January 2011

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Joe Ruggeri and Jean-Philippe Bourgeois

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ISBN 978-1-926888-40-8

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Acknowledgements

The authors are thankful to two anonymous referees for their insightful comments and to Christine Saulnier for her editorial assistance and her guide in finalizing this paper.

The contents and opinions expressed in this paper belong to the authors and do not necessarily represent the views of Canadian Centre for Policy Alternatives Nova Scotia.

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The Fiscal and Economic Implications of Tax Reform in New Brunswick

Executive Summary

This report reviews the Liberal government's 2009 New Brunswick income tax reform.

On the personal income tax side, the main change was the compression of the four-rate schedule into a two-rate system: 9% for taxable income up to $37,892 and 12% for taxable income above this level. On the business side, in addition to the reduction in the general corporate income tax rate from 13% to 8%, it offered a range of incentives to businesses.

The government's ideologically-motivated, pro-growth justification for its tax reform package of reforms is based on the belief that income tax cuts have the power to provide a strong stimulus to the provincial economy, and thus are considered self-financing. Not only is there little to no empirical evidence to support this belief and key objective of the tax reform package, there is significant evidence to counter this contention and other claims about the impact of these tax reforms.

Evidence and Government Claims

The liberal government claimed that lower corporate income tax rates will serve as a magnet for new businesses and will provide a strong stimulus by attracting new firms to the province or/and by encouraging the expansion of investment by existing firms in the province.

There is no evidence to support this claim and the government did not produce any.

Studies show that taxes are not a major determinant of business location, especially for non-manufacturing enterprises. Canada already has a low business cost environment and the lowest level of business taxes among established industrialized countries, including the United States and several European countries. In addition, New Brunswick had one of the lowest costs of doing business in Canada even before the tax reform. The decision to expand investment is based on what economists call the marginal effective tax rate (METR). The METR in New Brunswick, which includes all taxes and credits and not just the corporate income tax, was prior to the 2009 changes, substantially below the national average. In fact, the combined federal-provincial METR in New Brunswick was by far the lowest among provinces. Yet, the ratio of fixed investment to GDP in New Brunswick is below the national average. Reducing provincial taxes on business, therefore, becomes a form of inter-provincial competition and only feeds an unsustainable race to the bottom for taxes.

The Liberal government also claimed that provincial tax cuts are self-financing because they stimulate economic activity. This claim has no factual foundation and ignores the Canadian fiscal system and the structure of intergovernmental fiscal relations. First, even if economic wishful-thinking materialized and tax cuts increased economic activity, most of the associated fiscal benefits would accrue to the federal government due to its dominance of the personal and corporate income tax fields. The federal government receives substantially more income taxes from New Brunswick individuals and corporations than does the provincial government. Second, any extra provincial revenue generated by the potential growth effects of the tax cuts would be offset by reductions in equalization payments. That is, under the current structure of the equalization program, any revenue gains generated by the expansion of the provincial tax base would reduce the per capita fiscal capacity gap between New Brunswick and the national average, thus lowering per capita equalization entitlements.

Those who support lower personal income tax rates, including the previous government in New Brunswick, claim that these tax cuts will increase economic activity and in particular result in higher employment income by increasing: (1) inter-provincial migration, (2) labour force participation rates, or/and (c) number of hours of work.

Empirical studies show that personal income tax (PIT) rate reductions have minimal effect on economic activity because labour force participation rates and hours of work are not very responsive to changes in after-tax wages. In addition, interregional tax differentials within a country have little effect on internal migration or immigration of skilled workers. Rather, workers move their residence when they find higher-paying jobs and more rewarding careers. For workers earning the average wage, the reduction in PIT rates would be equivalent to an increase in the weekly wage of less than $8, which is hardly an enticing amount to encourage more workers to enter the labour force or to migrate to the province. New Brunswick must create jobs in excess of the in-province supply of skilled workers before it can attract qualified workers from other regions of the country or other parts of the world. When these jobs become available, these workers will be attracted to New Brunswick without the need for special tax incentives. To generate any sizeable effect on hours of work, the tax reduction would need to be focused on lower income workers, which was not the case for this tax reform package.

Key Conclusions

Income tax reform as implemented since 2009 is *unsustainable, regressive and ineffective.*

The reform is *unsustainable* because it aggravates the province's precarious fiscal position in a permanent way. The provincial budget is in a substantial deficit position and this deficit is not just the result of the recent economic downturn. It is structural and cannot be eliminated by stronger economic growth. The New Brunswick government cannot afford the revenue it loses due to these tax cuts.

This reform is *regressive* because it increases after-tax income disparities by disproportionately benefitting high-income New Brunswickers, as well as large corporations. The design of these tax cuts leads to greater income inequality in New Brunswick and provides greater impetus to rural depopulation. This study shows that the tax savings for New Brunswickers, both in absolute amount and relative to income, increase as family income rises. The major beneficiaries of this tax reform are high-income families in general and two-income families in particular. As calculated in this study, income tax reform provides $722 in tax savings for the average family in constant 2006 dollars. However, at the low end of the income scale, families with an average income of $12,914 will receive a tax reduction of $24, which is 1/30 of the average tax reduction. At the other end of the income scale, families with income above $300 thousand, with an average family income of $559 thousand, will receive a tax reduction of $24,029, which is 33 times the average.

In addition, regressive tax reform has the potential to widen the urban-rural economic gap. Modern economic growth is largely urban-driven growth as the cities are the creators of the well-paying jobs. To the extent that incomes are higher in the urban centers, the greater tax savings for higher income taxpayers, which are concentrated in the urban areas, will add a fiscal incentive to the economic forces of rural depopulation.

This reform is *ineffective* because it will do little to stimulate economic growth. Expanding economic activity in the province is a laudable policy objective. However, stimulating provincial economic activity in the presence of national and international competition requires well-designed and properly targeted policies, not blunt instruments such as the tax cuts implemented by the previous government. New Brunswick does not have the funds to throw at large corporations in the blind hope that they may move some of their activities to this province. And, it does not have the funds to subsidize workers to come to New Brunswick instead of other Atlantic provinces. More importantly, pursuing a regional tax competition policy is a self-defeating strategy that in the end would leave all governments in the region more fiscally vulnerable.

Recommendations

No more tax cuts, roll back previous tax cuts: The new Alward Conservative government has the opportunity to undo the fiscal damage generated by its predecessor's tax reform. At a minimum, it should not implement any further tax cuts. Indeed, from a fiscal-sustainability perspective, a roll-back of the entire tax reform would be preferable.

Independent study of long-term fiscal prospects needed: The government should undertake as soon as possible an independent study of New Brunswick's long-term fiscal prospects. This independent study must consider the equity effects of any proposed changes to the tax system including considering the effects on different income classes, family types and the gendered implications.

Meaningful province-wide consultation is necessary: The government should initiate a province-wide program of consultation to ensure that all New Brunwickers have the opportunity to make a contribution to the reshaping of the province's fiscal system — both spending and taxation. In order to make decisions about taxation, one must consider what taxes are being collected for and what needs exist in the province now and into the future.

The Fiscal and Economic Implications of Tax Reform in New Brunswick

Introduction

In 2008, the New Brunswick government (the then Liberal government under Shawn Graham) initiated a process leading to the introduction of a package of income tax reform in the 2009 provincial Budget (Department of Finance 2009a). This process started with the publication in June 2008 of a *Discussion Paper on New Brunswick's Tax System* (Department of Finance 2008), which outlined various options for comprehensive tax reform that would not result in a net loss of revenue for the government. The Discussion Paper presented two options for reforming the personal income tax (PIT) system, four options for reducing the general corporate income tax (CIT) rate, an increase of two percentage points in the provincial portion of the harmonized sales tax (HST), and the introduction of a carbon tax similar to the one introduced by British Columbia in 2008. In its March 2009 Budget, the provincial government introduced only the income tax component of the proposed tax reform. Specifically, the government opted for a two-rate system for the PIT (9% and 12%) and the reduction in the CIT rate from 13% to 8%.

It is important to understand the implications of this income tax reform for New Brunswick, but also because such policies could have implications for the Atlantic region. To this end, this paper considers the effects of tax reform on the province's fiscal position, on its economic performance, and on the tax distribution among New Brunswickers.

Fiscal Impact

As noted, the March 2009 Budget introduced changes in the personal-income and the corporate tax systems. We discuss each in turn below.

On the personal side, the Budget compressed the four-rate schedule of personal income tax rates into a two-rate system: 9% for taxable income up to $37,892 and 12% for taxable income above this level. In addition, the government reduced the clawback rate for the Low-Income-Tax-Reduction (LITR)[1] from 5% to 3%, increased the tuition-rebate program from $2,000 to $4,000, and raised the Low-Income Senior's Benefit from $200 to $400 by 2010.[2] A summary of the personal income tax reform introduced in the 2009 Budget is shown in Table 1.

TABLE 1 Chronological Personal Income Tax Implementation Plan

	2008	2009	2010	2011	2012
Taxable Income, $	0–34,835	0–35,706	0–36,420	0–37,149	0–37,892
Tax Rate (%)	10.12	9.65	9.30	9.10	9.00
Taxable Income, $	34,836–69,672	35,707–71,414	36,421–72,843	37,150–74,299	
Tax Rate (%)	15.48	14.50	12.50	12.10	
Taxable Income, $	69,673–113,272	71,415–116,105	72,843–118,426	74,300–120,795	
Tax Rate (%)	16.80	16.00	13.30	12.40	
Taxable Income, $	113,273+	116106+	118,427+	120,796+	37,893+
Tax Rate (%)	17.95	17.00	14.30	12.70	12.00
Personal Amount, $	8,395	8,605	8,777	8,953	9,132
Spousal Amount, $	7,129	7,307	7,453	7,602	7,754
Expenses For Dependent Relative: Maximum, $	5,000	10,000	10,000	10,000	10,000
Tuition Amount, Maximum Annual, $	2,000	4,000	4,000	4,000	4,000
Tuition Amount, Maximum Lifetime, $	10,000	20,000	20,000	20,000	20,000
Low-Income Seniors' Benefit, $	200	300	400	400	400
Low Income Tax Reduction Clawback, %	5	4	3	3	3

SOURCE The Plan for Lower Taxes in New Brunswick 2009–2012, 2009, page 18, Table A.1 (Department of Finance 2009b)

On the business side, in addition to the reduction in the general CIT rate from 13% to 8%, the government (1) increased the income eligible for the small business tax rate to $500,000, (2) introduced a Forestry Industry Investment Tax Credit, (3) extended the High Energy Use Tax Rebate, (4) introduced significant enhancements to the Small Business Investor Tax Credit, (5) enhanced the Labour-Sponsored Venture Capital Tax Credit, and (6) offered incentives for the energy sector.[3]

Two of these components, the Forestry Industry Investment Tax Credit and the High Energy Use Tax Rebate, benefit only the forestry and pulp and paper industry and bring a maximum of $10 million in relief for 2009. The increase in the income level eligible for the small business tax rate saves them approximately $1 million per year. Another $2 million in relief is provided by the increase in the maximum annual investment amount under the Small Business Investor Tax Credit.[4]

These changes have serious implications for the province's financial position. The provincial government has estimated that the revenue loss from these tax changes amounts to $144 million in fiscal year 2009–10 and $380 million in 2012–13. Details of the provincial estimates are shown in Table 2. The low income tax reduction (LITR) clawback rate implementation and the increase in the maximum expense for dependent relative are not mentioned in this table. The revenue loss for these two programs was estimated at $13 million.

Since the provincial government would have been in a deficit position even without tax reform, the revenue loss in 2009 from the income tax reductions simply raised the level of the deficit because there were no offsetting reductions in government spending.

TABLE 2 **Estimated Changes to Provincial Government Revenues for the Complete Reform, in Current Dollars**

	2009–10	2010–11	2011–12	2012–13
Personal Income Tax Rate Reductions	-118	-232	-288	-323
Enhanced Tuition Rebate	-2	-2.5	-3.5	-5
Enhanced Low-Income Senior's Benefit	-3.5	-7.4	-7.8	-8.2
Tax Savings for Individuals	-123.5	-241.9	-299.3	-336.2
General Corporate Income Tax Rate Reduction	-6	-11	-20	-37
Higher Small Business Limit	-1	-1	-1	-1
Enhanced Small Business Investor Tax Credit	-2	-3	-4	-5
Enhanced Labour Sponsored Venture Capital Tax Credit	-1	-1	-1	-1
High Energy Use Tax Rebate	-5	0	0	0
Forestry Industry Investment Tax Credit	-5	0	0	0
Tax Savings for Business	-20	-16	-26	-44
Total Tax Savings	-143.5	-257.9	-325.3	-380.2

SOURCE The Plan for Lower Taxes in New Brunswick 2009-2012, 2009, Page 6, Table 1

Both the 2008 Discussion Paper and the 2009 Budget suggest that this reform-induced deficit will be wiped-out over time by the expansion of economic activity induced by the reduction in income tax rates. This explanation indicates a blind belief in the power of tax cuts to stimulate the provincial economy; it promotes the illusion that provincial tax cuts would be self-financing over the long-term. However, within the framework of the existing fiscal structure of the Canadian federation, provincial tax cuts cannot be self-financing, even if they stimulate economic activity, for two fundamental reasons. First, even if economic wishful thinking materialized, economic growth would do little to offset the deficit created by the tax reductions. Rather, most of the associated fiscal benefits would accrue to federal government due to its dominance of the personal and corporate income tax fields. For example, in 2006 the federal government collected in New Brunswick 60% more in PIT revenues and 160% more in direct taxes on corporations than did the provincial government (Statistics Canada, 2007a). Second, any extra provincial revenue that may be generated by the potential growth effects of the tax cuts would be offset by reductions in equalization payments. That is, under the current structure of the equalization program, any revenue gains that might be generated by the expansion of the provincial tax base would reduce the per capita fiscal capacity gap between New Brunswick and the national average, thus lowering per capita equalization entitlements. This offset would be less if the additional provincial revenue originated from the natural resource sector.[5] For New Brunswick, this means that even if income tax cuts were capable of stimulating economic activity, the entire fiscal benefits would accrue to the federal government. The deficit created by the tax cuts represents a permanent revenue loss for the provincial government that must be offset by increases in other taxes, reductions in provincial government spending or a combination of the two — unless the government continues to use deficit financing.

In fact, provincial income tax reductions are not self-financing even in the absence of such revenue leakages to the federal government. Simulations performed by researchers at the Bank of Finland (Kuismanen 2000) indicate that none of the personal income tax reduction options evaluated — including across the board rate reductions, rate reductions for lower income tax-

TABLE 3 **Indicators of Fiscal Sustainability in New Brunswick**

Fiscal Year	Net Debt as % of GDP	Debt Services as % of Total Government Revenues
1999–2000	36.1	13.7
2006–2007	25.4	9.9
2008–2009	27.0	8.9
2009–2010	30.2	9.4
2010–2011	33.3	9.4
2024–2025	37.3–42.0	11.4–13.4

SOURCE Department of Finance (2001 and 2010) and Ruggeri, Goodwin and Zou (2004)

payers, and rate reductions for higher income taxpayers — generated additional revenue from the extra economic growth to offset the revenue loss from the tax cuts. Moreover, this study shows that the option that generated the largest revenue loss was the reduction in the tax rates for high income taxpayers.

New Brunswick faces dire fiscal prospects in the future. As the population ages at a faster rate than the national average (Statistics Canada, 2009) and the pace of economic growth slows down nationwide because of labor supply constraints, the increasing spending pressures in the health care sector will make it increasingly difficult for the provincial government to balance the books and maintain current levels of public services.

In his report for 2009–10, the Auditor General expressed some concerns for the fiscal situation of the New Brunswick government, based on trends in two major indicators of fiscal sustainability. The first indicator is the ratio of net debt to Gross Domestic Product (GDP). The second indicator is the share of total provincial revenues used to service the public debt, in other words, the proportion of the government's fiscal resources that are not available for financing public services. The values of these indicators for fiscal years 1999–2000, 2006–07, 2008–09, 2009–10, and 2010–11 are presented in Table 3. This table shows that the ratio of net debt to GDP fell substantially from 2000 to 2007 — due to the national and provincial economic expansion and fiscal restraint measures introduced by all governments — but has resumed an upward trend. The 2010 provincial Budget indicates that in just four years (2007 to 2011) this ratio would have increased by nearly one-third. A similar pattern is visible for the share of debt servicing costs, but with a more moderate increase, partly because of low interest rates. The increase in this share from 2009 (the low point) to 2011 was 6 percent.

Ruggeri, Goodwin and Zou (2004) projected the values of these two indicators of fiscal sustainability over fifteen years, assuming steady economic growth and no discretionary changes in taxation. They estimated that while the provincial government would be able to balance its budget until 2015, it would thereafter face deficits of increasing magnitude. They estimated that, from 2009 to 2025, the debt to GDP ratio would rise by 5.5 percentage points, and the share of debt servicing costs would increase by 1.9 percentage points. The recent recession and the income tax cuts have intensified these negative trends by generating deficits six years earlier than projected and reducing the growth rate of provincial revenues. These two changes will add at least five percentage points to the debt-to-GDP ratio in 2025 and 2 percentage points to the share of debt servicing costs. This means that by 2025 New Brunswick would be in a worse fiscal position than it was in 2000, but with a much larger structural deficit. This situation would be unsustainable over the long-term.

Economic Growth and Regional Cooperation

This section deals mostly with the potential effects of tax reform on economic growth, but it also includes a brief discussion of its implications for inter-provincial cooperation in Atlantic Canada.

Personal Income Tax

The government's justification for tax reform rests on its belief that lower personal and corporate income taxes will deliver a powerful stimulus to economic activity. However, neither in the 2008 Discussion Paper nor in the 2009 Budget does the government provide empirical evidence for New Brunswick that would support such a claim. While such empirical evidence is hard to obtain, it is possible to identify the channels through which income tax cuts may generate these stimulus effects. This section will undertake that task, starting with the personal income tax (PIT).

The PIT applies to three types of income: (a) employment income, (b) pension income and government transfers, and (c) investment income. The data published by the Canada Revenue Agency for 2008 (Taxation Statistics for Individuals, 2010) show that in New Brunswick employment income accounted for 69 percent of total assessed income, pensions and government transfers for 19 percent, and investment income for only 6 percent. The rest (6 percent) was composed of tax exempt income and unspecified "other income."

Lower PIT rates on pension income and government transfers affect economic activity only to the extent that they raise private consumption resulting from the increase in spending associated with the higher after-tax income. PIT rate reductions for taxpayers relying primarily on pensions and transfers are generally justified by policymakers on equity grounds, as these taxpayers tend to have below-average levels of income.

Personal income taxes affect the saving decision of individuals by changing the after-tax return on savings. Thus, in theory, the 2009 tax reform should raise the personal savings rate in New Brunswick. To determine the economic impact of lower tax rates on this component of income we need to answer the following questions: (a) what is the magnitude of the stimulus to personal savings that would be generated by a reduction in PIT rates, and (b) how would an increase in private savings in New Brunswick affect economic growth?

Although there is no agreement among researchers on the strength of the response of personal savings to changes in the after-tax rate of return, the range of estimates in the literature is not wide and the value used in economic models is quite low (Boskin 1978, Carroll 1992, Engen 1994, Gale and Scholtz 1994). Therefore, one could not expect a large increase in private savings as a result of the personal income tax reform. Low-income individuals and families do not have sufficient income to allow savings (Statistics Canada 2006). They will spend any increase in income resulting from lower taxes. Thus, a reduction in the rate of taxation on savings affects only the saving decision of high income taxpayers. The difference in the capacity to save between high and low-income Canadians is shown by the great disparity in their accumulated wealth. According to Statistics Canada (2006), in 2005 the top 20 percent of families accounted for 69.2 percent of net wealth while the bottom 20 percent accounted for 0.1 percent. Low-income families have little or no net wealth for two main reasons: (1) they do not participate in private pension plans, and (2) they do not own their home. According to Moussaly (2010, p. 16), "91% of employed tax filers in the lowest income quintile did not participate in any private pension plans." In addition, "7 out of 10 families with no pension assets also don't own their home" (Statistics Canada 2006, p. 24).

Individuals and families save for a variety of reasons — such as smoothing consumption over their lifetime, preparing for a rainy day, or maintaining a certain amount of liquid assets in their post-retirement years. Some of these saving decisions may respond positively to a tax-induced increase in the rate of return (consumption smoothing over the lifetime), but others may respond negatively (a lower level of annual savings is needed to achieve a certain target of total savings as the rate of return increases).

In general, savings represent income that is not spent. The tax revenues received by the provincial government are a portion of income which is not available for private consumption or investment. They become government income which is used to finance public expenditures. When tax cuts are not offset by spending reductions, the government is engaged in dissaving either by reducing its surplus or by increasing its deficit, as was done with the 2009 tax reform in New Brunswick. In this case, while private savings may increase in response to lower PIT rates, public savings will fall by the amount of the revenue lost due to tax reform (financed through borrowing). Therefore, the 2009 income tax reform will have a negative effect on total provincial savings (public plus private savings) because the unknown (but small) increase in private savings will be more than offset by the decrease in public savings.

PIT reductions are often justified with the argument that the resulting higher private savings will stimulate private investment and economic growth. This argument is valid only in a closed economy. It does not apply to New Brunswick, which is a small open economy operating within a small open economy.[6] In a small open economy, changes in domestic savings have no effect on interest rates. Therefore, they have no effect on private investment, employment and output. In this case, private investment may be stimulated only through measures aimed directly at business enterprises, such as corporate income tax cuts (the economic effects of such a policy are discussed later in this section). However, if these measures are financed by cutting spending on public investment, such as reductions in spending on education, the net result may be a lower level of total investment. New Brunswickers could double their savings rate and nothing would happen to investment in the province. Lower PIT rates, especially when biased in favour of high income earners as in the case of New Brunswick's tax reform, are a gift to those with high enough incomes to afford savings.

The only component of income which may generate economic effects due to tax reform is employment income. In this case, we may identify three separate effects from lower PIT rates: (a) changes in inter-provincial migration, (b) higher labour force participation rates, and (c) increased number of hours of work. To evaluate the strength of these potential effects, it is important to look first at the magnitude of the tax changes for different income groups. Table 4 provides some information on the tax savings from the PIT rate reduction for three single taxpayers, based on estimates using the New Brunswick Government's Tax Savings Calculator. These tax savings measure the change in after-tax income for each selected taxpayer. The first taxpayer is a single worker earning the minimum wage ($10 per hour as scheduled for 2011). The second taxpayer is a worker earning the average wage (total employment income divided by total employment), and the third taxpayer is a worker receiving income subject to the top tax rate.

This table suggests that PIT reform in New Brunswick was directed at high income earners. As explained in *The Plan for Lower Taxes in New Brunswick*, "lower personal income taxes will… help to attract higher paying jobs and higher skilled workers to New Brunswick," (Department of Finance 2009b, p. 16). Evidence from Canada and Switzerland indicate that this strategy would not be successful. In a report prepared for Human Resources Development Can-

TABLE 4 **Tax Savings from the PIT Rate Reduction for Three Single Taxpayers, $**

	Change in After-Tax Income			
Taxable Income	Total	Per Week	Per Hour of Work	Percent
19000	290	5.58	0.03	1.58
36000	413	7.94	0.20	1.24
120000	4137	79.60	1.99	3.99

ada, Day and Viner (2001) concluded that "the major determinants of provincial migration are differentials in earnings, employment prospects and moving costs, with moving costs being the most important of the three" (p.37). They also found that the elimination of all policy variables (unemployment insurance, personal income taxes, social assistance, and provincial and federal spending on goods and services) would "raise the value of migration by *at most* 5% or by less than half a percentage point" (p. 29). Of specific relevance to New Brunswick's tax reform is their finding that "in the case of tax rates, the overall change in the number of migrants is smallest for the high income group" (p. 29). A similar small effect of income taxation on interregional migration was found in a study by Sousa-Poza and Liebig for Switzerland (2006). Their results indicate that "despite active community tax policies aimed at attracting new residents and a significant increase in tax-burden dispersion among communities in the past decade, no tax-induced migration is observed" (abstract).

PIT reductions also generate small effects on the labour force participation rate. Table 4 shows that, for workers earning the average wage, the reduction in PIT rates would be equivalent to an increase in the weekly wage of less than $8. It is hard to imagine that many people would be enticed to enter the labor force by such a small increase in income. If there were to be any increase in the participation rate it would have to come from those who would make more than the average wage. These are skilled people who already have participation rates exceeding 90 percent (Statistics Canada 2007b). Not only is there little room from raising the participation rate of these workers, but some of them are out of the labour force for non-monetary reasons (such as staying home to raise children) and would not be attracted by modest increases in after-tax wages.

There is also empirical evidence that PIT changes have little effect on the labor force participation rate. Researchers at the Bank of Finland (Kuismanen 2000) performed a number of micro-simulations to measure the economic effects of a number of options for reducing personal income taxes, including an across-the-board rate reduction, a reduction in the rates of the lower end of the income scale, and a rate reduction at the higher end of the income scale. For the last simulation, which is closest to New Brunswick's tax reform, they found that compressing the top two tax rates into one and reducing the top rate from 44% to 35% had no effect on the labour force participation rate.

The only channel left for New Brunswick's PIT reform to generate positive economic effects is to increase the number of hours of work of those already employed. Lower PIT rates increase the after-tax return to labour, thus making leisure (not working) more expensive. How strong the effect of PIT rate reductions is on the hours of work depends on how workers adjust their choice between work and leisure in response to higher after-tax wages. Empirical studies addressing this issue have reached two major conclusions: (a) the responsiveness of hours worked to changes in after-tax wages is quite low, and (b) it is lowest for high-wage workers (Phipps and Osberg 1993, Allie 1994, Marchildon, Sargent and Ruggeri 1996). This means that we should not expect a major increase in hours worked as a response to PIT reform in New Brunswick. To generate any sizeable effect on hours of work, the tax reduction would have been focused on lower income workers. As indicated by Bank of Finland research (Kuismanen 2000), reducing the bottom three tax rates by three percentage points would lead to a revenue loss of 12% and an increase in hours of work of 8.8%. By comparison, compressing the two top rates of 44% and 37% into a single rate of 35% would generate a revenue loss of 13%, but would expand hours of work by only 4.5%.

Having assessed the economic effects of PIT reductions, we now turn to the issue of corporate tax cuts. Here we need to distinguish between the location decision by new firms and the decision to expand investment by existing firms. A detailed analysis of the effect of taxation on business location is provided by KPMG in its annual report called *Competitive Alternatives* (KPGM 2010). In its analysis, KPGM compares 26 significant cost factors, including five types of taxes (corporate income taxes, capital taxes, sales taxes, property taxes, miscellaneous local taxes, and payroll taxes), and applies them to 17 different business operations in 9 established industrialized countries plus Mexico. It also includes non-cost factors such as labour availability and skills, infrastructure, personal cost of living, and quality of life. This report shows that the most significant cost factor is labour costs, which represent about half of total costs in manufacturing and three-quarters in non-manufacturing. Taxes represent a maximum of 14 percent of total costs in manufacturing and much less in non-manufacturing.

According to the KPMG study, Mexico has the lowest overall cost, but Canada has the lowest costs among established industrialized countries with a 5% cost advantage over the United States. Further, Canada's business tax index is 63.9 compared to 100 for the United States. In brief, the KPMG study shows, contrary to what proponents of corporate tax cuts argue, that Canada has a competitive tax and overall business cost regime and is a very attractive business location. Reducing provincial taxes on business, therefore, becomes a form of inter-provincial competition.

The KPMG report provides details for 100 cities including 15 in Canada, 5 in Atlantic Canada, and 2 in New Brunswick. Its results show that New Brunswick is a low-cost province for business. For the overall cost index, Moncton and Fredericton are second only to Sherbrooke as the lowest-cost locations in Canada, with a value of 91.3 and 91.8, respectively, or about 8.5% less than in the United States. The KPMG report also shows that New Brunswick already has a very competitive tax regime. For example, according to the overall tax index, Moncton and Fredericton ranked lowest and third lowest, respectively, with a value two percent lower than Edmonton and ten percent lower than Halifax. For corporate income taxes alone, these two cities ranked third and fourth lowest, respectively.

Unlike the location decision, which is based on the overall level of taxation among other factors, the decision to expand investment is based on what economists call the marginal effective tax rate (METR), which is the effective tax rate on the last unit of investment. This rate includes all taxes and credits and not just the corporate income tax. A report by Chen and Mintz (2008) shows that in 2008 New Brunswick already had METRs substantially below the national average. In fact, the combined federal-provincial METR in New Brunswick was by far the lowest among provinces. Yet, the ratio of fixed investment to GDP in New Brunswick is below the national average. If below-average METRs have not been effective in lifting the rate of investment in New Brunswick, why does the government expect a strong investment response from lowering corporate tax rates?

Determining the effects of lower corporate taxes is complicated by the fact that in New

Brunswick the reduction in the general corporate income tax rate would apply mostly to large corporations with national and international operations. For these corporations, the New Brunswick tax cut would represent a miniscule proportion of their total profits. Yet, it would produce a sizeable revenue loss and would intensify pressures for tax competition in the Atlantic region, ultimately aggravating the fiscal position of provincial governments without generating any economic benefits.

The Atlantic Canada Context

For a long time, provincial PIT rates were expressed as a percentage of federal personal income tax payable. Therefore, provincial PIT revenues were automatically affected by federal changes to both the tax base (taxable income) and federal tax rates. About a decade ago, the federal government allowed provinces to set their own PIT rates and apply them to the federally-determined tax base. Until recently, the PIT regimes in Atlantic Canada were very similar. Newfoundland and PEI have three statutory rates while Nova Scotia and New Brunswick have four rates. Before the 2009 PIT rate reductions, the range of tax rates was very similar in the four Atlantic provinces. Close similarities existed also in the corporate income tax field as each province imposed a two-rate structure which included a lower rate for small businesses and higher general rate. The general rate did not differ much among the four provinces. Tax reform, when fully implemented will set New Brunswick apart from the other Atlantic provinces.

In our view, the government of New Brunswick's tax reform strategy is a blatant attempt at using inter-provincial tax competition in Atlantic Canada as a tool of economic growth. This strategy rests on the hope that, through lower tax rates, New Brunswick can attract skilled workers and firms that might otherwise have decided to settle in other Atlantic provinces. This strategy follows the direction of the previous government that considered it a source of great pride to pursue a tax policy that would lead to the lowest income tax rates in the region.

During the past twenty years, provincial governments in Atlantic Canada have made considerable efforts at cooperation and policy coordination in selected areas. The 2009 tax reform is a drastic departure from this approach. It reflects an economic growth strategy that uses inter-provincial tax competition as main tool. This strategy cannot succeed in the long-run. If it does not achieve its goal, as we have suggested, it will simply aggravate an already shaky fiscal situation in New Brunswick. If it succeeds in the short-run, it will likely be followed by a round of tax cuts by the other Atlantic provinces, which would be forced to take such measures to protect their economy. The end result would be little change in economic performance and a worsening fiscal situation in all Atlantic provinces. This result would impair the ability of government in Atlantic Canada to finance the public services required by their residents.

Who Benefits Most From Income Tax Reform?

The tax system is a major instrument of income redistribution because it has the capacity to reduce annual differences in pre-tax income determined by market forces and to lessen the potential for increasing inequality of wealth over time. The fundamental role of equity in the design of tax systems was emphasized nearly half a century age by the Royal Commission on Taxation (the Carter Commission, 1966). The commissioners pointed out that *"the first and most essential purpose of taxation is to share the burden of the state fairly among individuals and families"* (vol. 1, p. 4). They believed that *"unless the allocation of the burden is generally accepted as fair, the social and political fabric of the country is weakened and can be destroyed,"* (vol. 1, p.4). Therefore, the commissioners became *"convinced that*

TABLE 5 **The Distribution of the Revenue Reduction: Select Income Groups**

Family Income ($ Thousands)	Population (%)	Families (%)	Income (%)	Tax Savings (%)
MIN–10K	3.65	6.93	0.79	0.07
10K–15K	4.40	6.89	1.83	0.23
15K–20K	7.02	11.22	3.98	0.94
20K–25K	5.68	7.91	3.66	2.18
25K–30K	6.50	7.98	4.51	2.27
30K–40K	12.74	13.52	9.65	6.98
40K–50K	11.50	10.44	9.63	6.99
50K–60K	8.46	6.86	7.77	5.59
60K–70K	8.32	6.18	8.27	6.76
70K–80K	7.48	5.60	8.65	8.20
80K–90K	5.80	4.16	7.26	7.51
90K–100K	5.38	3.72	7.23	7.74
100K–150K	9.65	6.48	15.70	19.70
150K–200K	1.83	1.14	3.99	6.65
200K–300K	1.05	0.63	3.18	7.00
300K–MAX	0.55	0.34	3.88	11.20

scrupulous fairness in taxation must override all other objectives when there is conflict among objectives," (vol. 1, p. 4). According to the Commission, equity in taxation requires a progressive tax system, i.e., a system based on ability to pay and a pattern of effective tax rates that rises as a taxpayer's income increases (a progressive rate structure). Since taxes other than the personal income tax are either proportional or regressive, progressivity of the overall tax system can be achieved only through a progressive income tax structure. Flattening the rate structure, thus reducing the progressivity of the PIT, undermines the very principle of equity.

The equity dimensions of income tax reform in New Brunswick are explored in this section by showing the distribution of the tax savings. The first sub-section presents the results by income class. The second sub-section shows the results by type of family. (A short methodological note is found in the Appendix. As noted, full details on the methodology employed can be obtained on request.)

A. Distribution by Income Class

Table 5 shows, for each selected income group, the share of the population, number of families, income, and the tax savings due to the tax reform. This table shows that the tax savings are concentrated on the top portion of the income distribution. Families making less than $80 thousand will receive a share of the benefits of tax reform smaller than their share of income. Specifically, families which comprise 59 percent of the total income in New Brunswick will receive 40 percent of the total share of the tax savings. These same families constitute 80 percent of all the families and 76 percent of the population in New Brunswick. Income tax reform will provide minimal benefits to families with income up to $20 thousand. This group, which represents 15 percent of the population, 25 percent of families (including unattached individuals), and 6.6 percent of income, will receive only 1.2 percent of the benefits from tax reform.

The main beneficiaries of income tax reform are high-income families. Families with income above $100 thousand, which account for 13 per-

FIGURE 1 **Income and Total Reform Benefit Received Share: Select Income Groups**

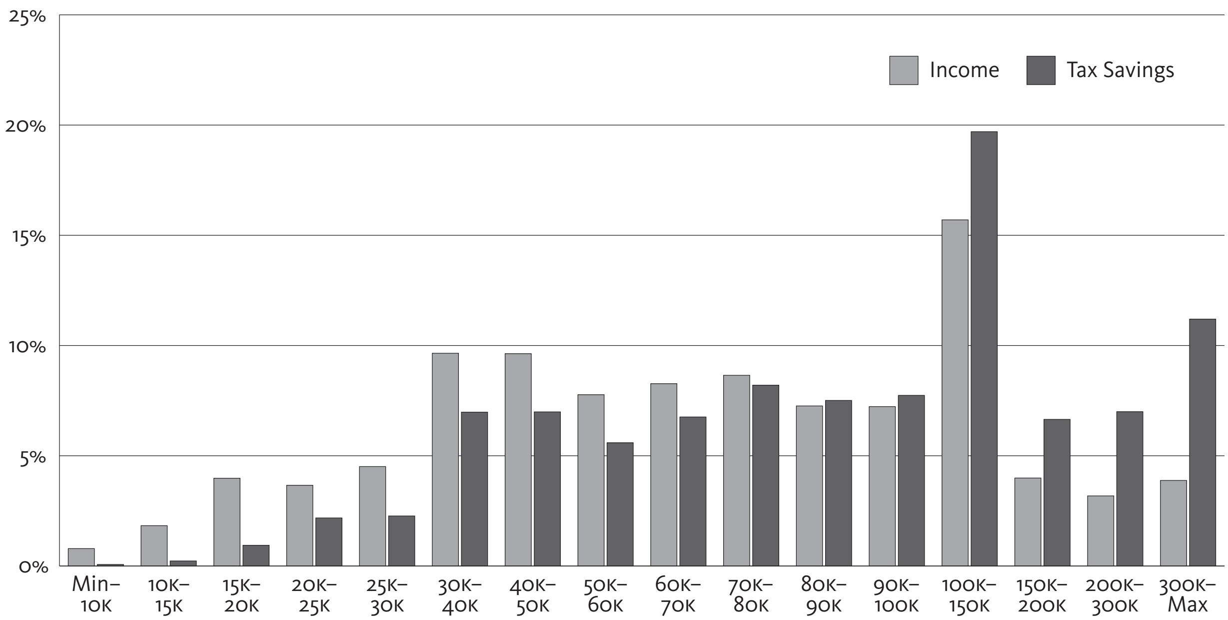
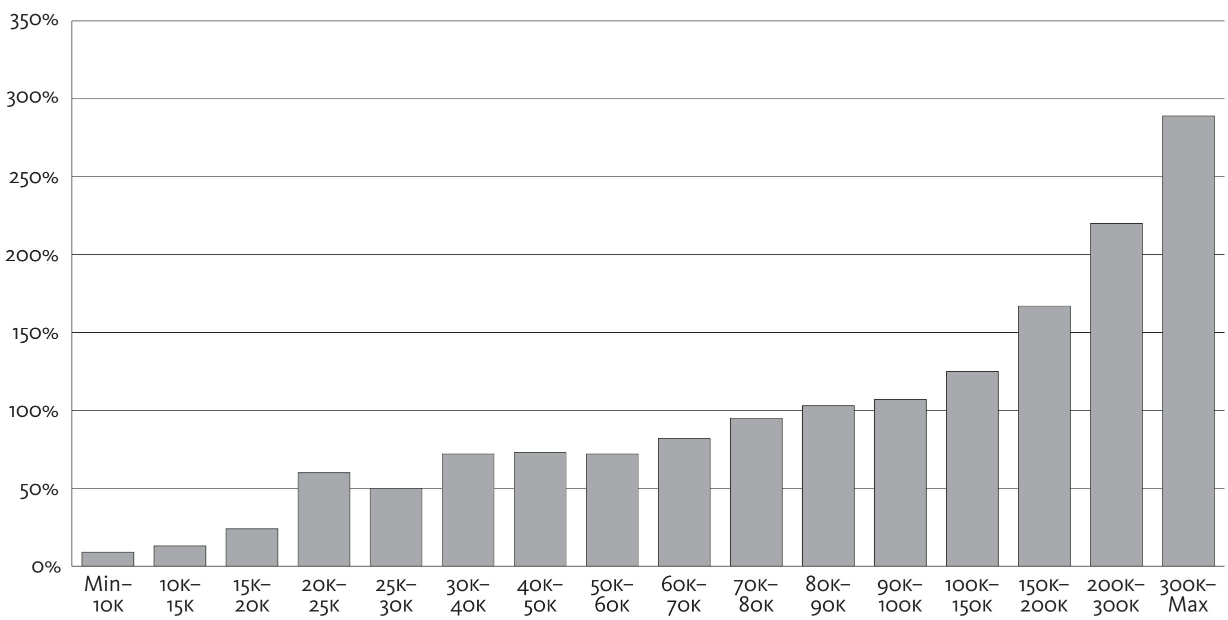


FIGURE 2 **Share of Income Divided by Tax Cut Share: Select Income Groups**



cent of the population, 8.6 percent of families and 27 percent of income, will receive 45 percent of the benefits of income tax reform. The gains are even larger for the top income group, families with income in excess of $300 thousand. This group represents less than half a percentage point of the population and one-third of a percentage point of families, and accounts for 3.9 percent of income. However, it gains 11.2 percent of the income tax reduction benefits.

The relationship between the income share and the share of the tax reform benefit is shown in Figure 1.

Figure 2 shows the share of the savings from tax reform divided by the share of income for each income group. Here the percentage increase in savings rises as income increases, thus demonstrating the regressive nature of income tax reform. For the low income groups, families making less than $25 thousand a year receive less than one-quarter of the benefit compared to their income. The share of the tax savings is less than the share of income for families with income below $80 thousand. Families with income between $80 and $100 thousand receive tax savings equal to their share of income. Clearly, this means that only families with income above $100 thousand will receive a disproportionate share of the tax savings. As family income increases over $100 thousand, the benefit from tax reform rises dramatically for each of the selected high income groups.

Table 6 shows the benefit received by the average family in each income class. It also shows the effective tax rate (ETR) under the pre-reform system and the post-reform system. The last column is the difference in the ETR from those two systems. The income tax reform provides $722 in tax savings for the average family in constant 2006 dollars, but there are wide differences in the tax benefit among families in different income classes. At the low end of the income scale, families with an average income of $12,914 will receive a tax reduction of $24, which is 1/30 of the average tax reduction. At the other end of the income scale, families with income above $300 thousand, with an average family income of $559 thousand, will receive a tax reduction of $24,029, which is 33 times the average.

The data contained in the last three columns of this table provide an indication of the extent to which income tax reform is reducing

TABLE 6 **Change in Tax Payable and in Effective Tax Rates by Income Group for the Complete Tax Reform**

		Effective Tax Rate (%)		
Family Income ($ Thousands)	Tax Reduction ($)	Current System	New System	Difference (%)
MIN–10K	7	0.86	0.73	-0.13
10K–15K	24	1.03	0.85	-0.18
15K–20K	60	1.43	1.08	-0.35
20K–25K	199	3.51	2.63	-0.89
25K–30K	205	3.85	3.10	-0.75
30K–40K	373	5.19	4.12	-1.07
40K–50K	484	6.45	5.37	-1.08
50K–60K	589	7.21	6.14	-1.07
60K–70K	791	7.83	6.62	-1.21
70K–80K	1,058	8.72	7.31	-1.41
80K–90K	1,305	9.06	7.53	-1.54
90K–100K	1,506	9.27	7.67	-1.59
100K–150K	2,196	10.11	8.25	-1.87
150K–200K	4,215	11.58	9.10	-2.48
200K–300K	8,021	12.58	9.31	-3.27
300K–MAX	24,029	13.97	9.68	-4.30
Average	723	7.79	6.30	-1.49

FIGURE 3 **Reduction in Effective Tax Rate, By Select Income Group**

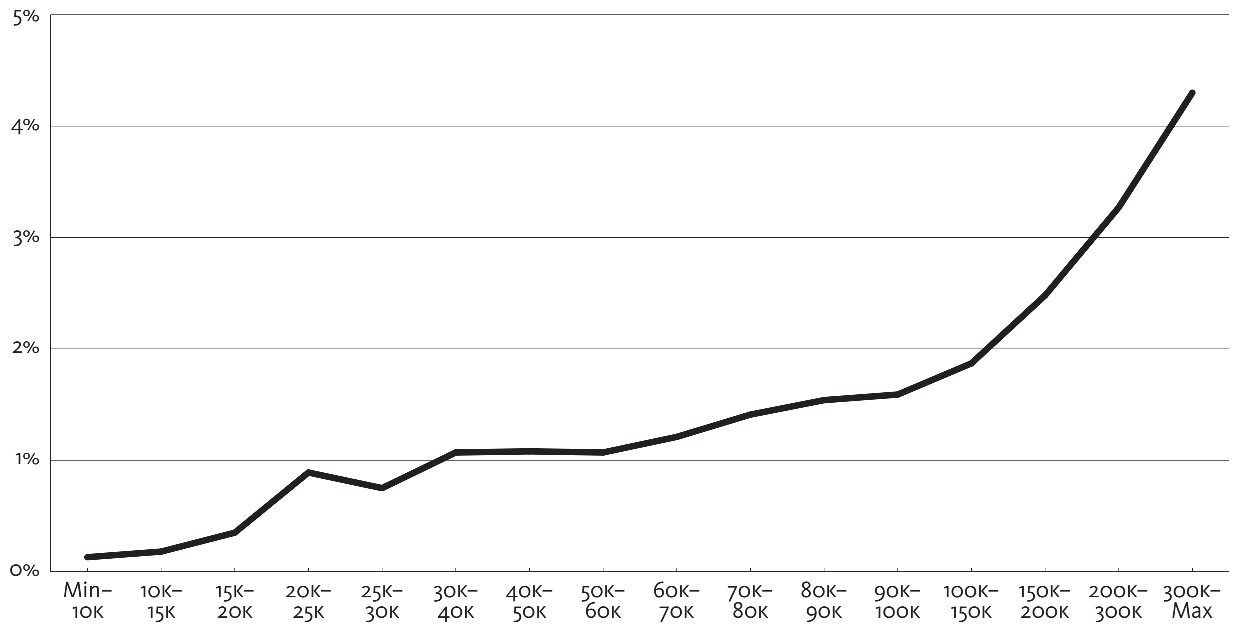


TABLE 7 **The Distribution of the Revenue: Select Family Type (percent)**

Family Type	Population	Families	Income	Tax Reduction
Singles	12.58	26.03	13.39	11.89
Single Parents	7.61	6.11	4.00	2.29
Seniors	16.00	23.56	16.12	10.74
One-Earner Couples	9.96	9.01	8.24	8.96
Two-Earner Couples	53.84	35.30	58.26	66.12

the progressivity of the income tax system in New Brunswick. These data lead to the following conclusions. First, the reduction in effective tax rates increases as family income rises. The average reduction in the effective tax rate is 1.5 percentage points. Families with income up to $20 thousand will get an effective tax rate reduction of about 15 percent of the average. Families with income above $300 thousand will gain an effective rate reduction of 4.3 percentage points or nearly 300 percent of the provincial average.

Second, the effective tax rate for the current system ranges between nearly 1 percent for the low income groups (income up to $10 thousand) and 14 percent for families making more than $300 thousand. The new system will have a very small effect on the effective tax rate of the lowest income group, but will reduce the effective tax rate of the top income group by 4.3 percentage points, lowering it to 9.6 percent. Under tax reform, the income tax structure becomes roughly proportional after income reaches $150 thousand because after this income level the effective tax rate increases very little as income rises (these taxpayers will pay roughly the same proportion of their income in income taxes regardless of their level of income).

FIGURE 4 **Tax Reduction Share By Family Type**

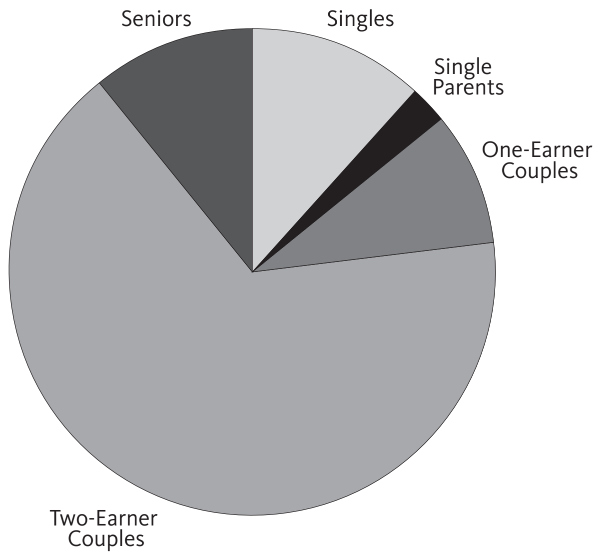


TABLE 8 **Change in Tax Payable and in Effective Tax Rates: Select Family Type**

Family Type	Tax Reduction ($)	*Effective Tax Rate (%)* Current System	New System	Difference (%)
Singles	330	7.38	6.06	-1.32
Single Parents	271	4.40	3.55	-0.85
Seniors	330	5.32	4.33	-0.99
One-Earner Couples	719	7.26	5.65	-1.62
Two-earner Couples	1,354	8.87	7.19	-1.69
Average	722	7.79	6.30	-1.49

B. Distribution by Family Type

Table 7 reports on five family types, showing each type's share of population, families, income and the benefit from tax reform. Three of the five - singles, single parents, and seniors — each receives a share of the tax reduction that is lower than its respective shares of either population, families or income. In contrast, the remaining two types of families — couples with one or two earners — enjoy a share of the tax reduction that is larger than their share of the population, families or income.

The final table in this section (Table 8) shows that the tax reform would save the average family in New Brunswick $722 (in constant 2006 dollars). It also provides results by family type, and again reveals inequity. Couples with one or two earners are the only families receiving close or above the average saving. The other three family types receive below average benefits.

The middle two columns report the effective tax rate for the average member in each family type under the current and new system; and the last column shows the reduction in effective tax rates due to tax reform. For the average of all family types, before tax reform, income taxes accounted for 7.79 percent of income (the effective tax rate). After reform, this ratio will fall to 6.30 percent, which amounts to a reduction of 1.49 percentage points (7.79 minus 6.30) in the effective tax rate. One-earner and two-earner families are the only family groups with above-average reductions in effective tax rates (about 9 percent higher in both cases). Single parents and seniors are the two family groups with the lowest reduction in effective tax rates, with a reduction 43 percent and 34 percent below the average, respectively.

Fairness

Our general conclusion that income tax reform in New Brunswick is regressive is consistent with the results of two other recent studies. Sanger (2008) analyzed the distributional impact of the tax reform proposals presented in the Discussion Paper, specifically, a flat-rate (10%) personal income tax, a rate of 7% general corporate tax rate, an increase of two percentage points in the harmonized sales tax (HST), and a new carbon modeled on the tax recently introduced in British Columbia. Noting that this package of tax reform may generate a deficit of $150 million, Sanger restored fiscal neutrality by reducing provincial government spending across the board by the amount of the deficit. His main conclusion is that:

> The average impact of the major tax changes being proposed would lead to a loss — in terms of increased taxes and reduced services — averaging over $500 a year for over 175,000 New Brunswick households, representing more than half of the province's population. The lower the income, the more negative is the impact in both relative and absolute terms. For the lowest income group, the impact of the tax increase and services cut would add taxes and cuts equal to a loss of about 3.5% of their average income. In contrast, the 20% highest income household would benefit handsomely, with an average benefit of over $3,500 per household, equivalent to a benefit of about 3.6% of their average income. The 1,000 highest income people in the province would gain an average benefit of over $60,000 a year from these changes (p. 1).

The absolute values of the changes in the net gains (losses) cannot be compared directly with ours. Sanger evaluated a complete package (including spending cuts) that does not create a deficit. We measured the equity effects of the 2009 tax reform, which was confined to personal and corporate income taxes and generated a deficit. The general conclusions, however, are the same. Both the 2009 income tax reform and the package of tax reform presented in the Discussion Paper (plus offsetting spending reductions) are regressive. The former provides relatively larger benefits to higher income families and the latter shifts income from lower and middle income families to higher income families.

Another important study of the New Brunswick tax reform proposals was undertaken by Lahey (2008). She evaluated the equity aspects by gender of income tax reform plus a 2 percentage points increase in the HST. Since women generally have lower incomes than men, a regressive tax reform will have a gender bias against women. She noted that, "women in New Brunswick live in a very different social, economic, and political world than men. Women have substantially smaller incomes, heavier workloads, and limited access to critical resources. The overall "gender income gap" was at least 35% in 2005 and is estimated to reach 36.4% by the end of 2008" (p. 1). She concluded that the proposals outlined in the discussion paper will widen the existing gender gap between women's and men's total incomes, and consumable (after-tax) income (p.7).

In short, the 2009 New Brunswick tax reform violates fundamental principles of fairness. First, it violates the principle of vertical equity by providing greater absolute and relative tax savings to higher income families. Second, it violates the principle of horizontal equity, by offering different tax savings to different families with the same income, specifically by giving the largest absolute and relative tax savings to two-income families and the smallest for seniors and single-parent families. Third, it further exacerbates the gender bias in the tax system by widening the gender gap in after-tax income.

In addition, regressive tax reform has the potential to widen the urban-rural economic gap. Modern economic growth is largely urban-driven growth as the cities are the creators of the well-paying jobs. To the extent that incomes are higher in the urban centers, the greater tax savings for higher income taxpayers, which are concentrated in the urban areas, will add a fiscal incentive to the economic forces of rural depopulation.

Although our analysis was carried out within a static framework, it allows some predictive generalizations. The provincial government has justified this tax reform as a vehicle of economic growth. Its main objective is to stimulate the creation of high-paying jobs and fill these jobs with skilled workers coming into New Brunswick from other provinces and other countries. This approach to economic growth would tend to increase disparities in earned income. The regressivity of the tax reform would compound these distributional effects, thus exacerbating the inequality of after-tax income. This means that the distributional effects of tax reform will increase in intensity over time to the extent that tax reform is successful in achieving the provincial government's stated goal.

Concluding Comments and Recommendations

The income tax reform introduced by the government of New Brunswick in its 2009 Budget is *inequitable*, because it increases after-tax income disparities, *unsustainable*, because it is financed with borrowed funds, and *inefficient* because it will do little to stimulate economic growth. New Brunswick's tax reform favours large corporations and high-income New Brunswickers. It also represents a departure from inter-provincial cooperation among Atlantic Provinces as it introduces tax competition into the region.

The tax reform package presented in the 2008 Discussion Paper was ill-conceived. It relied on an ideological belief, unsupported by any evidence for New Brunswick, that a shift from income taxes to consumption taxes would stimulate economic growth. The income tax reform introduced in the 2009 Budget is not sustainable over the long-run. It ignores the interaction between the growth of own-source revenues and equalization payments, and will aggravate New Brunswick's precarious fiscal situation by increasing the deficit and expanding the public debt.

The new government has the opportunity to undue the fiscal damage that would be generated by its predecessor's tax reform. At a minimum, it should stop any stages of tax reform past the one already implemented for 2009 though, from a fiscal sustainability perspective, a rollback of the entire tax reform would be preferable.

In this context, it is important to note that New Brunswick's deficit is not entirely the result of cyclical factors and will not disappear with the resumption of economic growth. New Brunswick's fiscal prospects are not encouraging for two main reasons. First, the slowdown in long-term economic growth for the country as a whole, largely due to the lower rate of growth of the labour force, will limit the growth of total provincial revenues. Second, the above-national-average rate of population aging in New Brunswick will place additional pressures on provincial government spending. To design a sustainable fiscal structure, the government must take into consideration these economic and fiscal forces and must have reliable information on their magnitude. Therefore, we recommend that the government undertake as soon as possible an independent study of New Brunswick's long-term fiscal prospects. This independent study must also consider the equity effects of any proposed changes to the fiscal system, including its impact on different types of families and families with different economic power and its gender implications.

Fundamental policy changes are more readily acceptable when they have broad support among the population. Therefore, we also recommend that the government initiate a province-wide program of consultation to ensure that all New Brunswickers have the opportunity to make a contribution to the reshaping of the province's fiscal system.

Notes

1 This program eliminates the provincial personal income tax payable by taxpayers with income below a specified threshold and reduces it for other taxpayers with income up to another specified threshold. In the 2008 taxation year, the lower threshold for a single taxpayer was $14,001 and the maximum amount of the tax reduction was $569. This amount was reduced by 5% (the *clawback rate*) of taxable income in excess of $14,001. Based on the 5% clawback rate, the tax reduction for a single taxpayer vanished at a taxable income of $25,391. The 2009 tax reform did not change the lower income threshold, though it indexed it at the same rate of indexation of the of the tax brackets, but lowered the clawback rate to 4% for 2009 and 3% for 2010 and successive years.

2 The Low-Income Senior's Benefit is a transfer payment to New Brunswickers who receive the Guaranteed Income Supplement or the Allowance for Survivor or the Federal Allowance.

3 The Forestry Industry Investment Tax Credit will be offered for one year. Forestry companies can apply for a rebate of 50% of their capital investment in manufacturing and processing investment up to a maximum of 50% of the provincial property tax paid. The High Energy Use Tax Rebate is extended to March 31, 2010. This rebate is offered to pulp and paper companies and provides a remission of provincial property taxes paid in order to offset energy costs.

4 The Small Business Investor Tax Credit provides a 30% non-refundable tax credit on investments up to $80,000. Effective March 17, 2009, the maximum annual investment eligible for the credit was raised to $250,000.

5 Only half of natural resource revenues are included in the provincial revenues to be equalized. Therefore, only half of each additional dollar of resource revenues would reduce equalization entitlements.

6 A country is said to have a small open economy when its economy is sufficiently small relative to the world trade area in which it participates that its domestic policies have no effect on world prices, interest rates and income.

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APPENDIX

General Assumptions

This appendix discusses briefly the methodology used in our study. We begin by discussing the general assumptions and definitions used in the analysis. We then identify the steps needed to measure the distributional effects of tax reform.

To measure the benefits of income tax reform by income class and family type, we started by calculating the tax payable by the average taxpayer for 16 selected income groups and 5 family types under the tax structure in 2008. Then we compared the results with those for the 2012 income tax structure (when the tax reform is fully implemented). For these calculations, we used the data incorporated in Statistics Canada's (2008) Social Policy Simulation Database and Model (SPSD/M). For the personal income tax, the SPSD/M data was compared with the information in the *Taxation Statistics for Individuals* published by the Canada Revenue Agency (2010).

For the selection of family types, we used the concept of *Census Family*. In Statistics Canada's SPSD/M, a census family is defined as "a head, their spouse (if there is one), and their children under the age of 25 (including their guardian children), living together in the same dwelling. A head is defined as the male if the census family contains a married or common-law couple, the female lone parent if the census family includes children but not a couple, or the unattached individual." We divided New Brunswick's census families into the following five major categories: *singles* (under the age of 65 without a child and young adults not living with their parents), *single parents* (singles, separated or divorced, 25 of age or older, with children), *one-earner couples* (with or without children and with a single income source), *two-earner couples* (with or without children and with two or more income sources where a child younger than 25 years of age living with his family also generates income), and *seniors* (singles or couples).

For the income concept, we chose *total income*, defined by the SPSD/M as "all income received by individuals: the sum of all market income and transfer income." Each family type was divided into 16 groups based on a family's total income, with a closed range up to $300 thousand and an open range for income above this level.

The SPSD/M program has actual data only up to 2006 and projections for the subsequent years. We performed the analysis with the 2006 data instead of relying on projections. Using the

2006 data has benefits, but also some shortfalls. First, our analysis is based on the distribution of income and family types for this year. If there were large shifts in the income distribution from the selected groups from year to year, the results that would materialize in fiscal 2012–13 could be different than the results in this paper. In the case of the HST, the SPSD/M data underestimate the amount recorded in the provincial Budget, because it includes only revenues from individual consumers. A portion of the HST is paid by institutions and non-profit organizations (commercial firms receive offsetting tax credits). We reconciled this difference by increasing proportionally the HST collected from individuals to match the New Brunswick government figures. This means that the revenue collected from institutions, such as universities and hospitals, was treated for distributional purposes as the revenue from individuals, an assumption commonly used in the measurement of the incidence of broad based consumption taxes.

To determine whether each of the tax reform options evaluated in this report is progressive or regressive, we analyzed the pattern of effective tax rates (ETR) for each component of the reform package and for the entire package. The ETR was calculated as the ratio of the tax payable by each family type and income group to the corresponding total income. If the ETR increases (decreases) as income rises, a tax is said to be progressive (regressive).

The incidence of the new and reformed fiscal structure was measured in four steps. First, we determined who ultimately pays taxes based on tax incidence theory and practice. Following standard incidence analysis (Ruggeri, Van Wart and Howard 1994), we allocated the PIT to those who are liable to pay the tax. Corporations are legal entities with tax liabilities, but they ultimately do not pay the CIT. They may shift this tax to consumers through higher prices, workers through lower wages, or investors through lower rates of return. We assumed that all each of three groups end paying a portion of the CIT. Second, we identified the selected groups of taxpayers according to their family and income characteristics. Third, we calculated the actual tax liability and the effective tax rate for the current and the new system. Each of these values is representative of the average taxpayer in his/her specific income group. Finally, whether a tax reform package would be regressive or progressive was determined by comparing the difference between the current and new effective tax rate for each of the specific tax instruments. A deficit generating tax reform that reduces the ETR for taxpayers is said to be progressive (regressive) when the change in the ETR decreases (increases) as family income rises. A revenue-neutral tax reform is said to be progressive (regressive) when the ETR decreases (increases) for low-income earners and increases (decreases) for high-income earners.

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