personal exemption, an exemption of $2,000 per child, a deduction for RRSP/RPP contributions, and a deduction for charitable donations.

Two cases are also presented that combine a flat tax with reductions in taxes and expenditures implemented at the federal level. The section is meant to present possible options for the implementation of a flat tax and to illustrate the trade-offs, tax rates, and distribution of taxation given the particulars of each case.

It should be noted that Section 3 only investigates the effect of tax changes on personal income. Due to the design of the SPSD/M and related technical complexities, the flat-tax cases presented in this section, like the single-rate tax enacted in Alberta and proposed by the Canadian Alliance, do not include reform of business taxes. Nonetheless, the cases in this section provide an important step forward in the discussion of the possibilities available for tax reform and the various trade-offs present in the reform process.

Section 4 places the issue of tax reform based on a flat tax in the context of a lifetime tax liability analysis. That is, it explains why and how we should think about tax liabilities in terms of an individual's life rather than in the context of a particular year. The section demonstrates how specific tax reforms are affected by age and the lifetime pattern of earnings. The section further highlights the highly transitory nature of income and the flaws present in much of the tax analysis that are based on single-year analyses.

Finally, Section 5 discusses the flat tax as presently used by Hong Kong and the Channel Islands. The section is presented to establish that the flat tax is a viable possibility that is already in use and not some theoretical construct that has yet to be concretely tested.

It is our hope that this study will establish a foundation for a rational discussion of tax reform based on a flat tax as well as creating a platform from which to undertake further research.

1 Average taxes, marginal taxes and progressivity

Section 1 of the study explains differences between average and marginal tax rates, shows how progressivity can be achieved with a flat tax (the analysis is equally applicable to a single-rate tax systems), and describes the negative effects of high and increasing marginal tax rates.

Marginal and average taxes

The terms "marginal tax rate" and "average tax rate" are often confused in discussions of tax policy. The average tax rate for an individual, family, or business is simply the total amount of taxes paid relative to the total amount of income earned. For instance, the average tax rate for an individual who earned $40,000 and paid $10,000 in taxes would be 25%.

Marginal tax rates, as the name indicates, apply at the margin. That is, marginal tax rates are relevant on an incremental basis. In other words, the marginal tax rate is the rate that applies to the next dollar of income earned. For example, if an individual who earned $40,000 received a raise of $5,000, raising her income to $45,000, the tax rate applicable to the last dollar of the raise of $5,000 would be the marginal tax rate. If $2,000 of the $5,000 raise were taxed away, the marginal tax rate would be 40%.

Illustrated example

Let us assume, for illustrative purposes, that only the four 2000 federal statutory rates (0%, 17%, 25%, and 29%)[1] of income tax exist, that the personal exemption ($7,231) also exists and that no deductions from income are permitted. Table 1 summarizes the 2000 income brackets within which each rate applies.

Let us further assume that an individual currently earns $30,004. The individual would pay $3,871 in federal income tax given his income.[2] This represents an average tax rate of 12.9%. Recall that average taxes are simply the ratio of taxes paid ($3,871) to total income ($30,004).

Let us now assume that the individual receives a raise of $1,000. His income would, therefore, increase to $31,004. We are interested in the marginal rate of taxation faced by the individual given his raise. Recall that marginal taxes are applied at the margin, that is, on additional income.

The additional income gained from the raise will place the individual in a higher tax bracket. He will now face a tax rate of 25% on the income above $30,004. In other words, his current marginal tax rate is 25%; his marginal tax rate will remain at 25% until his income exceeds $60,009, when the next tax rate will apply. This individual will, therefore, pay $250 in federal income tax on his raise rather than $170, which he would have been assessed using the lower tax rate. The individual has, therefore incurred an additional tax liability of $80 due to the higher rate of taxation.

The individual's average tax rate would also change. The individual's total tax bill for the year would now be $4,121, an average federal tax rate of 13.3%.

It is important to distinguish these two concepts of taxation. Average tax rates, on the one hand, represent the total tax burden on individuals, families, and businesses relative to their total income. Marginal tax rates, on the other hand, indicate the rate of income tax paid on marginal or incremental income.

Influence of high and increasing marginal tax rates

When deciding whether to work an additional hour, to increase one's human capital through education, or to in-

Table 1: Federal statutory rates (2000)

Tax Rate	Income Level
No Tax (0%)	$0 – $7,231
17%	$7,232 – $30,004
25%*	$30,005 – $60,009
29%	$60,010 – and above

Source: The Budget Plan 2000, Department of Finance, 2000.

* Rate reduction to 23% will be fully implemented by 2001.

vest one's savings, the tax rate most important to an individual or business is the marginal tax rate. It matters most because it directly affects the proportion of increased income that can be kept. The higher the marginal tax rate, the lower the return to productive activity and, thus, the lower the level of incentives for the individual, family, or business.

The folly of demanding higher and higher marginal tax rates for those in the upper income brackets is that this effectively provides disincentives for the most productive members of society to be productive. In so much as this reduces economic growth that benefits all members of society, increases in tax rates can eventually result in each of us being worse off than we might otherwise have been, even if our own marginal tax rate is much lower than that of the wealthiest individuals.

Marginal tax rates and maximizing social welfare

A particularly interesting study of the connection between social welfare and marginal tax rates is found in Gruber and Saez (2000). In this paper, the authors derive optimal tax rates based on different assumptions of how the government values[3] the incomes of citizens in different tax brackets and the responsiveness of individuals in these different brackets to increases in their marginal tax rate. The task for the government is to raise the revenue necessary for its functioning (provision of goods and services, income redistribution, and debt servicing) while maximizing social welfare, given how individual behaviour will change as tax rates are modified.

Gruber and Saez present a number of different situations, including an example where the government values revenue from each income bracket equally, one where the government does not value the income of the top bracket at all (labelled "progressive"), and one where almost everyone is treated equally, except for the very poor, whose welfare the government is more concerned about. Their finding is that for each of these cases the optimal structure of marginal tax rates should be *declining* as you move up from lower to higher income brackets rather than increasing. In other words, the marginal rates of taxation should be decreasing not increasing as one's income increases.

This result holds even in the case where the government is "progressive."[4] Given the behavioural responses of individuals, the authors conclude that in order to maximize social welfare "the optimal tax system should feature declining (or at least not increasing) marginal rates, although perhaps increasing average rates" (Gruber and Saez 2000: 34).

High marginal tax rates and formation of capital

Most commentators would agree that investment is important for the future well-being of a nation. High marginal tax rates lower the returns to investment and the incentives for the entrepreneur. Carroll, Holtz-Eakin, Rider, and Rosen (1998) find that "a 5 percentage point rise in marginal tax rates would reduce the proportion of entrepreneurs who make new capital investment by 10.4%. Further, such a tax increase would lower mean capital outlays by 9.9%" (1998: 2).

In a recent paper, Gustavo Ventura (1999) modelled the effects of a broad-based flat tax reform initiative such as that proposed by Hall and Rabushka (see Section 2). Ventura concluded that the elimination of taxes on capital did indeed have a positive effect on capital accumulation. He also concluded that aggregate labour supply, measured in efficiency units, would also increase.

High marginal tax rates and economic growth

In a statistical sense, both average and marginal tax rates can influence economic well-being. A larger size of government and larger corresponding average tax burden(s) can translate into lower economic performance, especially as an expanding government tends to get involved in activities not consistent with furthering economic growth (Gwartney, Halcombe, and Lawson 1998). Marginal tax rates, however, can have a separate influence on the incentives facing the factors of production and, thus, ultimately on economic well-being. Several papers have tried to disentangle these two effects.

For example, Koester and Kormendi (1989) find that after controlling for average tax rates, increases in marginal tax rates have negative effects on the level of economic activity. In other words, reducing the "progressivity" of the tax system while allowing the government the same tax revenue as a percent of GDP leads to higher levels of national income. Since the tax base increases while the average tax rate remains unchanged, this suggests that governments can actually increase their revenues by moving to "flatter" tax systems.

Mullen and Williams (1996) derive marginal tax rates for the American states using a method similar to

that of Koester and Kormendi (1989). Their model controls for initial income, the growth rate of the capital stock, and the growth in the labour force. After looking at a number of different estimates they conclude that "lowering marginal tax rates can have a considerable positive impact on growth ... creating a less confiscatory tax structure, while maintaining the same average level of taxation, enabling sub-national governments to spur economic growth" (Mullen and Williams 1996: 703).

Becsi (1996) uses a method similar to that of Koester and Kormendi (1989) to derive marginal tax rates for the American states. He finds that differences in marginal tax rates across states have a statistically significant effect on relative growth rates. For the time period examined, Becsi finds that "state and local taxes have temporary growth effects that are stronger over shorter intervals and a permanent growth effect that does not die out over time" (Becsi 1996: 34).

Finally, Engen and Skinner (1996) examine a number of studies looking at evidence from the United States and abroad. They conclude that "a major tax reform reducing all marginal rates by 5 percentage points, and average tax rates by 2.5 percentage points, is predicted to increase long term growth rates by between 0.2 and 0.3 percentage points" (Engen and Skinner 1996: 34). While this may appear small, the cumulative effective can be enormous. They speculate that if an inefficient tax structure had been in place in the United States from 1960 to 1996, the amount of output currently lost would have totalled more than $500 billion annually or 6.4% of 1996 GDP.

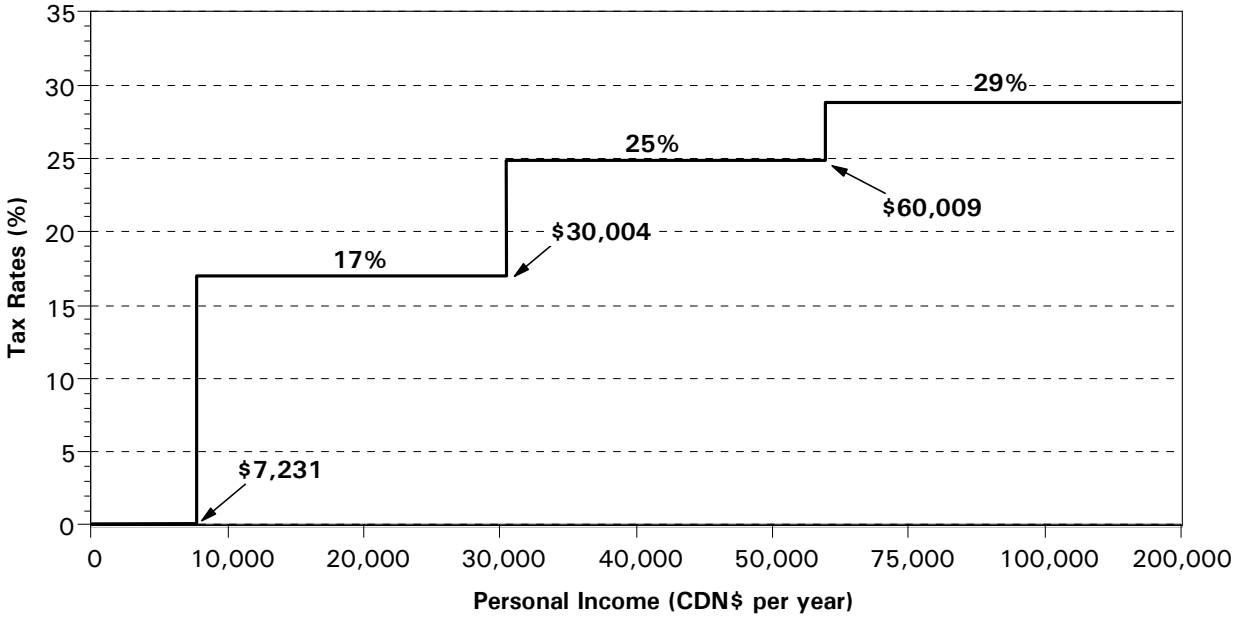
Progressivity

The evidence is already quite strong and still growing that high and increasing marginal taxes have negative economic consequences. One of the main benefits of a flat tax is that it is able to achieve progressivity in the tax system—those earning more, pay more in taxes—while at the same time eliminating the damaging effects of high and increasing marginal tax rates.

One of the most fundamentally misunderstood aspects of the flat tax and, for that matter, of the single-rate tax is their effect upon progressivity and marginal taxation. Progressivity refers to the amount of taxation contributed by each income group. The traditional concept of progressivity, often referred to as vertical equity, has been that individuals earning more should contribute more in taxes in an absolute sense. That is, as individuals and families earn more, they should pay proportionately more in taxes.

Progressivity has traditionally been achieved by progressively higher statutory tax rates. Figure 1 illustrates the progressivity present in the 2000 basic federal tax system. There are four statutory rates: 0%, 17%, 25%, and 29%. Income earned below the level of $7,231 is exempt from federal taxation. Income earned between $7,231 and $30,005 is taxed at a rate of 17%. Income earned above $30,004 but below $60,010 is taxed at the higher rate of 25% and finally, income earned above $60,009 is taxed at 29% (see table 1 for a summary of this information).

Figure 1: 2000 Federal Statutory Tax Rates



In addition to the four federal statutory rates, there is a federal surcharge, federal payroll taxes, provincial taxes (including surcharges), and provincial and federal tax credits to consider. For simplicity, only the federal statutory rates are presented to illustrate the concepts of progressivity and marginal taxes.

Progressivity is currently achieved through progressively higher statutory tax rates. However, increasing marginal tax rates also introduce the negative effects discussed previously. Specifically, achieving progressivity through high and increasing marginal tax rates creates disincentives for entrepreneurial activities, innovation, savings, and investment.

The flat tax can eliminate the negative effects of high and increasing marginal tax rates while maintaining progressivity. Individuals, families, and businesses continue to contribute an increasing amount of their income as they earn more but no longer face increasing marginal tax rates. Progressivity within a system based on a flat tax or a single-rate tax is achieved through an exemption. Thus, progressivity is achieved while at the same time avoiding the disincentives associated with high and increasing marginal tax rates.

Illustrated example

Progressivity is introduced in a flat-tax system through a personal exemption. A personal exemption allows individuals, families, or businesses to earn a certain level of income before they are assessed income taxes. Figures 2 and 3 and table 2 illustrate the effect the introduction of a personal exemption has on both the proportion of income paid in taxes and the average rate of taxation. The marginal rate of taxation beyond the personal exemption remains constant at 20% and 30%, respectively. The first dollar, and every subsequent dollar earned beyond the personal exemption is taxed at the same uniform rate. Thus, there is only one point at which the marginal tax rate changes based on the federal statutory tax rates: moving from the exempted income with zero taxation to the non-exempt income with some positive rate of taxation.

Figures 2 and 3 also show that the proportion of income paid (average or effective tax rate) in tax increases as one's income increases. As the level of personal income increases, the amount of income or average rate of taxation approaches the actual flat rate of taxation although it never actually equals the flat rate due to the presence of the exemption.

This, in fact, is one of the trade-offs that must be considered when developing a flat tax. The larger the exemption, the larger the rate of tax that must be applied to all income above the exemption in order to achieve sufficient revenue. The larger the exemption and, thus, the higher the rate of the flat tax, the larger the marginal disincentive effect present at the point of taxation. That is, the strength of the disincentive present at the point at which individuals begin to pay taxes will increase as the exemption and tax rate increase. A crucial step in the development of a tax system based on a flat tax is the determination of the exemption level and its corresponding tax rate. Section 3 presents nine cases to illustrate this and other trade-offs.

Figure 2: Marginal and Effective Tax Rates ($10,000 exemption with 20% tax rate)

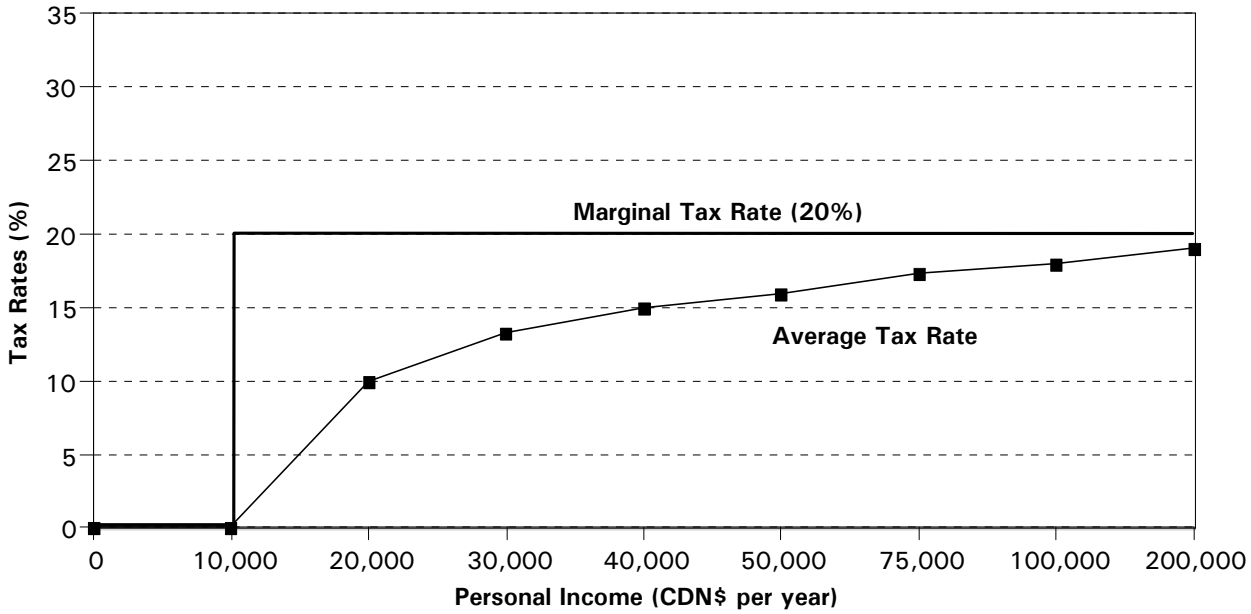


Figure 3: Marginal and Effective Tax Rates ($20,000 exemption with 30% tax rate)

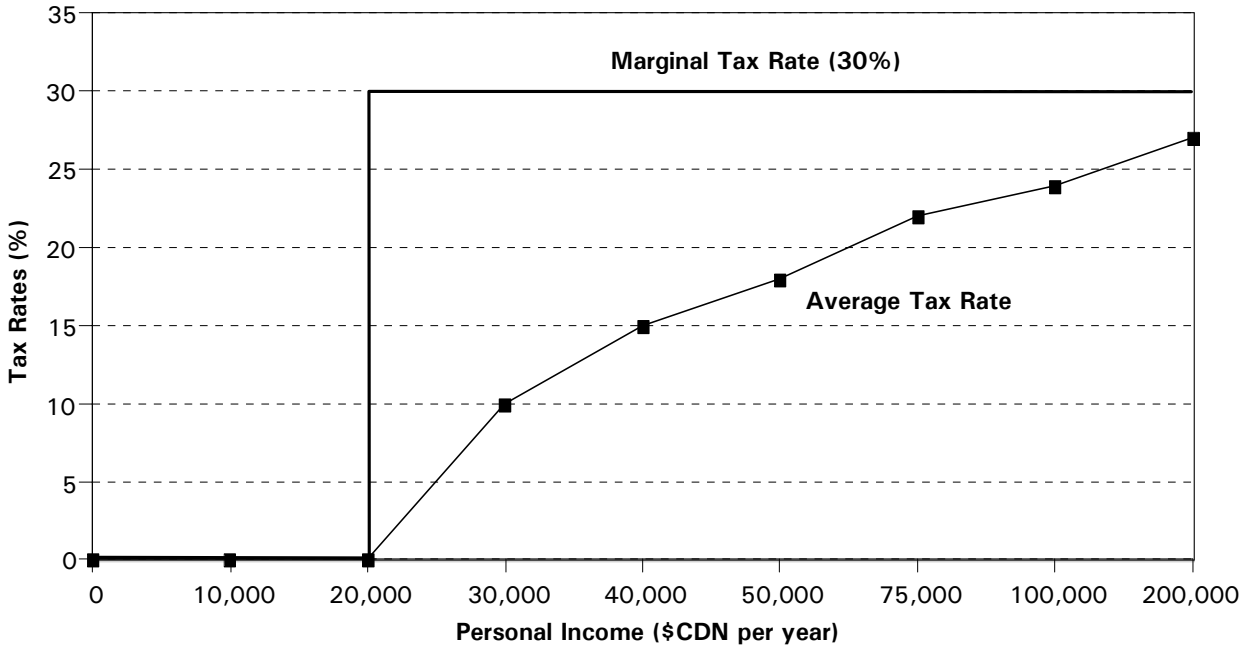


Table 2: Two scenarios of the flat tax

	Scenario 1		Scenario 2	
Income Level	Taxes Paid	Average Tax Rate	Taxes Paid	Average Tax Rate
10,000	—	0.0%	—	0.0%
20,000	2,000	10.0%	—	0.0%
30,000	4,000	13.3%	3,000	10.0%
40,000	6,000	15.0%	6,000	15.0%
50,000	8,000	16.0%	9,000	18.0%
75,000	13,000	17.3%	16,500	22.0%
100,000	18,000	18.0%	24,000	24.0%
200,000	38,000	19.0%	54,000	27.0%

Notes: Scenario 1—$10,000 exemption with a 20% single tax rate. Scenario 2—$20,000 exemption with a 30% single tax rate. Data and calculations are for illustrative purposes only and do not represent modelled tax calculations.

Conclusion

It is important to note when reading this study and other analyses of tax reform the basic differences between average and marginal tax rates when assessing tax policy. Further, it is vital to acknowledge the growing body of research confirming the rather large negative effects associated with high and increasing marginal tax rates. Finally, one should acknowledge that progressivity can be achieved through a flat tax or a single-rate tax without incurring the costs associated with the negative incentives arising from high and increasing marginal tax rates.

2 Hall-Rabushka flat-tax reform

This section provides a brief overview of the flat-tax reform proposed by Professors Robert E. Hall and Alvin Rabushka, both of the Hoover Institution. The tax reform developed by Hall and Rabushka is based on a single rate of taxation for all sources of income and represents a fundamental change in the way governments would collect tax revenue. The proposal achieves simplicity, economic efficiency, and fairness, the traditional measures of effective taxation, while collecting the necessary revenues required to finance government. One could think of their proposal as the ideal tax system towards which we should strive. Those wishing to pursue the proposals of Hall and Rabushka in greater breadth and detail will find their works on the Internet at the Hoover Institution (www.hoover.org) and the American Enterprise Institute (www.aei.org) as well as in most major bookstores and libraries.

Differentiating the flat tax from the single-rate tax

In discussing tax reform, it is again important to recognize the stark difference between reform based on a flat tax and the replacement of multiple tax rates with a single tax rate. The reforms to personal income tax announced in the Province of Alberta in 1999 will replace the multiple tax rates applied to personal income with a single tax rate. Similarly, the tax reform recently proposed by the Canadian Alliance would replace the multiple federal statutory personal income tax rates with two rates initially, and, near the end of their first mandate, with one rate. However, the replacement of multiple tax rates with a single rate is but one step in the process of broad-based tax reform based on a flat tax model. In fact, the replacement of multiple tax rates with a single rate can be viewed as a tax reform separate and distinct from reforms based on a flat tax.

Hall-Rabushka flat tax

A number of tax reforms have been proposed in the United States including a national sales tax and the replacement of the current graduated system of income tax with a flat tax. Prominent American political leaders, including the Majority Leader of the House of Representatives, Dick Armey, have formulated comprehensive programs for tax reform based on a flat tax. The foremost proposal for a flat tax, however, is also one of the earliest: Hall and Rabushka first proposed a comprehensive flat tax in 1985 and their proposal has subsequently formed the basis for a host of others.[5]

The principles upon which Hall and Rabushka's flat-tax proposal (hereafter Hall-Rabushka) rest are simplicity, efficiency, and fairness. That is, in formulating their reformed tax system, Hall and Rabushka attempted to fashion a system that would increase simplicity, efficiency, and fairness.

One of the essential aspects of a flat-tax system is the taxing of all types of income once and only once. Under the current system, in both the United States and Canada, certain types of income, such as some fringe benefits, are not taxed at all, while other sources of income such as dividends and capital gains are taxed more than once or at differing rates.

The other essential aspect of a flat tax is that income should be taxed uniformly, with no rate differentials between different types of income. In other words, income from dividends, or wages, or pensions should be taxed at the same single rate. In the case of the United States, Hall-Rabushka recommended replacing the current 5 personal federal rates (15%, 28%, 31%, 36%, and 39.6%) and the various business tax rates with one single, 19% federal tax rate.

Individual income tax

One frequently overlooked aspect of Hall-Rabushka is its rejection of alternative taxes such as a national sales tax or

value-added tax. Both scholars reject the alternatives because of the difficulty of exempting lower-income individuals and families from taxation. Under Hall-Rabushka a significant number of lower-income families pay absolutely no income tax. In fact, under Hall-Rabushka the exemption for a family of four in 1995 was $25,500 (CDN$32,986). In other words, a family of four with total income less than US$25,500 would pay no income tax and families with income above the exemption would pay 19% tax on the amount in excess of the exemption.

While the most significant reforms under Hall-Rabushka occur in taxation of corporate or business income, reforms are nonetheless present for personal income tax. Under Hall-Rabushka, only wages, salaries, and pension benefits are deemed personal income and subject to personal income tax. Income from dividends, capital gains, interest, or fringe benefits are not subject to personal income tax because they are already taxed at the corporate or business level. Recall that, under Hall-Rabushka, whether income is taxed at the personal or business level is irrelevant since all income is taxed at the same rate.

The phrase "postcard-size tax returns" was coined partially in connection with the Hall-Rabushka plan. Individuals and families would simply sum their income from wages, salaries, and retirement benefits and subtract the personal exemption to calculate their taxable income. This amount is then multiplied by one rate (19%) to determine the individual or family tax bill for the year. The amount withheld is then compared to the amount owed to calculate whether a refund is owing from, or a payment is owing to, the federal government.

This system has no tax credits, deductions, or additional exemptions. In other words, the myriad of tax credits and deductions present in the current systems and the attendant complicated and time-consuming paperwork are eliminated under Hall-Rabushka.

Business income tax

Another important aspect of Hall-Rabushka and, indeed, most flat-tax proposals is that they offer an integrated approach to tax reform. That is, they aim to reform not only personal income tax but also corporate or business income tax. Hall-Rabushka assesses tax on all business income after deducting the cost of inputs, salaries, wages, pensions, and investment in plant and equipment.

Although the corporate tax rate is lowered in order to satisfy the requirement for one rate of taxation, more revenue is generated by broadening the tax base through the elimination of tax-based incentives for business, taxing certain benefits that currently escape taxation, and removing interest deductibility.

Hall-Rabushka precludes businesses from deducting the cost of interest, dividends, fringe benefits, and any other payments to owners as expenses. The rationale for excluding these types of deductions and, thus, forcing the business to pay tax on them is to ensure that they are taxed only once. The income individuals and families receive from business is exempt from personal taxation because it has already been taxed at the corporate or business level. Hall-Rabushka is, therefore, a comprehensive tax system that assesses all types of income equally and singularly.

Interest deductibility and depreciation expenses

Two of the major reforms in Hall-Rabushka are the exclusion of interest costs and depreciation expenses as deductible expenses. Interest income is no longer deemed to be taxable income for individuals or families under Hall-Rabushka because it is taxed as business income. This fundamental change in the way businesses are taxed eliminates the preferential treatment accorded debt relative to equity financing. Currently, payments based on debt instruments, such as bonds, are tax deductible while payments based on equity investments, such as dividends, are not. By eliminating interest payments as tax deductions, Hall-Rabushka eliminates preferential treatment of debt.[6] This is one of the many economic efficiencies gained under Hall-Rabushka.

Perhaps the largest single reform under Hall-Rabushka is the elimination of depreciation expenses. Businesses are currently able to write-off, or deduct, the cost of investing in new plants and equipment on an incremental basis. That is, each year over a period determined by government, business is permitted to deduct a percentage of the total cost of purchasing plants and equipment. Under Hall-Rabushka, the entire cost of investment (plant and equipment) is deducted as an expense in the year of purchase. Thus, depreciation schedules and the bureaucracy necessary to interpret them (accountants and lawyers) and to enforce them (government revenue officials) are eliminated or, at least, reduced in number. There would be no conflict over whether the purchase of certain types of equipment are investments or expenses since Hall-Rabushka considers all such expenditures as expenses.

Focus on consumption

One of the main, though often overlooked, benefits of Hall-Rabushka is that it effectively moves income tax away from a tax system based on income towards one based on consumption. Economists generally agree that the taxation of consumption is the most efficient manner in which to raise tax revenue (Jorgensen Yun 1991; Kesselman 1997; and Kneller, Bleaney, and Gemmell 1999). Hall-Rabushka creates a tax system based on consumption by excluding all investment activities. In essence, a consumption tax is levied on any income that is consumed, that is, spent rather than saved. The exclusion of savings (investments) under Hall-Rabushka also enables it also to eliminate the heavy taxation of returns to savings. Thus, not only are efficiencies gained by moving towards a more effective base of taxation (i.e., consumption) but considerable incentives are created for increased savings and the formation of capital.

Economic considerations

There are a number of important economic considerations associated with the implementation of Hall-Rabushka beyond achieving simplification in the tax system. The net economic effect of the reforms proposed by Hall-Rabushka include improved incentives for work, increased entrepreneurial activity, and greater formation of capital, leading to a substantially higher level of national output and standard of living.

Various aspects of the proposals included in Hall-Rabushka would lead to increases in the efficiency of capital formation. Although the current system sustains a relatively high level of capital formation, it does so by providing a number of tax-based incentives in the form of tax credits and subsidies that tend to redirect capital to less efficient uses. Specifically, the current system promotes debt-financed investment by permitting interest deductibility while penalizing equity-financed investment through double taxation of dividends and capital gains. The net result is less entrepreneurial activity and greater debt-financed (lower risk) investment. Auerbach and Kotlikoff (1987; cited in Hall-Rabushka) estimate that a flat tax would increase the ratio of capital formation to GDP from 5.0% to 6.2% and, as a consequence, increase GDP by between 2% and 4% within seven years.

There are also strong incentives for individuals to increase their work effort. Hall-Rabushka completely eliminates the effect of increasing marginal taxes except for the initial level at which taxation begins. That is, as individuals attain skills and begin to advance in the labour force, they do not face increasing rates of taxation. There is, therefore, no marginal disincentive to work harder and succeed as exists in the current system. Hall and Rabushka estimate that GDP will increase by approximately 3% simply due to the elimination of disincentives for work.

Finally, Hall and Rabushka conclude that there would be downward pressure on interest rates within a flat-tax regime. They specifically cite the ⅙ (17%) interest-rate differential present between tax-exempt municipal bonds and comparable taxable bonds. Evidence derived from their analysis suggests that interest rates would be lowered by roughly 25%. The reduction in interest rates would have a significant effect on the housing and investment market.

Conclusion

We have not, by any means, given a full description and assessment of Hall-Rabushka. However, it is important to note the comprehensive nature of this proposal and the far-reaching economic improvement that it offers. Hall and Rabushka present a clear, concise, and effective proposal for reform of taxation on personal income and on business income. They offer a road map for tax reform that increases simplicity, efficiency, and fairness in the tax system.

There are major differences between the broad-based and far-reaching tax reform that results from a flat-tax model of taxation such as Hall-Rabushka and the incremental reform that results from replacing multiple rates of taxation with a single rate. The replacement of multiple rates of taxation with a single rate, although an important tax reform, does not change the tax system in the fundamental way that a flat tax does. For instance, the replacement of multiple rates of taxation with a single rate does not eliminate the great number of deductions and tax credits present in the system nor does it eliminate the preferential treatment of certain types of income relative to others or the double taxation of other types of income.

3 The flat tax applied: nine cases

This section contains nine quantitative analyses based on Statistics Canada's Social Policy Simulation Database and Model (SPSD/M) of various implementations of a flat tax at the federal and provincial levels. The reforms included in each of the nine cases considered show the flat tax implemented to the extent possible within the SPSD/M. The application of the flat tax is, thus, restricted to personal income and does not include other major sources of tax revenue such as corporate income.

Cases 1 through 4 present the simplest scenarios. The first eliminates all tax credits, exemptions, and deductions in order to present the simplest, most straightforward case possible. The remaining three add a personal exemption of varying value, illustrating the rather large trade-off that exists between the value of the personal exemption and the corresponding tax rate.

Case 1
- no tax credits, exemptions or deductions

Case 2
- personal exemption ($7,231)
- no other deductions or exemptions

Case 3
- personal exemption ($8,766)
- no other deductions or exemptions

Case 4
- personal exemption ($17,532)
- no other deductions or exemptions

Cases 5, 6, and 7 introduce an exemption of $2,000 per child, and deductions for both contributions to retirement plans (RRSP/RPP) and donations to registered charities, illustrating the effects associated with the introduction of a variety of tax deductions and exemptions.

Case 5
- personal exemption ($8,766)
- exemption of $2,000 per child

Case 6
- personal exemption ($8,766)
- exemption of $2,000 per child
- current RRSP/RPP deduction

Case 7
- personal exemption ($8,766)
- exemption of $2,000 per child
- current RRSP/RPP deduction
- current deduction for charitable donations

Cases 8 and 9 introduce a reduction in spending by the federal government and a corresponding reduction in taxes. In the the previous seven cases, federal government spending was held neutral (constant).

Case 8
- $13.4 billion spending and tax reduction
- personal exemption ($11,834)
- exemption of $2,000 per child
- current RRSP/RPP deduction

Case 9
- $22.3 billion spending and tax reduction
- personal exemption ($11,834)
- exemption of $2,000 per child
- current RRSP/RPP deduction

Each case contains the respective tax rates charged by the federal and provincial governments. The combined or total flat-tax rate for each jurisdiction is also shown.

Analysis of tax distribution, which provides information on which income groups actually pay the income tax bill, is presented for all nine cases.

The study also presents relative measures of the tax distribution, specifically, the combined federal-provincial flat tax as well as the federal-only rate of flat tax relative to total income for each income group. The relative measures are presented in a separate table following the absolute measures of the tax distribution. In both cases, a brief discussion of the results contained in the tables is presented.

In addition to the overall distribution of taxation, analyses of five sample households from Ontario are presented. The five households were selected in order to

highlight specific experiences with tax reform. Household 1 is a single individual aged 31, with no children, and earning $37,635, roughly the average industrial wage.

The second and third examples are family households with proximate incomes, both with two parents and two children. Household 2 is a family of two working parents aged 34 and 32, with two children aged 14 and 11, and earning a combined income of $55,840. Household 3 is a family of two parents aged 37 and 33, with two children aged 5 and 8, and earning a combined income of $56,783. The difference between these two households is that household 3 has one predominant income earner while household 2 has two people earning nearly equal incomes. In other words, one of the parents in household 3 essentially works in the home.

These two households are presented in order to illustrate the different effects the nine cases would have on households where incomes are similar but the work status of the parents differ. Thus, rather than viewing each household in isolation the two should be viewed simultaneously in order to compare the effect of the flat tax on a family of dual earners with the effect on a family supported by a single earner.

Households 4 and 5 are presented to illustrate the effects of the various tax cases on different levels of household income. Household 4 has two parents, aged 43 and 39, with two children aged 18 and 8 and earning a combined income of $24,849. Like household 3 (single income-earner), this family's income is predominantly earned by one of the parents. Household 5 is meant to illustrate the effects of the various tax scenarios on a relatively affluent household. This household has two parents, aged 49 and 39, with two children aged 19 and 14 and earning a combined income of $98,585. Although both parents in this particular household work, the income of one of the earners is significantly higher than the other parent's income.

These examples are just five of approximately 65,000 families included in the SPSD/M. These particular examples were chosen in order to highlight specific effects of the flat tax upon the personal income tax of typical Canadian households. The households were chosen by inserting the general family specifications into the Record Selection Facility of the SPSD/M.

It is important to note that, in all of the cases except 8 and 9, there is no effect upon government revenue. That is, Cases 1 through 7 provide the same revenue to the federal and provincial governments as the status quo. Any reduction in spending that results in the need for less tax revenue necessarily reduces the rates of the flat tax.

Also, there is no federal tax abatement allowed for Quebec in this study. Therefore, the value of the abatement is removed from the provincial revenue that a flat tax in Quebec would generate. While the federal and provincial tax rates presented below would differ if the abatement were allowed, the total tax rate faced by taxpayers in Quebec would remain the same.

Methodology

The model used to analyze all cases was built using a glass-box application of the Social Policy Simulation Database and Model.[7] A new executable SPSD/M was created by copying the relevant SPSD/M files, changing existing or adding new C++ code segments, and compiling the changed files using Microsoft Visual C++.

Net income is equal to the Canada Customs and Revenue Agency's definition of total income for tax purposes except for Cases 6 through 9 where RRSP/RPP contributions are deducted from total income.

The only exemptions and deductions from income allowed are those discussed in the various cases; all other personal income tax credits, exemptions, and deductions have been eliminated. All spending programs (including programs such as GST rebates and child-tax benefits that depend on income as determined by the annual tax return) remain in place.

The federal tax abatements to Quebec as they currently exist were not modelled as this arrangement between the federal and Quebec governments is one of the unnecessary complications in the current tax system that tax reform should eliminate. In all relevant cases, more federal and less provincial revenue is collected from Quebec's taxpayers than would be the case if the abatements were included in the calculations. A note to the tables showing the flat-tax rates (tables 3.*x*.1) provide the tax rates that would exist if the abatement were included in the model. For example, Case 6 shows Quebec with a federal tax rate of 19.9% and a provincial rate of 15.7%. If the abatements were included, the federal rate for Quebec would be 16.2% (resulting in less federal revenue from Quebec taxpayers) and the provincial rate would be 19.4% (resulting in more provincial revenue from Quebec taxpayers). The overall rate remains unchanged at 35.6%.

The various cases presented in this section do not incorporate any behavioural responses to the changes in

the tax system. That is, the analysis does not account for the possibility that the various changes proposed in each case might facilitate or encourage particular changes in the behaviour of taxpayers. For instance, the replacement of high and increasing marginal taxes with one single-rate of taxation is expected to encourage greater work effort and higher levels of savings that lead to higher rates of economic growth but such benefits are not included in the analysis. Thus, our analysis is conservative in estimating the total effect the proposed tax changes would have on government revenue and personal income levels.

Case 1

No tax credits, exemptions or deductions (base case)

Case 1 eliminates all tax credits, deductions, and exemptions, including the personal exemption. Put another way, this case represents a basic tax system for personal income that excludes all types of incentive-based exemptions and tax credits. For instance, in addition to the elimination of the personal exemption, other popular exemptions such as those for Registered Retirement Saving Plans (RRSP) and Registered Pension Plans (RPP), the child expense deduction, and the tax credit for charitable donations are also eliminated. Eliminating the myriad exemptions, tax credits, and deductions presents a nearly flat rate of taxation for personal income. The system is not completely flat because it does not include other types of income such as corporate income. It is, however, to the fullest extent possible within the structure of the SPSD/M, a flat system of taxation on personal income.

Case 1 is presented not because the authors do not believe a personal exemption should be present but rather to present a base-case to which other cases can be compared. One of the important insights gained from presenting a base case is the effect the introduction of exemptions and deductions have on the applicable rates of flat tax.

The pattern present in Table 3.1.1 will persist: Quebec maintains the highest provincial flat-tax rate, followed by the prairie and Atlantic provinces clustered closely together, with Ontario consistently having the lowest provincial rate of flat tax. Eliminating all tax credits, exemptions, and deductions results in a base federal flat tax rate of 12.7%, 4.3 percentage points lower than the current lowest federal statutory rate of 17%.

The elimination of the personal exemption that shields a large portion of lower-income Canadians' income from income tax causes a pronounced shift in the distribution of tax from upper-income Canadians to lower-income and middle-income Canadians. For instance, Canadians earning between $1 and $10,000 experience, on average, an increase in personal income tax of $614. The largest absolute, per-capita increase, $1,614, occurs for individuals earning between $10,000 and $20,000 annually.

The first income group to experience a net reduction in personal income tax are those earning between $40,001 and $50,000, who receive a decrease of $303 per capita (table 3.1.2). Income groups below this level all experience a net increase in personal income taxes. The largest absolute, per capita tax reduction occurs in the highest income bracket, those earning in excess of

Table 3.1.1: Flat tax rates (Case 1)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	12.7	19.7*
Newfoundland	7.2	19.9
Prince Edward Island	6.5	19.2
Nova Scotia	6.4	19.1
New Brunswick	7.0	19.7
Quebec†	9.5	22.2
Ontario	5.8	18.5
Manitoba	8.0	20.7
Saskatchewan	7.8	20.5
Alberta	6.5	19.2
British Columbia	7.0	19.7

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 7.0%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 10.5% for Quebec only and an adjusted Quebec provincial flat tax of 11.7%. Note that the adjustment does not affect Quebec's combined federal-provincial flat tax rate.

Table 3.1.2: Tax distribution (Case 1)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	0	12	0
(9,999) — 0	0	0	0	0	7,385	0
1 — 10,000	3,485	67	3,417	17,578	5,563	614
10,001 — 20,000	13,024	3,795	9,229	65,443	5,717	1,614
20,001 — 30,000	16,942	10,781	6,160	85,172	3,835	1,606
30,001 — 40,000	18,672	15,702	2,969	94,506	2,838	1,046
40,001 — 50,000	16,802	17,393	(590)	85,171	1,947	(303)
50,001 — 60,000	14,876	17,261	(2,384)	75,371	1,397	(1,707)
60,001 — 70,000	9,735	12,062	(2,327)	49,512	772	(3,011)
70,001 — 80,000	6,742	9,039	(2,296)	34,889	472	(4,860)
80,001 — 90,000	4,252	6,078	(1,826)	21,838	259	(7,049)
90,001 — 100,000	2,854	4,286	(1,432)	14,640	155	(9,196)
100,001 — 110,000	2,034	3,151	(1,116)	10,350	100	(11,152)
110,001 — 120,000	1,639	2,664	(1,025)	8,495	75	(13,555)
120,001 — 130,000	1,271	2,063	(792)	6,551	53	(14,930)
130,001 — 140,000	1,014	1,650	(636)	5,243	39	(16,158)
140,001 — 150,000	603	988	(385)	3,077	21	(17,938)
150,001 — 200,000	2,564	4,424	(1,860)	13,157	78	(23,576)
200,001 — 250,000	1,599	2,986	(1,386)	8,153	36	(37,723)
250,001 — Maximum	5,992	12,648	(6,656)	30,686	62	(105,882)

Based on calculations by the authors using Statistics Canada's SPSD/M.

$250,000, who receive a net reduction of personal income tax of $105,882. It is interesting to note that those earning in excess of $250,000 annually represent roughly 2% of all those filing tax returns (Emes and Walker 1998).

Table 3.1.3 supports the findings contained in the previous tax distribution table (table 3.1.2). Specifically, the gains from eliminating all exemptions, deductions, and tax credits is largely concentrated at upper-income levels. The reason for this is that the value of the personal exemption eliminated in this base case is more valuable for lower-income Canadians because it shields a greater portion of their income from income tax than it does for middle- and upper-income Canadians. For instance, an individual earning $10,000 annually has almost three-quarters of her entire income shielded by the personal exemption while someone earning $35,000 only has approximately one-fifth of his income shielded by the personal exemption.

It is important also to recognize that the personal exemption is one of only a few exemptions from which all taxpayers benefit. Increasing or decreasing the personal exemption can, therefore, have significant effects on the tax rates. This trade-off between the value of the exemption and the rate of tax required will be a recurring theme throughout this section of the study as different exemptions and deductions are re-introduced into the personal income tax system.

Table 3.1.4 shows the effects upon the personal income tax of the five sample households when deductions and the personal exemption are eliminated. The single individual (household 1) enjoys an $896 reduction in her income tax, representing an 11.3% reduction from the status quo.

Income tax for the dual-earner family (household 2) increases by $1,248, an increase of 14.0% from the status quo. On the other hand, income tax for the single-

earner family (household 3) decreases by $2,187, representing a decline of 17.5% compared with their current income tax bill.

The divergent experiences of the two households with similar incomes is worth discussing.[8] The implementation of a flat tax with no exemptions or deductions effectively equalizes the percentage of total family income allocated to personal income tax at 18.2% of total income. In other words, under the reformed system, the two families with approximately equal income are assessed approximately equal tax bills relative to their income.

The equalization of the income-tax liability under the new system is a change from the current system. Under the current system, due, in part, to different exemptions and income brackets, two-income families will pay tax bills much different from those of one-income, two-parent families. For instance, the two-income family (household 2) splits the income of the two working parents and thus has its income taxed at lower tax rates. Recall that the first positive statutory rate applies to income between $7,231 and $30,005 while the next rate applies to income above $30,004 and below $60,010. Thus, the one-income family (household 3) will incur a larger tax bill simply because they are not able to split their family income as the two-income family can. When this discriminatory effect of the tax code is removed, both families pay approximately the same amount of income tax relative to their total household income.

The most striking result occurs with respect to the low-income family (household 4). By removing the personal exemption and all deductions, the income tax burden for the low-income household increases 237.5% when compared to the amount of income taxes paid currently. The bulk of the income tax increase is due to the elimination of the personal exemption that previously would have shielded more than half of the household's income from income tax.[9]

On the other hand, the high-income household (household 5) experiences a reduction of $8,415 in its income tax, a 31.7% decrease relative to the amount of income taxes paid under the status quo. The reason for the dramatic decrease in the high-income household's income tax bill is that the removal of the personal exemption and various deductions had much less effect relative to the substantial decrease in the tax rates.

Table 3.1.3: Relative measures of tax changes (Case 1)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	14.0	0.3	13.7	8.9	0.2	8.7
10,001 — 20,000	15.4	4.5	10.9	9.8	3.0	6.8
20,001 — 30,000	17.8	11.4	6.4	11.5	7.0	4.5
30,001 — 40,000	18.9	15.9	3.0	12.1	9.9	2.2
40,001 — 50,000	19.3	20.0	(0.7)	12.4	12.5	(0.1)
50,001 — 60,000	19.5	22.7	(3.2)	12.5	14.3	(1.8)
60,001 — 70,000	19.4	24.1	(4.7)	12.5	15.2	(2.7)
70,001 — 80,000	19.2	25.8	(6.6)	12.6	16.8	(4.2)
80,001 — 90,000	19.4	27.8	(8.4)	12.6	17.7	(5.1)
90,001 — 100,000	19.4	29.1	(9.7)	12.6	18.4	(5.8)
100,001 — 110,000	19.4	30.1	(10.7)	12.5	18.7	(6.2)
110,001 — 120,000	19.0	30.8	(11.8)	12.5	19.8	(7.3)
120,001 — 130,000	19.3	31.3	(12.0)	12.6	19.9	(7.3)
130,001 — 140,000	19.2	31.2	(12.0)	12.6	20.0	(7.4)
140,001 — 150,000	19.4	31.8	(12.4)	12.5	19.4	(6.9)
150,001 — 200,000	19.0	32.8	(13.8)	12.3	20.3	(8.0)
200,001 — 250,000	19.5	36.4	(16.9)	12.6	22.3	(9.7)
250,001 — Maximum	19.4	40.9	(21.5)	12.6	24.8	(12.2)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.1.4: Effect on sample households (Case 1)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,023	10,180	10,309	4,094	18,166
Nominal Difference	(896)	1,248	(2,187)	2,881	(8,415)
Percent Change	(11.3%)	14.0%	(17.5%)	237.5%	(31.7%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 2

Personal exemption of $7,231

Case 2 re-introduces the personal exemption that was eliminated in the Case 1. The exemption is introduced at the 2000 level of $7,231. The rationale for the re-introduction of an exemption from taxation up to a certain level of income is based on fairness.[10] The policy objective is to ensure that a low-income individual does not pay income tax until (at least) most of her basic requirements have been met. That is, an exemption allows taxpayers to earn a certain amount of money without paying tax.

Table 3.2.1 summarizes the various rates of taxation applicable when a flat tax is coupled with the 2000 personal exemption of $7,231. The re-introduction of the personal exemption increases the overall rates of taxation for each jurisdiction by nearly a third. For instance, the federal rate increases 4.0 percentage points, from 12.7% to 16.7%. Similarly, the provincial rate for Ontario increases 1.7 percentage points, from 5.8% to 7.5% while the provincial rate for Quebec increases 3.6 percentage points, from 9.5% to 13.1%.

Table 3.2.1: Flat tax rates (Case 2)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	16.7	26.1*
Newfoundland	10.8	27.5
Prince Edward Island	9.4	26.1
Nova Scotia	9.2	25.9
New Brunswick	9.9	26.6
Quebec†	13.1	29.8
Ontario	7.5	24.2
Manitoba	10.6	27.3
Saskatchewan	10.8	27.5
Alberta	8.4	25.1
British Columbia	9.2	25.9

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 9.4%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 13.7% for Quebec only and an adjusted Quebec provincial flat tax of 16.1%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

The combined rates for all provinces increase. Ontario, the jurisdiction with the lowest rate of taxation, experiences an overall increase of 5.7 percentage points, from 18.5% to 24.2%. Similarly, the rate for Quebec, the jurisdiction with the highest rate of taxation, increases 7.6 percentage points, from 22.2% to 29.8%. The reason for the large increase in the rate across all jurisdictions is that the re-introduction of the personal exemption affects all taxpayers.

The re-introduction of the personal exemption not only increases the respective provincial and federal tax rates but also alters the distribution of taxation. Table 3.2.2 includes the distribution of income taxes based on Case 2. The shift in the tax burden from higher incomes to lower- and middle-incomes seen in Case 1 is mitigated by the re-introduction of a personal exemption. For instance, the increased tax burden placed on incomes between $10,001 and $20,000 is reduced from $1,614 to $575 with the re-introduction of the exemption, a decrease of 64.4%. Similarly, for those in the lowest positive earnings bracket ($1 to $10,000), the increased tax burden is reduced from $614 to $30.

Conversely, the reduction in the tax burden for those with high income is less than it was in Case 1. For instance, those earning in excess of $250,000, the highest income group, experience a reduction in personal income tax of $77,424, $28,458 less than the tax reduction of $105,882 experienced without an exemption.

One of the interesting effects of the re-introduction of the personal exemption is that it raises the income group in which individuals receive a net reduction in personal income tax from the range of $40,001 to $50,000 to the next range of $50,001 to $60,000. Thus, in order to receive a net reduction in personal income tax from the flat tax in this case, individuals must earn in excess of $50,000. Interestingly though, in 1997, a full 57% of income tax was paid by the top 12% of tax-filers, those earning in excess of $50,000 annually (Emes and Walker 1999). It is, therefore, not unexpected that the shift in the tax burden would benefit those who now bear the greatest proportion of income tax.

Table 3.2.2: Tax distribution (Case 2)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	0	12	0
(9,999) — 0	0	0	0	0	7,385	0
1 — 10,000	234	67	166	17,578	5,563	30
10,001 — 20,000	7,085	3,795	3,289	65,443	5,717	575
20,001 — 30,000	14,770	10,781	3,988	85,172	3,835	1,040
30,001 — 40,000	18,744	15,702	3,041	94,506	2,838	1,072
40,001 — 50,000	18,060	17,393	667	85,171	1,947	343
50,001 — 60,000	16,665	17,261	(596)	75,371	1,397	(427)
60,001 — 70,000	11,160	12,062	(902)	49,512	772	(1,167)
70,001 — 80,000	7,881	9,039	(1,157)	34,889	472	(2,449)
80,001 — 90,000	5,031	6,078	(1,047)	21,838	259	(4,043)
90,001 — 100,000	3,427	4,286	(859)	14,640	155	(5,516)
100,001 — 110,000	2,468	3,151	(682)	10,350	100	(6,812)
110,001 — 120,000	1,995	2,664	(669)	8,495	75	(8,844)
120,001 — 130,000	1,563	2,063	(500)	6,551	53	(9,425)
130,001 — 140,000	1,249	1,650	(401)	5,243	39	(10,185)
140,001 — 150,000	749	988	(239)	3,077	21	(11,128)
150,001 — 200,000	3,207	4,424	(1,217)	13,157	78	(15,426)
200,001 — 250,000	2,031	2,986	(955)	8,153	36	(25,995)
250,001 — Maximum	7,781	12,648	(4,867)	30,686	62	(77,424)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.2.3 supports the general findings of the data contained in the tax-distribution table (3.2.2). Since taxpayers in the income group earning $50,001 to $60,000 are the lowest income group to show a reduction in their income tax bill relative to their income, the introduction of a personal exemption to a flat-tax system significantly mitigates the shift in the tax burden from upper-income groups to lower-income and middle-income groups.

Table 3.2.4 presents the income tax for our household examples. The individual's income tax, although reduced by 5.9%, is reduced much less than it was under the previous case. Again, we notice the diverging experiences of the two households with similar incomes. The two-income family (household 2) experiences a marked increase in income tax while the single-income family (household 3) experiences a marked decrease in income tax. It is again important to recognize that both family households pay approximately the same percentage of their total household income (17.6%) in income taxes under the flat tax.

The re-introduction of a personal exemption has a noticeable effect on the tax paid by the low-income and high-income families. The tax increase experienced by the low-income household (household 4) is significantly less than it was in Case 1, where any personal exemption was excluded. Household 4 experiences a 53.6% increase in its total income tax bill compared to the status quo.

The introduction of a personal exemption also decreases the size of the tax reduction experienced by the high-income household (household 5), which has a reduction in income tax of $6,267 or 23.6% relative to the status quo, whereas they have a 31.7% decrease in case 1.

Table 3.2.3: Relative measures of tax changes (Case 2)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	1.0	0.3	0.7	0.6	0.2	0.4
10,001 — 20,000	8.4	4.5	3.9	5.3	3.0	2.3
20,001 — 30,000	15.5	11.3	4.2	9.9	7.0	2.9
30,001 — 40,000	19.0	15.9	3.1	12.2	9.9	2.3
40,001 — 50,000	20.8	20.0	0.8	13.3	12.5	0.8
50,001 — 60,000	21.9	22.7	(0.8)	14.0	14.3	(0.3)
60,001 — 70,000	22.3	24.1	(1.8)	14.3	15.2	(0.9)
70,001 — 80,000	22.5	25.8	(3.3)	14.8	16.8	(2.0)
80,001 — 90,000	23.0	27.8	(4.8)	15.0	17.7	(2.7)
90,001 — 100,000	23.2	29.1	(5.9)	15.1	18.4	(3.3)
100,001 — 110,000	23.6	30.1	(6.5)	15.2	18.7	(3.5)
110,001 — 120,000	23.1	30.9	(7.8)	15.2	19.8	(4.6)
120,001 — 130,000	23.7	31.3	(7.6)	15.5	19.9	(4.4)
130,001 — 140,000	23.6	31.2	(7.6)	15.5	20.0	(4.5)
140,001 — 150,000	24.1	31.8	(7.7)	15.6	19.4	(3.8)
150,001 — 200,000	23.8	32.8	(9.0)	15.4	20.3	(4.9)
200,001 — 250,000	24.8	36.4	(11.6)	16.0	22.3	(6.3)
250,001 — Maximum	25.1	40.9	(15.8)	16.3	24.8	(8.5)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.2.4: Effect on sample households (Case 2)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,455	9,842	10,010	1,863	20,314
Nominal Difference	(465)	910	(2,486)	650	(6,267)
Percent Change	(5.9%)	10.2%	(19.9%)	53.6%	(23.6%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 3

Personal exemption of $8,766

Case 3 includes an important addition to the value of the personal exemption. As discussed previously, the inclusion of a personal exemption is based on fairness. The tax system should allow individuals and families to earn a certain amount of money before they begin contributing to income tax revenues. However, the personal exemption in the present income tax system is not based on an objective criterion of how much money individuals and families need to cover basic necessities. It is, rather, quite arbitrary.

The calculation and subsequent inclusion of an exemption valued at $8,766 is based on the pioneering work of Professor Christopher A. Sarlo, Senior Fellow of the Fraser Institute (Sarlo 1996; Sarlo 1998; and a series of articles printed in Fraser Forum over the last three years all dealing with poverty. Professor Sarlo has revolutionized the way Canadians think about poverty by calculating an absolute, as opposed to the conventionally used relative, estimate of poverty. Professor Sarlo's work utilizes a "basic needs" definition of poverty. This basic-needs poverty line determines the cost of a list of necessities required for physical maintenance and good health on an ongoing basis. The list includes items such as nutritious food, adequate shelter, appropriate clothing, necessary health care, required transportation, and basic telecommunications.

The personal exemption of $8,766 is calculated by taking the highest provincial line (British Columbia) and adjusting it by the Consumer Price index (CPI) to reflect a 2000 value. It would, therefore, afford citizens in any province the ability to earn a sufficient amount of money to provide basic needs for themselves and their families. In Case 3, then, the personal exemption increases $1,535, from $7,231 to $8,766, an increase of 21.2%.

If government revenues are to remain unchanged, this increase of 21.2% in the value of the personal exemption requires that the rates of taxation for the provinces and federal government also increase. The federal flat-tax rate increases from 16.7% with an exemption of $7,231 to 17.8% with an exemption of $8,766, an increase of 1.1 percentage points (table 3.3.1). Similarly, Quebec's provincial flat-tax rate increases 0.9 percentage point, from 13.1% to 14.0% and the provincial rate for Ontario increases 0.4 percentage point, from 7.5% to 7.9%.

Quebec maintains the highest combined federal-provincial flat-tax rate. Its combined tax increases 2.0 percentage points, increasing from 29.8% with a $7,231 exemption to 31.8% with an $8,766 exemption. Similarly, Ontario, with the lowest flat-tax incurs rate a 1.5 percentage point increase in its combined flat tax, increasing from 24.2% to 25.7%.

The effect of increasing the personal exemption is the same as the re-introduction of the exemption presented in Case 2. Increasing the personal exemption further decreases the shift in the tax burden from those with high-incomes to those with lower- and middle-incomes.

Table 3.3.1: Flat tax rates (Case 3)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	17.8	27.8*
Newfoundland	11.9	27.7
Prince Edward Island	10.3	28.1
Nova Scotia	10.0	27.8
New Brunswick	10.7	28.5
Quebec†	14.0	31.8
Ontario	7.9	25.7
Manitoba	11.4	29.2
Saskatchewan	11.6	29.4
Alberta	8.9	26.7
British Columbia	9.8	27.6

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 10.0%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 14.5% for Quebec only and an adjusted Quebec provincial flat tax of 17.3%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

Table 3.3.2: Tax distribution (Case 3)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	0	12	0
(9,999) — 0	0	0	0	0	7,385	0
1 — 10,000	42	67	(25)	17,578	5,563	(5)
10,001 — 20,000	5,608	3,795	1,813	65,443	5,717	317
20,001 — 30,000	13,975	10,781	3,194	85,172	3,835	833
30,001 — 40,000	18,574	15,702	2,872	94,506	2,838	1,012
40,001 — 50,000	18,262	17,393	869	85,171	1,947	446
50,001 — 60,000	17,044	17,261	(216)	75,371	1,397	(155)
60,001 — 70,000	11,484	12,062	(578)	49,512	772	(748)
70,001 — 80,000	8,153	9,039	(886)	34,889	472	(1,875)
80,001 — 90,000	5,219	6,078	(859)	21,838	259	(3,316)
90,001 — 100,000	3,569	4,286	(716)	14,640	155	(4,603)
100,001 — 110,000	2,578	3,151	(572)	10,350	100	(5,719)
110,001 — 120,000	2,085	2,664	(579)	8,495	75	(7,657)
120,001 — 130,000	1,637	2,063	(425)	6,551	53	(8,022)
130,001 — 140,000	1,309	1,650	(341)	5,243	39	(8,662)
140,001 — 150,000	787	988	(201)	3,077	21	(9,367)
150,001 — 200,000	3,374	4,424	(1,050)	13,157	78	(13,318)
200,001 — 250,000	2,143	2,986	(843)	8,153	36	(22,930)
250,001 — Maximum	8,256	12,648	(4,392)	30,686	62	(69,871)

Based on calculations by the authors using Statistics Canada's SPSD/M.

The increased burden or personal income tax for those earning less than $40,000 is reduced relative to Case 2. For instance, the increase in income tax for those earning between $10,001 and $20,000 is reduced from $575 with an exemption of $7,231 to an increase of $317 with an exemption of $8,766 (table 3.3.2).

Similarly, the tax reduction for those earning high-income is also lessened. For instance, incomes above $250,000 show a 9.8% decrease in the value of their tax reduction, from $77,424 with a $7,231 exemption to $69,871 with an exemption of $8,766. The income group at which taxpayers receive a decrease in their personal income tax burden remains the same as in Case 2 ($50,001 to $60,000).

Table 3.3.3 reiterates the findings contained in the previous tax distribution table (table 3.3.2): it shows that the increase in the value of the personal exemption lessens further the shift of the tax burden from upper-income groups to lower-income and middle-income groups.

Table 3.3.4 presents the effects of increasing the personal exemption on our representative households. Like Case 2, the individual earner (household 1) continues to experience a tax reduction but it is less than it is in Case 1 or 2: a decrease of $389, representing a reduction of 4.9% compared to the status quo.

As it did in the previous two cases, the experience of the two households with similar incomes differs. The dual-income household (household 2) again incurs an increase in its income tax, although to a much lesser extent than in previous cases: $741, an increase of 8.3% relative to the amount of income tax paid under the status quo. The single-income household (household 3), on the other hand, shows a $2,644 decline in its income tax, a decline of 21.2% relative to the amount of income taxes paid un-

Table 3.3.3: Relative measures of tax changes (Case 3)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.2	0.3	0.1	0.1	0.2	0.1
10,001 — 20,000	6.6	4.5	2.1	4.2	3.0	1.2
20,001 — 30,000	14.7	11.3	3.4	9.3	7.0	2.3
30,001 — 40,000	18.8	15.9	2.9	12.0	9.9	2.1
40,001 — 50,000	21.0	20.0	1.0	13.4	12.5	0.9
50,001 — 60,000	22.4	22.7	(0.3)	14.3	14.3	0.0
60,001 — 70,000	22.9	24.1	(1.2)	14.7	15.2	(0.5)
70,001 — 80,000	23.3	25.8	(2.5)	15.3	16.8	(1.5)
80,001 — 90,000	23.9	27.8	(3.9)	15.5	17.7	(2.2)
90,001 — 100,000	24.2	29.1	(4.9)	15.7	18.4	(2.7)
100,001 — 110,000	24.6	30.1	(5.5)	15.9	18.7	(2.8)
110,001 — 120,000	24.1	30.8	(6.7)	15.9	19.8	(3.9)
120,001 — 130,000	24.8	31.3	(6.5)	16.2	19.9	(3.7)
130,001 — 140,000	24.8	31.2	(6.4)	16.2	20.0	(3.8)
140,001 — 150,000	25.3	31.8	(6.5)	16.3	19.4	(3.1)
150,001 — 200,000	25.0	32.8	(7.8)	16.2	20.3	(4.1)
200,001 — 250,000	26.1	36.4	(10.3)	16.9	22.3	(5.4)
250,001 — Maximum	26.7	40.9	(14.2)	17.3	24.8	(7.5)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.3.4: Effect on sample households (Case 3)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,531	9,673	9,852	1,190	20,806
Nominal Difference	(389)	741	(2,644)	(23)	(5,775)
Percent Change	(4.9%)	8.3%	(21.2%)	(1.9%)	(21.7%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

der the status quo. Again, it is important to note that both family households pay approximately the same percentage of total household income in income taxes (17.4%) under the flat tax.

The increase in the amount of the personal exemption causes the low-income household (household 4) to experience a minor reduction of $23 in the amount of income taxes paid, a 1.9% reduction relative to the tax currently assessed. The affluent household (household 5) also experiences a reduction in income tax, $5,775, which is less than in previous cases.

Case 4

Personal exemption of $17,532

Case 4 is an extension of the previous case: the personal exemption is doubled to $17,532, about the level at which many social-welfare groups suggest that an individual has sufficient income to enjoy what they consider to be a satisfactory degree of physical and emotional comfort relative to other Canadians.

These relative "poverty lines" that are promulgated by social-welfare groups have no official status as poverty lines. Indeed, Statistics Canada's Low Income Cut-Off (LICO), often referred to as "Canada's poverty line," is always accompanied by a disclaimer that LICOs should not be used as poverty lines (Sarlo 1996). Case 4 is included to show what the effect on the tax rates would be if a flat tax with a very high personal exemption were adopted.

The rates for the federal and provincial governments significantly increase as the value of the personal exemption doubles from Case 3 ($8,766) and increases by 142.5% from Case 2 ($7,231). The doubling of the value of the personal exemption increases the applicable flat-tax rate. For instance, the federal flat tax increases 8.3 percentage points, from 17.8% in Case 3 to 26.1% in this case. Quebec, the jurisdiction that consistently maintains the highest rate of taxation shows a 7.7 percentage point increase in its provincial rate, from 14.0% with an $8,766 exemption to 21.7% with an exemption of $17,532. Similarly, Ontario, the jurisdiction with the lowest flat-tax rate, shows an increase of 3.3 percentage points in its provincial rate, from 7.9% to 11.2%.

Ontario incurs one of the smaller combined percentage-point increases in its combined flat-tax rate, 11.6 percentage points, from 25.7% to 37.3%. Quebec incurs one of the larger percentage-point increases of 16.0 percentage points, from 31.8% to 47.8%. Newfoundland shows the largest percentage-point increase in its combined federal-provincial rate, increasing from 27.7% in Case 3 to 46.2% in Case 4, an increase of 18.5 percentage points.

The substantial increase in the personal exemption has a peculiar affect on the distribution of taxation. The effect of the increase is to restrict tax reductions to very low and extremely high levels of income. In this case, incomes between $0 and $40,000 and above $200,001 show a net decrease in personal income taxes, while incomes between $40,001 and $200,000 show a net increase in personal income taxes (table 3.4.2).

The relative indicators of the change in the distribution of income tax echo the findings above: by doubling the personal exemption those at the very low and high ends of the income spectrum gain while the majority of taxpayers in the middle-income group experience an increase in their income tax bill (table 3.4.3).

Table 3.4.4 shows the effects that doubling the personal exemption has on the personal income tax of the sample households. Case 4, which is characterized by a significant increase in the personal exemption, is the first case in which all five households show a reduction in their income tax.

Table 3.4.1: Flat tax rates (Case 4)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	26.1	40.9*
Newfoundland	20.1	46.2
Prince Edward Island	17.5	43.6
Nova Scotia	16.9	43.0
New Brunswick	17.3	43.4
Quebec†	21.7	47.8
Ontario	11.2	37.3
Manitoba	16.9	43.0
Saskatchewan	17.9	44.0
Alberta	12.7	38.8
British Columbia	14.1	40.2

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 14.8%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 21.0% for Quebec only and an adjusted Quebec provincial flat tax of 26.8%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

Table 3.4.2: Tax distribution (Case 4)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	0	12	0
(9,999) — 0	0	0	0	0	7,385	0
1 — 10,000	0	67	(67)	17,578	5,563	(12)
10,001 — 20,000	233	3,795	(3,562)	65,443	5,717	(623)
20,001 — 30,000	7,390	10,781	(3,391)	85,172	3,835	(884)
30,001 — 40,000	15,319	15,702	(383)	94,506	2,838	(135)
40,001 — 50,000	18,188	17,393	795	85,171	1,947	409
50,001 — 60,000	18,684	17,261	1,423	75,371	1,397	1,019
60,001 — 70,000	13,267	12,062	1,205	49,512	772	1,559
70,001 — 80,000	9,806	9,039	766	34,889	472	1,623
80,001 — 90,000	6,416	6,078	337	21,838	259	1,304
90,001 — 100,000	4,520	4,286	233	14,640	155	1,500
100,001 — 110,000	3,324	3,151	173	10,350	100	1,734
110,001 — 120,000	2,700	2,664	36	8,495	75	480
120,001 — 130,000	2,156	2,063	93	6,551	53	1,756
130,001 — 140,000	1,725	1,650	75	5,243	39	1,914
140,001 — 150,000	1,056	988	67	3,077	21	3,129
150,001 — 200,000	4,564	4,424	140	13,157	78	1,775
200,001 — 250,000	2,962	2,986	(23)	8,153	36	(646)
250,001 — Maximum	11,790	12,648	(858)	30,686	62	(13,659)

The individual household (household 1) experiences a tax reduction smaller than in previous examples: $303, a 3.8% reduction relative to the household's current income tax.

Unlike the situation in previous cases, in Case 4 both households with similar incomes experience a reduction in their income tax bills. However, the size of the reduction differs substantially: the two-income household (household 2) shows a $1,483 reduction in income tax, a 16.6% reduction relative to the status quo. The single-income household (household 3) shows a reduction of $4,788, a 38.3% reduction in its income tax compared to its current income-tax liability.

In Case 4 we first notice a very small difference in the percentage of household income paid to income taxes by households 2 and 3. Household 2, the dual-income household, pays 13.3% of its total household income to income tax while the single-earner household (household 3) pays 13.6%. As one would expect, the low-income household (household 4) pays absolutely no income tax since the total household income is well below the value of the combined exemption. Interestingly, the high-income household (household 5) also shows a reduction in its income tax: $3,047, a reduction of 11.5% relative to the status quo.

Please note that Cases 5 through 9 will be compared with Cases 1 through 3 only; Case 4 will be ignored.

Table 3.4.3: Relative measures of tax changes (Case 4)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.0	0.3	(0.3)	0.0	0.0	0.0
10,001 — 20,000	0.3	4.5	(4.2)	0.2	3.0	(2.8)
20,001 — 30,000	7.8	11.3	(3.5)	4.9	7.0	(2.1)
30,001 — 40,000	15.5	15.9	(0.4)	9.9	9.9	0.0
40,001 — 50,000	20.9	20.0	0.9	13.3	12.5	0.8
50,001 — 60,000	24.5	22.7	1.8	15.6	14.3	1.3
60,001 — 70,000	26.5	24.1	2.4	17.0	15.2	1.8
70,001 — 80,000	28.0	25.8	2.2	18.4	16.8	1.6
80,001 — 90,000	29.3	27.8	1.5	19.1	17.7	1.4
90,001 — 100,000	30.7	29.1	1.6	19.9	18.4	1.5
100,001 — 110,000	31.7	30.1	1.6	20.4	18.7	1.7
110,001 — 120,000	31.3	30.8	0.5	20.6	19.8	0.8
120,001 — 130,000	32.7	31.3	1.4	21.4	19.9	1.5
130,001 — 140,000	32.6	31.2	1.4	21.4	20.0	1.4
140,001 — 150,000	33.9	31.8	2.1	21.8	19.4	2.4
150,001 — 200,000	33.8	32.8	1.0	22.0	20.3	1.7
200,001 — 250,000	36.1	36.4	(0.3)	23.2	22.3	0.9
250,001 — Maximum	38.1	40.9	(2.8)	24.7	24.8	(0.1)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.4.4: Effect on sample households (Case 4)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,617	7,449	7,708	0	23,534
Nominal Difference	(303)	(1,483)	(4,788)	(1,213)	(3,047)
Percent Change	(3.8%)	(16.6%)	(38.3%)	(100.0%)	(11.5%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 5

Personal exemption of $8,766 + exemption of $2,000 per child

Case 5 is the first to include an exemption of $2,000 per child under the age of 18. Case 5 is the same as Case 3 except for the inclusion of an exemption for children. The nature of the exemption for children, however, is different from the personal exemption in that it is available only to households with children: while the personal exemption applies equally to all taxpayers, the exemption for children does not.

This exemption of $2000 per child demonstrates a consistent approach to calculating exemptions for basic needs. It acknowledges the additional cost of acquiring basic needs that are borne by families in the raising of children. It also stands in contrast to the current tax system, which effectively rewards parents that choose to have other people care for their children part of the time while penalizing parents that choose to look after their children full-time. In other words, the current system discriminates in favour of one group of parents at the expense of all others.

Unsurprisingly, the rate of the flat tax increases for all jurisdictions. For instance, the federal rate for the flat tax increases 0.5 percentage points, from 17.8% with a personal exemption of $8,766 (Case 3) to 18.3% with both the personal exemption of $8,766 and the exemption of $2,000 per child (Case 5) (table 3.5.1).

Quebec has the highest combined federal-provincial tax rate of 32.8%, an increase of 1.0 percentage point from its level of 31.8% in Case 3. Ontario possesses the lowest combined rate of flat tax, 26.4%. It showed a 0.7 percentage point increase in the combined federal-provincial tax rate from its rate in Case 3.

As in the previous cases (excluding Case 4), the addition of an exemption—an exemption for children, in this case—reduces the shift in the tax burden from those earning high incomes to those earning low and middle incomes. Put another way, the amount of tax reduction for those earning high incomes is reduced while the increase in the tax burden for those earning low and middle incomes is lessened. For instance, the tax reduction for those earning in excess of $250,000, the highest income bracket, is reduced from $69,871 with a personal exemption of $8,766 to $66,632 when both the personal exemption ($8,766) and the exemption for children ($2,000 per child) are included (table 3.5.2). Those earning between $40,001 and $50,000 show a reduction in their tax increase from $446 in Case 3 to $372 in Case 5.

Table 3.5.4 presents the effects that the introduction of the exemption of $2000 per child has on our representative households. Like the previous cases, the individual (household 1) continues to experience a tax reduction. The reduction is less than it was in previous cases, however, due to the interaction between the exemption for children, which the single individual cannot claim, and the subsequent increase in the rate of the flat tax.

Table 3.5.1: Flat tax rates (Case 5)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	18.3	28.6*
Newfoundland	12.4	30.7
Prince Edward Island	10.7	29.0
Nova Scotia	10.4	28.7
New Brunswick	11.1	29.4
Quebec†	14.5	32.8
Ontario	8.1	26.4
Manitoba	11.7	30.0
Saskatchewan	12.0	30.3
Alberta	9.2	27.5
British Columbia	10.0	28.3

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 10.3%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 15.0% for Quebec only and an adjusted Quebec provincial flat tax of 17.8%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

Table 3.5.2: Tax distribution (Case 5)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	0	12	0
(9,999) — 0	0	0	0	0	7,385	0
1 — 10,000	43	67	(24)	17,578	5,563	(4)
10,001 — 20,000	5,643	3,795	1,847	65,443	5,717	323
20,001 — 30,000	13,825	10,781	3,043	85,172	3,835	794
30,001 — 40,000	18,402	15,702	2,699	94,506	2,838	951
40,001 — 50,000	18,117	17,393	724	85,171	1,947	372
50,001 — 60,000	16,982	17,261	(278)	75,371	1,397	(199)
60,001 — 70,000	11,472	12,062	(590)	49,512	772	(764)
70,001 — 80,000	8,179	9,039	(859)	34,889	472	(1,819)
80,001 — 90,000	5,248	6,078	(830)	21,838	259	(3,204)
90,001 — 100,000	3,599	4,286	(687)	14,640	155	(4,414)
100,001 — 110,000	2,611	3,151	(539)	10,350	100	(5,383)
110,001 — 120,000	2,113	2,664	(550)	8,495	75	(7,282)
120,001 — 130,000	1,660	2,063	(402)	6,551	53	(7,581)
130,001 — 140,000	1,329	1,650	(321)	5,243	39	(8,155)
140,001 — 150,000	797	988	(191)	3,077	21	(8,894)
150,001 — 200,000	3,431	4,424	(993)	13,157	78	(12,592)
200,001 — 250,000	2,189	2,986	(797)	8,153	36	(21,686)
250,001 — Maximum	8,460	12,648	(4,188)	30,686	62	(66,632)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Both households with similar incomes (households 2 and 3) receive a reduction in their income tax, although once again these reductions differ considerably. The dual-income household (household 2) shows a minor reduction of $54 in its income tax, a decrease of 0.6% relative to the status quo.

The single-income household (household 3) shows a much larger reduction of $3,434, a 27.5% reduction in its income tax compared to the status quo. As in most of the previous cases, both households bear nearly the same burden of income tax: 15.9% (household 2) and 16.0% (household 3) as a percentage of total household income.

The low-income household (household 4) experiences a significant reduction of 86.5% from its current income tax when the needs-based personal exemption of $8,766 is coupled with the moderately valued exemption of $2,000 per child. The high-income household (household 5) also receives a reduction in its income tax bill, $5,737, a 21.6% reduction relative to the status quo.

Table 3.5.3: Relative measures of tax changes (Case 5)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.2	0.3	(0.1)	0.1	0.2	(0.1)
10,001 — 20,000	6.7	4.5	2.2	4.2	3.0	1.2
20,001 — 30,000	14.6	11.3	3.3	9.2	7.0	2.2
30,001 — 40,000	18.7	15.9	2.8	11.9	9.9	2.0
40,001 — 50,000	20.8	20.0	0.8	13.3	12.5	0.8
50,001 — 60,000	22.3	22.7	(0.4)	14.3	14.3	0.0
60,001 — 70,000	22.9	24.1	(1.2)	14.7	15.2	(0.5)
70,001 — 80,000	23.3	25.8	(2.5)	15.3	16.8	(1.5)
80,001 — 90,000	24.0	27.8	(3.8)	15.6	17.7	(2.1)
90,001 — 100,000	24.4	29.1	(4.7)	15.9	18.4	(2.5)
100,001 — 110,000	24.9	30.1	(5.2)	16.1	18.7	(2.6)
110,001 — 120,000	24.5	30.8	(6.3)	16.1	19.8	(3.7)
120,001 — 130,000	25.2	31.3	(6.1)	16.5	19.9	(3.4)
130,001 — 140,000	25.1	31.2	(6.1)	16.5	20.0	(3.5)
140,001 — 150,000	25.6	31.8	(6.2)	16.5	19.4	(2.9)
150,001 — 200,000	25.4	32.8	(7.4)	16.5	20.3	(3.8)
200,001 — 250,000	26.7	36.4	(9.7)	17.2	22.3	(5.1)
250,001 — Maximum	27.3	40.9	(13.6)	17.7	24.8	(7.1)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.5.4: Effect on sample households (Case 5)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,736	8,878	9,062	164	20,844
Nominal Difference	(184)	(54)	(3,434)	(1,049)	(5,737)
Percent Change	(2.3%)	(0.6%)	(27.5%)	(86.5%)	(21.6%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 6

Personal exemption of $8,766 + exemption of $2,000 per child + current RRSP/RPP deduction

Case 6 introduces deductions from taxable income for contributions made to Registered Retirement Savings Plans (RRSP) and Registered Pension Plans (RPP). Currently, individuals are able to contribute up to 18% of eligible wages to either an RRSP or an RPP, up to a limit of $13,500 per year. These deductions for RRSP/RPP contributions are added to the personal exemption of $8,766 and the exemption of $2,000 for children used in the calculations in Case 5.

There are three important considerations regarding the inclusion of RRSP and RPP contributions. First, contributions are made to savings earmarked for retirement exclusively. Since current government programs for retirement savings do not provide sufficient income for retirement, individuals must save independently of government plans for retirement (Income Security Programs Branch, Human Resources Development Canada 2000; Office of the Superintendent of Financial Institutions 1997a, 1997b; Canadian Institute of Actuaries 1995; Association of Canadian Pension Management 1995, 2000; James 1997; and Peterson1999). For this reason, some tax deferral is offered to those saving for retirement through private retirement savings programs.

Table 3.6.1: Flat tax rates (Case 6)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	19.9	31.0*
Newfoundland	13.6	33.5
Prince Edward Island	11.6	31.5
Nova Scotia	11.3	31.2
New Brunswick	12.0	31.9
Quebec†	15.7	35.6
Ontario	8.8	28.7
Manitoba	12.6	32.5
Saskatchewan	13.2	33.1
Alberta	9.9	29.8
British Columbia	10.9	30.8

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 11.1%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 16.2% for Quebec only and an adjusted Quebec provincial flat tax of 19.4%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

The second consideration is much more important and concerns the nature of tax systems. Allowing tax-sheltered contributions to RRSPs and RPPs moves the flat tax closer to a tax on consumption and away from a tax on income. A variety of studies, most notably Jorgensen and Kun-Young 1991, have concluded that a tax on consumption is a much more efficient form of taxation that can reduce economic distortions and increase economic efficiency (Jorgensen and Kun-Young 1991; Kesselman 1997, 1999; Kneller, Bleaney, and Gemmell 1999). Since an overwhelming majority of Canadians save almost exclusively through RRSPs and RPPs,[11] a tax system that shelters the contributions made to RRSPs and RPPs from current taxation will be taxing consumption rather than income for the vast majority of Canadians.[12] There is, therefore, an argument from economic efficiency to support the inclusion of deductions for retirement savings programs like RRSPs and RPPs in a proposed flat tax.

Third, deductions from income for RRSP and RPP contributions are not tax reductions or even what are often referred to as tax expenditures. These deductions are tax deferrals (Association of Canadian Pension Management 2000.): contributors delay the requisite tax payment until they have retired and use these savings to finance their retirement. When the original contributions and the accrued investment returns are removed from the RRSP or RPP to fund retirement, they are fully taxable.

Table 3.6.1 contains the rates for the flat tax including deductions from income for RRSP and RPP contributions.

The federal rate of flat tax increases 1.6 percentage points from its level in Case 5, from 18.3% to 19.9%. Quebec continues to show the highest rate of flat tax of any province; it has a 1.2 percentage point increase in its provincial rate, from 14.5% to 15.7%. Quebec's combined tax rate increases 2.8 percentage points, from 32.8% to 35.6%. Ontario, which continues to show the lowest provincial

Table 3.6.2: Tax distribution (Case 6)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	(23)	12	0
(9,999) — 0	0	0	0	(23)	7,385	0
1 — 10,000	39	67	(28)	16,895	5,563	(5)
10,001 — 20,000	5,654	3,795	1,858	63,233	5,717	325
20,001 — 30,000	13,861	10,781	3,080	81,465	3,835	803
30,001 — 40,000	18,276	15,702	2,573	89,275	2,838	907
40,001 — 50,000	18,046	17,393	653	80,159	1,947	335
50,001 — 60,000	16,888	17,261	(372)	70,625	1,397	(266)
60,001 — 70,000	11,373	12,062	(689)	46,152	772	(892)
70,001 — 80,000	8,089	9,039	(950)	32,378	472	(2,010)
80,001 — 90,000	5,200	6,078	(878)	20,276	259	(3,391)
90,001 — 100,000	3,586	4,286	(700)	13,632	155	(4,495)
100,001 — 110,000	2,577	3,151	(573)	9,521	100	(5,731)
110,001 — 120,000	2,129	2,664	(534)	7,967	75	(7,072)
120,001 — 130,000	1,668	2,063	(394)	6,127	53	(7,434)
130,001 — 140,000	1,328	1,650	(321)	4,882	39	(8,174)
140,001 — 150,000	795	988	(193)	2,852	21	(9,009)
150,001 — 200,000	3,439	4,424	(985)	12,257	78	(12,484)
200,001 — 250,000	2,241	2,986	(745)	7,729	36	(20,283)
250,001 — Maximum	8,911	12,648	(3,737)	29,882	62	(59,457)

Based on calculations by the authors using Statistics Canada's SPSD/M.

flat-tax rate, incurs a 0.7 percentage point increase in its provincial flat-tax rate, from 8.1% to 8.8%. Its combined federal-provincial tax rate increases 2.3 percentage points, from 26.4% to 28.7%.

The inclusion of a deduction for RRSP and RPP contributions further dampens the shift in the tax burden from those earning high incomes to those earning low and middle incomes (table 3.6.2). This is so for two reasons. First, contrary to popular opinion it is predominantly those earning middle incomes who use RRSPs and RPPs (Emes 1999a, 2000; Clemens and Mihlar 1999: 14–21). Thus, the inclusion of contributions to those programs will mainly benefit middle-income individuals and families. Second, the maximum contribution to RRSPs and RPPs is limited by the absolute cap of $13,500 per annum. Individuals are able to contribute up to 18% of their income each year to RRSPs and RPPs up to the limit of $13,500, which caps contributions by those earning more than $75,000, who cannot, therefore, shelter any of their income beyond $75,000. The value of this deduction for those earning a high income is less than it is for those earning low and middle incomes.

Table 3.6.3 presents the relative measures of the change in the distribution of income tax. As in previous cases, the relative measures in table 3.6.3 corroborate the results found in table 3.6.2. Table 3.6.4 depicts the effects of the flat tax on our representative households after the inclusion of a deduction for RRSP and RPP contributions is added. The individual household (household 1) shows a 5.7% increase in its income tax relative to the status quo.

Of the two households with similar incomes, the dual-income household (household 2) experiences a 7.6% increase in its income tax while the single-income household (household 3) experiences a tax reduction, though to a lesser extent than in previous cases.

The low-income household (household 4) shows a large reduction in its income tax, approximately the same as it was after the exemption for children was introduced

Table 3.6.3: Relative measures of tax changes (Case 6)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	(0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.1	0.3	(0.2)	0.1	0.2	(0.1)
10,001 — 20,000	6.7	4.5	2.2	4.2	3.0	1.2
20,001 — 30,000	14.6	11.3	3.3	9.2	7.0	2.2
30,001 — 40,000	18.5	15.9	2.6	11.9	9.9	2.0
40,001 — 50,000	20.7	20.0	0.7	13.3	12.5	0.8
50,001 — 60,000	22.2	22.7	(0.5)	14.2	14.3	(0.1)
60,001 — 70,000	22.7	24.1	(1.4)	14.6	15.2	(0.6)
70,001 — 80,000	23.1	25.8	(2.7)	15.2	16.8	(1.6)
80,001 — 90,000	23.8	27.8	(4.0)	15.5	17.7	(2.2)
90,001 — 100,000	24.3	29.1	(4.8)	15.8	18.4	(2.6)
100,001 — 110,000	24.6	30.1	(5.5)	15.9	18.7	(2.8)
110,001 — 120,000	24.7	30.8	(6.1)	16.2	19.8	(3.6)
120,001 — 130,000	25.3	31.3	(6.0)	16.5	19.9	(3.4)
130,001 — 140,000	25.1	31.2	(6.1)	16.5	20.0	(3.5)
140,001 — 150,000	25.5	31.8	(6.3)	16.5	19.4	(2.9)
150,001 — 200,000	25.5	32.8	(7.3)	16.6	20.3	(3.7)
200,001 — 250,000	27.3	36.4	(9.1)	17.6	22.3	(4.7)
250,001 — Maximum	28.8	40.9	(12.1)	18.7	24.8	(6.1)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.6.4: Effect on sample households (Case 6)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	8,373	9,608	9,807	177	22,064
Nominal Difference	453	676	(2,689)	(1,036)	(4,517)
Percent Change	5.7%	7.6%	(21.5%)	(85.4%)	(17.0%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

in Case 5. Household 4 receives an 85.4% reduction in their income tax relative to the status quo.

The high-income household (household 5) also receives a reduction in its income tax, showing a 17.0% reduction in income tax compared with its current income-tax liability.

The reason for the increase in income tax for the single individual (household 1) and the dual-income family household (household 2) and the relative reduction in the decrease in the tax for households 3, 4, and 5 is that none of the households contributed to an RRSP or RPP for the year in question. Thus, the increased rate of the flat tax associated with the inclusion of RRSP and RPP contributions is not offset by a reduced amount of taxable income for any of these households. Incorporating different household profiles that had contributed to RRSPs or RPPs would result in a different effect depending on the magnitude of contributions to RRSPs and RPPs.

Case 7

Personal exemption of $8,766 + exemption of $2,000 per child + current RRSP/RPP deduction + current deduction for charitable donations

Case 7 adds a deduction for charitable donations to the the exemptions and deductions for RRSP/RPP contributions used in calculating Case 6. Currently, individuals are permitted to claim donations made to registered charitable organizations, a tax credit of 17% of the first $200 and 29% of the amount in excess of $200.

There is considerable debate among economists and tax experts about the strength of tax incentives in motivating individuals to donate to registered charities (Francis and Clemens 1999; Reynolds 1997). A number of scholars have suggested that other factors, such as involvement with a charitable organization, disposable income, and religious activity are more important in fostering charitable giving than is the level of tax credit afforded charitable donations.[13] Of Canadians surveyed in the latest Statistics Canada survey of non-profit and volunteering activity, 89% indicated they were not motivated by tax considerations when making charitable donations (Statistics Canada 1998). There are other factors in addition to tax considerations that at least partially explain charitable giving.

Implementing a simple tax system that encourages economic growth may accomplish much more in terms of fostering increased charitable giving than including tax deductibility for charitable giving (Chao and Grubel 1998; Emes and Samida, unpublished; Barro 1990; Peden 1989, 1991; Mackness 1998; Grossman 1998; Scully 1991; Tanzi and Schuknecht 1995, 1997).

The inclusion of charitable donations as a possible exemption increases the rate of the flat tax for all jurisdictions by roughly 0.1 to 0.2 percentage point over those in Case 6 (table 3.7.1). The federal rate increases by 0.2 percentage point, from 19.9% to 20.1%. Similarly, the rates for Quebec and Ontario increase by 0.1 percentage point.

Although the increases are relatively small, inclusion of charitable donations as a deduction is a concern because it could be the first step down a slippery-slope: if charitable donations are included in a proposed flat tax, then why not include other worthy tax-based incentives? The long-term effect of including a targeted tax reduction may lead, as it has historically, to the inclusion of other tax-based incentive programs. The function of the tax system, however, should be to collect sufficient revenues to finance programs provided by the government in the least distortionary manner and the addition of tax incentives moves a tax system away from such neutrality.

Like the previous additions, the inclusion of the deduction for charitable donations reduces, though only to the slightest degree, the transfer of the tax burden from those earning high incomes to those earning low and middle incomes. Both table 3.7.2 (absolute analysis) and table 3.7.3 (relative analysis) illustrate how the introduction of the deduction for charitable donations lessens, although only slightly, the shift in the tax distribution from upper-income to lower-income and middle-income groups.

Table 3.7.1: Flat tax rates (Case 7)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	20.1	31.3*
Newfoundland	13.7	33.8
Prince Edward Island	11.8	31.9
Nova Scotia	11.4	31.5
New Brunswick	12.2	32.3
Quebec†	15.8	35.9
Ontario	8.9	29.0
Manitoba	12.8	32.9
Saskatchewan	13.5	33.6
Alberta	10.0	30.1
British Columbia	11.0	31.1

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 11.2%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 16.4% for Quebec only and an adjusted Quebec provincial flat tax of 19.5%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

Table 3.7.2: Tax distribution (Case 7)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	(23)	12	0
(9,999) — 0	0	0	0	(23)	7,385	0
1 — 10,000	39	67	(28)	16,895	5,563	(5)
10,001 — 20,000	5,588	3,795	1,792	63,233	5,717	314
20,001 — 30,000	13,843	10,781	3,061	81,465	3,835	798
30,001 — 40,000	18,277	15,702	2,574	89,275	2,838	907
40,001 — 50,000	18,064	17,393	671	80,159	1,947	345
50,001 — 60,000	16,925	17,261	(335)	70,625	1,397	(240)
60,001 — 70,000	11,370	12,062	(692)	46,152	772	(896)
70,001 — 80,000	8,095	9,039	(943)	32,378	472	(1,997)
80,001 — 90,000	5,208	6,078	(870)	20,276	259	(3,359)
90,001 — 100,000	3,595	4,286	(691)	13,632	155	(4,439)
100,001 — 110,000	2,585	3,151	(565)	9,521	100	(5,645)
110,001 — 120,000	2,140	2,664	(523)	7,967	75	(6,925)
120,001 — 130,000	1,673	2,063	(389)	6,127	53	(7,336)
130,001 — 140,000	1,328	1,650	(321)	4,882	39	(8,170)
140,001 — 150,000	792	988	(196)	2,852	21	(9,117)
150,001 — 200,000	3,440	4,424	(984)	12,257	78	(12,472)
200,001 — 250,000	2,241	2,986	(745)	7,729	36	(20,272)
250,001 — Maximum	8,896	12,648	(3,752)	29,882	62	(59,688)

Based on calculations by the authors using Statistics Canada's SPSD/M.

As in Case 6, an interesting result occurs for our representative households when the deduction for charitable donations is included (table 3.7.4). The individual household (household 1) experiences a 6.7% increase in its income tax relative to the status quo. The dual-income household (household 2) incurs a 8.7% increase in income tax from the status quo while the single-income household (household 3) experiences a 20.7% reduction in income tax relative to the status quo.

Both the low-income household (household 4) and the high-income household (household 5) show a tax reduction, although to a slightly lesser degree than in Case 6: 85.2% for household 5 and and 16.6% for household 6 compared with the status quo.

The households show either an increase in income tax or a reduction in the decrease in income tax because none of the households claimed charitable deductions on their income-tax returns. Thus, the increased rate of the flat tax associated with the inclusion of charitable donations as a deduction is not offset by a reduced income tax bill through a deduction for charitable donations. Analyzing different household profiles that claimed donations to a registered charity would result in a different effect, depending on the value of the donation.

Table 3.7.3: Relative measures of tax changes (Case 7)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.2	0.3	0.1	0.1	0.2	(0.1)
10,001 — 20,000	6.6	4.5	2.1	4.2	3.0	1.2
20,001 — 30,000	14.6	11.3	3.3	9.2	7.0	2.2
30,001 — 40,000	18.5	15.9	2.6	11.9	9.9	2.0
40,001 — 50,000	20.8	20.0	0.8	13.3	12.5	0.8
50,001 — 60,000	22.2	22.7	(0.5)	14.2	14.3	(0.1)
60,001 — 70,000	22.7	24.1	(1.4)	14.6	15.2	(0.6)
70,001 — 80,000	23.1	25.8	(2.7)	15.2	16.8	(1.6)
80,001 — 90,000	23.8	27.8	(4.0)	15.5	17.7	(2.2)
90,001 — 100,000	24.4	29.1	(4.7)	15.9	18.4	(2.5)
100,001 — 110,000	24.7	30.1	(5.4)	15.9	18.7	(2.8)
110,001 — 120,000	24.8	30.8	(6.0)	16.3	19.8	(3.5)
120,001 — 130,000	25.4	31.3	(5.9)	16.6	19.9	(3.3)
130,001 — 140,000	25.1	31.2	(6.1)	16.5	20.0	(3.5)
140,001 — 150,000	25.5	31.8	(6.3)	16.4	19.4	(3.0)
150,001 — 200,000	25.5	32.8	(7.3)	16.6	20.3	(3.7)
200,001 — 250,000	27.3	36.4	(9.1)	17.6	22.3	(4.7)
250,001 — Maximum	28.7	40.9	(12.2)	18.6	24.8	(6.2)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.7.4: Effect on sample households (Case 7)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	8,447	9,712	9,914	179	22,157
Nominal Difference	527	780	(2,582)	(1,034)	(4,424)
Percent Change	6.7	8.7%	(20.7%)	(85.2%)	(16.6%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 8

Personal exemption of $11,834 + exemption of $2,000 per child + current RRSP/RPP deduction + $13.4 billion reduction in spending and taxes

Case 8 is the first case that does not keep tax revenue unchanged. The amount of federal taxes collected under Case 8 is $13.4 billion lower than it is in previous cases and the existing tax system. Case 8 includes a $13.4 billion spending reduction at the federal level coupled with a tax cut.[14] This amount is based on the amount required to provide all income groups a reduction in their income tax bill.[15]

Over the long term, taxes are a function of spending. That is, the amount of tax revenue raised is directly related to the amount expended by government. A reduction in spending will, therefore, necessarily lead to a reduction in the level of taxes required to generate sufficient revenue.

There are two other material differences between Case 7 and Case 8: the increase in the value of the personal exemption and the absence of a deduction for charitable donations. The value of the personal exemption included in Case 8 is 1.35 times the value of the personal exemption in Case 7. This means that Canadians would be able to earn at least 35% more than is necessary to sustain a minimum standard of living as calculated by our inflation-adjusted Basic Needs Line. Further, as illustrated in table 3.8.2, the increased personal exemption ensures that the tax reduction flows to all groups of taxpayers so that every income group receives a reduction in combined federal-provincial personal income taxes.

Table 3.8.1: Flat tax rates (Case 8)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	19.0	31.9*
Newfoundland	16.8	35.8
Prince Edward Island	14.1	33.1
Nova Scotia	13.7	32.7
New Brunswick	14.3	33.3
Quebec†	18.5	37.5
Ontario	10.0	29.0
Manitoba	14.6	33.6
Saskatchewan	15.6	34.6
Alberta	11.3	30.3
British Columbia	12.5	31.5

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 12.9%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 14.7% for Quebec only and an adjusted Quebec provincial flat tax of 22.8%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

Case 8 provides a balanced approach to the implementation of a flat tax. The proposal includes a sizable exemption for individuals and a large exemption for children. Further, it retains the deductibility of RRSP and RPP contributions in order to stimulate retirement savings and to move the tax system towards a system based more on consumption than on income.

In assessing the effect of increasing the personal exemption and implementing a spending reduction, we compare Case 8 with Case 6 rather than Case 7, since the deduction for charitable donations has been eliminated. The federal rate of flat tax decreases by 0.9 percentage point, from 19.9% to 19.0% while at the same time the personal exemption increases by 35% (table 3.8.1).

One of the interesting effects of reducing spending exclusively at the federal level while increasing the personal exemption at both the federal and provincial levels is that every one of the provinces shows an increase in provincial rates of flat tax. In other words, to compensate for the increased value of the personal exemption while still generating sufficient revenue in a static model, each province's tax rate in Case 8 has increased from what it was in Case 6. For instance, Quebec, with the highest tax rate of any province, shows an increase of 2.8 percentage points in its provincial rate. Similarly, Ontario, with the lowest rate incurs an increase in its provincial rate of 1.2 percentage points from 8.8% to 10.0%.

Each of the provinces shows a net increase in its combined federal-provincial tax rate due to the fact that increases in the provincial tax rates exceed the reduction of 0.9 percentage point in the federal tax rate.[16] For instance, Newfoundland shows the largest increase of all the prov-

Table 3.8.2: Tax distribution (Case 8)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	(23)	12	0
(9,999) — 0	0	0	0	(23)	7,385	0
1 — 10,000	0	67	(67)	16,895	5,563	(12)
10,001 — 20,000	2,598	3,795	(1,197)	63,233	5,717	(209)
20,001 — 30,000	10,534	10,781	(247)	81,465	3,835	(65)
30,001 — 40,000	15,575	15,702	(127)	89,275	2,838	(45)
40,001 — 50,000	16,252	17,393	(1,140)	80,159	1,947	(586)
50,001 — 60,000	15,675	17,261	(1,585)	70,625	1,397	(1,135)
60,001 — 70,000	10,728	12,062	(1,334)	46,152	772	(1,726)
70,001 — 80,000	7,710	9,039	(1,328)	32,378	472	(2,811)
80,001 — 90,000	5,001	6,078	(1,076)	20,276	259	(4,157)
90,001 — 100,000	3,486	4,286	(800)	13,632	155	(5,137)
100,001 — 110,000	2,525	3,151	(625)	9,521	100	(6,241)
110,001 — 120,000	2,085	2,664	(579)	7,967	75	(7,657)
120,001 — 130,000	1,644	2,063	(418)	6,127	53	(7,886)
130,001 — 140,000	1,309	1,650	(340)	4,882	39	(8,652)
140,001 — 150,000	790	988	(198)	2,852	21	(9,228)
150,001 — 200,000	3,426	4,424	(998)	12,257	78	(12,652)
200,001 — 250,000	2,253	2,986	(733)	7,729	36	(19,942)
250,001 — Maximum	9,062	12,648	(3,586)	29,882	62	(57,055)

Based on calculations by the authors using Statistics Canada's SPSD/M.

inces in its combined federal-provincial tax rate, increasing 2.3 percentage points, from 33.5% to 35.8%. Ontario, on the other hand, shows the smallest net increase of 0.3 percentage point, with an increase from 28.7% to 29.0%.

When compared with Case 6, the most noticeable change in table 3.8.2 and table 3.8.3 is that all income groups receive a reduction in their combined federal-provincial personal income tax. The large personal exemption and the exemption for children coupled with reductions in spending and taxes result in an across-the-board reduction in personal income taxes for all taxpayer groups regardless of income level.

All five representative households experience a reduction in their personal income taxes. The individual household (household 1) experiences a reduction of $338 in its income tax, a reduction of 4.3% compared to its current tax.

The dual-income household (household 2) receives an 11.1% reduction in its income tax relative to the status quo. The value of the tax reduction is $990. The single-income household (household 3) shows a 34.8% decline in its income tax compared to the status quo. This reduction, $4,352, is substantially larger than that of the dual-income household. It is interesting to note that, as in the previous seven cases, the two family households with similar incomes (households 2 and 3) pay approximately the same percentage of their household income (14.3%) in income taxes under the flat tax.

Household 4 pays no income tax in this case since increasing the personal exemption, allowing for an exemption of $2,000 per child and reducing federal spending and taxes, eliminates completely the burden of income taxes for this low-income family. The high-income household (household 5) also receives a reduction in its income taxes, $6,038, a decrease in income taxes of 22.7% relative to the status quo. Although this case permits RRSP and RPP contributions, it does not affect these households since they do not make such contributions.

Table 3.8.3: Relative measures of tax changes (Case 8)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.0	0.3	(0.3)	0.0	0.2	(0.2)
10,001 — 20,000	3.1	4.5	(1.4)	1.8	3.0	(1.2)
20,001 — 30,000	11.1	11.3	(0.2)	6.5	7.0	(0.5)
30,001 — 40,000	15.8	15.9	(0.1)	9.4	9.9	(0.5)
40,001 — 50,000	18.7	20.0	(1.3)	11.1	12.5	(1.1)
50,001 — 60,000	20.6	22.7	(2.1)	12.3	14.3	(2.0)
60,001 — 70,000	21.4	24.1	(2.7)	12.8	15.2	(2.4)
70,001 — 80,000	22.0	25.8	(3.8)	13.5	16.8	(3.3)
80,001 — 90,000	22.9	27.8	(4.9)	13.9	17.7	(3.8)
90,001 — 100,000	23.6	29.1	(5.5)	14.4	18.4	(4.0)
100,001 — 110,000	24.1	30.1	(6.0)	14.5	18.7	(4.2)
110,001 — 120,000	24.1	30.8	(6.7)	14.9	19.8	(4.9)
120,001 — 130,000	24.9	31.3	(6.4)	15.3	19.9	(4.6)
130,001 — 140,000	24.8	31.2	(6.4)	15.2	20.0	(4.8)
140,001 — 150,000	25.4	31.8	(6.4)	15.3	19.4	(4.1)
150,001 — 200,000	25.4	32.8	(7.4)	15.4	20.3	(4.9)
200,001 — 250,000	27.5	36.4	(8.9)	16.5	22.3	(5.8)
250,001 — Maximum	29.3	40.9	(11.6)	17.7	24.8	(7.1)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.8.4: Effect on sample households (Case 8)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	7,582	7,942	8,144	0	20,543
Nominal Difference	(338)	(990)	(4,352)	(1,213)	(6,038)
Percent Change	(4.3%)	(11.1%)	(34.8%)	(100.0%)	(22.7%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Case 9

Personal exemption of $11,834 + exemption of $2,000 per child + current RRSP/RPP deductions + $22.3 billion reduction in spending and taxes

Given past research on the effect of governments that are larger or smaller than optimal on economic growth and social outcomes (Zelder and Basham 2000) and the present large amount of non-core spending by both the federal and provincial governments, we thought it useful to include a case that eliminated peripheral government spending at the federal level. Case 9 presents a tax profile in which spending by the federal government is limited to programs deemed to be core areas of its responsibility: national defence, provision of civil and criminal court systems, protection of property and person, and the financing of core education and health care.

This reduction in spending and subsequent tax relief are considered only at the federal level and the provincial rates remain unchanged from Case 8 (table 3.9.1).

Table 3.9.1: Flat tax rates (Case 9)

	Rate of Jurisdiction	Combined Federal/ Provincial Rate
Federal	16.5	29.4*
Newfoundland	16.8	33.3
Prince Edward Island	14.1	30.6
Nova Scotia	13.7	30.2
New Brunswick	14.3	30.8
Quebec†	18.5	35.0
Ontario	10.0	26.5
Manitoba	14.6	31.1
Saskatchewan	15.6	32.1
Alberta	11.3	27.8
British Columbia	12.5	29.0

Based on calculations by the authors using Statistics Canada's SPSD/M.

* Calculated using the weighted provincial average of 12.9%.

† Does not account for the current opting out arrangement (CHST and youth allowance abatements) that Quebec has with the federal government. Accounting for this agreement yields an adjusted federal flat tax rate of 12.2% for Quebec only and an adjusted Quebec provincial flat tax of 22.8%. Note that the adjustment does not affect Quebec's combined federal-provincial flat-tax rate.

The federal rate of flat tax decreases from 19.0% to 16.5%, a reduction of 2.5 percentage points. Quebec once again has both the highest provincial and highest combined federal-provincial rate of taxation. Its combined rate declines from 37.5% to 35.0%. Ontario has the lowest provincial and lowest combined federal-provincial rate. It shows a reduction of 2.5 percentage points in its combined federal-provincial tax rate, which decreases from 29.0% to 26.5%.

As in Case 8, focusing spending by the federal government on priority areas and eliminating peripheral spending affords reductions in personal income tax for all groups of taxpayers, regardless of income. In some income groups, the increased tax relief from reduced spending and taxes is quite substantial. For instance, those earning between $20,001 and $30,000 receive a tax reduction 4.3 times the size of the reduction received under Case 8 (tables 3.9.2 and 3.9.3). Further, tax relief is more than double the reduction in Case 8 for those earning between $40,001 and $50,000. The reductions for every income group are greater in Case 9 than in Case 8, highlighting what can be achieved when government spending is reduced based on a prioritizing of functions and a more efficient tax system.

The effects of the large reductions in spending and associated taxes on our representative households are highlighted in table 3.9.4. The individual household (household 1) shows a 12.6% reduction in its income tax relative to current income tax.

Both of the households with similar incomes also experience a reduction in income tax, although to different degrees. The dual-income household (household 2) receives an 18.9% reduction in its income tax relative to the status quo while the single-income household (household 3) receives a 40.5% reduction in income tax relative to the status quo.

As in Case 8, the low-income household (household 4) pays no income tax because of the reductions in spending and taxes, the personal exemption, and the exemption for children. The high-income household (household 5) also receives a reduction in its income tax, 29.5% relative to the status quo.

Table 3.9.2: Tax distribution (Case 9)

Income Group	Total Flat Tax Revenue ($millions)	Total Current Tax Revenue ($millions)	Change in Tax Revenue ($millions)	Net Income ($millions)	Number of Individuals (thousands)	Per-capita Tax Difference ($)
Minimum — (10,000)	0	0	0	(23)	12	0
(9,999) — 0	0	0	0	(23)	7,385	0
1 — 10,000	0	67	(67)	16,895	5,563	(12)
10,001 — 20,000	2,393	3,795	(1,402)	63,233	5,717	(245)
20,001 — 30,000	9,707	10,781	(1,074)	81,465	3,835	(280)
30,001 — 40,000	14,339	15,702	(1,363)	89,275	2,838	(480)
40,001 — 50,000	14,962	17,393	(2,430)	80,159	1,947	(1,248)
50,001 — 60,000	14,429	17,261	(2,831)	70,625	1,397	(2,027)
60,001 — 70,000	9,871	12,062	(2,191)	46,152	772	(2,835)
70,001 — 80,000	7,078	9,039	(1,960)	32,378	472	(4,148)
80,001 — 90,000	4,595	6,078	(1,482)	20,276	259	(5,724)
90,001 — 100,000	3,204	4,286	(1,082)	13,632	155	(6,950)
100,001 — 110,000	2,323	3,151	(827)	9,521	100	(8,264)
110,001 — 120,000	1,913	2,664	(750)	7,967	75	(9,922)
120,001 — 130,000	1,510	2,063	(552)	6,127	53	(10,415)
130,001 — 140,000	1,202	1,650	(447)	4,882	39	(11,374)
140,001 — 150,000	727	988	(261)	2,852	21	(12,173)
150,001 — 200,000	3,149	4,424	(1,275)	12,257	78	(16,166)
200,001 — 250,000	2,072	2,986	(913)	7,729	36	(24,854)
250,001 — Maximum	8,331	12,648	(4,317)	29,882	62	(68,684)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.9.3: Relative measures of tax changes (Case 9)

Income Group	Total Flat Tax Paid to Total Income (%)	Current PIT to Total Income (%)	Percentage Point Change	Federal Flat Tax Only to Total Income (%)	Federal PIT Only to Total Income (%)	Percentage Point Change
Minimum — (10,000)	0.0	0.0	0.0	0.0	0.0	0.0
(9,999) — 0	0.0	0.0	0.0	0.0	0.0	0.0
1 — 10,000	0.0	0.3	(0.3)	0.0	0.2	(0.2)
10,001 — 20,000	2.8	4.5	(1.7)	1.6	3.0	(1.4)
20,001 — 30,000	10.2	11.3	(1.1)	5.7	7.0	(1.3)
30,001 — 40,000	14.5	15.9	(1.0)	8.1	9.9	(1.8)
40,001 — 50,000	17.2	20.0	(2.8)	9.6	12.5	(2.9)
50,001 — 60,000	18.9	22.7	(3.8)	10.6	14.3	(3.7)
60,001 — 70,000	19.7	24.1	(4.4)	11.1	15.2	(4.1)
70,001 — 80,000	20.2	25.8	(5.6)	11.7	16.8	(5.1)
80,001 — 90,000	21.0	27.8	(6.8)	12.1	17.7	(5.6)
90,001 — 100,000	21.7	29.1	(7.4)	12.4	18.4	(6.0)
100,001 — 110,000	22.2	30.1	(7.9)	12.6	18.7	(6.1)
110,001 — 120,000	22.2	30.8	(8.6)	12.9	19.8	(6.9)
120,001 — 130,000	22.9	31.3	(8.4)	13.2	19.9	(6.7)
130,001 — 140,000	22.7	31.2	(8.5)	13.2	20.0	(6.8)
140,001 — 150,000	23.4	31.8	(8.4)	13.2	19.4	(6.2)
150,001 — 200,000	23.3	32.8	(9.5)	13.3	20.3	(7.0)
200,001 — 250,000	25.3	36.4	(11.1)	14.3	22.3	(8.0)
250,001 — Maximum	26.9	40.9	(14.0)	15.4	24.8	(9.4)

Based on calculations by the authors using Statistics Canada's SPSD/M.

Table 3.9.4: Effect on sample households (Case 9)

	Household 1 (Individual)	Household 2 (Two Earners)	Household 3 (One Earner)	Household 4 (Low Income)	Household 5 (High Income)
Base PIT	7,920	8,932	12,496	1,213	26,581
Combined flat tax	6,919	7,248	7,432	0	18,748
Nominal Difference	(1,001)	(1,684)	(5,064)	(1,213)	(7,833)
Percent Change	(12.6%)	(18.9%)	(40.5%)	(100.0%)	(29.5%)

Based on calculations by the authors using Statistics Canada's SPSD/M.

4 Income dynamics and mobility

Tax reforms are most often evaluated in terms of their effects upon particular groups identified by factors such as age, income, or employment status and these effects are most often discussed in the context of a one-year period. Such an analysis leads to erroneous and quite meaningless conclusions and is based on a simplistic view of taxation.

This type of analysis rests on the notion of "fairness," traditionally referred to in public finance as "horizontal and vertical equity." In fact, the question of fairness, however defined, is often seen as a prerequisite to assessing the appropriateness of a particular reform to the tax system. Critics of the reform point to the "unfairness" of the change to an identifiable group. This unfairness then becomes an insurmountable barrier that, no matter how large the benefits of the change, no amount of evidence can dislodge.

Argumentation based on unfairness implicitly accepts the status quo as a reasonable representation of a fair (or fairer) state. Those who accept this proposition often incorrectly use the impact on the tax system in a single year as the basis for analysis, when a horizon encompassing several years is more appropriate. When looking at a single year of data, a casual examination of the impact of a revenue-neutral flat-tax system or the replacement of multiple rates of tax with a single rate leads to one obvious conclusion: such a system leads to lower taxes for those earning a high income and higher taxes for those with low and middle incomes.

To see such an analysis is premature, we need only to look at the importance of income mobility. It is obvious to most people that at different times of our lives we have different incomes. Those first entering the work force or enrolled in educational programs (typically the young), understandably have lower incomes. In fact, most of the authors of this Critical Issues Bulletin lived below Statistic Canada's Low Income Cut Off line during their time in university. Similarly, retired persons drawing down retirement savings would also be classified as those with low income. Persons in this age category typically have paid off their debts and thus require less income for the same standard of living as they had during their working life. Between these two extremes lies a pattern of first increasing, then decreasing income (Gunderson and Riddell 1993: 175). The movement of people from one category of age and income to another makes it difficult to defend statements such as "the condition of those in low-income groups has deteriorated over the past ten years" because people with a low income in year one do not, for the most part, have a low income in later years.[17] It is similarly difficult to make statements like "the poor are going to bear the burden of this tax reform" because those who are poor today are likely to be relatively well off tomorrow.

Nature of income mobility

Statistics Canada's *Survey of Labour and Income Dynamics* (Webber, Cotton, Meere, Bishop, and Hewer 1999) can help us understand the movement between income groups better. This survey tracks specific persons over time and allows us to observe and to monitor how a person's income changes over time. This type of longitudinal analysis is often carried out by grouping people into income quintiles[18] according to their annual earnings. The study then examines how the composition of each income group (quintile) changes over time.

Canadian Results

Webber et al. (1999) examined Canadian panel data to investigate the extent of income mobility. The following summarizes their findings on income mobility for a two-year period:

- 66.5% of families did not change quintile
- 13.8% moved up one quintile
- 13.1% dropped one quintile
- 3.2% moved up more than one quintile
- 3.5% dropped more than one quintile.

Of those families initially in the bottom two quintiles in 1995, 24% found themselves at least one quintile higher by 1996. In other words, nearly one-quarter of families in the lowest two income groups had moved up at least one income group within a one-year period. This depicts Canadian income mobility as fairly dynamic. In fact, after examining the available Canadian data, Emes and Walker (1999) conclude that "there is not a 'permanent underclass' stuck in the lower income group" (1999: 54).

When a similar analysis is extended to a five-year period (Webber, Cotton, Meere, Bishop, and Hewer 1999), the results show, as expected, even greater income mobility. The data shows that:

- 49.1% of families did not change quintile
- 20.7% moved up one quintile
- 14.5% dropped one quintile
- 8.2% moved up more than one quintile
- 7.5% dropped more than one quintile

Of those initially in the bottom two quintiles, 45% moved up at least one quintile over the five-year period of the study. In other words, in only 5 years nearly half of all Canadian families in the bottom 40% moved up at least one income group. In fact, almost as many families moved up a quintile as stayed in the same quintile. Should the data be extended further, even greater levels of income mobility can be expected.[19]

Research into British income mobility corroborates Canadian results. The research examined the early 1990s and found "much mobility in household net income from one year to the next" (Jarvis and Jenkins 1998: 428). They also found relatively greater mobility in the low and high ends of the income distribution than in the middle. This is, again, suggestive of a dynamic income distribution.

Research in the United States

Unfortunately, both the Canadian and British data sets are limited in their applicability to the current discussion because they cover very few years. A more accurate sense of income mobility can be found in the University of Michigan's Panel Survey on Income Dynamics, the results of which were presented in a recent report by the Federal Reserve Bank of Dallas (1995). The study, which looked at incomes during the period 1975 to 1991, found the following key facts.

- Only one-half of one percent (0.05%) of the sample was in the bottom quintile for every year of the study, suggesting that "being in the low-income bracket isn't, for a large majority of people, permanent" (1995: 8).
- Only 5.1% of those in the bottom quintile in 1975 were in the bottom quintile in 1991.
- The average income in the poorest quintile grew 2,196% from 1975 to 1991 while the average income in the richest quintile grew 8.7% in this time period.
- The young and the educated were more likely to move up the income distribution.
- The report concludes: "All through the University of Michigan data, there's a consistent, powerful thrust toward the top of the income distribution" (1995: 8).

The report cites a study from the US Treasury Department examining tax returns from over 14,000 people from 1979 to 1998. The study confirms many of the findings of the University of Michigan. For instance, "86% of those in the lowest income bracket moved to a higher grouping. Two-thirds of them reached the middle strata or above, with almost 15% making it all the way to the top fifth of income earners" (Federal Reserve Bank of Dallas 1995: 12). Interestingly, of those in the low income group in 1979, more had made it all the way to the top of the income distribution in those nine years than remained in the bottom quintile.

Census Bureau data for the 1980s consistently shows roughly 20% of the people in the bottom quintile moving up a minimum of one quintile within a one-year period. Interestingly, the data also showed roughly the same percentage of people in the top quintile of earnings moving down a minimum of one quintile (cited in Bartlett 2000).

Finally, a study from the Urban Institute (Steuerle 1998) concluded that approximately one-half of those in the bottom quintile during the period from 1967 to 1976 had moved up when surveyed in the period from 1977 to 1986. Similar to the findings of the Census Bureau, an almost equal number of individuals in the top earnings quintile had moved down over the same two periods. The results of these studies speak volumes for the importance of considering income mobility when analyzing tax reforms.

Implications for the flat tax

Even when evaluating tax reform against the status quo, static analysis is only the starting point. A blanket statement that this reform helps the rich or hurts the poor cannot be justified. One year's data provides insufficient information to conclude that there is systematic "unfairness" given the movement of taxpayers from one income group to another. A rational taxpayer would be concerned about his or her lifetime tax burden, not how a particular change will affect next year's tax bill. Most people expect to earn a greater income in their 40s and 50s than they do in their 20s and 30s; most do so. A rational taxpayer would be willing to trade-off a slightly larger tax burden today for the efficiency gains, increased economic growth, and much larger tax savings in the future based on tax reform. This is no different from saving money today to spend tomorrow. The effects of a change in the tax regime, therefore, should be looked at over a number of years.

Life-cycle analysis

A life-cycle analysis by Walker (1983) of various flat-rate tax proposals provides us with a foundation for analysis. Walker notes that, of those in the main group of income earners who would be paying greater taxes, a full 63% would be in periods of their lives with abnormally low levels of income (due to youth or old age) relative to the tax system that existed at the time of the analysis. For the portion of those income earners who were young, their tax burden would decline as they aged, offsetting the effects of an initial increase. Walker also finds that the burden of lifetime taxes for all but one of the flat-rate tax systems he examined is equivalent to, or less than, the burden of lifetime taxes from the tax system in existence at the time of analysis.

Tables 4 and 5 show the changes in income tax for each of the cases analyzed in Section 3 compared with the current tax system. All of the cases except cases 8 and 9, which include spending and tax reductions, show an increased tax burden during the early years of the taxpayers working life as well as during the later years of life. This increased burden is offset by a decreased burden during mid-life, usually the years from age 30 to age 64.[20] Let us examine the experience of an average individual[21] in Case 3, which offers a personal exemption of $8,766 with no tax credits or other deductions. Before turning 20, the average individual is burdened with additional income taxes of $12 per year above the status quo. This burden increases with age, peaking at an extra $214 during the years from age 25 to age 29. It then drops to $68 above the status quo during the years from age 30 to age 34. This is followed by many years (from 35 to 64) when the tax bill is less than it would have been under the current system. In some cases, these reductions are substantial. For instance, during the years from age 55 to age 59, income taxes are over $800 less in Case 3 than under the status quo. Beyond 64 years of age, the average individual pays over $200 more in tax per year.

This example illustrates several important points. First, there is a relatively small amount of extra income tax paid during those years in which taxes paid in Case 3 are higher than the status quo. In fact, before age 30 the average increase in taxes amounts to around 0.8% of income. After 65, the increase in taxes is 1.3% of total income. Second, the period during which taxes are lower is longer than the periods when taxes are higher and the reductions in taxes are typically larger than the increases. During the period from 35 years to 65 years of age, the reduction in taxes is, on average, 1.3% of income. Over this individual's lifetime, the biggest tax decrease is 2.4% of income, whereas the biggest increase is 1.6%. These numbers indicate that the transition to a flat tax like that analyzed in Case 3 would be, for the average individual, relatively painless and most likely profitable.

The bottom line for an average individual in Case 3 is a lifetime reduction in income taxes of $6,408 (table 6). As shown in table 6, all of the Cases presented in Section 3 result in a lifetime reduction in income-tax liability for an average income earner. This is obviously due to the fact that the reductions obtained during the person's peak earning period more than offset the tax increases incurred during periods of lower income.

If the status quo is the ultimate arbitrator of fairness, the evidence presented suggests that the flat tax as analyzed in Cases 1 through 9 constitute a fairer tax system. Those with low incomes may temporarily bear the burden of the change in tax systems but when they begin to earn higher income, as research shows they almost certainly will, they will enjoy lower rates of income tax that will more than compensate them for the relatively small increases incurred in their younger years.[22] Other sections of this study highlight the important benefits gained through tax reform based on a flat tax and, to a lesser extent, on a single-rate tax. This analysis shows that the lifetime tax benefits do not come at the cost of fairness to those at various points in the income distribution.

Table 4: Income tax payable—status quo versus single-rate tax reform (Cases 1 through 9)

		Age Group of Taxpayer											
		Under 20	21–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	Over 70
Avg. Income Earned ($)		$1,381	$14,826	$24,785	$30,375	$34,272	$26,070	$37,134	$35,821	$33,830	$24,512	$24,167	$21,409
Tax Payable	Status Quo	108	1,760	4,064	5,592	6,823	7,564	8,157	7,978	7,603	4,350	3,496	2,500
	Case 1	244	2,626	4,517	5,573	6,336	6,762	7,044	6,738	6,299	4,300	4,432	3,681
	Case 2	132	2,052	4,338	5,660	6,646	7,199	7,599	7,217	6,694	4,052	3,836	3,011
	Case 3	119	1,939	4,277	5,661	6,704	7,288	7,721	7,328	6,789	4,008	3,706	2,853
	Case 4	78	1,351	3,768	5,474	6,900	7,688	8,387	7,970	7,318	3,798	3,132	2,274
	Case 5	123	1,971	4,297	5,552	6,537	7,139	7,721	7,448	6,948	4,109	3,803	2,933
	Case 6	126	2,015	4,302	5,539	6,484	7,098	7,593	7,350	6,901	4,094	4,009	3,124
	Case 7	126	2,019	4,324	5,566	6,501	7,117	7,604	7,346	6,876	4,086	3,953	3,082
	Case 8	95	1,591	3,693	4,901	5,854	6,464	6,986	6,769	6,346	3,591	3,367	2,554
	Case 9	88	1,464	3,398	4,507	5,386	5,949	6,429	6,228	5,838	3,305	3,097	2,349

Table 5: Income tax payable—change from status quo (Cases 1 through 9)

		Age Group of Taxpayer											
		Under 20	21–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	Over 70
Avg. Income Earned ($)		$1,381	$14,826	$24,785	$30,375	$34,272	$26,070	$37,134	$35,821	$33,830	$24,512	$24,167	$21,409
Change in Tax Payable	Case 1	136	866	453	(19)	(487)	(801)	(1,113)	(1,240)	(1,304)	(49)	936	1,180
	Case 2	24	292	274	68	(177)	(365)	(558)	(761)	(909)	(297)	340	511
	Case 3	12	178	214	68	(119)	(276)	(436)	(650)	(814)	(342)	210	353
	Case 4	(30)	(409)	(295)	(118)	77	(124)	(230)	(8)	(285)	(551)	(364)	(226)
	Case 5	15	211	233	(41)	(286)	(424)	(436)	(530)	(655)	(241)	307	433
	Case 6	18	255	238	(53)	(339)	(466)	(564)	(628)	(702)	(256)	513	624
	Case 7	18	259	261	(27)	(322)	(447)	(553)	(632)	(727)	(263)	457	582
	Case 8	(12)	(169)	(370)	(691)	(969)	(1,100)	(1,171)	(1,209)	(1,257)	(758)	(129)	54
	Case 9	(20)	(296)	(666)	(1,086)	(1,437)	(1,615)	(1,728)	(1,750)	(1,765)	(1,044)	(399)	(151)

Other considerations

Another consideration is the impact that changing the tax system will have on income mobility. If the changes induce greater work effort or greater investments in education,[23] the average taxpayer will be much better off under the reformed system. Is there evidence that this would happen?

Samida (1998) examines the relationship between economic freedom in Canada and the percentage of people in a particular age group with incomes under $12,500 (in real terms). He finds that the greater the level of economic freedom a province has, the greater the percentage of people who will surpass this level of income seven years later. In so much as the single-rate tax or a flat tax reduces marginal tax rates and, by implication, increases the level of economic freedom, we might expect income mobility to increase as well.

Table 6: Change in income tax liability over lifetime (Cases 1 through 9)

Case 1	(5,768)
Case 2	(6,232)
Case 3	(6,408)
Case 4	(7,420)
Case 5	(5,656)
Case 6	(5,440)
Case 7	(5,576)
Case 8	(31,124)
Case 9	(47,828)

Conclusion

Given that income increases and decreases over an individual's lifetime, it is clear that an entire lifetime is the proper framework in which to analyze tax reform. We should assess the effect of a change in the tax system upon a person's lifetime tax liability rather than simplistically and quite incorrectly assessing its effect in a particular year. Further, the data available for Canada, Britain and, in particular, the United States strongly suggest that, in all three jurisdictions, individuals move from one level of income to another to a relatively high degree.

5 International evidence

There is a void in the debate about the applicability of a flat tax on income to Canada: the debate is exclusively theoretical. Opponents of the flat tax foretell fiscal doom-and-gloom should the allegedly untested flat tax ever be introduced as an instrument of public policy. The demonstrated successes of the flat tax, however, are usually ignored and this section attempts to fill the void.

For several decades, various jurisdictions have operated their highly successful fiscal policies on the basis of a flat tax. Both Hong Kong and the Channel Islands have largely insulated themselves from the mediocre, frequently poor, performance of most Western economies, in no small measure, by implementing tax systems characterized by fairness, simplicity, and efficiency.

Hong Kong

On July 1, 1997, following 150 years of British administration, the city-state of Hong Kong became a Special Administrative Region of the People's Republic of China (PRC). Under the constitutional terms of the transfer, known as the Basic Law, the existing economic, legal, and social systems will be maintained for at least 50 years: "While the mainland PRC will continue to practise 'socialism with Chinese characteristics', Hong Kong is to continue the practice of 'capitalism with Chinese characteristics'" (Cullen 1994: 512). This section provides an overview of the central fiscal characteristics of Hong Kong.

The island of Hong Kong, on which 6.8 million people reside, contains no natural resources. Yet, Hong Kong succeeds as the world's eighth-largest trading economy. How is this possible? According to *The Economist* magazine: "The territory's tradition of simple and low taxes, combined with a comparatively easy-going government . . . is widely seen as a main reason for its stunning rise to prosperity" (*The Economist* 2000).

According to The Fraser Institute's publication, *Economic Freedom of the World: 2000 Annual Report*: "The latest economic freedom index stands at a level of 9.4 (out of 10), maintaining Hong Kong's primacy as the most economically free place on earth" (Gwartney and Lawson 2000: 49). Hong Kong's tried and trusted non-interventionist economic policy is, in fact, constitutionally mandated. For example, government spending is not permitted to grow at a rate higher than that of the economy. As Milton and Rose Friedman observed, "Though government spending has grown as the economy has grown, it remains among the lowest in the world as a fraction of the income of the people. As a result, low taxes preserve incentives" (Friedman and Friedman 1980: 34).

In theory, Hong Kong's tax system, "is designed to be as neutral as possible so as to avoid any distortive effects on the economy while at the same time generating sufficient revenue to finance the government's socio-economic policies and programmes" (Jao 1978: 253). In practice, therefore, a moderately narrow tax base is combined with very low tax rates. Hong Kong does not have a general income tax, does not tax stock dividends, capital gains, wealth, or gifts, and has no value-added tax, general sales tax, or payroll tax. There is a flat-rate tax of 16% on corporate profits and a property tax.

Hong Kong has had a version of the flat tax on income since its original tax system came into effect with the Inland Revenue Ordinance of 1947.[24] Hong Kong has a Salaries Tax on all employment income. The original tax law legislated a standard rate of 10% on salaries. Currently, the maximum limit on salaries and wages is a flat rate of 15% on gross income, less personal exemptions (the current basic allowance is HK$200,000 [US$25,641] for a married person), expenses, and charitable donations (the current standard rate of 15% came into effect in 1966). Income tax was flattened further when the top marginal rate of 30% was eliminated in 1978. Critically, the government's "philosophy is not only to keep each and every taxation levy . . . simple and easy for the taxpayers, but also productive and inexpensive for the government to administer" (Anthony Au-Yeung, Deputy Commissioner of Inland Revenue, in Lai 1982: 199).

The Salaries Tax operates according to a sliding scale. The effective rates of income tax are: 10.2% for a single person; 5.7% for a single person with two depen-

dent parents; 3.5% for a married person with no children; 1.4% for a married person with two children; and 0.14% for a married person with two children and two dependent parents.

In Hong Kong, personal and child allowances are so high (including a maximum deduction of 10% of taxable income for charitable donations) that 70% of the population pay *no* income tax whatsoever; a further 28% of the population pay *below* the 15% flat rate, which, consequently, is paid only by the most affluent *2%* of Hong Kong's residents.

Commenting on the flattening of the income tax, economist Y.C. Jao observes: "Since 1976 there has been further simplification and rationalization of Hong Kong's tax system, which on balance has resulted in a lower burden of personal taxation, higher tax yield and hence a larger fiscal surplus" (Jao 1981: 406)." He continues: "The remarkable growth and industrialization of the economy during the post-war period provides a recent and striking illustration of the positive effects of a congenial tax system" (Jao 1981: 253)."

During the second-half of the twentieth century, the Hong Kong economy grew at a phenomenal pace. Indeed: "The combination of simplicity and low taxation, to the extent that it minimizes the adverse effects of taxation on work effort, saving and risk-taking, has played its part in Hong Kong's remarkable post-war economic growth and development" (Jao 1981: 401).

Impressively, Hong Kong's flat tax "has proved itself capable of generating a sufficiently high level of government expenditure such that fiscal surpluses have been recorded in no less than 27 out of the 31 post-war fiscal years" (Jao 1981: 253). It may be observed, therefore, that: "A comparatively low level of taxation contributes significantly to economic prosperity and thus increases revenue yields despite high tax thresholds" (Lai 1982: 199).

The Channel Islands

Situated in the English Channel off the northwest coast of France, the Channel Islands are made up of two larger islands, Guernsey (population 59,000) and Jersey (population 75,000), three much smaller islands (Alderney, Herm, and Sark), and several tiny islets. The Channel Islands operate under a special constitutional status bestowed by the British crown.

Guernsey

This section focuses primarily upon the fiscal policies of Guernsey, while also outlining the similar policies followed, and results generated, by Jersey. Neither Guernsey nor Jersey is a member of the European Union (EU), although both hold special status under a relationship with the EU established when the United Kingdom joined the European Economic Community. Overall, both Guernsey and Jersey have "maintained the islands' rare combination of low taxation, considerable economic prosperity, and political stability, whilst still preserving a highly attractive environment" (Deloitte Haskins & Sells 1978: 4). The tax systems employed in Guernsey and Jersey are quite similar. Both islands employ a 20% standard rate of income tax for individuals and corporations. Neither island imposes a tax on capital gains, a tax on capital transfer, or a withholding tax; both refrain from taxing interest on bank deposits. Neither Guernsey nor Jersey collect a value-added tax.

Hence, while historically Guernsey had higher rates of income tax than did Jersey, since the establishment of a flat tax of 20% on income in 1960, the island has not increased the rate of income tax. The question, however, remains—to what effect? The island's GDP has more than trebled since 1965. Since 1996, economic growth has outpaced a booming British economy and GDP per capita increased from £7,510 in 1970 to £16,960 in 1998.

Although Guernsey's 20% standard rate of income tax is already very low by international standards, the 20% flat tax is complemented by generous personal allowances and reliefs, which include allowances both for single and for married persons, as well as allowances for children and dependent relatives. Income-tax receipts nevertheless account for 74% of total general revenue.[25] The significant increases in revenue allowed for a comparable increase in government expenditure on health care, social services, and education. A rising revenue stream has ensured that Guernsey's public finances are consistently balanced.

Jersey

The income tax was introduced into Jersey in 1928 and was modelled, unsurprisingly, on Britain's income tax code. The island's introductory standard rate was 2.5%. The standard rate was raised to 20% in 1940, the level at which it remains 60 years later. It is a flat tax that applies to both individual and corporate income.

The 20% flat tax is also complemented by generous personal allowances and reliefs comparable to those pro-

vided in Guernsey. Income tax provides 90% of the island's revenue, even higher than is the case in Guernsey. Similar to the Guernsey tax system, the Jersey tax system is described as "a pure imputation system in that no income is taxed twice. For example, dividends paid by a Jersey company are not deductible in the company's computation but are treated as taxed income in the hands of the shareholder" (Deloitte Haskins & Sells 1978: 7).

A legislative committee summarized Jersey's economic development philosophy in the following terms:

> New forms of taxation should be avoided wherever possible, and . . . efforts should be directed more at maximizing the tax yield with the present form of taxation by the encouragement of profit growth with business activities of a level and nature that are consistent with population growth. (State of Jersey 1991: 10).

How has this policy served the largest of the Channel Islands? It has been observed that Jersey suffers from the "problems" of affluence and low unemployment (Johns and Le Marchant 1993: 110). GDP, a principal measure of macroeconomic affluence, rose 90% in real terms between 1980 and 1990. Meanwhile, per-capita income stood at £8,153 in 1981; by 1990, it had risen to £14,000.

Conclusion

It is equally true of both Hong Kong and the Channel Islands that, "The necessary process of change and development to provide for continued economic prosperity requires the continued ability both of individuals to start up in business, and of the successful to expand at the expense of the unsuccessful" (Colin Powell, Chief Economic Adviser to the States of Jersey; quoted in Johns and Le Marchant 1993: 112). Within these jurisdictions there exist long-standing commitments to fiscal policies centred upon fairness, simplicity, and efficiency. As demonstrated by their respective post-war experiences, such fiscal policies based upon the flat tax are positive influences upon economic growth, employment, and the overall standard of living.

Notes

1 The 2000 Federal Budget reduced the middle-income statutory tax rate from 26% to 23% over two years beginning with a reduction of 2 percentage points (26% to 24%) effective July 2000; the rate for 2000 is, therefore, 25%.

2 Computation of federal income tax: $30,004 minus $7,231 multiplied by applicable tax rate (17%) = $3,871.

3 "Values," in this context, means how much weight the government places on a dollar of income for a person in a particular income bracket in assessing the well-being of society through a social-welfare calculation.

4 Even if the government does not value the incomes of the rich, it should still value the revenue it can generate from them. This is why, even in the "progressive" case, the optimal tax rate is declining, because the rich have much greater behavioural responses to changes in the tax rate than do the rest of the population. A government with these preferences would attempt to maximize the tax revenue obtained from this group without concern for their level of social welfare while collecting revenue as necessary from the other groups, balancing the value of this revenue versus the cost in terms of social welfare.

5 Other proposals for flat-tax reform include: Steuerle 1998; Mitchell 1997a; Boessenkool, Grubel, and Silye 1995; American Enterprise Institute 1996; and Monte Solberg 2000 (Canadian Alliance). Note that the proposal from the Canadian Alliance is a single-rate tax rather than a comprehensive flat-tax reform.

6 This particular change poses significant problems for the financial services industry that are specifically addressed in Hall-Rabushka but are too detailed to include in this summary.

7 **Disclaimer** This analysis is based on Statistics Canada's Social Policy Simulation Database and Model. The assumptions and calculations underlying the simulation results were prepared by The Fraser Institute and the responsibility for the use and interpretation of these data is entirely that of the authors.

8 For further information on differences in the treatment of single-income and dual-income families and penalties for marriage embedded in the tax code, please see Zelder and Basham 2000 and the references included in that article.

9 Several countries, including New Zealand, do not have personal exemptions in their tax systems.

10 The personal exemption is our model's equivalent to the "Basic Personal Amount" familiar from the "Non-refundable tax credits" section of the personal income tax form. The personal exemption in our model, like the Basic Personal Amount, functions as a tax credit. Specifically, the amount of the exemption is multiplied by some tax rate to arrive at the value of the tax credit. In the current tax system, this rate is 17%. In our model, the federal flat-tax rate for the relevant case is used.

11 Podder and English (1999) note that the present system exempts 75% of domestic savings.

12 According to the Tax Statistics on Individuals for the 1997 tax year, 92.7% of tax-filers earned incomes less than $70,000, allowing them the opportunity to make full use of their RRSP/RPP contributions up to the 18% maximum without being affected by the cap of $13,500.

13 In 1995, less than half the receipts issued by charitable organizations in Canada were actually claimed. Similarly, only 29% of Americans who filed tax statements choose to itemize their tax returns and claim charitable donations. That such a small percentage use the charitable donation tax credit further weakens the argument that tax incentives explain charitable donations.

14 In 1999/2000 alone, some $7.2 billions were spent on regional development programs and subsidies to crown corporations; these make up 54% of the total spending reductions proposed. No spending or tax reductions are implemented at the provincial level.

The provinces will collect and spend the same amount as under previous cases.

15 One of the limitations of the SPSD/M is that is uses data from a single year only. It is, therefore, not designed to provide dynamic or multi-year analyses. Our analysis, which is based on the SPSD/M, includes reductions in expenditure and related taxes in a single year although such reductions can be enacted over a number of years.

16 Note that a corresponding spending and tax reduction at the provincial level would have reduced or reversed the single-rate tax (SRT) rate increases at the provincial level.

17 It is interesting to note that increasing university enrollments would tend to increase traditional measures of poverty. Ironically, this may be the result of greater general affluence.

18 One quintile represents 20% of the population. For example, when looking at income quintiles, the bottom quintile is that 20% of the population earning the least income.

19 Note that the data will only cover a six-year period according to current research plans since, though the Survey of Labour Income and Dynamics (SLID) will continue indefinitely, any one group of families will be surveyed for six years only. The survey of the second group, for instance, started at the mid-point in the six-year survey cycle of the first group; this process will continue and the survey of each new group will begin at the mid-point of the previous group's cycle.

20 This is confirmed by a net present-value calculation using appropriate discount rates.

21 This assumes that the average individual follows the average time trend of income and that there is no behavioural response from the tax reform.

22 Those who are now retired may be adversely affected by a change in the tax system as described thus far. This effect is the result of the transition from one tax regime to another since those who are already retired, unlike individuals currently working, could not receive the offsetting benefit of reduced taxes during their prime working period.

23 High marginal tax rates mean lower returns to education. Since education is an investment, these lower returns imply a smaller investment in education. One would expect that reducing the marginal tax rate at the top end would encourage more people to enroll in educational programs.

24 For a brief history of Hong Kong's experience with the flat tax, and a detailed examination of its current tax system, see Reynolds 1999.

25 This is a 1999 statistic.

References

Aaron, H., and J. Pechman (eds) (1981). *How Taxes Affect Economic Behaviour*. Washington, DC: Brookings Institution.

Adams, Charles (1993). *For Good and Evil: The Impact of Taxes on the Course of Civilization*. London: Madison Books.

Altig, David, and Charles T. Carlstrom (1994). The Efficiency and Welfare Effects of Tax Reform: Are Fewer Brackets Better Than More? *Economic Review* 30, 4: 30–42. Federal Reserve Bank of Cleveland.

American Enterprise Institute (1996). *Fairness and Efficiency in the Flat-tax*. Washington, DC: AEI. Digital document available on the Internet at www.aei.org.

Association of Canadian Pension Management (1995). *A Retirement Income Strategy for Canada: Creating the Best Retirement Income System in the World*. Toronto, ON: ACPM.

Association of Canadian Pension Management (2000). *Dependence or Self-reliance: Which Way for Canada's Retirement Income System?* Digital document: www.acpm.com/ACPMenglish/documents/dep_self-reliance.htm.

Auerbach, Alan J. (1997). The Future of Fundamental Tax Reform. *AEA Papers and Proceedings* 87, 2 (May 1997): 143–46.

Auerbach, Alan J. and Laurence Kotlikoff (1987). *Dynamic Fiscal Policy*. Cambridge: Cambridge University Press.

Auerbach, Alan J., Laurence Kotlikoff, and Jonathan Skinner (1983). The Efficiency Gains from Dynamic Tax Reform. *International Economic Review* 24, 1 (February): 81–100.

Ballard, C., J. Shoven, and J. Whalley (1985). General Equilbirum Computations of the Marginal Welfare Costs of Taxes in the US. *American Economic Review* 75,1 (March): 128–38.

Barro, Robert (1990) Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy* 98, 5 (pt.2): S103–S125.

Barro, Robert (1997) *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge: MIT Press.

Barro, R., and Xavier Sala-i-Martin (1995). *Economic Growth*. New York: McGraw Hill.

Barry, John S. (1996). *How a Flat Tax Would Affect Charitable Contributions*. Washington, DC: The Heritage Foundation. Digital document available at http://flat-tax.house.gov.

Bartlett, Bruce (2000). Income Mobility Belies Liberal Myth. *NCPA Digest* (August 23). Digital document available at www.ncpa.org.

Bawly, D. (1982). *The Subterranean Economy*. New York: McGraw Hill.

Besci, Zsolt (1996). Do State and Local Taxes Affect Relative State Growth? *Economic Review* 81, 2: 18–36. Federal Reserve Bank of Atlanta.

Bevilacqua, Maurizio (1999). *Budget 2000, New Era . . . New Plan*. Report of the Standing Committee on Finance [House of Commons, Canada] (December). Ottawa: Standing Committee on Finance.

Boessenkool, Ken, Herb Grubel, and Jim Silye (1995). A Flat Tax for Canada. Unpublished paper presented to The Flat Tax Conference (The Fraser Institute), Toronto (October 31).

Boskin, M. (1975). Efficiency Aspects of the Differential Tax Treatment of Market and Household. *Journal of Public Economics* 4: 1–26.

Boskin, M. (1978). Taxation, Saving, and the Rate of Intereest. *Journal of Political Economy* 86, 2 (pt.2): S3–S28.

Bradley, Bill (1984). *The Fair Tax*. New York: Pocket Books.

Brenner, Reuven (1998). *Canada: Failure of a Promised Land*. Special Report, Polyconomics, Inc. (July 16).

Broadway, Robin W., and Harry M. Kitchen (1999). Personal Income Tax Reform in a Broader Context. *Canadian Tax Journal* 47, 3: 566–602.

Brown, Robert D. (1999). Tax Reform and Tax Reduction: Let's Do the Job Right. *Canadian Tax Journal* 47, 2: 182–205.

Browning, Edgar K. (1987). On the Marginal Welfare Cost of Taxation. *American Economic Review* 77, 1 (March): 199–219.

Browning, Edgar K., and Jacquelene M. Browning (1985). Why Not a True Flat Rate Tax? *Cato Journal* 5, 2 (Fall): 620–50.

Bruce, Doug (1999). *Tax Pain, No Gain: Results of CFIB Survey on Tax Principles*. CFBI Research (June).

Buchanan, James M. (1993) The Political Efficiency of General Taxation. *National Tax Journal* 46, 4 (December): 401–10.

Canadian Institute of Actuaries (1995). *Troubled Tomorrows: The Report of the Canadian Institute of Actuaries' Task Force on Retirement Savings*. Ottawa, ON: Canadian Institute of Actuaries.

Carroll, Robert, Dougals Holtz-Eakin, Mark Rider, and Harvey S. Rosen (1998). *Entrepreneurs, Income Taxes and Investment*. Working Paper 6374. Cambridge, MA: National Bureau of Economic Research.

Chao, Johnny C.P., and Herbert Grubel (1998). Optimal Levels of Spending and Taxation in Canada. In Herbert Grubel (Ed.), *How to Use the Fiscal Surplus: What is the Optimal Size of Government?* (Vancouver, BC: The Fraser Institute): 53–68.

Clemens, Jason, and Fazil Mihlar, with Johanna L. Francis (1999). *The 20% Foreign Property Rule: Increasing Risk and Decreasing Returns on RRSPs and RPPs*. Critical Issues Bulletin. Vancouver, BC: The Fraser Institute.

Clemens, Jason, and Michael Walker (1999). Reducing Taxes in Canada*, Fraser Forum* (December): 11–13.

Cooper, Sherry (1999). Puling Up Stakes: The Best and Brightest of Our Children and Grandchildren Are Being Lured South of the Border by Higher After-Tax Incomes and More Vibrant Job Markets. *FiftyPlus* (October).

Courchene, Thomas J. (1999). National versus Regional Concerns: A Provincial Perspective on the Role and Operations of the Tax Collection Agreements. *Canadian Tax Journal* 47, 4: 861–89.

Courchene, Thomas J., and D. Purvis, Eds. (1993). *Productivity Growth and Canada's International Competitiveness*. Bell Papers on Economic and Public Policy. Kingston, ON: John Deutsch Institute for the Study of Ecnomic Policy (Queen's University).

Cox, W. Michael, and Richard Alm (1999). *Myths of Rich and Poor: Why We're Better Off than We Think*. New York: Basic Books.

Cullen, Richard (1994). Looking into Hong Kong's Fiscal Ball. *Australian Tax Forum* 11, 4.

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

Deloitte Haskins & Sells, Inc. (1978). *The Channel Islands: Basic Business Information*. London: Deloitte Haskins & Sells.

De Long, J. Bradford, and Lawrence H. Summers (1991). Equipment Investment and Economic Growth. *Quarterly Journal of Economics* 106, 2: 445–502.

Drache, Arthur (2000). This Tax Concept Deserves to Fall Flat. *Financial Post* (February 8): D4.

Drolet, Marie, and René Morissette (1998). *The Upward Mobility of Low Paid Canadians: 1993-1995*. Ottawa: Statistics Canada,.

Drolet, Marie and René Morissette (1999). *To What Extent Are Canadians Exposed to Low Income?* Ottawa: Statistics Canada.

The Economist (2000). Hong Kong: Atonement Day (February 26): 50.

Emes, Joel (1999a). April Questions & Answers. *Fraser Forum* (April): 4–7.

Emes, Joel (1999b). *Fiscal Performance Index, 1999*. Public Policy Sources 20. Vancouver, BC: The Fraser Institute.

Emes, Joel (2000). May Questions & Answers. Fraser Forum (May): 28–30.

Emes, Joel, and Dexter Samida (1997). Growth Tax in Canada. Unpublished paper, The Fraser Institute.

Emes, Joel, and Michael Walker (1999). *Tax Facts 11*. Vancouver: The Fraser Institute.

Engen, Eric, and Jonathan Skinner (1996). *Taxation and Economic Growth.* Working Paper 5826. Cambridge: National Bureau of Economic Research.

Engen, Eric M., and William G. Gale (1997). Consumption Taxes and Saving: The Role of Uncertainly in Tax Reform. *AEA Papers and Proceedings* 87, 2 (May).

Ernst & Young (1998). *Tomorrow's Taxes. Ernst & Young's Analysis of the Report of The Technical Committee on Business Taxation* (April).

Fagerber, Jan (1994). Technology and International Differences in Growth Rates. *Journal of Economic Literature* 32, 3 (September): 1147–75.

Federal Reserve Bank of Dallas (1995). *By Our Own Bootstraps: Economic Opportunity and the Dynamics of Income Distribution*. Dallas, TX: Federal Reserve Bank.

Feldstein, M., Ed. (1987). *Taxes and Capital Formation*. Chicago: University of Chicago Press.

Feldstein, Martin (1995). The Effect of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform Act. *Journal of Political Economy* 103, 3: 551–72.

Feldstein, M., and J. Slemrod (1978). Inflation and the Excess Taxation of Capital Gains on Corporate Stock. *National Tax Journal* 31, 2 (June):107.

Francis, Johanna, and Jason Clemens (1999). Charitable Donations and Tax Incentives. *Fraser Forum* (June): 12–14.

Friedman, Milton, and Rose Friedman (1980). *Free to Choose: A Personal Statement*. New York: Harcourt Brace Jovanovich.

Fullerton, Don, and Diane Lim Rogers (1997). Neglected Effects on the Uses Side: Even a Uniform Tax Would Change Relative Goods Prices. *AEA Papers and Proceedings* 87, 2 (May): 120–25.

Gale, William G. (1998). Don't Buy the Sales Tax. *Police Brief 31* (March). Digital document available at www.brookings.edu.

Gramlich, E. (1994). Infrastructure Investment: A Review Essay. *Journal of Economic Literature* 32, 3 (September): 1176–96.

Gravelle, J., and L. Kotlikoff (1989). The Incidence and Efficiency Costs of Corporate Taxation when Corporate and Noncocorporate Firms Produce the Same Good. *Journal of Political Economy* 97, 4 (August): 749–80.

Gravelle, Jane G. (1996). *Effects of Flat Taxes and Other Proposals on Housing: An Overview.* Congressional Research Service: Report for Congress. Digital document available at http://flattax.house.gov.

Grossman, Philip J. (1988) Government and Economic Growth: A Non-linear Relationship. *Public Choice* 56, 2 (February): 193–200

Grossman, Gene M., and Elhanan Helpman (1994). Endogenous Innovation in the Theory of Growth. *Journal of Economic Perspectives* 8, 1 (Winter): 23–44.

Grubel, Herbert (2000). The True Cost of Job Creation Schemes. *National Post* (March 7): C6.

Grubel, Herbert, and Michael A. Walker (1999). Using Cash Rebates for Tax Relief without Risk. *Public Policy Sources 19*. Vancouver, BC: The Fraser Institute.

Gruber, Jon, and Emmanuel Saez (2000). *The Elasticity of Taxable Income: Evidence and Implications*. Working Paper 7512. Cambridge: National Bureau of Economic Research.

Gunderson, Morely, and W. Craig Riddell (1993). *Labour Market Economics*. Third Edition. Toronto: McGraw-Hill Ryerson.

Gwartney, James, and Richard Lawson, with Dexter Samida (2000). *Economic Freedom of the World: 2000 Annual Report*, Vancouver, BC: The Fraser Institute.

Gwartney, James, and James Long (1985). Is the Flat Tax a Radical Idea? *Cato Journal* 5, 2 (Fall): 407–32.

Gwartney, James, Randall Holcombe, and Robert Lawson (1998). The Scope of Government and the Wealth of Nations. *The Cato Journal* 18, 2: 163–90.

Hall, Robert E. (1997). Potential Disruption from the Move to a Consumption Tax. *AEA Papers and Proceedings* 87, 2 (May): 147–50.

Hall, Robert E., and Alvin Rabushka. (1983). *Low Tax, Simple Tax, Flat Tax*. New York: McGraw-Hill.

Hall, Robert E., and Alvin Rabushka (1995). *The Flat Tax*. Third Edition. Stanford, CA: Hoover Institution Press.

Hall, Robert E., Alvin Rabushka, Dick Armey, Robert Eisner, and Herbert Stein (1996). *Fairness and Efficiency in the Flat Tax*. Washington, DC: American Enterprise Institute Press.

Hill, Roderick, and Muhammed Kabir (1996). Tax Rates, the Tax Mix, and the Growth of the Underground Economy in Canada: What Can We Infer?" *Canadian Tax Journal* 44, 6: 1552–83.

Horrigan, Brian R. (1985) The Tax Reform Controversy: A Guide for the Perplexed. *Business Review* (May-June): 3–15. Federal Reserve Bank of Philadelphia.

Horry, Isabella, and Michael Walker (1994). *Government Spending Facts Two*. Vancouver, BC: The Fraser Institute.

Howitt, P., Ed. (1996). *The Implications of Knowledge-Based Growth for MicroEconomic Policies*. The Industry Canada Research Series. Calgary, AB: University of Calgary Press.

Hubbard, R. Glenn (1997). How Different Are Income and Consumption Taxes. *AEA Papers and Proceedings* 87, 2 (May): 138–42.

Hunter, William J., and Charles E. Scott (1987). The Impact of Income Tax Progressivity on Tax Revenue. *Public Finance Quarterly* 15, 2 (April): 188–98.

Income Security Programs Branch, Human Resources Development Canada (2000). *Canada Pension Plan Benefit Rates 2000*. Digital document available at www.hrdc-drhc.gc.ca/isp/studies/trends/cpp-rates_e.shtml.

Iqbal, Mahmood (1994). A Corporate Tax Comparison for Canada, the US and Mexico. *Canadian Business Economics* 3, 1 (Fall): 54–64.

James, Steven (1997). *A Public versus a Private Canada Pension Plan: A Survey of the Economics*. Working Papers 97–04 (June). Ottawa: Department of Finance.

Jao, Y.C. (1978). Hong Kong: Tax Structure and Fiscal Policy. *International Bureau of Fiscal Documentation Bulletin* 32, 6: 251–54.

——— (1981). Tax Changes and Reforms in Hong Kong. International Bureau of Fiscal Documentation Bulletin 35, 8–9: 401–07.

Jarvis, Sarah, and Stephen P. Jenkins (1998). How Much Income Mobility Is There in Britain? *The Economic Journal* 108 (March): 428–43.

Jestin, Warren, Randall Powley, Mary Webb, and Patricia Mohr (1999). Debt Reduction Takes Back Seat to Tax Cuts and New Spending. *Scotiabank Economic Directions* (February 16.

Johns, R.A. (1983). *Tax Havens and Offshore Finance: A Study of Transnational Economic Development*. London: Frances Pinter.

Johns, R.A., and C.M. Le Marchant (1993). *Finance Centres: British Isle Offshore Development since 1979*. New York: St. Martin's Press.

Jorgenson, Dale W., and Yun Kun-Young. (1991) The Excess Burden of Taxation in the United States. *Journal of Accounting, Auditing, and Finance* 6, 4 (Fall): 487–508.

Jorgenson, Dale W., and Peter J. Wilcoxen (1997). The Long-Run Dynamics of Fundamental Tax Reform. *AEA Papers and Proceedings* 87, 2 (May): 126–32.

Kaye, Barry (no date). Who Would The New Flat Tax Help? Everyone! Digital document available on the internet at www.barrykaye.com.

Kesselman, Jonathan R. (1990). *Rate Structure and Personal Taxation: Flat Rate or Dual Rate?* Victoria University Press for the Institute of Policy Studies.

Kesselman, Jonathan R. (1997). *General Payroll Taxes: Economics, Politics, and Design*. Toronto: Canadian Tax Foundation.

Kesselman, Jonathan R. (1998). Tax Cuts for Growth and Fairness. *Policy Options* (December): 13–16.

Kesselman, Jonathan R. (1999). Rate Cuts and Base Reforms: The Best Mix for Personal Taxes. Prepared for the Canadian Tax Foundation Tax Policy Conference, Personal Income Tax Reform: Building a Better Mousetrap, Ottawa, Ontario (April 9/10).

Ketl, Donald F. (1997). *Taxing Reforms: Assessing the Plans to Transform the IRS*. Policy Brief 22 (August). Digital document available on the internet at www.brookings.edu.

Kneller, Richard, Michael F. Bleaney, and Norman Gemmell (1999). Fiscal Policy and Growth: Evidence from OECD Countries. *Journal of Public Economics* 74, 2 (November: 171–90.

Koester, Reinhard, and Roger Kormendi (1989). Taxation, Aggregate Activity and Economic Growth: Cross-Country Evidence on Some Supply-Side Hypotheses. *Economic Inquiry* 27: 367–86.

Krauss, Melvyn (1997). *How Nations Grow Rich: The Case for Free Trade*. Oxford: Oxford University Press.

Lai, Mary (1982). 15 Percent Tax—and Still Taxpayers Grumble. *International Bureau of Fiscal Documentation Bulletin* 36, 5: 197–99.

Lemieux,Thomas, Bernard Fortin, Pierre Frechettee (1994). The Effect of Taxes on Labor Supply in the Underground Economy. *American Economic Review* 84, 1: 231–54.

Spiro, Peter S. (1997). Taxes, Deficits and the Underground Economy. In Owen Lippert and Michael Walker (Eds.), *The Underground Economy: Global Evidence of its Size and Impact* (Vancouver, BC: The Fraser Institute): 37–52.

Lipsey, Richard (1996). Economic Growth, Technological Change, and Canadian Economic Policy. Benefactors Lecture, Toronto, CD Howe Institute.

Lopez-Pancheco, Alexandra (1999). Taxed to Death. *Financial Post Magazine* (February):14–22.

Lucas, Robert E. (1990). Supply-Side Economics: An Analytical Review. *Oxford Economic Papers* 42 (April): 293–316.

Mackness, William (1998). *Canadian Public Spending: The Case for Smaller More Efficient Government*. Public Policy Sources 13. Vancouver, BC: The Fraser Institute.

Macnaughton, Alan, Thomas Matthews, and Jeffrey Pittman (1998). "Stealth Tax Rates": Effective versus Statutory Personal Marginal Tax Rates. *Canadian Tax Journal* 46, 5: 1029–66.

Maddison, Angus (1991) *Dynamic Forces in Capitalist Development: A Long Run Comparative Perspective*. Oxford: Oxford University Press.

McCallum, John (2000). *Will Canada Matter in 2020?* (Basis for remarks in Lecture Series *2020: Building the Future*, University of Waterloo, February 16). Current Analysis. Toronto, ON: Royal Bank of Canada . Digital document available on the internet at www.royalbank.com/economics.

McEvoy, Michael R. (1996). Clear Understanding of Flat-Tax Concept Needed. *Rochester Business Journal* (April 12).

Mitchell, Daniel J. (1997). *Flat Tax or Sales Tax? A Win-Win Choice for America*. Backgrounder 1134 (August 14). Washington, DC: The Heritage Foundation. Digital document available on the internet at www.heritage.org.

McQuillan, Peter, and E. Cal Cochrane (1996). *Capital Taxes Issues*. Working Paper 96-8. Prepared for the Technical Committee on Business Taxation.

Milroy, Robert B. (1999). The Channel Islands: Guernsey and Jersey—How They Are Different. *Offshore Finance Canada (*September/October).

Mintz, Jack M. (1999). *Why Canada Must Undertake Business Tax Reform Soon*. C.D. Howe Institute.

Mintz, Jack M. (2000). Competitiveness and Economic Growth in Ontario. Unpublished paper prepared for the Ontario PC Party Policy Convention (February 12).

Mintz, Jack, and Finn Poschmann (1999). Economic Aspects of Personal Income Tax Co-ordination. Prepared for the Canadian Tax Foundation 1999 Tax Policy Conference, Ottawa (April 9–10).

Mintz, Jack M., and Thomas A. Wilson (2000). *Capitalizing on Cuts to Capital Gain Taxes*. C.D Howe Institute Commentary (February).

Mirus, Rolf, Roger S. Smith, and Vladimir Karoleff (1994). Canada's Underground Economy Revisited: Update and Critique. *Canadian Public Policy* 20, 3: 235–52.

Mitchell, William C., and Randy T. Simmons (1994). *Beyond Politics*. Oxford: Westview Press.

Mitchell, Daniel J. (1997a). *Flat-tax or Sales Tax? A Win-Win Choice for America*. Washington, DC: Heritage Foundation. Digital document available on the Internet at www.heritage.org.

——— (1997b). *A Guide to The Flax Tax: What Everyone in Business Should Know*. Washington, DC: The Heritage Foundation. Digital document available on the internet at flattax.house.gov.

Mullen, John, and Martin Williams (1994). Marginal Tax Rates and State Economic Growth. *Regional Science and Urban Economics* 24, 6: 687–705.

Murdock, Deroy (1995). Hong Kong's Prosperity Is Built, in Part, on a Flat Tax. *The Orange County Register (*May 21).

Musgrave, Richard A. (1997). Reconsidering the Fiscal Role of Government. *AEA Papers and Proceedings* 87, 2 (May): 156–59.

National Commission on Economic Growth and Tax Reform (1996). A New Tax System For The 21ST Century. *Unleashing America's Potential: A Pro-Growth, Pro-Family Tax System for the 21st Century*. Digital document available on the internet at flattax.house.gov/details/ .

Noreau, Nathalie, Maryanne Webber, Philip Giles, and Alison Hale (1997). *Crossing the Low Income Line*. Ottawa: Statistics Canada.

Office of the Superintendent of Financial Institutions (1997a). *Canada Pension Plan: 17th Actuarial Report*. Digital document available at www.osfi-bsfi.gc.ca.

Office of the Superintendent of Financial Institutions (1997b). *Old Age Security Program: 4th Actuarial Report*. Digital document available at www.osfi-bsfi.gc.ca.

O'Neill, Tim (2000). *A Primer on the 2000 Federal Budget*. Bank of Montreal Commentary (February 18). Digital document available on the internet at www.bmo.com.

Organisation for Economic Cooperation and Development [OECD] (1997). OECD *Economic Surveys 1997, Canada*. Paris: OECD.

Organisation for Economic Cooperation and Development [OECD] (1998). *Harmful Tax Competition: An Emerging Global Issue*. Paris: OECD.

Organisation for Economic Cooperation and Development [OECD] (1998). *OECD Revenue Statistics 1965–1997*. Paris: OECD.

Organisation for Economic Cooperation and Development [OECD] (1999). *OECD Economic Outlook* (December). Paris: OECD.

Organisation for Economic Cooperation and Development [OECD] (1999). *OECD Economic Surveys 1999, Canada*. Paris: OECD.

Orr, Dale, and Bob Dugan (2000). *The Economic Impact of the Reform Party's Proposals for Personal Income Tax Reduction*. Project completed for the Reform Party of Canada (January).

Pack, Howard (1994). Endogenous Growth Theory: Intellectual Appeal and Empirical Shortcomings. *Journal of Economic Perspectives* 8, 1 (Winter): 55–72.

Peden, E.A., and M.D. Bradley (1989). Government Size, Productivity, and Economic Growth: The Post-War Experience. *Public Choice* 61, 3 (June): 229–46.

Peden, Edgar (1991). Productivity in the United States and Its Relationship to Government Activity: An Analysis of 57 Years, 1929–1986. *Public Choice* 69: 153–73.

Penner, Rudolph G. (1982). The More or Less Flat Tax. *The AEI Economist* (August).

Peterson, Peter G. (1999). *Gray Dawn: How the Coming Age Wave Will Transform America—and the World*. New York: Random House.

Poddar, Satyar, and Morley English (1999). Canadian Taxation of Personal Investment Income. *Canadian Tax Journal* 47, 5: 1270–1304.

Report of the Technical Committee on Business Taxation, (December 1997). *Report of the Technical Committee on Business Taxation* (December). Ottawa: Dep't of Finance, Gov't of Canada.

Reynolds, Alan (1997). *Death, Taxes and the Charitable Sector*. Washington, DC: The Hudson Institute. Digital document available www.hudson.org.

Reynolds, Alan (1999). The Hong Kong Tax System. The Hudson Institute.

Robson, William B.P., Jack M. Mintz, and Finn Poschmann (2000). *Budgeting for Growth: Promoting Prosperity with Smart Fiscal Policy.* C.D. Howe Institute Commentary 134.

Rosenberg, N., R. Landau, and David Mowery, Eds. (1992). *Technology and the Wealth of Nations*. Stanford, CA: Stanford University Press.

Royal Bank (2000). Canada-U.S. Outlook. *Royal Bank Forecast revisions*. Economics Department. Digital document available on the internet at www.royalbank.com/economics.

Samida, Dexter (1998). The Predictable Nature of Poverty. *Fraser Forum* (October): 17–18.

Sarlo, Christopher A. (1996). *Poverty in Canada*. 2nd Edition. Vancouver, BC: The Fraser Institute.

Sarlo, Christopher A. (1998). *Canadian Living Standards: 1998 Report*. Critical Issues Bulletin. Vancouver, BC: The Fraser Institute.

Schaefer, Rebecca S. (no date). *Straight Talk about the Flat Tax*. Citizens for a Sound Economy Foundation. Digital document available on the internet at flattax.house.gov.

Scully, G. (1991). *Tax Rates, Tax Revenues and Economic Growth*. NCPA Policy Report 98. Dallas, TX: National Center for Policy Analysis.

Shapiro, Robert J. (1996). *Why Fairness Matters: Progressive versus Flat Taxes*. Progressive Foundation (April).

Simon, Carl, and A. Witte (1982). *Beating the System: The Underground Economy.* Boston: Auburn House.

Slemrod, Joel (1997). Deconstructing the Income Tax. *AEA Papers and Proceedings* 87, 2 (May): 151–55.

Solberg, Monte (2000). *Solution 17: The Single Rate Tax*. The Canadian Alliance.

Sowell, Thomas (no date). *The Vision of the Anointed*. New York: Basic Books.

States of Jersey, Policy and Resources Committee (1991). *Strategic Policy Report, 1991*.

Statistics Canada (1998). *Caring Canadians, Involved Canadians: Highlights from the 1997 National Survey of Giving, Volunteering and Participating*. Highlights available on the Internet at www.statcan.ca.

Statistics Canada (1999). Customized data request to Statistics Canada from The Fraser Institute.

Steuerle, C. Eugene (1998). *The Simple Arithmetic of Flat Taxes*. Washington, DC: The Urban Institute. Digital document available on the internet at www.urban.org.

Stuart, C. (1984). Welfare Costs per Dollar of Additional Tax Revenue in the US. *American Economic Review* 74 (June): 352–62.

Tanzi, Vito, Ed. (1982). *The Underground Economy in the US and Abroad*. Lexington, MA: DC Heath.

Tanzi, Vito, and Ludger Schuknecht (1995). *Growth of Government and the Reform of the State in Industrial Countries*. IMF Working Paper 130. Washington, DC: International Monetary Fund.

Tanzi, Vito, and Ludger Schuknecht (1997a). Can Small Governments Secure Economic and Social Well-Being? In Herbert Grubel (Ed.), *How to Use the Fiscal Surplus: What is the Optimal Size of Government?* (Vancouver, BC: The Fraser Institute): 69–92.

Tanzi, Vito, and Ludger Schuknecht (1997b). Reconsidering the Fiscal Role of Government: The International Perspective. *AEA Papers and Proceedings* 87, 2 (May): 164–68.

Tax Foundation (US) (1985). *Flatter Taxes and Fatter Bases*. Washington, DC: Tax Foundation.

Taylor, Peter M. (1997). Developing Policy Analysis of Fundamental Tax Reform. *AEA [American Economic Association] Papers and Proceedings* 87, 2 (May): 133–37.

Ventura, Gustavo (1999). Flat Tax Reform: A Quantitative Exploration. *Journal of Economic Dynamics & Control* 23: 1425–58.

Wagner, Richard E. (1997). Choice, Exchange, and Public Finance. *AEA Papers and Proceedings* 87, 2 (May): 160–63.

Walker, Michael (1983). On Flat-Rate Tax Proposals. Vancouver, BC: The Fraser Institute.

Watson, William (2000). Wanted: Tax Guy with Orange Hair, Red Nose. *National Post* (February 16): C7.

Webber, Maryanne, and Mike Sheridan (1998). *Labour Market Dynamics: Information for New Canadian Longitudinal Sources*. Ottawa: Statistics Canada.

Webber, Maryanne, Cathy Cotton, Mauri Meere, Kevin Bishop, and Peter Hewer (1999). *A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF), 1993*. Ottawa: Statistics Canada.

Zelder, M. and P. Basham (2000). Does Revenue Canada Play Matchmaker? *Fraser Forum* (March): 8–10.

The Fraser Institute
1770 Burrard Street, Vancouver , B.C. Canada V6J 3G7

Canadian Publications Mail Sales
Product Agreement #0087246

Return Postage Guaranteed