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ERODING TAX FAIRNESS

Tax Incidence in Canada, 1990 to 2005

By Marc Lee

Growing Gap  **.ca**

CANADIAN CENTRE FOR POLICY ALTERNATIVES

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Canadian Centre for Policy Alternatives

2 Carlton Street, Suite 1001

Toronto, Ontario

(416) 263-9896

www.GrowingGap.ca

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Vancity

ABOUT THE AUTHOR

Marc Lee is the Senior Economist with the B.C. Office of the Canadian Centre for Policy Alternatives. He is a frequent media commentator on public policy issues and has authored many CCPA publications looking at fiscal policy and the financing of public services, including *Is Medicare Sustainable? A Closer Look at Aging, Technology and Other Cost Drivers in Canada's Health Care System*, *The Myth of Interprovincial Trade Barriers* and *TILMA's Alleged Economic Benefits* (with Erin Weir), *Size of Government and Economic Performance: What does the Evidence Say?*, and *Tax Cuts and the "Fiscal Imbalance"*. Marc is chair of the Progressive Economics Forum, a national network of economists (progressive-economics.ca).

Summary

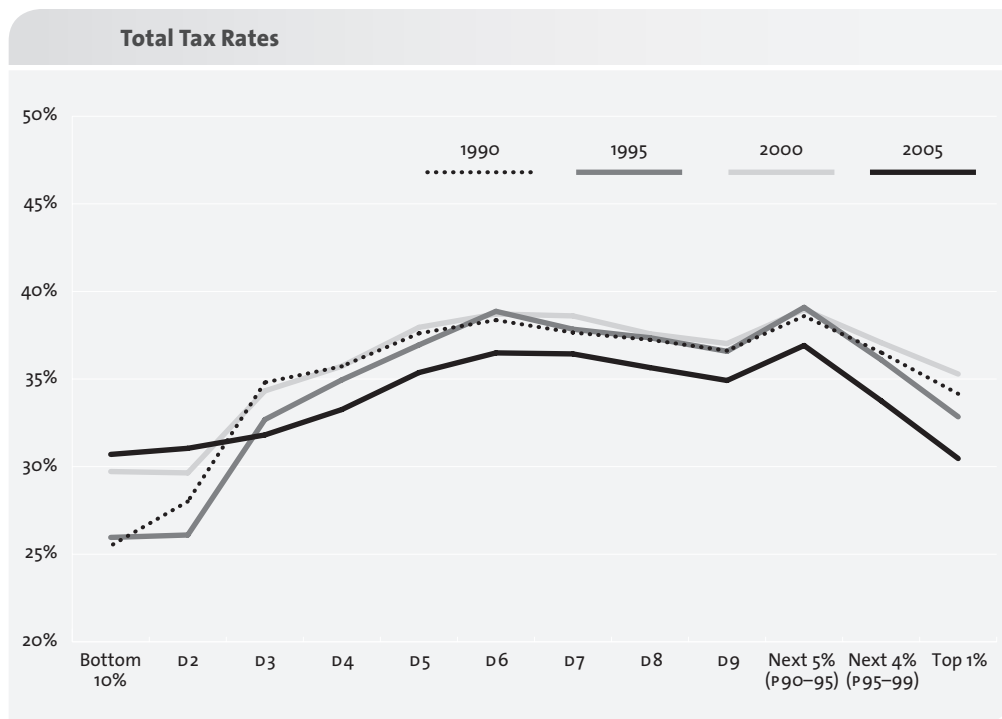
ERODING TAX FAIRNESS: Tax Incidence in Canada, 1990 to 2005 is the first major study of tax incidence in Canada in well over a decade. This study is unique among recent analyses of taxes in Canada in that it includes all sources of income (*broad income*, including inheritances, employer-provided benefits and capital gains) and all taxes (including property taxes and corporate taxes). It examines the many changes to Canada's provincial and federal tax system over this 15-year period and shows that Canada's tax system was far more fair in 1990 than it is today.

The tax rates of the richest 1% of Canadians have dropped dramatically since 1990, while poorer Canadians have seen their tax rates rise steadily. The tax system is still progressive for middle-income earners in Canada, but not for upper-income earners. Not only do the top 1% pay a lower tax rate than they did in 1990, their rate is actually slightly lower than that paid by the poorest 10%.

The principal finding of this study is that the overall tax system no longer meets the test of fairness across income groups. It finds Canada's upper income earners are not paying their fair share in taxes compared to 15 years ago.

Tax cuts were the major factor behind the erosion of Canada's tax fairness, with personal income tax cuts leading the reduction in rates at the top. This has reinforced adverse inequality trends driven by the labour market. The tax cut agenda unfurled precisely when inequality in pre-tax incomes surged, disproportionately benefiting those with the highest incomes, while doing little for low-income Canadians.

This study also finds that the provinces have led the way in introducing regressive tax changes. Provincial taxes were relatively flat in 1990, but had become more uni-



formly regressive by 2005. Provincial income tax cuts are the major culprit behind Canada’s eroding tax fairness, an important consideration given allegations by the provinces of a “fiscal imbalance” in Canadian federalism.

By 2005, federal tax cuts had exacerbated the problem. Higher payroll taxes have offset the impact of income tax cuts for the middle of the distribution. At the top of the distribution, income tax cuts have contributed to a regressive pattern.

The study works through federal and provincial changes to Canada’s tax system. Among these changes:

- For most Canadians, tax rates fell by roughly two percentage points or more between 1990 and 2005.
- Canadians in the top 1% of the income distribution saw their total tax rate fall by almost 4 percentage points between 1990 and 2005.
- In contrast, Canadians in the bottom 10% of the income distribution saw their tax rate increase by more than five percentage points between 1990 and 2005, with an increase of three percentage points for the next 10%, with almost all of the change occurring by 2000.
- A number of small changes in regressive taxes account for about half of the change for income earners in the bottom two deciles. These include consumption, payroll and property taxes and other provincial taxes and fees.
- Income taxes are the principal source of progressive taxation, although this had eroded for the top 5% by 2005.

The study concludes that there is scope for raising income taxes at the top of Canada's income distribution so that tax incidence becomes, minimally, proportional and, ideally, progressive. Such changes would help to ensure those who can afford to contribute more for public goods and services valued by all Canadians do so.

While there may be some theoretical limit to how progressive upper rates can be, Canada is nowhere close to hitting tax rates that would have adverse economic consequences. The study finds there is still ample room for raising income taxes on the most affluent by raising the top rate or through the addition of new top tax brackets. Similarly, the study finds Canada's preferential treatment of capital gains is unwarranted, and they should be taxed fully as any other form of income. These measures would go a long way towards restoring tax fairness to Canada's tax system.

Tax Incidence and Tax Fairness

MODERN INDUSTRIALIZED COUNTRIES provide a wide range of public goods, services and infrastructure through their democratic institutions. The price of these services is taxes: income taxes, sales taxes, property taxes and payroll taxes.

Not all taxes are created equally — there are distinct distributional impacts that affect families at the low, middle and high end in different ways (see sidebar). So it matters what the mix of taxes is, and how total taxes are distributed. This is called the study of tax incidence.

In this paper, we review tax incidence in Canada, tracking changes made to the Canadian tax system between 1990 and 2005, with a view to understanding how the tax system has changed. In particular, we are concerned with issues of fairness in how taxes are distributed across families of different income levels.

The 1990 to 2005 time frame was an interesting period for fiscal policy in Canada. The early period saw modest tax increases (and spending restraint) in a bid to confront growing and persistent budget deficits. Surpluses emerged by decade's end, followed by a period of tax cuts, at both federal and provincial levels.

We are interested in the role of taxation in fiscal policy: how taxes changed during the years when concern was acute about federal and provincial deficits; and how they have changed in recent years now that budget surpluses are the order of the day.

In recent years, many economists have stressed that the mix of taxes can have effects on economic performance. The older argument that tax cuts alone will lead

Jargon Watch: Progressive, Regressive and Proportional

Three terms describe the incidence of a tax (or a tax system):

- A tax is *progressive* if people with higher incomes pay a greater share of their income in taxes. Put another way, the effective tax rate rises as income increases. In tax jargon, this is called *vertical equity*, a fairness principle that says people with a greater ability to contribute should do so.
- The opposite of a progressive tax, where the share of income paid in tax falls as income rises, is called *regressive*.
- Finally, a tax where the share of income going to the tax stays the same is called *proportional*.

Personal income taxes are the most prominent progressive tax, with rate brackets that ensure those with higher incomes pay relatively more. Most other taxes are not progressive. Sales taxes, for example, are widely known to be regressive because low-income people spend all of their income (and often more, due to debt) while those higher up the distribution are able to save more as their income increases.

The design of taxes can mean that they are not uniformly progressive or regressive over the course of the income distribution. Payroll taxes, such as unemployment insurance, are initially progressive because a minimum threshold applies before workers start paying the tax, but a ceiling on total contributions means they are regressive higher up the income distribution. General sales taxes also have exemptions for basic goods and services, plus tax credits transferred to low-income households, that mitigate regressive distributional impacts.

These distinctions matter because most of the calls for tax cuts in recent years have been aimed at income taxes, the progressive part of the tax system. Moves to a flat income tax, as advanced by the Fraser Institute and many right-wing commentators, would inevitably lead to a tax system that is fully regressive. Cutting income taxes tends to reduce the progressivity of the tax system, unless tax cuts are deliberately targeted to those with low and modest incomes. Even an across-the-board reduction in income tax reduces progressivity because it shrinks the most progressive component of the entire tax system.

to higher economic growth rates has largely been dismissed, in favour of notions that certain taxes are less “distorting” to the economy than others, implying that changing the tax mix appropriately can have pro-growth effects. This literature is relatively new, and is far from conclusive.¹ We revisit some of these themes in the conclusion, in relation to shifts in Canada’s tax mix and prospects for progressive tax reforms.

This is the first major study of tax incidence in Canada in well over a decade. A well-known study, Vermaeten, Gillespie and Vermaeten (or VGV, 1994 and 1995), last looked at Canadian tax incidence for the period ending in 1988.² Between 1951 and 1988, the period that captures the development of modern social programs, average tax rates fell for the poorest 10% and for the top 2% of the income distribution, and increased for most families in the middle. They found that the 1951 system was regressive over the low income range, proportional through the middle, then progressive at the top. By 1988, it had evolved into a system with some progressivity over the bottom income range, slightly regressive after the median, then progressive for the top 1%.

This study follows a similar methodological approach to VGV, and we use VGV to benchmark our estimates for 1990. In particular, all sources of income (including inheritances, employer-provided benefits and capital gains) and all taxes (including property taxes and corporate taxes) are included. Economic families are the primary unit of analysis, with adjustments made for family size. Data and methodological issues are spelled out in detail in the Technical Appendix.

This review of tax changes shows that by 2005, the Canadian tax system was much less fair than it was in 1990. Overall, the Canadian tax system in 2005 has become flatter, with total tax rates ranging from 30.7% of income at the bottom of the income spectrum, some modest progressivity up to the middle of the income distribution, peaking at 36.5%, then modestly regressive thereafter, falling back to 30.5% for the top 1% of families. Top tax rates have dropped the most over this time frame, while rates at the bottom have actually increased.

The principal finding of this study is that the overall tax system no longer meets the test of fairness across income groups. The principle of vertical equity (taxation based on ability to pay) has been violated due to the regressive structure of tax rates at the top of the income distribution. Overall, the period of tax cuts has disproportionately benefited those with the highest incomes, and this has occurred precisely at the time when inequality in pre-tax incomes has surged, thereby exacerbating inequality trends.

Tax Incidence in Canada, 1990–2005

THE 1990 START of this analysis was a very different time than in 2005. Like every industrialized country, large and persistent deficits were the order of the day, exacerbated by the onset of a recession, high interest rates, and structural adjustments to the 1989 Canada-US Free Trade Agreement.

In the recovery years that followed, spending restraint plus modest tax increases were invoked to reduce the deficit. This “war on the deficit” was won faster than most thought possible, and by 1997–98, deficits had turned into a string of growing budget surpluses, which, in turn, set the stage for some modest social reinvestment and for larger personal and corporate tax cuts. By the early 2000s, most provincial governments had joined in with tax cuts of their own.

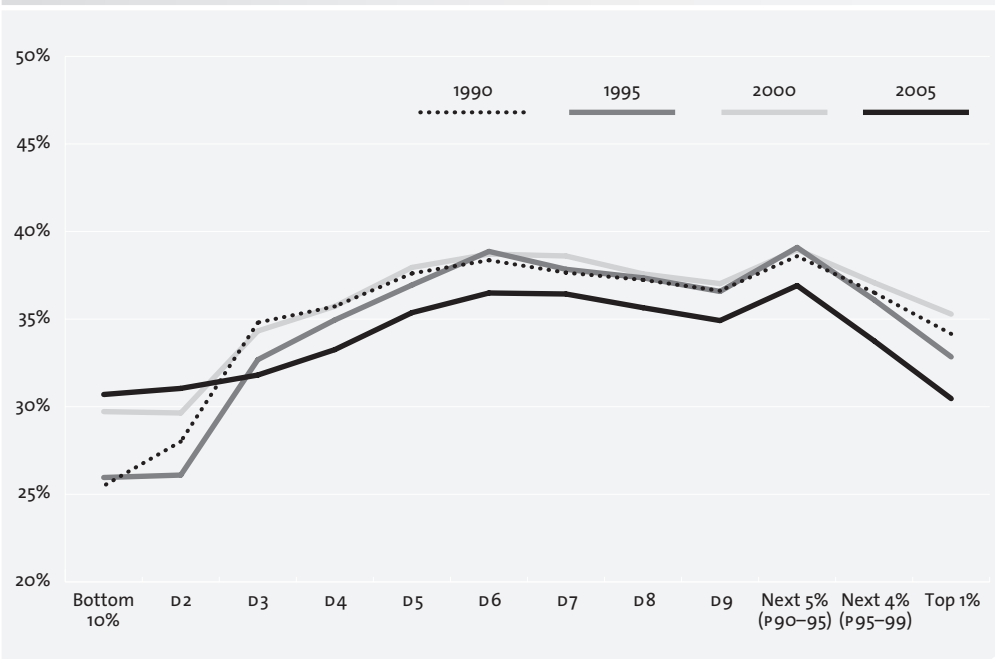
Changes to the tax system made in the years before 1990 also inform the fiscal situation during the period of this study. These include the federal implementation of a general surtax and high-income surtax and the partial de-indexation of tax brackets and credits (more on this below). Another important tax reform was the introduction of the GST in 1991. More detail on the numerous tax changes over the 1986 to 2005 period can be found in the Appendix.

Figure 1 shows that, based on the change in total tax rates between 1990 and 2005, Canada’s tax system has become much less progressive. The system has remained progressive through to the middle of the income distribution, but in the upper half, the pattern has shifted to being more regressive by 2005. One exception to this is

A Note on Notation

Families are broken into ten equal-sized groups, ranked from lowest to highest income, called deciles. These groupings are sometimes referred to in shorthand. The bottom decile, or bottom 10%, is D1, rising to the top decile, or D10. In many of the figures, the top 10% has been further broken down by the top 1% (percentile 99–100), the next 4% (P95–99), and the next 5% (P90–95).

FIGURE 1 Total Tax Rates

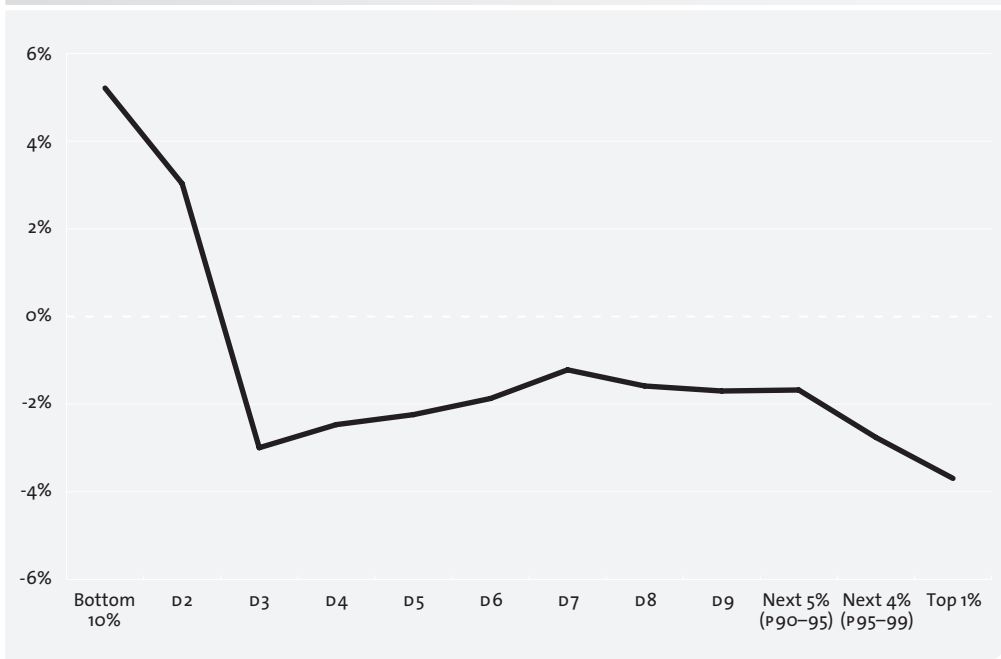


the income tax bracket-driven bump in tax rates going from the ninth decile (D9) to the bottom half of the top decile (P90–95). The total tax rate for the top 1% of income earners was essentially the same (in fact, slightly lower) than the rate for the bottom 10% of income earners.

The biggest changes for all groups came between 2000 and 2005, and are driven by tax cuts. Figure 2 shows the change in percentage points of income between 2005 and 1990. For most Canadians, tax rates fell by roughly two percentage points or more.³ But Canadians in the top 1% of the income distribution saw their rate fall by almost 4 percentage points. On the other hand, the bottom 10% had an increase of more than five percentage points in 2005 relative to 1990, with an increase of three percentage points for the next 10% (D2), with almost all of the change occurring by 2000.

A number of small changes in regressive taxes account for about half of the change for income earners in the bottom two deciles. These include consumption, payroll and property taxes and other provincial taxes and fees. Because we are measuring income, not consumption, it is possible that increases in debt financing through the

FIGURE 2 Change in Total Tax Rate, 1990–2005



expansion of credit markets has led to higher consumption, leading poorer families to pay higher consumption taxes relative to income. This remaining difference relates to higher estimated corporate taxes allocated to bottom income groups. Corporate taxes are allocated based on investment income, which rose as a share of the total for bottom groups over the time period studied, and overall corporate income and taxes increased substantially. Some caution is warranted around interpretation. The main point is that while the tax system remained progressive over the first six deciles, it was much less so in 2005 relative to previous years.⁴

Breaking down federal and provincial total taxes (Figures 3 and 4) shows that the progressivity in the tax system largely stems from federal taxes. This confirms a well-known finding from tax incidence studies.⁵ And for the bulk of the income distribution, the federal tax rate is essentially unchanged between 1990 and 2005 (though 2005 rates are lower at the top and higher at the bottom).

The trend in provincial taxes is to move from being progressive over the first half of the distribution and somewhat regressive thereafter in 1990, to being roughly proportional in 2000, to more uniformly regressive by 2005. Thus, much of the change in total taxes comes from actions at the provincial level to cut taxes, with impacts at the top and the bottom of the distribution exacerbated by changes in federal tax rates.

Provincial tax changes have driven the reduction in total taxes by a greater amount than federal tax changes. This is related to arguments about the so-called “fiscal imbalance”. While provinces have complained about their fiscal position vis-à-

FIGURE 3 Federal Tax Rate

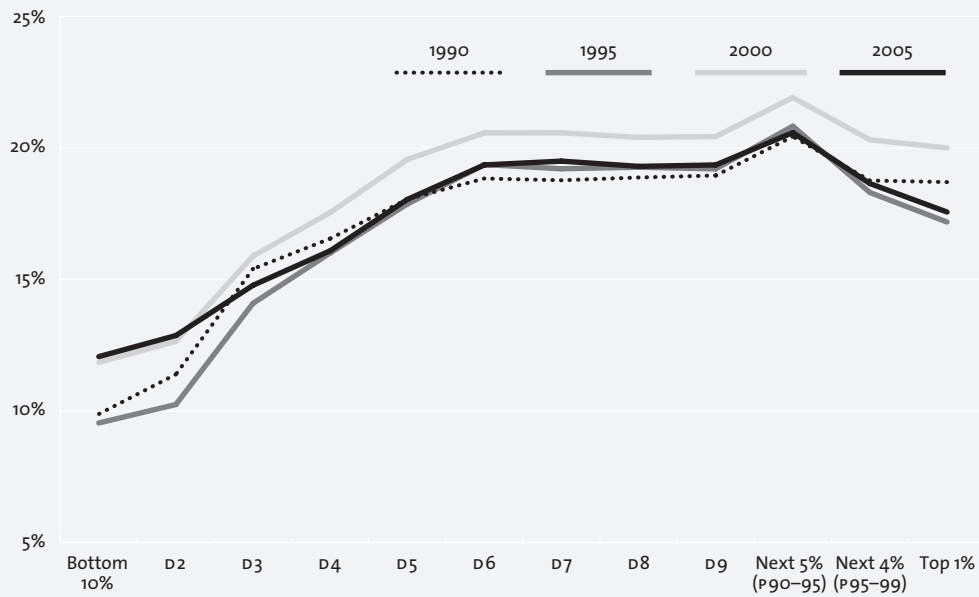
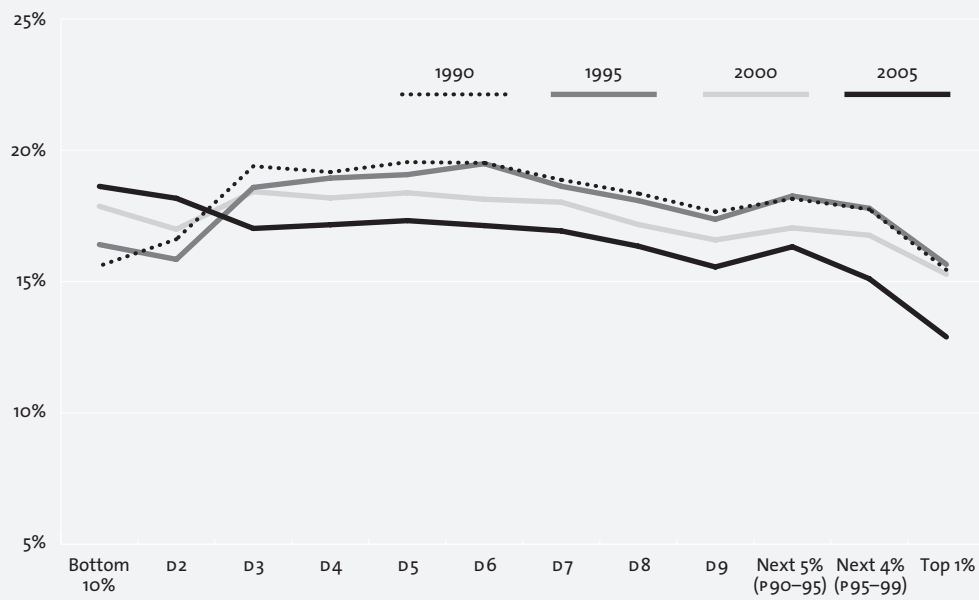
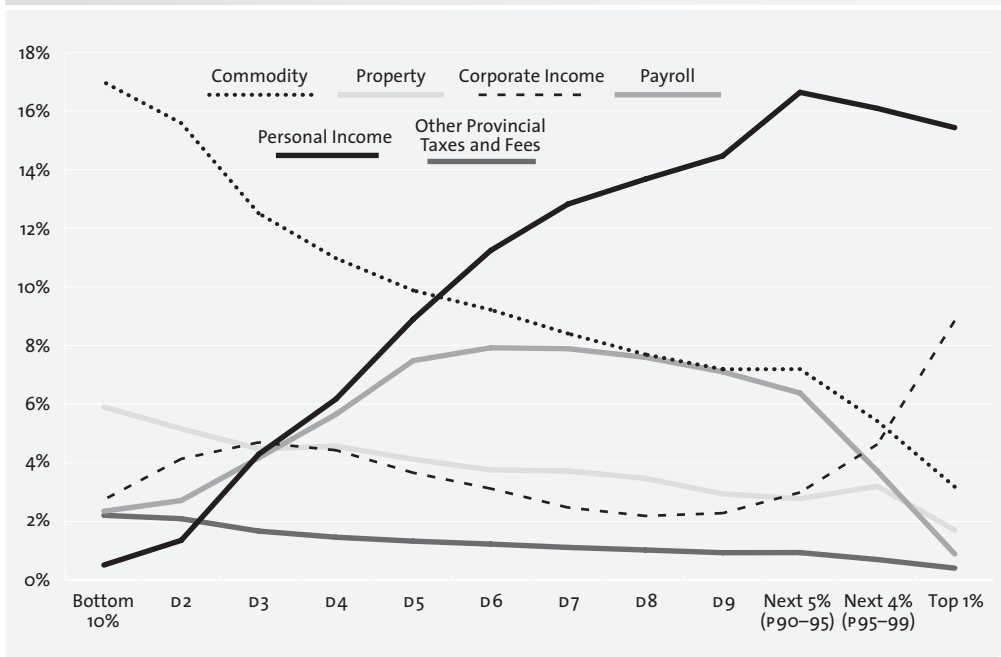


FIGURE 4 Provincial Tax Rate



vis the federal government, they are, if anything, the architects of their own fiscal problems.

FIGURE 5 Tax Rates by Type of Tax, 2005



TAX RATES BY TYPE OF TAX

In this sub-section, we examine changes over the 1990 to 2005 period by different type of tax, with some explanation of specific tax changes and how these have affected tax incidence. These changes are of interest when we revisit the issues of tax mix and tax fairness in the conclusion. Table 1 presents the results for a number of different taxes. Figure 5 shows the incidence of different tax types (combining federal and provincial taxes) for 2005.

Because this analysis spans several years, there are other factors at play besides tax rate changes. First, in the case of income taxes, real income growth will tend to push people into higher tax brackets over time, a pattern that moves in the opposite direction of cuts in statutory rates. Secondly, different components of income have grown at different rates over time. For example, employment income grew by 87% between 1990 and 2005, but corporate pre-tax profits grew by 322%. Another important example is that inheritances and gifts grew by 185%, compared to 101% for broad income as a whole. This shapes tax incidence because inheritances and gifts are not taxable, and are concentrated in the upper part of the distribution.

Personal Income Taxes

By type of tax, we find that (federal and provincial) personal income taxes are progressive. They are the only consistently progressive tax over time and throughout the vast majority of the distribution (rates become regressive for the top 5% after 1995). Federally, personal income taxes as a share of broad income fell for all Canadians

TABLE 1 Tax Rates By Type of Tax (As Share of Broad Income)

All taxes	Bottom 10%	D2	D3	D4	D5	D6
1990	25.5%	28.0%	34.8%	35.7%	37.6%	38.4%
1995	26.0%	26.1%	32.7%	35.0%	36.9%	38.9%
2000	29.7%	29.6%	34.3%	35.7%	37.9%	38.7%
2005	30.7%	31.0%	31.8%	33.3%	35.4%	36.5%
Federal and provincial personal income taxes						
1990	0.8%	2.2%	6.5%	9.0%	11.2%	13.2%
1995	0.7%	1.7%	5.1%	7.8%	9.8%	12.3%
2000	1.0%	2.2%	5.8%	8.0%	10.6%	12.7%
2005	0.5%	1.4%	4.3%	6.2%	8.9%	11.2%
Federal and provincial corporate income taxes						
1990	0.9%	1.5%	1.7%	2.0%	2.1%	1.7%
1995	1.4%	1.6%	2.4%	2.2%	2.6%	2.0%
2000	2.8%	3.9%	4.3%	5.0%	4.4%	3.6%
2005	2.7%	4.1%	4.7%	4.4%	3.7%	3.1%
Federal and provincial commodity taxes						
1990	15.5%	14.8%	14.9%	12.6%	11.2%	10.3%
1995	15.3%	13.9%	13.7%	12.3%	10.8%	10.0%
2000	15.8%	14.3%	13.1%	11.1%	9.8%	9.2%
2005	17.0%	15.6%	12.5%	11.0%	9.9%	9.2%
Federal and provincial payroll taxes						
1990	1.80%	2.82%	4.72%	5.82%	7.14%	7.44%
1995	1.30%	2.40%	4.39%	5.81%	7.41%	8.43%
2000	2.24%	2.63%	4.51%	5.67%	7.42%	7.90%
2005	2.35%	2.71%	4.17%	5.65%	7.49%	7.92%
Federal personal income taxes						
1990	0.6%	1.5%	4.0%	5.4%	6.7%	7.9%
1995	0.5%	1.1%	3.2%	4.7%	5.9%	7.4%
2000	0.7%	1.5%	3.7%	5.0%	6.6%	8.0%
2005	0.4%	1.0%	2.8%	3.8%	5.4%	7.0%
Provincial personal income taxes						
1990	0.3%	0.8%	2.6%	3.6%	4.5%	5.3%
1995	0.2%	0.6%	1.9%	3.1%	3.9%	4.9%
2000	0.2%	0.7%	2.1%	3.0%	4.0%	4.7%
2005	0.1%	0.4%	1.5%	2.3%	3.4%	4.2%
Canada Pension Plan premiums						
1990	0.5%	0.8%	1.4%	1.7%	2.1%	2.2%
1995	0.4%	0.7%	1.4%	1.8%	2.3%	2.6%
2000	1.0%	1.1%	1.9%	2.4%	3.2%	3.4%
2005	1.2%	1.4%	2.2%	2.9%	3.9%	4.1%
Employment Insurance premiums						
1990	0.7%	1.1%	1.8%	2.2%	2.7%	2.8%
1995	0.5%	1.0%	1.8%	2.4%	3.1%	3.5%
2000	0.7%	0.9%	1.5%	1.8%	2.4%	2.6%
2005	0.6%	0.7%	1.0%	1.4%	1.8%	1.9%
Property taxes						
1990	5.1%	5.3%	5.5%	5.2%	5.0%	4.8%
1995	5.6%	5.0%	5.5%	5.5%	5.1%	5.1%
2000	5.8%	4.8%	4.9%	4.5%	4.4%	4.0%
2005	5.9%	5.2%	4.5%	4.6%	4.1%	3.8%
Other provincial taxes and fees						
1990	1.4%	1.3%	1.3%	1.1%	1.0%	0.9%
1995	1.7%	1.6%	1.6%	1.4%	1.2%	1.1%
2000	2.1%	1.9%	1.8%	1.5%	1.3%	1.2%
2005	2.2%	2.1%	1.7%	1.5%	1.3%	1.2%

TABLE 1 (CONTINUED) Tax Rates By Type of Tax (As Share of Broad Income)

All taxes	D7	D8	D9	Next 5% (P90-95)	Next 4% (P95-99)	Top 1%
1990	37.7%	37.2%	36.6%	38.6%	36.5%	34.2%
1995	37.8%	37.4%	36.6%	39.1%	36.1%	32.8%
2000	38.6%	37.6%	37.0%	39.0%	37.1%	35.3%
2005	36.4%	35.7%	34.9%	36.9%	33.8%	30.5%
Federal and provincial personal income taxes						
1990	14.3%	15.3%	16.2%	18.5%	18.3%	19.0%
1995	13.2%	14.2%	14.9%	17.6%	17.1%	17.3%
2000	14.3%	15.1%	15.8%	17.9%	17.2%	16.5%
2005	12.8%	13.7%	14.5%	16.6%	16.1%	15.4%
Federal and provincial corporate income taxes						
1990	1.7%	1.5%	1.6%	2.0%	3.8%	8.2%
1995	2.1%	1.7%	1.8%	2.1%	4.2%	8.6%
2000	3.2%	2.5%	2.8%	3.9%	6.3%	12.5%
2005	2.5%	2.2%	2.3%	3.0%	4.6%	8.8%
Federal and provincial commodity taxes						
1990	9.1%	8.5%	7.9%	7.9%	6.2%	3.9%
1995	8.8%	8.2%	7.5%	7.6%	5.8%	3.5%
2000	8.3%	7.7%	7.2%	7.0%	5.6%	3.3%
2005	8.4%	7.7%	7.2%	7.2%	5.4%	3.2%
Federal and provincial payroll taxes						
1990	7.23%	7.01%	6.58%	6.18%	3.40%	0.66%
1995	8.21%	8.16%	7.77%	7.57%	4.07%	0.86%
2000	7.72%	7.62%	7.10%	6.36%	3.83%	0.84%
2005	7.89%	7.60%	7.10%	6.38%	3.72%	0.89%
Federal personal income taxes						
1990	8.5%	9.2%	9.8%	11.3%	11.4%	11.8%
1995	7.9%	8.5%	8.9%	10.5%	10.3%	10.2%
2000	8.8%	9.4%	9.9%	11.3%	10.9%	10.2%
2005	8.0%	8.5%	9.0%	10.4%	10.3%	9.7%
Provincial personal income taxes						
1990	5.7%	6.1%	6.4%	7.2%	6.9%	7.2%
1995	5.3%	5.7%	6.0%	7.1%	6.8%	7.1%
2000	5.5%	5.6%	5.9%	6.6%	6.2%	6.3%
2005	4.9%	5.1%	5.4%	6.3%	5.8%	5.7%
Canada Pension Plan premiums						
1990	2.1%	2.1%	1.9%	1.8%	1.0%	0.2%
1995	2.5%	2.5%	2.4%	2.3%	1.3%	0.3%
2000	3.3%	3.3%	3.1%	2.7%	1.7%	0.4%
2005	4.1%	4.0%	3.7%	3.3%	1.9%	0.5%
Employment Insurance premiums						
1990	2.8%	2.7%	2.5%	2.4%	1.3%	0.3%
1995	3.4%	3.4%	3.2%	3.2%	1.7%	0.4%
2000	2.5%	2.5%	2.3%	2.1%	1.2%	0.3%
2005	1.9%	1.8%	1.7%	1.5%	0.9%	0.2%
Property taxes						
1990	4.5%	4.2%	3.7%	3.3%	4.2%	2.1%
1995	4.6%	4.3%	3.8%	3.4%	4.3%	2.2%
2000	3.9%	3.6%	3.1%	2.9%	3.5%	1.8%
2005	3.7%	3.5%	2.9%	2.8%	3.2%	1.7%
Other provincial taxes and fees						
1990	0.8%	0.8%	0.7%	0.7%	0.6%	0.3%
1995	1.0%	0.9%	0.8%	0.8%	0.6%	0.4%
2000	1.1%	1.0%	1.0%	0.9%	0.7%	0.4%
2005	1.1%	1.0%	0.9%	0.9%	0.7%	0.4%

between 1990 and 2005. The largest drop is for the top 1% of income earners, with rates two percentage points lower in 2005 relative to 1990.

Federal income taxes increased modestly across the distribution between 1990 and 2000, then fell back for most Canadians to 1990 levels by 2005 (except for the bottom two deciles). In part, this reflects the expansion of the 1990s, with real incomes increasing steadily later in the decade, pushing Canadians into higher tax brackets. This pattern was reinforced by a policy of “bracket creep”: from 1986 to 2000 the income tax system was characterized by “partial de-indexation”, which meant that brackets and credits were only adjusted annually by the rate of inflation less 3% (i.e. no adjustment if inflation was less than 3%). The cumulative effect of this policy was to push more Canadians above the threshold for paying income tax and others into higher tax brackets.⁶

Federal income tax cuts began modestly in 1998 and 1999 with the phase-out of surtaxes, then tax cuts ramped up significantly in 2000.⁷ The 2000 budget ended “partial de-indexation” and was accompanied by a commitment to raise bracket levels and the basic personal exemption. The 2000 and 2001 federal budget also cut rates in all brackets under \$100,000 of taxable income. While these changes left the top rate at 29%, a 2001 decision to eliminate the 5% high-income surtax (\$65,000 plus) reduced progressivity at the top of the tax system.⁸ And in 2005, the bottom tax rate was lowered to 15%.⁹

High-income earners also benefited during this period from a major reduction in the tax treatment of capital gains (the income or profit from selling an asset such as real estate or stocks)¹⁰ and steady increases in the size of the allowable deduction for RRSPs (only a small fraction of Canadians earn enough to use up all the allowable deduction, which unlike tax credits, lowers tax paid at that person’s top marginal rate).

Provincial personal income taxes also fell for all income groups between 1990 and 2005, and although provincial rates are less than federal rates, the 1990–2005 percentage point drop was similar. In some notable cases, provincial income tax cuts began several years before federal tax cuts. Alberta began to cut income taxes in the early 1990s, followed by Ontario in the post-1995 period. B.C. and other provinces joined in the tax cutting in the 2000 to 2005 period.

Between 2000 and 2002, all provinces converted to a “tax on income” system, which means they now set their own tax brackets for income tax purposes, giving them the latitude to make their tax structures more or less progressive. Historically, provincial income tax was set as a percentage of federal income taxes; provinces could change the percentage, but the progressivity of the income tax system was determined by the schedule of federal income tax (surtaxes could be added but the essential structure was determined federally).

Commodity Taxes

In contrast to personal income taxes, commodity taxes are regressive over the income distribution. Federal and provincial commodity taxes have roughly the same incidence, and the pattern over the 1990 to 2005 period is also very similar, with a small reduction in tax rates in the middle of the distribution. This may reflect (for federal taxes) reductions in tariffs associated with the 1989 Canada-U.S. Free Trade Agreement and the 1995 World Trade Organization. A 1994 reduction in the federal excise tax for tobacco to combat smuggling may also partially explain the lower rates.

Higher tax rates in 2005 for Canadians in the bottom two deciles relative to 1990 contributed to their overall increase in taxes. However, an important caveat is that at the bottom of the distribution, the regressive impact of the GST is offset by the GST credit. For methodological reasons, this latter credit is counted on the income side as part of transfer income, rather than being netted out on the tax side. This means the impact for lower-income Canadians may be slightly less regressive than in practice.

Overall, there was essentially no change arising from the shift to the GST in 1991. The GST generated net revenues similar to the federal manufacturers' sales tax that it replaced, and it shifted the sales taxes somewhat from goods to services.

Corporate Taxes

Combined federal and provincial corporate taxes (this analysis includes both corporate income and capital taxes) show a similar distribution to that reported in VGV, with a moderately progressive distribution up to the top decile, where the incidence becomes more sharply progressive. Canadians in the top decile hold a much greater share of corporate assets than other groups. This pattern is driven by the assumption (also made by VGV) that owners of capital bear corporate income and capital taxes, at least up to a U.S. or world rate (see the Technical Appendix for a discussion). Alternative assumptions that taxes are shifted, in whole or in part, to employees or consumers would make the incidence of corporate taxes, and the overall tax incidence, more regressive in all years.

In addition to the more widely-cited personal income tax cuts, Canada also cut corporate taxes in the surplus era. Federal corporate tax cuts introduced in 2000 and phased in over five years. These tax cuts reduce the statutory rate for all businesses to 21%, the rate previously only applicable to the manufacturing sector.

Provincial governments brought in their own corporate tax cuts, particularly in the 2000 to 2005 period. Provinces also made other tax reductions, including elimination of capital taxes, as well as reduced small business and manufacturing rates. And for both federal and provincial governments, additional corporate tax cuts are in the queue for many years to come.

Payroll Taxes

Combined payroll taxes include federal Employment Insurance and Canada Pension Plan premiums, as well as provincial Workers' Compensation premiums and other payroll taxes. Payroll taxes are progressive for Canadians up to the sixth decile, due to minimum thresholds at the bottom, and regressive thereafter, due to ceilings on contributions. On balance, payroll taxes have increased in the upper-middle income range.

CPP premiums have been increasing to shore up the public pension system. Combined employee and employer contributions amounted to 5.6% in 1998, at which point CPP reforms stipulated an increase in the contribution rate over six years to 9.9% in 2003, and steady thereafter. There is no CPP contribution on the first \$3,500 of earnings, and the ceiling for contributions is \$38,300 of earnings.

Increases in CPP have been offset by Employment Insurance premium reductions between 1995 and 2005. After increasing from a rate of 2.25% in 1990 to just over 3% in 1994, there was a steady reduction in the EI premium contribution rate to 1.95% in 2005. In addition, the ceiling for contributions was reduced from \$43,940 to \$39,000 of earnings in 1996.

Property Taxes

Property taxes are a regressive tax when measured as a share of broad income. Rates have been falling by one-half to a full percentage point depending on the income decile, with the exception of Canadians in the bottom decile, who experienced a slight increase.

Property taxes are levied based on assessed value, typically adjusted so that increases in market value do not translate directly into higher proportionate taxes. Rental income from ownership of property and the imputed rental value of owner-occupied housing are both included as income in the national accounts (under "net income of non-farm, unincorporated business, and rent"). In addition, following VGV a portion of the property tax borne by the corporate sector is assumed to be shifted and is counted as income.

Other Provincial Taxes and Fees

This final grouping includes a host of smaller taxes and fees levied by provincial governments, such as natural resource licenses and taxes, motor vehicle licenses, and liquor and gaming profits. These are not necessarily taxes as we normally conceive of them, but they have been growing a source of revenue, so for completeness they are included.

These other taxes and fees are relatively small in magnitude, but are clearly regressive and show a steady increase, especially between 1990 and 2000, with little change between 2000 and 2005. Increases have been much larger for lower income groups, contributing to the increase in total taxes for the bottom two deciles. They have remained at roughly the same share of income for the top decile.

Putting Tax Reform Back on the Agenda

THIS DETAILED REVIEW of tax incidence in Canada between 1990 and 2005 finds that the tax system has become flatter, with an inverted-U shape. In 1990, the overall tax system was progressive up to the middle of the distribution then relatively flat. By 2005, the system had become less progressive for Canadians in the bottom of the income distribution, and regressive after the middle, with tax rates slightly higher for Canadians in the bottom 10% compared to those in the top 1%. The peak tax rates are in the middle, and are about six percentage points of income higher than the top and the bottom. This pattern violates the taxation principle of vertical equity, leading to the conclusion that tax fairness has been greatly eroded over this fifteen-year period.

It is worth reiterating that the shape of the distribution in any given year is sensitive to the assumptions made and the nature of income and taxes included. What matters is the trend over time, and on this front the evidence is clear: the recent era of tax cuts has made the tax system much less progressive — indeed clearly regressive for the upper part of the distribution — than in 1990. If anything, due to the non-inclusion of accrued capital gains, and relatively conservative shifting assumptions, the estimates in this paper underestimate the regressivity of the tax system at the top end.

Changes to the tax system in recent years have placed a high priority on tax cuts, in particular income tax cuts. The case for income tax cuts has been made on eco-

conomic grounds — that they will enhance economic performance — bolstered by well-cultivated anti-tax sentiments among the general public. The trend towards tax cuts may be waning, as the public has repeatedly stated a preference for greater social spending, but the presence of federal and provincial surpluses has made tax cuts an easy political move.

This has particular importance in the context of calls for further income tax cuts, even a “flat tax” on income. Whereas income tax cuts in general would further reduce the most progressive element of the tax system, a “flat tax” would make the tax system as a whole regressive, and even more so if the lost revenue was replaced by regressive taxes. A full distributional analysis would need to consider the incidence of how these tax revenues are spent to assess inequality impacts.

An exception to the income tax cutting trend is the Harper government’s 2006 reduction in the federal GST, with a promise of a further cut by 2009. Arguably, this tax cut policy is driven by the political factors related to public perceptions around the GST. Many economists who support tax cuts prefer income tax cuts, and chastised Harper for “bad policy” in cutting the GST. This relates to economic arguments about the mix of taxes, and whether some re-shifting is warranted if doing so would improve economic performance. Attempts to raise top income tax rates are also likely to encounter opposition on the grounds that there will be negative economic consequences to doing so.

However, there is little reason to think that restoring a progressive tax system through higher top income tax rates would have such disastrous impacts. Studies that claim the superiority of consumption and payroll taxes over income taxes all *assume* that the former are superior because they do not distort the allocation of resources, and also *assume* that progressive income taxes do distort allocation. This case rests entirely in the realm of theory, not evidence, and while interesting conjecture, should not be considered a guaranteed ticket to stronger economic performance. What matters is whether the current structure of income taxes is having adverse impacts on behaviour, and on these grounds the evidence suggests that, at recent historical levels, they are not having that impact.¹¹

In contrast to the largely theoretical and occasionally dubious arguments about tax mix and economic performance, the real-world experience of the Nordic countries is illustrative. They show that it is possible to have much higher overall levels of taxation in order to pay for more expansive public programs and greater social cohesion (lower poverty and inequality). The big question is whether we, as a society, want to go there. Economics is not the obstacle, but political challenges and moral objections are bigger barriers.

Notwithstanding the potential for raising top income tax rates, in order to raise Canadian tax revenues from one-third of GDP to Sweden’s one-half, a large portion of this increase would likely need to come from consumption taxes. The challenge would be to ensure that revenues are spent in a highly progressive manner, so that any regressive taxation impacts are more than offset. This is more consistent with

the message of the tax mix literature than the simplistic notion that income taxes should be replaced by consumption taxes (with rather large inequality impacts as the pattern of spending would remain unchanged). Claims that Canada relies too much on personal income taxes do not really hold up when we add the Nordics to the comparison.

An essential point for Canada is that there is scope for raising income taxes at the top of the distribution so that the overall tax incidence becomes, minimally, proportional and, ideally, progressive. While there may be some theoretical limit to how progressive upper rates can be, we are not close to rates that would have adverse economic consequences. There is still ample room for raising income taxes on the most affluent by raising the top rate or through the addition of new top tax brackets. Similarly, the preferential treatment of capital gains is unwarranted, and they should be taxed fully as any other form of income.

A potentially divisive matter is corporate taxes. The historical example of the Nordics is that capital is taxed relatively lightly to avoid capital flight from small, open economies. So on one hand, we should be careful of knee-jerk responses that aim to rely on higher corporate taxes to boost fiscal capacity. On the other hand, it is not at all obvious that reducing Canadian corporate taxes would stimulate economic activity. In Canada, we mostly need to be mindful of U.S. rates, and because U.S. corporations get a deduction for taxes paid in other jurisdictions, Canadian corporate tax cuts may simply be a transfer from the Canadian Treasury to the U.S. Treasury.

So while tax mix matters in getting to Nordic levels of social services and income transfers, the immediate challenge raised by this study is the need to restore the progressivity of Canada's tax system for those income earners at the upper end. There is scope for higher income taxes on top incomes, and for measures that would reduce regressive taxes that have been weighing down Canadians at the bottom of the income distribution. These simple measures would go a long way towards restoring tax fairness to Canada's tax system.

Tax Reform in Canada

TAX REFORM has been a serious topic of public policy for 40 years. Calls for reforming the system go back to the Carter Commission report in 1967. Kenneth Carter, a conservative accountant from Bay Street, was hand-picked by the Diefenbaker government, at the request of the business community, to lead a Royal Commission on improving the tax system. Carter shocked his colleagues when, after a thorough review of tax data, he recommended dramatic changes that would enhance the fairness of the tax system — to the detriment of the vested interests of the well-off (McQuaig, 1987).

Among Carter's recommendations was the principle that a dollar earned should be fully taxed no matter what the source of that income. This was a blow to wealthy families who paid no taxes on capital gains, a major source of their income. Fierce opposition arose to the Carter proposals from a well-organized business sector. Changes were made in 1971 to enhance the fairness of the tax system, but were greatly watered down relative to the Commission's recommendations. Capital gains were taxed at half rates rather than the recommended full rates. A decade later, the MacEachen budget of 1981 attempted to make progressive changes in the tax system, only to be abandoned when business threatened and engaged in a capital strike (cranes were literally pulled off of work sites).

The immediate backdrop to the analysis presented in this paper is a series of tax reforms made by the Mulroney government over a seven-year span, beginning in 1985. First, the 1985–86 period introduced changes to the tax system that broadened the tax base, increased rates, and de-linked the tax system from inflation. Second,

the income tax system (personal and corporate) underwent more sweeping reforms as of the 1988 tax year. And third, the introduction of the GST in 1991 capped the reform of the federal sales tax system.

These changes were made in the context of a “war on the deficit” that gained strength during this period, as well as changes in the U.S. tax system brought about by the Reagan administration. This paper does not analyze the impact of those changes, with the exception of the GST in 1991 and the “partial de-indexation” of the tax system that was in place from 1986 to 2000.

In particular, the 1985–86 reforms:

- Introduced a lifetime capital gains exemption in 1985.
- Introduction of federal surtaxes in 1985. A 3% general surtax (a tax on tax payable) was raised to 5% in 1989, then subsequently lowered to 4% in 1992 and back to 3% in 1993. An additional high-income surtax was brought in at a rate of 3% in 1989, then raised to 5% in 1991.
- Implemented an Alternative Minimum Tax, to ensure a certain minimum tax payable for high income households, in 1986.
- From 1986 to 2000, the income tax system was characterized by “partial de-indexation”, which meant that brackets and credits were only adjusted annually by the rate of inflation less 3 percentage points (i.e. no adjustment if inflation was 3% or lower).

Later in the decade, spurred by the 1986 tax reforms in the U.S., the federal government engaged in a similar exercise to ensure that the Canadian tax system was “competitive” (Gillespie 1991). In 1988, federal income tax reform reduced the number of brackets from ten to three, lowered the top marginal rate, converted major exemptions and deductions to tax credits (deductions reduce taxable income whereas tax credits reduce tax payable), increased the proportion of net capital gains that are taxable, and reduced the dividend tax credit.

Finally, federal sales taxes were also increased over the course of the 1980s. The GST was introduced on Jan. 1, 1991 replacing the old Manufacturers’ Sales Tax. Related to this is a phase-out of tariffs on most imported goods from the United States due to the 1989 Canada-U.S. Free Trade Agreement.

For those interested in a longer historical view, Vermaeten, Gillespie and Vermaeten (1995) compare Canadian tax incidence for various years between 1951 and 1988. Their key findings were that: average tax rates for the poorest decile and the top 2% fell between 1951 and 1988, while increasing for most families in the middle; and, that the 1951 system was regressive over the low-income range, proportional through the middle, then progressive at the top. It evolved by 1988 into a system with some progressivity over the bottom income range, slightly regressive after the median, then progressive for the top 1%.

Maslove (1989) assesses the 1980s federal income tax reforms. He finds that the 1985–86 changes increased average taxes for all but the bottom decile. Tax increases were progressive up to the seventh decile, then regressive thereafter. The 1988 reforms lowered average taxes for all groups, with a larger decrease for the top 1%. The net effect of these two reforms in the 1980s was to lower average tax rates for the bottom two deciles, and the top 1%, but with higher average taxes for middle-income groups (peaking at D7).

Technical Appendix on Data and Methodology Employed in this Study

THIS PAPER assesses changes over a fifteen-year period at five-year intervals: 1990, 1995, 2000 and 2005. The choice of dates in five-year intervals works well for this analysis, as 1990 and 2000 roughly correspond to business cycle peaks. In addition, provincial tax cuts began to get underway after 1995 and major federal tax cuts started in 2000. Absent from this study are numerous changes to tax credits implemented by the Harper government starting in the 2006 tax year.

What we are most interested in is how the tax system, and tax incidence, changed over time. Between 1990 and 2005, many changes to the federal and provincial tax systems were made, including the introduction of the GST. This period also marks the advent of federal and provincial tax cuts (following some tax increases earlier in the 1990s) as well as the movement by provinces to establish income tax brackets independently of the federal government.

The methodology is consistent across years so that the numbers can be easily compared and the directions of change are clear. In order to be as accurate as possible, this paper draws on aggregate data from the national accounts. That said, there are a number of methodological complexities in moving forward.

GENERAL CONCEPTS AND DATA SOURCES

The intuition behind this paper comes from pioneering work done by Irwin Gillespie in the 1960s, and most recently, Vermaeten, Gillespie and Vermaeten (or VGV, 1994 and 1995). While this study follows the broad strokes of VGV, there are some important differences that have emerged in the course of developing the methodology and data.

VGV uses a “national” basis, or income received and taxes paid by Canadian citizens wherever they may live, whereas this analysis used a “domestic” basis, or income received and taxes paid within the geographic boundaries of Canada. The same basic distinction underlies the difference between Gross National Product versus Gross Domestic Product. In practice, the difference is small and is not likely to alter any of the conclusions found in this study. Domestic aggregates were simply easier to obtain, given the prevalence of GDP statistics in modern economic accounting.

VGV also draw much more heavily on aggregates generated by Statistics Canada’s Social Planning Simulation Database and Model. The SPSD/M contains a detailed database of 100,000 representative individuals in 40,000 families, drawn from tax, census and survey data sources. It also is an accounting model that analyzes the impact of legislated or proposed programs on the taxes paid by and transfers received by individuals and families. Version 10.2 of the SPSD/M is employed in this paper.¹²

Due to data discrepancies between the SPSD/M and the System of National Accounts (SNA), this study works principally from aggregates in the SNA in order to be more accurate, but generates distributive series from the SPSD/M in order to allocate income and taxes across deciles. One important reason for this is that across different income and tax categories there are some important differences between aggregates in the SNA and SPSD/M with SPSD/M values, typically ranging anywhere from 78% to 109% of SNA values (in the case of property taxes, they are even more understated in the SPSD/M). In other cases, the SPSD/M does not include aggregates of interest. Most of the income categories employed in this study are from the Income and Expenditure Accounts part of the SNA. Tax and transfer aggregates are drawn from the federal government’s Fiscal Reference Tables, which themselves are compiled from SNA data.¹³

Distributive series were generated from the Statistics Canada Social Planning Simulation Database and Model (SPSD/M) for employment income, investment income, other market income, transfers and key tax types. In addition, a series on the distribution of wealth from the Survey of Financial Security (based on data in Morissette and Zhang, 2006, with some interpolations made) is used to allocate inheritances and gifts, and realized capital gains (unfortunately, the SPSD/M series on capital gains contains some lumpy anomalies that make it unsuitable for that purpose). Allocation rules and the aggregates for the years used in this study can be seen in Table A1.

TABLE A1 Totals for Income and Taxes, 1990–2005

Economic families (Thousands)		1990	1995	2000	2005	
		11,259	11,954	12,709	13,557	
Income (\$Millions)	Allocation Rule	1990	1995	2000	2005	% change, 1990–2005
Net Domestic income						
Employment income	employment income	368,891	418,825	545,204	688,150	86.5%
Corporate pre-tax profits	investment income	44,936	76,270	135,978	189,455	321.6%
Interest and investment income	investment income	61,334	57,690	66,631	74,884	22.1%
Accrued net income of farm operators	other market income	2,053	2,702	1,243	1,706	-16.9%
Net income of non-farm, un-incorporated business, and rent	other market income	35,544	46,343	64,944	84,500	137.7%
Total domestic income (national accounts basis)		512,758	601,830	814,000	1,038,695	102.6%
Additions and adjustments						
Employer provided benefits	payroll tax	20,400	32,000	44,000	51,000	150.0%
Realized capital gains	wealth	16,157	15,648	17,386	17,068	5.6%
Inheritances and Gifts	wealth	20,486	30,233	36,988	58,344	184.8%
Shifted commodity taxes	payroll tax	5,607	3,342	4,193	5,375	-4.1%
Shifted property taxes	payroll tax	3,325	4,122	4,543	5,519	66.0%
Total additions and adjustments		65,976	85,345	107,110	137,306	108.1%
Pre-fisc income (domestic income plus additions plus adjustments)		578,734	687,175	921,110	1,176,001	103.2%
Government income transfers	transfers	73,004	98,512	110,487	134,768	84.6%
Broad income (pre-fisc income plus transfers)		651,738	785,687	1,031,597	1,310,769	101.1%
Taxes (\$Millions)						
Federal taxes						
PIT	federal PIT	58,636	63,582	90,220	104,149	77.6%
CIT	investment income federal	10,442	13,372	31,763	32,924	215.3%
Commodity taxes	commodity tax	27,160	31,447	38,339	48,426	78.3%
CPP	payroll tax	10,117	14,456	24,921	38,345	279.0%
EI	payroll tax	13,027	19,497	18,751	17,702	35.9%
Total federal taxes		119,382	142,354	203,994	241,546	102.3%
Provincial taxes						
PIT	provincial PIT	37,535	42,608	53,731	61,834	64.7%
CIT	investment income provincial	8,309	11,576	20,472	19,134	130.3%
Commodity taxes	commodity tax	28,914	33,422	41,934	53,747	85.9%
Property taxes	property tax	26,391	32,717	36,056	43,803	66.0%
Payroll taxes	payroll tax	11,027	12,915	14,015	17,541	59.1%
Other provincial taxes and fees	provincial commodity tax	5,084	7,170	10,670	13,462	164.8%
Total provincial taxes		117,260	140,408	176,878	209,521	78.7%
Total taxes		236,642	282,762	380,872	451,067	90.6%

TABLE A2 Decile Cut-Offs (Dollars)

	1990	1995	2000	2005
D1	1-8,835	1-9,287	1-11,851	1-13,522
D2	8,836-13,001	9,288-14,099	11,852-17,023	13,523-19,007
D3	13,002-18,758	14,100-20,270	17,024-24,088	19,008-26,760
D4	18,759-24,459	20,271-26,867	24,089-31,630	26,761-35,667
D5	24,460-31,270	26,868-34,336	31,631-40,328	35,668-45,528
D6	31,271-39,339	34,337-43,134	40,329-50,698	45,529-57,459
D7	39,340-48,875	43,135-53,733	50,699-63,055	57,460-72,299
D8	48,876-61,098	53,734-66,892	63,056-78,627	72,300-90,560
D9	61,099-81,174	66,893-88,911	78,628-104,573	90,561-120,392
P90-95	81,175-102,821	88,912-112,085	104,574-129,931	120,393-151,545
P95-99	102,822-190,254	112,086-205,653	129,932-231,042	151,546-265,791
P99-100	190,255-Max	205,654-Max	231,043-Max	265,792-Max

Deciles are used because these make for a more appropriate comparison over time. It is difficult to use income groups for time-series comparisons as incomes tend to rise over time, and it becomes difficult to distinguish between changes in real incomes and changes in prices (VGV 1995). If income groups were used, the number of families in each group would change over time and gradually shift upward in the distribution, thereby making the data less comparable than if deciles are used. Deciles and smaller groupings through the *SPSD/M* are created from the more standard Statistics Canada “total income” concept, equal to the sum of market income (all employment income, investment income and other income) and transfer income. Decile cut-offs for the various years are shown in Table A2.

Economic families are the primary unit of analysis in this paper. An economic family is defined as a group of individuals sharing a common dwelling and related by blood, marriage (including common law relationships) or adoption/guardianship. Unattached individuals are included as economic families of one person, so the full population is covered. In addition, a number of families with negative income have been dropped from the analysis. These families would normally be part of the bottom decile but are a poor fit as they are usually reflecting a major loss in a particular year through self-employment income or some other manner.

Because families are used, the distribution incorporates an adjustment for family size. This is a standard procedure that adjusts income to account for differences in family size across households but in a way that recognizes economies of scale at the household level (i.e. that two people living together can do so at less expense than two people living each on their own). The adjustment (or “equivalence scale”) divides income by the square root of the number of family members. For example, a \$90,000 income for a family of four would be divided by the square root of four, or two, for

an adult-equivalent income of \$45,000 — this says an income of \$90,000 for a family of four is “equivalent” to an income of \$45,000 for a single individual.

INCOME AND TAX CONCEPTS

Table A1 shows the different sources of income and taxes for each of the years studied and the aggregate figures for each year. On the surface, estimating the percentage of income paid in taxes and showing the distribution would appear to be a straightforward exercise. In practice, it is more complicated and involves making choices about what to include for taxes and incomes, plus making assumptions and imputations to overcome gaps in data. Statistics Canada typically estimates only personal income and a limited set of taxes (for example, in its annual *Income in Canada* publication). For a broader conception of income and taxes, such as corporate profits and taxes and property taxes, one must go to more detailed tax incidence studies.

Like vgv and other historical tax incidence studies, this paper attempts to be as comprehensive as possible in capturing all taxes and sources of income. In the tax literature, an income concept called *broad income* has been used because it is the measure of income that best reflects *command over resources*. Income is generally considered to be the flow, usually stated as an annual return, to an asset, whether wages and salaries (the return to labour effort and skills), profits (the return to investment in buildings, machinery and equipment), or rent (the return from ownership of land and residential buildings). In addition, many economists would add inheritances and gifts, employer-provided benefits and capital gains as sources of income, even though these are generally not (or are lightly) taxed. Finally, income transfers from government are included as income because they represent a large portion of the incomes of those at the bottom of the distribution.

All taxes, personal and corporate, direct and indirect, are included on the tax side of the ledger. Some argue that near-taxes, such as Canada Pension Plan premiums should not be counted as a tax. After changes made to the program over the past decade, CPP is a self-financing program with benefits linked to lifetime contributions. A similar, though looser, argument can be made for Employment Insurance premiums. However, these programs are important parts of the social security system, and we take the perspective that it is better to be as comprehensive as possible by leaving them in the analysis.

All of these decisions about what to include as income and taxes and what shifting assumptions (see below) should be made, means the calculated incidence of the overall tax system can vary from one study to another. For instance, in developing its concept of Tax Freedom Day, the Fraser Institute includes all corporate taxes but not all of corporate income upon which those taxes are based. This artificially lowers income relative to taxes, leading the Fraser Institute to calculate higher tax

rates that make taxes seem higher than they are, and thus push TFD further into the year (see Brooks 2005).

What matters for historical comparative purposes is that the same methodology is applied evenly, so that the direction of change is transparent (i.e. the same basic trends in the tax system would have been visible even if different assumptions were made in all years).

The System of National Accounts aggregates include some of the “additions to income” used by vgv in their analysis. Employment income includes wages and salaries, fees, tips, bonuses and taxable allowances, but also “supplementary labour income”, which includes employer contributions to pension funds and employer share of payroll taxes. The latter is added to income in vgv as a shifting assumption that these payroll taxes reduce employee income received. This common shifting assumption is thus already embedded in the sna employment income aggregate. More detail on shifting assumptions is provided below.

A departure from vgv is that they add to income accrued capital gains on shares but do not include retained earnings. For reasons explained in more detail below, accrued capital gains (implied income from the rise in value of an unsold asset) are not included in this study, but realized capital gains (income from the sale of an asset) are. Retained earnings are included as they do represent income (even if not received directly) to the owners of capital.

“Interest and (miscellaneous) investment income” includes most of the income from private and public sources but excludes interest on the public debt (considered a transfer of income rather than factor income from a productive service). This category also includes items that are added to income in vgv: imputed interest on deposits with chartered banks; investment income received on behalf of persons by insurance companies and trustee pension funds. Part of the interest on consumer debt related to the purchase of goods (as opposed to housing) is also not included as it is treated as a transfer in the national accounts.

“Accrued net income of farm operators” includes another addition to income from vgv: the imputed value of farm output consumed by the farm family. Similarly, “net income of non-farm, unincorporated business, and rent” includes paid and imputed rental income from the ownership of residential property as well as the net paid rents from the ownership of non-residential property. This item also includes the earnings of working proprietors and the net income of independent professional practitioners, such as doctors, lawyers, dentists and engineers.

The above plus corporate pre-tax profits sum to “total domestic income”. Next, a few additions to income are made for items not in the national accounts. These include employer-provided benefits, realized capital gains and, inheritances and gifts. Aggregate estimates for employer-provided benefits are from the Canadian Life and Health Insurance Association (personal communication).

Aggregates for inheritances and gifts based on the stock of total wealth (net worth, or total assets less total liabilities) as estimated by the sna National Balance Sheet

Accounts. vGV (1994) calculate that 1.2% of the total stock of net worth is transferred as inheritances and gifts in any given year, and this study assumes that to be the case for each year studied. One modification has been made to the wealth distributive series: since the bottom decile by wealth has negative net worth, it is assumed that they simply receive zero inheritances and gifts, or capital gains, rather than negative amounts.

While realized capital gains are included in the broad income concept, accrued capital gains (for real estate and financial assets) are not considered for a number of reasons. Whether accrued capital gains should be treated as income in the first place is of some controversy. The National Accounts do not include either realized or accrued capital gains, as the SNA attempts to measure the annual income flows arising from assets, rather than the increase in the value of assets themselves.

Realized capital gains are included in this paper because they represent real dollars in sellers' pockets upon which tax is paid. The omission of realized capital gains would be conspicuous in a tax incidence study. Accrued capital gains, on the other hand, are more notional, based on the idea that the annual increase in the value of assets (unsold) constitutes an increase in command over resources. In a tax incidence analysis, accrued capital gains are sometimes included, largely for annual studies. However, because accrued capital gains constitute a substantial addition to income (or deduction from income if asset prices fall), annual variations matter a great deal. In the five-year intervals are used for the paper, their consideration is problematic, especially in regards to the state of stock markets in 2000 and real estate markets in 2005.

Rounding out the additions to income, adjustments must be made for the business portions of commodity taxes and property taxes (more on these "shifting assumptions" below). It is generally assumed in tax incidence studies that these taxes are essentially costs passed along in the form of lower employee wages. It makes more sense that they would be passed along through higher consumer prices, but to be consistent with the literature, they are assumed to reduce labour income, and are allocated on the basis of payroll taxes. Ultimately, both tax portions combined are relatively small so that if they were allocated based on consumption, there would be little difference to the conclusions of the study.

The sum of the above is known in the literature as "pre-fisc income", as it is the sum of all income prior to any activities by government to transfer income or to provide public services. Following vGV and others, transfer payments (including social assistance, unemployment insurance, Canada Pension Plan benefits and smaller transfers like the GST tax credit) are added in order to create the "broad income" concept. vGV argue that this concept is more relevant for policy analysis because transfer payments constitute a substantial portion of income for those near the bottom of the income distribution, but families do not generally consider the value of public services as income.

The most comprehensive concept of income also would add the value of public services. The concept, “post-fisc income” is not considered in this paper due to difficulties in measuring and assigning allocations for different public services. In general, pre-fisc income will have a more regressive distribution than broad income, and post-fisc income will have a more progressive distribution.

All federal, provincial and local taxes are included on the tax side. Because local governments are, constitutionally speaking, creatures of the provinces, and in some cases do not have full autonomy over the property tax base (unincorporated locales pay provincial property taxes), all property taxes are considered as provincial taxes. The federal and provincial governments each tax personal and corporate income, commodity taxes (federal taxes include customs duties, excise taxes and the GST; provincially, retail sales taxes are applied to all sales, plus excise taxes), payroll taxes (federally EI and CPP, and four provinces have their own payroll taxes). Finally, provincial governments levy a number of fees and smaller taxes.

SHIFTING ASSUMPTIONS

Another major issue in a tax incidence study is the choice of *shifting assumptions*. The assumption is that people will attempt to pass along the taxes they have to pay onto others, if they can. Most people cannot shift their income or sales taxes elsewhere (an exception may be certain high-end professionals), but businesses will attempt to shift their taxes onto consumers through higher prices and/or onto workers through paying lower wages. Ultimately, there is very little empirical evidence about how much particular taxes are shifted, although there are theoretical conventions that are followed. In this study, we use standard shifting assumptions as found in other tax incidence studies.

In cases where a tax is assumed to be shifted, say, onto employees through lower wages (a common shifting assumption), we must then make an upward adjustment to income. What we are saying is that income would have been higher had the tax (even though paid by a corporation) not existed; therefore, a worker’s actual income is the wage plus the value of the indirect tax, even though that never appears as a deduction on their pay slip. Shifted commodity and property taxes can be seen in Table A1; employer-paid payroll taxes do not appear as a separate item as they are already added back to the employment income concept utilized in the national accounts.

Corporate taxes are allocated to owners of capital based on the distribution of investment income. A standard theoretical proposition in the literature is that corporate owners pay corporate taxes only up to the “world rate” then shift the remainder to consumers or employees. In the VGV (1994) analysis of the 1988 tax system they consider the US rate to be the effective world rate and note that since Canadian and US rates are very similar that the full incidence is borne by corporate owners.

This presumption is accepted in this paper as well, although it is questionable whether the “world rate” hypothesis actually holds in the real world. Furthermore, the hypothesis is based on highly mobile international capital, whereas in many sectors capital is less than fully mobile (non-tradables, resources) and the international mobile capital may represent a small share of Canadian industry.

Consumption and property taxes paid by business are assumed to be shifted to workers through lower wages. In *VG V* (1994), business-paid consumption taxes amount to 10% of total federal and provincial consumption taxes. This ratio is carried forward for 1990. In the subsequent years, the *GST* is in place, which as a value added tax means that consumption taxes paid on inputs are not paid by business, so only provincial consumption taxes (at the same assumed 10% rate) are added back to income. For property tax, the share of the total from *VG V* is 12.6%, which is assumed to be constant over the subsequent years studied.

A final consideration for tax shifting is that Kesselman and Cheung (2004) suggest that some portion of high-end professional labour may be shifted onto consumers. This is not overtly assumed in this paper. However, it could be argued that it has been implicitly considered through the choice of the allocation rule by “other market income” which is slightly more weighted to the top decile than employment income, but not nearly as much so as investment income.

Notes

1 See Lee, 2004 for an overview.

2 See also studies by Block and Shillington, 1991, and Ruggeri, Van Wart and Howard, 1994.

3 Note that these are percentage points of *broad income*. The percentage reduction would be much higher if measured as a percentage of market or taxable income.

4 There are a number of alternative, but incorrect, reasons for the increase in rates at the bottom of the distribution. “Bracket creep” is not a good explanation, as personal income tax is very small for this bottom group, and rates changed very little over this period for the bottom two deciles. Another possibility is that the economy in 2005 was much better, so more people at the bottom are working and earning income and paying tax on that income. This explanation is not generally supported by other data. Andrew Heisz’s recent study of inequality, for example, shows very little improvement in family incomes near the bottom of the distribution (2007:33). Still another possibility is that (non-taxable) transfer payments fell (due to social assistance and EI cuts) relative to other, taxable sources of income. Transfer payments did indeed fall from about 67% of broad income in 1990 to 64% in 2000 and to 62% in 2005, but this could account for only a small part of the shift in tax rates that took place.

5 See Kesselman and Cheung, 2004.

6 In a paper for the Caledon Institute, Ken Battle estimated that this policy had led to additional revenues of about \$1 billion per year.

7 Federal budget 1998 eliminated the 3% general surtax for incomes below \$50,000, and partially reduced it for incomes \$50–65,000, and the general surtax was eliminated completely in 1999. The inclusion rate for capital gains was lowered from 75% to 67% as of February 2000, and again lowered to 50% as of October 2000.

8 The 2000 federal budget lowered the middle income tax bracket to 24% from 26% as of July 1, 2000. In October 2000, a pre-election mini-budget, which served as the 2001 federal budget, further modified and lowered tax brackets. As of the 2001 tax year, the bottom 17% rate was lowered to 16%; the 24% rate was lowered to 22%; a new 26% rate on income between \$60–100,000 was created; leaving the 29% rate applicable to incomes over \$100,000. The 5% high-income surtax (\$65,000 plus) was eliminated for incomes \$65–85,000 as of July 1, 2000, and as of 2001, was completely eliminated.

9 At the end 2005, in a pre-election mini-budget, the Martin government lowered the rate in the bottom bracket to 15%, and increased the personal exemption (ie. the threshold for paying income tax). This was partially reversed in 2006, when the newly elected Harper government increased the rate in the bottom bracket to 15.5% (higher rate applied as of July 1, 2006, thus the rate for 2006 was 15.25% and for 2007, 15.5%), brought in a range of tax credits, and a one percentage point reduction in the GST.

10 Capital gains on principal residences are exempted from tax, while other asset sales are taxed but at less than the full value of the gain. This “inclusion rate” for capital gains was lowered from 75% to 67% as of February 2000, and again lowered to 50% as of October 2000 (i.e. for a \$1,000 gain from selling stocks, only half of this value is treated as taxable income). This restored the 50% inclusion rate for capital gains that had applied from 1972 through the 1988 tax reforms.

11 See Lee (2004) for a review of this literature.

12 According to the Statistics Canada web site: “The Social Policy Simulation Database and Model (SPSD/M) is a micro computer-based product designed to assist those interested in analyzing the financial interactions of governments and individuals in Canada. It can help one to assess the cost implications or income redistributive effects of changes in the personal taxation and cash transfer system. The SPSD is a non-confidential, statistically representative database of individuals in their family context, with enough information on each individual to compute taxes paid to and cash transfers received from government. The SPSM is a static accounting model which processes each individual and family on the SPSD, calculates taxes and transfers using legislated or proposed programs and algorithms, and reports on the results.”

13 More detail than provided here is available in Statistics Canada’s *A User Guide to the Canadian System of National Accounts*, 1989.

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