Challenges in Shifting Canadian Taxation toward Consumption

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ABSTRACT
Tax policy analysts in Canada have widely promoted shifting revenues away from the personal income tax and toward the consumption-based GST/HST or shifting the personal tax base further toward consumption. This study challenges the “consensus expert” policy recommendations by critically assessing the theoretical and empirical evidence relating to behaviour in the areas of work effort, saving, investment, economic growth, efficiency, and tax compliance. The study further examines the failure of the consensus views to account adequately for the regressive nature of the prescribed policy changes. Most of the consensus expert analyses ignore the fact that the Canadian personal tax is already highly oriented toward a consumption base except for the highest earners and wealth holders. Capital incomes that remain taxable in the personal income tax are highly concentrated in the highest income groups, and these constitute the largest departure from consumption-tax treatment.

We conclude that the proposed reforms are deficient in their claims of large economic gains for incentives, efficiency, and growth. Most of the asserted economic gains are either overstated, controvertible, or nonexistent. Careful review of the cited theoretical and empirical evidence reveals lack of robustness or vulnerability to key assumptions. Moreover, the reforms would adversely affect the equitable distribution of the tax burden unless accompanied by steepening of the personal tax rate schedule. This study examines the requisite conditions and implications of making the proposed reforms distribution neutral as well as revenue neutral. Even if the reforms are structured in a distribution-neutral way, any economic efficiency gains would be captured primarily by high earners and wealth holders now subject to limits on their consumption-based tax treatment.

KEYWORDS
Tax mix, consumption taxation, income taxation, personal tax reform, saving incentives
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INTRODUCTION
Among Canadian tax policy experts in academic, think-tank, and business arenas, a near consensus supports a shift in the revenue mix away from personal income tax and toward greater reliance on indirect consumption taxes like the GST and HST. For example, the experts expressed near-unanimous opposition to the GST rate cuts, with the typical comment being that a cut in personal income taxes (PIT) would have been far preferable. Similarly, expert opinion has widely supported reforms to the PIT—such as expanded access to Registered Retirement Savings Plans, Registered Pension Plans, and Tax-Free Savings Accounts—that would make its base more consumption-oriented. This “consensus expert view” has relied on diverse arguments and evidence to support the benefits of the proposed tax reforms in terms of enhanced incentives, efficiency, and economic growth. However, these analyses have often failed to examine the evidence from a sufficiently critical stance. Moreover, these analyses have typically neglected or downplayed the adverse distributional impacts that could result from such reforms.

In this study we begin by reviewing the claims of Canadian tax experts with respect to the mooted tax reforms and find that almost all have focused on efficiency issues to the neglect of vertical equity. We discuss how the personal income tax in Canada already embodies a tax base much closer to consumption than income for the great majority of taxpayers other than those at the highest income and wealth levels. We then critically assess the evidence on key economic claims of the advocates and find that most of the claims are either overstated, controvertible, or without solid foundation. Finally, we evaluate concrete proposals that would make the Canadian tax system more consumption-oriented—either by shifts from personal tax toward indirect taxes or by changes to the base of the personal tax system. In that exercise, we examine the requirements for policy reforms that would maintain distributional neutrality as well as revenue neutrality.

CONVENTIONAL EXPERT WISDOM
The federal government’s two cuts to the GST rate in 2006 and 2008 have been criticized by a near-unanimity of Canadian economists in both academe and think tanks. CBC News issued a report with the heading “Economists Dump on Harper’s GST-lowering Plan” and
quoted academic economist Jim Davies’ description of the move as “stupid, stupid, stupid, stupid”—a refrain echoed by other analysts and media commentators. Bill Robson of the C.D. Howe Institute was quoted, “From an economic point of view, it wouldn’t be my first choice. If you want tax cuts that are going to promote work, going to promote saving, help us invest more and raise living standards in the future, the GST is not the tax you would go after” (CBC News 2005). University of Toronto’s Roger Martin asserted, “How about Harper’s GST reduction? It is equally in the dumb category. This is a reduction of the smartest tool in the tax arsenal” (Martin 2005). The Globe and Mail later reported that “all 20 [surveyed] economists said other tax cuts would be better for the country than trimming another percentage point from the goods and services tax … It’s a remarkable show of unanimity on public policy.”1 Economist Don Drummond, then with Toronto-Dominion Bank, stated that “The GST rate cuts don’t move that agenda … to make [Canada’s] workers and companies competitive … forward at all” (Grant 2007).

Shifting the tax mix toward greater reliance on the GST/HST and reduced use of other taxes—particularly the PIT and corporate income tax—has been a perennial theme of Canadian policy analysts since long before the GST rate cuts and continuing to this day.2 Two economists writing for the C.D. Howe Institute in 1999, Jean-Yves Duclos and Julie Gingras, argued for cutting PIT rates while maintaining indirect consumption tax rates, which would unavoidably reduce overall tax progressivity. They asserted, “Because income taxes are assessed on the returns to savings as well as on wages, the Canadian economy also experiences less capital investment and lower productivity and income growth than it could” (1999, 2); similar arguments appear in most of the later studies advocating a tax mix shift. Economist Ken McKenzie (2000) examined the replacement of Alberta’s single-rate income tax with a new provincial sales tax. While estimating significant economic gains, he reported that even with a non-progressive PIT (other than the basic exemption) the change would be regressive. In a revenue-losing variant that

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1 Opposition Liberal leader Stephane Dion claimed in a speech in October 2007 that “there is scarcely an economist on the planet who believes that taking another point off the GST is better than cutting income taxes” (cited in Grady 2008).

2 As we note later, the economic evidence does support a shift away from corporate income taxes and to GST in terms of efficiency and growth, but our focus in this study is proposals to shift away from personal income taxes.
included a refundable sales tax credit, McKenzie found that although the lowest income classes could be insulated from losses, the gains from the reform still were skewed strongly in favour of higher income groups.

Other Canadian cases advocating a tax mix shift include that of Jack Mintz for “a sharp increase in sales tax revenues (sales and excise) to reduce income taxes” combined with “a major expansion of RRSP and pension limits to allow for greater accumulation of wealth …” (2003, 49-50). Economist Bev Dahlby’s analysis indicated substantial economic gains from shifting taxes toward consumption (through either the tax mix or direct tax reform) and acknowledged the reduced progressivity that would result. However, he argued that tax incidence should be measured over longer periods than annual, which makes consumption taxes appear less regressive, and he further asserted, “Redistributive policy objectives should be pursued through government expenditures rather than taxes because redistributive expenditures are more cost effective than highly progressive taxes” (2003, 102). The advocacy of a tax mix shift based on the presumed greater economic efficiency of consumption taxes has been echoed in studies of think-tank analysts at the Institute for Competitiveness & Prosperity (2005), the Fraser Institute (Clemens et al. 2007), and the Conference Board of Canada (Hodgson 2012) as well as two recent studies by economists expert in tax policy released by the University of Calgary’s School of Public Policy (Cnossen 2012; Dahlby 2012). With rare exception, distributional implications of the proposed tax reform have been neglected or minimized.

Shifting the base of the PIT further toward consumption has been a similarly popular theme for tax policy analysts in Canada. These proposals almost invariably have not been couched as revenue neutral reforms, and they typically have ignored or dismissed the distributional impacts. One example is Herbert Grubel’s (2003) proposal to cut the tax

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3. This recommendation echoed his earlier statement in Mintz (2001, 90). While Mintz noted that “[personal] expenditure taxes can be made progressive if desired” (2003, 47), his study did not cite the increased upper bracket marginal tax rates that would be needed for distributional neutrality.

4. This point was first established quantitatively by Davies et al. (1984).

5. Cnossen (2012, 18) approvingly cites Dahlby on this point while claiming elsewhere that his analysis assumes distributional neutrality.

6. Dahlby’s analysis supports a shift of revenue from provincial corporate income taxes toward either PIT or sales taxes.
on capital gains to zero; he dismisses the objection that this would reduce vertical equity by arguing that the apparent high concentration of capital gains among the top income groups is “quite misleading because the income used to classify families includes capital gains and these gains often are a rare event” (2003, 149).

Another example is recurrent proposals to raise RRSP and RPP contribution limits on the argument that the highest earners should be able to save for retirement with the same consumption tax treatment as others. These proposals rarely suggest that the upper bracket tax rates should also be increased, thus implying reduced effective tax progressivity. The adverse distributional impact of raising the TFSA contribution limits is dismissed in a recent article by Finn Poschmann with the apt title “Why We Should Not Fear Expansion of Tax-Free Savings Accounts.” He argues, “the fact that an economically beneficial tax policy choice offers benefits to high-income households as opposed to low, does not disqualify it” (2012, 396).

In fact, the view on these issues has been less than unanimous among Canadian economists. A couple have expressed qualified support for the GST rate cuts, based on several considerations: 1) reducing a regressive tax such as the GST has a progressive impact that is most favourable for lower-income households; 2) economic differences between the tax base of the GST and the PIT are not substantial except for the highest earners and wealth holders; 3) a lower GST rate moderates the incentive for tax evasion particularly for services supplied directly to homeowners; 4) economic distortions between taxed and untaxed items such as restaurant meals and groceries are relieved; and 5) a GST rate cut facilitates harmonization of provincial sales taxes with the GST, which promotes real investment and productivity growth (Kesselman 2006, 2007; Grady 2008, 2009). In their original analysis that led to the TFSA, Kesselman and Poschmann (2001)

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7 Curiously, Grubel seeks to support his contention by citing figures on the amounts of capital gain income reported by families with less than $50,000 of non-capital-gains income in a single year, 1992. A more telling measure would be the concentration of capital gains income within total incomes over an extended period.

8 A few examples of Canadian analysts advancing such proposals are Fortin (2000), Mintz (2001, 2003), Dahlby (2003), Kesselman (2004), and Clemens et al. (2007). Arguments have also been made to raise the age at which withdrawals must begin from tax-deferred savings plans and to reduce the rate of such mandatory withdrawals (Robson 2008).

9 Economists Smart and Bird (2007) described the GST cut as a desirable way to facilitate provincial sales tax harmonization in a policy package that included a cut in federal fiscal transfers.
identified the issue of distributional impacts and noted a trade-off between base changes and tax rate changes particularly for taxpayers in the top bracket. Concerns about the significant adverse distributional impacts of the proposal to double the TFSA contribution limits have been articulated by Armine Yalnizyan (2011) and Kesselman (2012). Another example is Robin Boadway’s (2011) advocacy of moving the personal tax fully to a consumption base but in a reform package that includes a more highly progressive rate structure and a lifetime tax on inheritances.

In contrast to the relative neglect of vertical equity among Canadian policy analysts seeking a more consumption-based tax system, this issue has received much closer scrutiny among analysts elsewhere. In the United States, economists have investigated the distributional aspects of shifting the PIT fully to a consumption base (for example, Altig et al. 2001). They have also critiqued on distributional grounds American proposals to replace the federal PIT with a flat-rate tax based on consumption principles, a USA (unlimited savings allowance) personal tax, or a national retail sales tax (studies in Slemrod 1999). In Australia, economists have assessed analytically and quantitatively the distributional impacts of shifting the tax mix between direct and indirect taxes (Warren 1987, 1990; Creedy 1992; Apps 1997) including an extensive monograph on the topic (Creedy 2000). Analysts have also estimated the regressivity of indirect taxes for five European countries and found that the adverse distributional impacts of a direct-indirect tax mix shift could be offset by raising PIT rate progressivity (Decoster et al. 2010).

**BASE OF THE PERSONAL INCOME TAX**

While Canada’s direct tax on persons is called a personal “income” tax, the base of the tax is in fact much closer to consumption than income for the great majority of taxpayers. The reasons for this are a host of provisions for deferring tax on savings, exempting capital incomes from tax, and reduced rates of tax on particular types of capital incomes. As a result the personal tax base bears relatively heavily on labour earnings and relatively

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9 Their study reported that indirect taxes (including excise taxes and broad value-added taxes) were regressive with respect to disposable incomes (because of savings patterns) but progressive with respect to annual expenditures (because of exemptions and zero-rating of necessities).
lightly on savings and capital incomes. This situation has major implications for proposals to shift the tax mix away from PIT and toward indirect taxes on consumption or to shift the PIT base further toward consumption, since the PIT base already is close to consumption. The exceptions are the highest earners and largest wealth holders, for whom the use of consumption-type treatment in the PIT is more restricted. This point also explains why the proposed tax reforms would extend disproportionate benefits to top earners and why distributional impacts pose concerns. We next describe the major methods by which the Canadian PIT base approaches consumption.

**Tax Deferral Method**

Tax deferral is a basic method for sheltering savings from income-tax treatment in the PIT, for both Canada and most other countries.\(^{11}\) The ostensible purpose is to encourage personal savings for retirement by deferring tax on a portion of labour earnings that are saved and applying tax only when the funds are withdrawn to finance spending. Since the definition of “income” for economic and tax purposes is:

\[
\text{Income} = \text{Consumption} + \text{Saving}.
\]

rearranging the income formula yields:

\[
\text{Consumption} = \text{Income} - \text{Saving}.
\]

That formula describes the tax-deferral method of implementing a consumption-based tax: take total income and allow a deduction for saving. When the individual withdraws savings, or “dissaves,” that amount is added to his income for a measure of current consumption.\(^ {12}\) Beyond deferring tax on the amounts saved, this method also eliminates the effective tax on the normal rate of return earned in tax-deferred accounts.

Canada’s largest vehicles for tax-deferred savings are the individual Registered Retirement Savings Plans (RRSP) and the workplace-based Registered Pension Plans

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11 This method is sometimes called “cash flow” taxation. Most analysts would restrict assets such as closely held businesses to the tax deferral treatment (and exclude them from tax-prepaid treatment) on account of the ease of shifting factor payments between wages and returns to capital.

12 In the second formula, dissavings are negative savings, and because of the negative sign they enter as an addition to income for tax purposes.
(RPP). Relative to income-tax treatment, these schemes are estimated to have reduced federal revenues in 2011 by $9.9 billion and $15.6 billion, respectively (Canada Finance 2012, 18). To avoid unlimited tax relief for the highest earners, the PIT limits the amount of savings afforded tax-deferred treatment. The ceiling is 18 percent of the individual’s “earned income”—which includes net rental income, net business income, and gross employment earnings—with an annual dollar limit of over $23,000 in 2013. Any entitlement that the individual does not utilize in a given year can be carried forward for use in future years. For an individual who contributes to a tax-deferred scheme at the full 18 percent of earned income, the dollar ceiling equates to annual earnings of nearly $130,000. Thus, anyone earning less than that amount is currently unconstrained in their ability to save on a consumption-tax basis unless their saving rate is extremely high, and proposals to raise the dollar ceiling would potentially affect only the fewer than 4 percent of tax filers with annual earned incomes above that amount.

Indirect sales taxes such as the federal Goods and Services Tax (GST), federal-provincial Harmonized Sales Taxes (HST), and provincial retail sales taxes also use the deferral method for taxing consumption. No sales tax is paid when the funds are initially earned through labour or business, no sales tax is applied to accruing investment income, and sales tax applies only when the initial funds plus accrued investment returns are finally spent. Thus, proposals to shift the overall tax mix away from PIT and toward greater use of sales taxes will also shift the basis for taxation toward consumption to the

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13 Additional tax-deferral vehicles in the PIT are the Deferred Profit Sharing Plan (DPSP) and the Registered Retirement Income Fund (RRIF). Registered Educational Savings Plans differ from both the tax deferral and the tax exemption method; they permit no deduction for contributions, but tax on investment returns is deferred until the funds are disbursed and face only the rate of the recipient (who normally can claim tax credits for tuition and related educational expenses to offset the tax liability). Thus, to the extent that little or no tax may be due upon withdrawal, RESPs do approach tax-prepaid treatment.

14 For 2013 the dollar limit for RRSP contributions is $23,820 based on income in the previous year, and the dollar limit for RPP contributions is $24,270. An individual’s total limit is based on their RRSP plus RPP contributions plus their employer’s RPP contributions on their behalf.

15 If total federal plus provincial income taxes plus employee contributions for CPP and EI are about 30 percent of gross income at the $130,000 earning level, then the 18 percent limit equates to a savings rate exceeding 25 percent of disposable income (0.18/0.7).

16 See the later Table 2 for the distribution of tax filers by total income assessed on their returns.
extent that the PIT contains partial elements of income tax. However, to the extent that
the PIT is already highly consumption-based for the great majority of taxpayers, this shift
entails a relatively small move toward consumption taxation except for top earners.

**Tax Prepayment Method**

The tax prepayment method\(^\text{17}\) of applying consumption taxation derives from an
alternative definition of income:

\[
Income = Income \text{ from labour} + Income \text{ from capital.}
\]

By exempting from tax the income from capital—which represents the return on savings
—the taxation of labour income alone is equivalent to consumption taxation. In effect, the
tax on future consumption is prepaid at the time the funds are initially earned. However,
unlike the tax deferral method, the tax prepayment method relieves from tax not only the
“normal” rate of investment return but also any “supernormal” returns. In contrast, the tax
deferral method taxes the full return to capital including any supernormal component at
the time of expenditure; yet, it also subsidizes savings that yield a subnormal rate of
return.\(^\text{18}\) The prepayment method can be simply applied within a direct PIT, although it
requires designated accounts to impose limits on the sums and types of assets receiving
the tax-exempt treatment.

The Tax-Free Savings Account (TFSA) introduced in 2009 is Canada’s primary
formal vehicle using the tax prepayment method. The TFSA provides individuals an
annual $5,500 contribution entitlement, with any unused room carried forward for use in
future years. Contributions receive no PIT deduction, but accruing investment returns are
tax-free, as are any subsequent withdrawals. Provision of TFSA means that even fewer
higher earners are subject to taxation on their investment incomes, although most higher
earners find it advantageous to exhaust their RRSP/RPP limits prior to making TFSA

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\(^{17}\) We use the terms “tax prepayment” and “tax-prepaid,” while some other analysts have used the
terms “exempt-yield,” “tax exemption,” and “wage tax.”

\(^{18}\) See Alarie (2009) and Kesselman (2009) for discussion of the appropriate tax treatment of
supernormal investment returns and the relative desirability of utilizing the tax deferral versus the
tax prepayment method.
contributions. \(^{19}\) Savers at low and moderate incomes face nil or low effective PIT rates, reducing the value of deductions for tax-deferred savings, which makes TFSAs relatively attractive for this group. However, the current TFSA limit is more than adequate for most savers at low and middle incomes, so that the primary beneficiaries of proposals to raise TFSA limits would be the highest earners and wealth holders. Taking account of both the RPP/RRSP limit and the $5,500 annual TFSA allowance and assuming saving at 15 percent of gross earnings, consumption-tax treatment extends up to annual earnings of $195,000, which excludes fewer than 2 percent of tax filers under the current system.

The tax prepayment method is also applied with the lifetime capital gains exemption of $750,000 for qualified small business shares and eligible farm properties. Note that this tax exemption can shelter labour earnings embedded over the years in the value of the property as well as the returns to capital \(\textit{per se}\). Another major, albeit informal, savings vehicle enjoying tax-prepaid treatment is owner-occupied housing in Canada; not only are capital gains upon the sale of a principal residence tax-free but so are the implicit incomes in the form of rent-free housing services. Similarly, the imputed incomes derived from the services of consumer durable goods such as household furnishings, appliances, and cars are free of PIT and thus consumption-taxed via the tax prepayment method.

**Reduced Tax Method**

For individual holdings of financial assets outside RPP/RRSP/TFSAs, business assets, and other real assets besides homes, the Canadian PIT offers further departures from income-tax treatment that move the base toward consumption. First, capital gains on most financial and real assets are taxed at rates that are just half of the individual’s marginal rate for PIT, and this tax is deferred—often for many years—until the year of sale. \(^{20}\) This treatment moves such gains about halfway from income toward consumption using the

\(^{19}\) Of course, over a long transition period, more higher earners will be subject to income taxation on their non-tax-sheltered wealth accumulated prior to the introduction of TFSAs.

\(^{20}\) This large tax preference is offset by the fact that tax is imposed on the nominal gain—including inflation—whereas an ideal income-based tax would include only the real gain after adjusting for inflation. However, for most high wealth holders, the value of the half rate of tax plus deferral far outweighs the lack of inflation indexation in periods of moderate inflation.
tax-prepaid method. Second, dividends received outside of tax-sheltered accounts from Canadian corporations are granted dividend tax credits that significantly reduce the PIT burden. While these credits are intended to avoid the “double taxation” of dividends at the corporate and individual levels, in a small open economy such as Canada the corporate tax is likely borne mostly by workers and consumers rather than shareholders. Thus, shareholders are reimbursed at the PIT level for corporate income taxes that they may not actually be bearing. Third, the Canadian PIT allows relatively unrestricted deductions of interest cost for leveraged holdings of financial assets; this can move the system further beyond a neutral consumption base to one that subsidizes rather than penalizes savings (which is like a negative tax on investment income).

**Effective Tax on Capital Incomes**

This panoply of PIT provisions that move the base toward consumption through various methods greatly reduces the effective taxation of capital income at the individual level. A study based on 1996 Canadian income tax returns found that “only about a quarter of personal investment income is subject to income tax” (Poddar and English 1999, 1284), with the balance receiving consumption tax treatment. This estimate would be further reduced by considering subsequent developments: 1) reduction in the capital gains tax inclusion rate from 75 to 50 percent; 2) increase in the dollar limits for RPP/RRSP contribution limits of about 70 percent versus a roughly 45 percent increase in average weekly earnings; and 3) a 50 percent hike in the lifetime capital gains exemption in 2007. As a result, updating the earlier finding would yield a figure below 20 percent of personal investment income now subject to income tax, making the PIT close to a consumption-based tax except for the highest earners and wealth holders. This figure will decline further as holdings in TFSA, initiated in 2009, mount over time. One projection is that a mature TFSA system will result in “only a very small share of Canadians [facing] taxation on their marginal savings decision”; the study further projects that after 20 years with a

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21 Foreigners are the marginal source of investment funds in corporate Canada, and they do not obtain the benefit of Canadian dividend tax credits. Moreover, Canadian subsidiaries of foreign corporations typically get tax credits from their home country for their Canadian corporate taxes.

22 Included in their measure of personal investment incomes were interest, dividends, capital gains, and imputed rents on homes.
doubled annual TFSA limit of $10,000, only 3.3 percent of households would face any PIT on their capital income from savings (Milligan 2012, 358).

In addition to financial investments, individuals can direct their savings to human capital in the form of education and training. Investments of both kinds are key determinants of productivity and economic growth, and thus any disincentives posed by the fiscal system may raise concerns. The major costs borne by the individual in human capital investment are foregone earnings for the time spent and out-of-pocket costs for tuition, fees, and related expenses. Net costs to the individual are affected by the tax treatment of each of these items plus the subsidies implicit in public funding of education and training. Foregone earnings are given the equivalent of an immediate write-off as under a consumption-based tax. However, a net tax burden arises in that the future increased earnings from the investment will be taxed at a higher rate. An analysis for Canada in 2006 found that the effect for most individuals was a small net subsidy for post-secondary education, with stronger incentives for females (Burbidge et al. 2012). Thus, the PIT provisions along with public subsidies already yield a system operating much closer to a consumption tax than an income tax for savings invested in human capital.

**ASSESSING THE ECONOMIC ISSUES**

In essence, the consensus expert view in Canada is that shifting the tax mix further toward consumption-based sources or making the PIT base more consumption-oriented would yield the following benefits:

- Improved incentives for working and labour force participation
- Improved incentives for saving and thus greater aggregate savings
- Increased real investment resulting from greater savings
- Increased economic growth and improved economic efficiency
- Greater horizontal equity across individuals over their lifetimes
- Improved tax compliance through reduced avoidance and evasion

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23 Because of the relatively low earnings that most students forgo, and the consequent low tax rate that the earnings would face, this treatment is less favourable than allowing students to capitalize their foregone earnings and deduct it in future years of higher earnings post-graduation.
In assessing these issues, we must keep in mind that the distinction between an income-based and a consumption-based tax is not synonymous with the difference between direct and indirect taxes. A direct personal tax can embody consumption-base principles, as we have shown the Canadian PIT already does to a great extent. In this section we provide a critical review of the economic evidence on each of these issues, and on most we find the consensus expert claims to be much weaker than asserted or entirely lacking.\(^{24}\)

**Work Incentive Effects**

Individuals face a choice in allocating their time between working for money income and undertaking unpaid non-market production and leisure activities. If employees’ earned income is taxed, while leisure time and home production are not taxed, this provides an incentive for choosing less work time and more leisure and non-market time. A common assertion—by both economists and tax advocates—is that a direct tax on personal income is therefore more adverse to work than an indirect tax on consumption. This assertion is then used as one justification for shifting the tax mix away from PIT and toward greater use of indirect consumption taxes such as GST/HST. Reduced reliance on income taxes, it is argued, will provide more neutral incentives for how individuals allocate their time and thus improve economic efficiency.

The fallacy of this assertion lies in its ignoring the work disincentive effects of any indirect tax on consumption. A consumption tax is also effectively a tax on work, because most people get most of their income from working, and they use most of this income to purchase goods and services. Their incentive to work is determined by how much real goods and services their incomes provide for them. An increase in the rate of GST/HST means that each hour of work provides less purchasing power, so that it reduces the incentive to work just as an increase of income tax would.\(^{25}\) Only if individuals face a

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\(^{24}\) Twenty years ago, an Australian economist concluded that “A tax mix change offers little in the way of efficiency gains in work versus leisure decisions and in intertemporal consumption choice decisions, to the aggregate level of savings and work effort, and to countering tax evasion and avoidance” (Freebairn 1992, 33); also see Kesselman (1986) for similar conclusions.

\(^{25}\) To the extent that part of the earnings from work are saved, the consumption tax does not impose any immediate burden, but this is offset by the future tax that will apply to consumer spending out of those savings and the accumulated investment return to the savings.
“tax illusion” where they consider their nominal net-of-PIT income but ignore the impact of GST/HST on their real purchasing power will a tax mix shift yield improved work incentives (Kesselman 1986). None of the extensive research on labour supply behaviour has uncovered any such tax illusion (Hausman 1985; MaCurdy et al. 1990). A recent study for the Mirrlees Taxation Review in the United Kingdom concluded, “shifting the balance of taxation towards VAT [value-added tax] cannot be expected to have a great impact on work incentives or levels of employment” (Crawford et al. 2010, 276).

A consumption-based tax can actually impose greater work disincentives than an income-based tax that raises the same concurrent level of revenues. A broad tax base of income (with few exempt receipts) is larger than a broad consumption base (with few exempt goods and services), since income equals consumption plus savings, and aggregate savings are positive. Therefore, to raise the same amount of revenues, the consumption-based tax must apply a higher tax rate than the income-based tax; this higher tax rate is more distorting to the choice of work and thus has greater work disincentives. This superior efficiency of an income tax in the labour market is offset by the superior efficiency of a consumption tax in the capital market related to non-distortion of savings behaviour. If one is willing to consider the future revenues that the savings will generate when ultimately spent under a consumption-based tax, its inferiority in terms of work incentives is reduced but not eliminated.26

Sometimes advocates of consumption-based taxation argue its superior work incentives in terms of a flat-rate indirect tax versus a progressive rate direct tax. Clearly, a progressive tax rate schedule will impose higher marginal rates on higher income earners, and this is more distorting to their work incentives. Advocates for a consumption-based “flat tax” formulated as a direct tax on persons made strong assertions about the increased work effort and entrepreneurial activity that would result (Hall and Rabushka 1995 and 2007). However, they could not cite studies that would support such assertions. In fact, empirical research has found relatively little change in hours worked or labour force participation in response to tax rate changes, particularly for primary prime-age workers.

26 The present value of tax revenues for the income-based tax will still exceed those for an equal-rate consumption-based tax, on account of the taxation of investment income.
A recent review of the literature concluded “Studies that have examined labour supply behaviour have tended to find that weekly hours of work, particularly among prime-age men, are almost completely unresponsive to changes in marginal tax rates” (Brewer et al. 2012, 189). Labour supply responses are often reported as somewhat greater for older and secondary workers, particularly in their labour-force participation decisions.

Savings and Investment Effects

A major assertion by advocates of making the tax system more consumption oriented (through either of the two reforms) relates to improved incentives for personal savings. By reducing the effective tax on investment income or shielding savings from tax until consumed, the proposed reforms are believed to increase aggregate savings. Yet, the economic theory on this issue suggests ambiguous savings effects of these reforms. Like the economic theory of labour supply, the theory of consumption and saving behaviour entails both substitution and income (and wealth) effects of changes in the tax rate on investment income. These two effects operate in opposite directions on saving incentives. Reducing the tax rate on investment income raises the net-of-tax return to saving; this poses a substitution effect that makes future consumption more attractive relative to current consumption and thus encourages greater savings. But the reduced tax rate also exerts an income effect, in which the individual feels wealthier and thus tends to consume more currently, which in turn means less saving out of current income. One cannot tell which of these two theoretical effects dominates without empirical evidence. Moreover, many individuals are “target savers,” meaning that they have a targeted level of saving at retirement. Reducing the tax rate on their investment income means that less saving will be required over the years to reach that target, so that reduced tax actually reduces savings.

Empirical studies of the effects of taxation on personal savings have been beset by

27 Moffitt and Wilhelm (2000) evaluated the impact of the sharp rate cuts of the 1980s Reagan tax reform on high-earning male workers and found “essentially no evidence of any response” (221).

28 While some studies report a higher labour supply responsiveness for married women, the most methodologically sound research based on Canadian data finds little difference between the responses of women and men (Osberg and Phipps 1993).

29 If the reform is distribution neutral, this can offset the income effect, so that the substitution effect should prevail; but a wealth effect can reduce savings. Also see Ragan (1994) for analysis of how RRSPs within a progressive PIT can yield a substitution effect that decreases saving.
complexities of both methodology and data, and they have yielded varying, sometimes inconclusive findings, but seldom large in magnitude. A leading expert on the subject concluded with the caveat: “one cannot review the voluminous literature on taxation and saving without being somewhat humbled by the enormous difficulty of learning anything useful about even the most basic empirical questions” (Bernheim 2002, 1240). A more recent review of the issue for the Mirrlees Taxation Review similarly found “it is unlikely that changes in interest rates due to preferential taxation, or other movements in interest rates, will cause big changes in the level of saving” (Attanasio and Wakefield 2012, 728).

Policy interest in the savings effects of tax reforms stems from the implied impacts on real investment in the Canadian economy. Yet, the linkage between domestic savings and domestic investment is itself tenuous, even if the proposed reforms did significantly raise the level of personal savings. Empirical analysis of cross-country experience has found only a limited association between a country’s domestic savings and its real investment. International capital flows are extensive, through both portfolio and direct investment, and the Canadian economy is particularly open to such flows. Business capital investment—at least for mid-sized and large firms—is not significantly constrained by a shortage of domestic funds. At the margin, it will be determined by investors who have a reasonable sense of the risk-adjusted rates of return in different countries, taking into account the taxes on business profits (which apply mainly in the host country) rather than taxes on personal income (which apply in their home country). Exceptions might arise with small businesses characterized by investors’ home-country bias and limited access to international capital markets; we return to this issue shortly.

Indeed, economic research supports the view that the marginal source of funds for most corporate capital investment is retained earnings rather than new stock issuance to investors. This view has been tested empirically and verified with respect to the taxation

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30 On a related issue, Sinn identifies conditions under which “a country that has a high value-added tax rate needs a high capital income tax rate as well if it wants to preserve its international competitiveness” (1990, 63).
31 For evidence regarding Canada in particular, see the findings in Afxentiou and Serlitis (1993); also see Pelgrin and Schich (2004). The seminal study by Feldstein and Horioka finding a strong relationship between national savings and investment rates covered data for 1960 to 1974, a period of much lower international capital mobility than the contemporary setting.
of dividends. Therefore, even if cutting the tax rate on dividends or capital gains increased the value of stock prices, it would have little effect on capital investment (McKenzie and Thompson 1995; Auerbach and Hassett 2003). This view is reinforced by the finding that dividend taxation has relatively little impact on stock prices. This outcome is particularly likely in Canada, where marginal investors are either foreigners or pension funds, entities that are not affected by Canadian taxes on dividends (Bird 2012).

In the period since 2000, business capital investment in Canada has been less than corporate gross savings (defined as the sum of retained earnings and capital cost allowance), as shown in Figure 1. Corporate cash flow in recent years has benefitted from major reductions in corporate tax rates that have brought Canada into line with the international average. Whatever the cause of relatively weak investment in Canada, it is not being constrained by inadequate sources of funds. Figure 2 shows Canada’s historical pattern of personal savings along with corporate capital investment, both expressed as a percentage of GDP. No discernible relationship between the two variables can be observed. Moreover, a statistical test finds a fairly high probability that the personal savings rate has no causal impact on business capital investment, and the probability that corporate retained earnings does not have a causal impact on investment is low.32

Canadian investors themselves are diversifying their savings internationally, which further attenuates any potential linkage between personal income taxes and capital investment in Canada. A certain degree of home-country bias still exists, but the funds flowing out have been substantial though volatile from year to year. Figure 3 displays this pattern with the value of each year’s additional purchase of foreign stocks as a percentage of that year’s personal savings. This proportion has averaged 60 percent since 1990, and the purchase of foreign stocks by Canadians has considerably exceeded the value of Canadian stocks bought by foreign investors. In sum, the notion that making the tax system more consumption oriented—through either a shift in the direct-indirect tax mix or a reform of the PIT—would significantly increase capital investment by larger businesses

32 The authors have undertaken a Granger causality test, finding that the probability of no causal impact of the personal savings rate on machinery and investment averages 80 percent over the first four lagged values in quarterly data.
in Canada receives scant empirical support.

We now return to the issue of whether lower income tax rates—if they did increase personal savings—would have a beneficial impact on investment in the small business sector. These smaller firms cannot readily access public capital markets or tap internationally mobile capital; those factors might mean that the tax reforms could increase investment in such firms. However, smaller incorporated businesses already enjoy preferential treatment through very low corporate income tax rates, which allow them to retain earnings in the firm and pay at rates much lower than the PIT rate on distributions. Subsequently, these retained earnings can be taken from the company completely free of tax via the lifetime capital gains exemption. These provisions represent a subsidy to small corporations relative to their larger rivals, which offsets disadvantages that come from small scale. They create incentives for an inefficiently excessive share of investment flowing to a sector that has lower productivity and worker compensation than larger firms. The large share of small business in the economy has been identified as a primary cause of lower productivity in Canada (Leung et al. 2008 and references therein). Thus, any additional tax inducement for investment in small business would likely be adverse for the overall economy. \(^{33}\)

**Economic Growth and Efficiency Effects**

More sophisticated research methodologies have also been employed to investigate whether changes in the tax mix or the PIT base would affect the economy’s growth and efficiency. These approaches can encompass more complex relationships beyond the impacts on aggregate savings and investment, such as effects on the composition of investment across sectors or between housing and business and on the efficiency in allocating resources over time. The first approach uses economic models of consumption and savings behaviour within the framework of optimal taxation theory. The second

\[^{33}\] Other standard reforms to increase the PIT’s consumption basis—such as expanding access to tax-deferred (RRSP) and tax-prepaid (TFSA) savings—have restrictions on the ability to invest in shares of closely-held businesses. These restrictions are well justified on grounds of preventing avoidance through sheltering the labour earnings of owner-proprietors along with their capital returns (a consumption-based tax is not intended to shelter labour income). Unincorporated small businesses are even less efficient in scale and already enjoy various inefficient tax advantages.
approach uses computable general equilibrium (CGE) models, in which the analyst’s views are built directly into the model and parameters fitted based on extraneous data and the analyst’s judgment. The third approach uses a statistical methodology that imposes far less theoretical economic structure and allows the data and historical correlations to speak with less judgment by the analyst. Each method has strengths and weaknesses, and we briefly review representative studies that address the issues at hand.

Much of economists’ widespread support for consumption-based taxation derives from early theoretical analyses finding that zero taxation of capital income is optimal. In a comprehensive critical review of this research for the Mirrlees Taxation Review, Banks and Diamond (2010) conclude that considering additional factors undermines the earlier findings and indicates that some taxation of capital income is likely optimal. Among these additional factors are the interaction between leisure and intertemporal preferences, initial wealth holdings, non-marketed risks, age-dependent characteristics, different savings propensities across earnings types, permanent income uncertainty, and diverse aspects of savings behaviour. These challenges to the theoretical presumption of the optimality of consumption-based taxation means that a role remains for income-based taxation in the overall revenue system. Economists advocating consumption taxation also cite the elimination of intersectoral distortions (cross-industry, cross-asset types) that are common in PIT systems, such as flow-through shares favouring particular industries. Yet, these distorting provisions could be eliminated from the PIT through legislative change, and political forces could introduce similar distorting provision in a consumption tax.

The CGE model that has been most frequently and uncritically cited by Canadian analysts advocating increased reliance on consumption taxes is contained in a Department of Finance working paper by Baylor and Beauséjour (2004). Their model estimated that

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34 Other recent economic analyses have also concluded that some taxation of capital income—contrary to the zero tax on such income under a pure consumption-based tax—is optimal for a variety of reasons. For example, see Davies et al., who conclude that “a consumption tax … can be improved on by taxing capital income more heavily than labour income” (2009, 1023).
35 The findings of this study have been cited by, among others, the Institute for Competitiveness & Prosperity (2005), Clemens et al. (2007), Dahlby (2012), and Hodgson (2012). The study’s findings have also been highlighted in federal Budget Papers.
cutting taxes by one dollar would raise real economic welfare\textsuperscript{36} by amounts that differ by type of tax: about $1.30 gain for tax cuts on capital (whether raising business capital cost allowances, cutting PIT on capital incomes, or cutting sales taxes on capital investment); 37 cents for corporate income taxes; 32 cents for PIT (a blend of tax on capital income and mostly labour income); 15 cents for payroll and labour income taxes; and just 13 cents for consumption taxes such as the GST/HST that do not strike business capital. Relying on these results, many analysts infer that substantial economic gains could be derived from shifting the tax mix toward consumption and away from taxes on capital or from reducing capital income in the PIT base. These results also imply that reducing corporate income tax rates is less advantageous than reducing taxes on capital investment, and further that reducing PIT rates is less advantageous than reducing the capital income subject to PIT.

A major deficiency of the Baylor-Beauséjour model is its assumption that a very large proportion—nearly 90 percent—of domestic savings is productively invested in Canada.\textsuperscript{37} Our earlier discussion of the high degree of international capital mobility for the Canadian economy casts doubt on this assumption, and as a result all of the study’s estimates may be greatly overstated. As stressed by one economist, “to the extent international capital markets are competitive, models that ignore international capital flows may give very misleading results regarding the relative efficiency properties of income and consumption taxes” (Zodrow 1990, 92). Another CGE model emanating from Finance Canada analysts also projected substantial gains in economic efficiency from tax reforms, in this case replacing the previous federal sales tax on manufacturers with the GST (Hamilton and Kuo 1991). This model has been critiqued on similar grounds to the Baylor-Beauséjour model based on assumptions about capital formation, terms-of-trade effects, compliance burdens, and economic distortions (Ruggeri and Van Wart 1992), negating the predicted gains in economic efficiency. These examples illustrate the lack of robustness and critical sensitivity to assumptions of CGE models that seek to predict the

\textsuperscript{36} The study also provides estimates of the impacts on real GDP, and these compare in relative magnitudes with the welfare effects (which include the value of leisure as well as real output).

\textsuperscript{37} Even more crucially, the model does not allow for responsiveness of foreign investors to changes in the net return to Canadian corporate business; if the mooted tax reforms impacted Canadian savings and investment in domestic business, this would be offset by reduced foreign investment in Canada with high capital mobility and an unchanged world rate of return.
efficiency or growth gains from tax reforms.

The statistical or econometric methodology for assessing the economic growth impacts of various types of taxes has been applied in other studies. One widely cited study of this genre utilized cross-country data (Kneller et al. 1999). It concluded that indirect consumption taxes like Canada’s GST/HST were either neutral or conducive to growth, while income taxes (PIT and corporate income taxes lumped together with other “distortionary taxes”) were adverse to growth. This finding has been construed by other analysts to support a tax mix shift from direct taxes on income to indirect taxes on consumption, at least on the grounds of promoting economic growth. Yet, when the authors entered PIT as a separate explanatory variable and excluded other distortionary taxes, it became statistically insignificant (Table 7, 187). This result would be consistent with the distinction made in our earlier discussion about the effects of taxes on investment income at the personal versus business level in an open economy. Like most other similar research, this study did not control for differing degrees of income versus consumption in the bases of the countries’ PITs nor for their degree of rate progressivity.38

In summary, economists’ estimates of the efficiency or growth gains from shifting the tax system toward consumption are highly sensitive to the assumptions, with much uncertainty about the size or existence of such gains. For example, Alan Auerbach, a leading authority on the topic, stated, “Simulation evidence to date has not taken into account a variety of issues that could significantly affect the estimated efficiency gains from adopting a consumption tax” (2008, 41). Diane Lim Rogers has echoed this view:

[T]he efficiency gains from a consumption tax … from even a purist’s version (with perfect flatness and a pure consumption base) are rather modest—almost certainly no more than one percent of lifetime income. If we … accept econometric evidence … that the intertemporal elasticity of substitution is close to zero, then the efficiency gains

38 Widmalm employed a statistical methodology similar to that of Kneller et al. but included a variable for tax progressivity and found that greater progressivity was detrimental to economic growth. However, her progressivity variable was based on the aggregate tax system and not the PIT, and she reported that because capital income is a small portion of the total PIT base, “no clear conclusion can be drawn about capital income taxes’ impact [on growth] from the empirical analysis here” (2001, 212).
are likely to be around zero as well. Deviations from the pure version, in the form of either transitional relief or enhancements to progressivity, can reduce still further the size of the efficiency gains. … This is not to say a consumption tax is a bad idea, but rather to say that the reform may be difficult to justify on the grounds of economic efficiency alone (1996, 45).

George Zodrow (1990, 92-93) similarly cites the losses on generations at and following a shift toward consumption taxes and the policy measures that would likely be implemented to compensate those losses as vitiating any prospective steady-state efficiency gains.

**Income Smoothing and Lifetime Equity**

An income-based tax strikes the returns to saving and investment, and in this manner it penalizes saving for future consumption versus spending labour earnings when they are received. This aspect of an income tax has been described as “double taxation” since the earnings are taxed both when received and again on the investment returns to the portion saved. In contrast, a consumption-based tax treats earnings in a neutral fashion whether they are spent immediately or saved for future consumption.\(^{39}\) Savings are important to individuals and families in buffering against short-run and transitory variations in labour earnings, thus allowing consumption levels to be smoothed over shorter periods. Savings are also important in facilitating the smoothing of consumption levels between working years and retired years despite the predictable drop of labour earnings during retirement. Consumption smoothing allows individuals to maximize their well-being over time, given that a smoother consumption path is more highly valued than a fluctuating path with the same average level.\(^{40}\) Thus, a consumption-based tax leads to higher levels of individual utility than an income-based tax even with the same total tax burden.

The efficiency gains from consumption smoothing in shifting the tax base toward

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\(^{39}\) The consumption-based tax imposes a burden that is equal in present value regardless of when the funds are spent, since the discounting for future consumption exactly offsets the compounding of investment returns, on the assumption that the discount rate is the same as the rate of return.

\(^{40}\) The relationship between consumption smoothing over time and the measured regressivity of consumption taxes is examined in an analytical model by Athreya and Reilly (2009).
consumption and the associated impacts on savings are important in assessing such reforms. Bev Dahlby (2003, 84) has computed the utility or welfare gains to individuals from moving the tax base to consumption based on a standard economic model of saving behaviour. Using a range of assumed values for the substitutability between current and future consumption and the income elasticity of consumption, most of his estimates imply welfare gains from reduced taxation of capital income but also reduced savings rates. Because the gains would accrue only to persons not already accessing consumption tax treatment—high earners and wealth holders—they would enjoy increased utility even if the reform were distribution neutral in money terms. Dahlby’s finding that the affected groups might actually save less in aggregate with the tax reform implies a reduction in the funds for investment, which is the only means by which the rest of society could gain from the reform. Thus, this study suggests the possibility that high earners gain from the move toward consumption taxation while most others could actually lose in the long run from less economic growth even if the reform were initially distribution neutral.

Because of their differential treatment of savings and investments, income- versus consumption-based taxes affect higher-saving individuals differently than non-saving individuals. With an income-based tax, two persons with exactly the same lifetime patterns and levels of labour incomes will face different lifetime total tax burdens if their saving rates differ. “Saver” will pay significantly more total tax over the lifetime than “spender” because the former has more investment income subject to income tax. Recall our earlier description of the equivalence between tax-deferred and tax-prepaid methods of implementing a consumption-based tax. With the tax-prepaid method, one can easily see that a consumption-based tax will treat “saver” and “spender” equivalently, since it taxes only their labour earnings which by assumption are equal in timing and levels. Similarly, the tax-deferred method will also treat the two individuals the same over their lifetimes in terms of the present value of their tax payments, which will differ only in timing but not discounted total amount. This lifetime equity aspect of a consumption-based tax is a notable advantage, but in terms of the proposed tax reforms it is significant only for very high earners and wealth holders who are the principal ones not already able to access fully consumption-based tax treatment.
Avoidance and Evasion Effects

An incremental shift in the mix toward indirect taxes would yield minimal gains in tax compliance and likely no savings in tax administration. Both the PIT and GST/HST would remain in operation with all of their administrative and compliance burdens. Arguments that the GST/HST is harder to avoid and evade than the PIT have little merit in view of real-world evidence on the operation of value-added taxes in Canada and abroad. Various evasion schemes have emerged such as claims for input rebates on fraudulent exports. Many services and some goods by small suppliers regularly evade GST/HST by cash sales, barter, and unreported incomes, similar to what happens under the PIT. An empirical study found that overall tax evasion increased with the introduction of Canada’s GST in 1991 (Spiro 1993). The new sales tax provided visible bargaining power by vendors for cash sales from purchasers, and this behaviour is likely to increase with higher GST/HST rates.\footnote{41 42} Tax avoidance by high earners under the PIT might moderate if its tax rates could be significantly reduced, but as will be shown shortly, on a distribution-neutral basis this would require massive rate hikes for GST/HST.

Shifting the PIT base further toward consumption would yield at best limited gains in tax compliance and administration. If undertaken on a distribution-neutral basis, the reform’s effects on tax planning and tax avoidance would be ambiguous. The larger amounts of capital income that received tax-deferred or tax-prepaid treatment would be freed of incentives for tax avoidance; these items would also be freed of the need for cost-basis record keeping and tax auditing. Simultaneously, the increased marginal tax rates needed for distributional neutrality would exacerbate tax planning and tax avoidance incentives for capital incomes that remained taxable. The higher marginal tax rates that also applied to labour and unincorporated business incomes of higher-bracket taxpayers

\footnote{41 The extension of tax to many services under the GST/HST also increases evasion, and several European countries have responded to this problem by reducing their VAT rates on selected services. See Copenhagen Economics (2007).} \footnote{42 Moreover, to the extent that underground activities are concentrated in sectors, economic analysis suggests that a tax mix shift will pose little leverage on noncompliance (Kesselman 1993). As a result of the general equilibrium effects, increased indirect taxes on evaders’ consumption purchases will be shifted onto suppliers in the compliant sectors; evaders will end up evading less income tax (because PIT rates are lower) but also in effect paying less indirect taxes (because the incidence of the indirect taxes they pay will fall on suppliers in the compliant sector).}
would likely exert disincentives for productive activity and inducement for tax planning and avoidance. One example is the incentive for proprietors to claim more of what should be deemed ordinary personal consumption outlays as tax-deductible business expenses.

**DISTRIBUTIONAL EFFECTS OF PROPOSALS**

Two variants of proposals to make the Canadian tax system more consumption-oriented have been advanced—first by shifting the tax mix away from the PIT and toward indirect taxes such as the GST/HST and second by shifting the PIT further toward consumption. Proposals for tax-mix change have clearly articulated revenue-neutral reforms, where the revenue losses from some changes would be fully offset by revenue gains from other components of the reform, while this is less common for PIT reform proposals. However, most proposals of both varieties have given inadequate attention to the distributional impacts of the reform, which opens the prospect of decreasing the overall tax system’s progressivity. We next address the likely distributional impacts and the requisite changes needed to make each type of reform distribution neutral as well as revenue neutral.

**Distributional Effects: Tax Mix Shift**

The federal PIT in Canada is highly progressive, and this progressivity is needed to offset the proportionality or regressivity of most other revenue sources.\(^{43}\) Without the PIT or with a PIT much reduced in relative size, the overall Canadian tax system would be transformed from a roughly proportional pattern to a regressive one. The GST and HST are both regressive in their annual impact even with exemptions and zero-rating of several types of consumer necessities.\(^{44}\) This regressive pattern is offset for the lowest incomes by the provision of federal and provincial refundable credits. However, the regressive

\(^{43}\) For extensive critical review of the distributional pattern of PIT and other taxes in Canada and other countries, see Kesselman and Cheung (2004) and references cited therein; for a review that focuses on the distributional effects of indirect consumption taxes, see Warren (2008). Also see Canada Finance (2012, 31-47) for findings that the federal PIT is highly progressive and even more so when considering federal refundable tax credits and income-tested benefits. Provincial PITs vary in their degree of progressivity, but many provinces apply a more progressive rate schedule than the federal PIT (Kesselman 2004).

\(^{44}\) Studies have found that the Canadian GST was even more regressive than the manufacturers’ sales tax that it replaced (Ruggeri and Bluck 1990) and that replacing provincial retail sales taxes with the HST likely exerted a further albeit small increase in regressivity (Smart and Bird 2009a).
impact of GST/HST resumes for incomes above the modest income levels where those credits phase out. For those willing to take a lifetime perspective on tax incidence, the regressivity of these sales-type taxes is substantially reduced but not eliminated.

As a result of this differential incidence between the PIT and the GST/HST, a shift of revenues away from PIT and toward GST/HST would reduce overall tax progressivity unless the PIT rate cuts were weighted heavily in favour of the lower brackets relative to the upper brackets. This outcome stems in part from the pattern of savings rates that increase significantly as one moves up the income scale; income that is saved is not spent on consumption and thus does not incur GST/HST. Moreover, the fact that GST/HST applies only to spending out of net-of-PIT incomes combined with the PIT’s progressivity further reduces the scope for reducing PIT rates in the upper brackets when increasing GST/HST rates. If an increase in the GST/HST rate is balanced by distribution-neutral cuts in PIT rates, the latter cuts will vary by the taxpayer’s initial PIT rate bracket and rate of savings (or spending) out of after-tax income.

Table 1 displays the distribution-neutral trade-off between PIT marginal rates and the GST/HST rate\(^4\) for various assumed initial marginal tax rates (\(t_0\)) and spending propensities (A) out of after-tax income.\(^6\) For taxpayers at moderate incomes with an initial PIT rate of 20 percent and A at 100 percent (for all spending and no saving), the PIT rate can be cut by 0.80 of one percentage point for each one percentage point hike in the GST/HST. At the other end of the income spectrum, at an initial PIT rate of 50 percent and A at 75 percent (25 cents of an extra after-tax dollar is saved), the PIT rate can be cut by only 0.37 of one percentage point. Consider a distribution-neutral policy reform that aimed to cut the top-bracket PIT rate by 5 percentage points from 50 to 45 percent.

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\(^4\) For more complex formulas of the distribution-neutral rate trade-off between direct and indirect tax rates that consider additional factors, see Creedy (1992).

\(^6\) These illustrations ignore the differential tax coverage of the goods and services purchased by consumers at different levels of income. According to the OECD (2011, 109), the “VAT revenue ratio” or proportion of all consumption effectively taxed by Canada’s federal GST in 2008 was 74 percent on average. Due to exempt and zero-rated items, this ratio is lowest for low-income households, but declines from the fourth to the top quintile (Godbout and St-Cerny 2011, 488) and likely declines further for the top decile and percentile of households due to foreign spending.
This reform would require a 13.5 percentage point hike (5/0.37) in the GST/HST rate and would permit the 20 percent PIT bracket rate to be reduced by 10.8 percentage points (13.5 x 0.8), which is more than twice the implied PIT rate cut for the top bracket.

The preceding example illustrates the problems in using changes to the tax mix as a way of reducing upper-bracket PIT rates. Reformers seeking significant cuts in top PIT rates through a tax mix change are therefore likely to be frustrated unless they also accept massive hikes in GST/HST rates or a regressive shift in the tax burden. This analysis further assumes that all income is subject to PIT, whereas in fact increasing proportions of income are not taxable at higher incomes on account of the consumption-type provisions described earlier as well as other legal tax shelter provisions; those factors would further reduce the scope for distribution-neutral rate cuts in the PIT’s upper brackets. Moreover, the limited difference between the bases of PIT and GST/HST—with many consumption-type elements in the PIT base—implies that any economic gains from shifting the overall tax base would be similarly limited. Because those gains are more likely to assume the form of improved economic efficiencies in lifetime consumption by affected households than increased savings and investment, the real gains would be concentrated among high income households rather than dispersed more widely.

Even if a tax mix change with reduced PIT and increased GST/HST were applied in a distribution-neutral manner across income classes, it would still exert redistributive effects in other dimensions. Take the case of three individuals at the same taxable income and with the same amount of wealth but held in different forms. Person A has $100,000 in home equity (or TFSA), which is a tax-prepaid asset; person B has $100,000 in an RRSP, which is a tax-deferred asset; and person C has $100,000 in unsheltered financial assets yielding taxable income. The GST/HST also applies the tax-deferred method, so that a distribution-neutral tax shift would leave unaffected person B, the RRSP holder; the reduced PIT rate on RRSP withdrawals would be offset by the increased GST/HST rate on the spending, and both occur at the same time. The same tax mix shift would be relatively adverse to person A, since the PIT rate cut provides no benefit for a tax-prepaid asset that would face no further tax even without the rate cut, yet this individual faces the higher GST/HST rate. And that tax shift would be relatively favourable to person C, who now faces a lower PIT rate on income from financial assets that more than offsets the higher
GST/HST ultimately incurred on the spending. Similarly, the tax mix shift would exert differential effects across cohorts at different stages of their lifecycle savings.

**Distributional Effects: PIT Base Reform**

The other major means of shifting the overall Canadian tax system’s base further toward consumption is to modify provisions of the PIT while maintaining the balance between PIT and GST/HST revenues. Any one or more of the three methods cited earlier for consumption taxation could be employed, and here we list specific proposals that have been advanced using each method:

- **Tax deferral method:** increase the dollar limits and/or percentage-of-earnings limits on contributions to RPPs and RRSPs; extend the current age of 71 for mandatory annuitization or periodic withdrawals from such plans;
- **Tax exemption method:** increase the annual contribution limits for TFSA from the current $5,500; allow annual or lifetime tax exemptions on limited amounts of interest, dividend, and/or capital gain incomes;\(^47\)
- **Reduced tax method:** reduce the tax inclusion rate from the current 50 percent for realized capital gains, possibly making such gains entirely tax-free (in which case it would be the tax exemption method); allow dividend tax credits for eligible shares of Canadian corporations held in tax-deferred plans.

We focus here on the distributional implications of these kinds of reforms, which have typically been ignored or downplayed by their advocates. Table 2 displays the distribution of the types of incomes and deductions that would be most affected by the reforms; the data are for the 2010 tax year, the most recent available. Tax filers have been grouped into eight classes based on their total assessed incomes, with a separate tabulation for the combined class of $100,000-plus. Note that fully 34 percent of the 24.8 million returns filed for 2010 were non-taxable. For the lowest tabulated bracket of loss to $19,999, non-taxable returns constituted over 90 percent of all returns. For all tabulated brackets of $35,000 and higher, 98 percent or more of all returns were taxable. Given

\(^{47}\) Prior to the major reforms of the late 1980s, individuals could exempt up to $1,000 of interest and dividend income each year. Beginning in 1985, individuals could access a lifetime exemption on up to $100,000 of taxable capital gains, but this provision was phased out in the 1990s.
income inequality in Canada, it is not surprising to observe that the ratio of percentages of total income assessed to total returns rises sharply as one moves up the income scale.

Now consider the three major types of investment income: interest, dividends, and capital gains. Each type of investment income is concentrated to a substantial degree in the taxable incomes of the highest income classes as tabulated in Table 2. Our measure of this concentration is to compare, for a given income class, the percentage of all income of that type to the percentage of total income assessed. For example, the aggregated income class of $100,000-plus (with just 6.0 percent of all tax filers) has 27.7 percent of total income assessed but 34.0 percent of all interest income, 65.2 percent of all taxable dividends, and 73.9 percent of all taxable capital gains. Those figures mean that capital incomes of these kinds constitute a much higher proportion for the total incomes of higher income filers than for middle and lower income filers. This concentration is even starker for the highest income class of $250,000-plus (with just 0.8 percent of all tax filers): relative to 10.1 percent of total income assessed, they receive 17.5 percent of all interest income, 37.8 of all taxable dividends, and 49.8 percent of all taxable capital gains. Consequently, reduced taxation of interest, dividends, and/or capital gains would reduce PIT progressivity unless offset by a steepening of the tax rate schedule.

These three types of financial incomes are taxed in very different ways. Interest income from assets held outside of tax-deferred or tax-prepaid accounts (as shown in Table 2) is fully taxable including the “inflation” component. Thus, with short-term interest rates below the inflation rate, the real return is negative but the full nominal return is subject to tax. Note that the bottom two tabulated income classes receive a higher percentage of all taxable interest than their share of total income; however, the great majority of those groups are non-taxable so that their interest in fact bears no tax. The top

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48 Note that the gross-up of eligible Canadian dividends and the 50-percent reduction for taxable capital gains do not affect the distribution of these income sources across income classes, since these proportions are independent of the tax filer’s income.

49 Of course, lower and middle earners hold most of their savings in tax-deferred or tax-prepaid forms, so that their interest, dividends, and capital gains in those accounts do not appear in the tax statistics; this will exaggerate the measured degree of concentration of such incomes among high income taxpayers. However, that is irrelevant for the current analysis, which focuses on the impacts of proposals to reduce the taxation of currently taxable forms of investment incomes.
two tabulated income classes from $150,000 and up also hold a higher percentage of interest income than their share of total income. However, their share of interest income is far less than their share of dividends and taxable capital gains, both of which receive highly preferential treatment relative to an income-based tax. An ideal income tax base would tax only the real component after adjusting for inflation; a pure consumption tax would not tax interest at all using either the tax-deferred or tax-prepaid method.

Dividend income from eligible Canadian corporations and realized capital gains both enjoy highly favourable PIT treatment, with economic rationales often provided for each. Eligible dividends are both “grossed up” and then given a dividend tax credit, which is an attempt to offset much of the tax those funds paid at the corporate level. The rationale is to reduce double-taxation of dividends (at the corporate and individual levels) and also to provide partially balanced treatment of corporate dividends and retained earnings that will be reflected in share prices and later taxed at capital gains rates. The preferential tax rates for capital gains are typically justified by the failure to make any inflation adjustment, but the half-rate treatment is a very crude offset and likely overly generous for investments held by wealthier persons. Moreover, the deferral of tax until the assets are sold and the gains realized departs from true income-based treatment, which would tax the accruing gains each year. Given the high concentration of dividend income and capital gains in the total incomes of high earners, these provisions substantially decrease PIT progressivity, and expanding those tax preferences would further compromise progressivity.

Next consider contributions to RPPs and RRSPs, which use the tax-deferral method for introducing a consumption base into the PIT. Table 2 displays a pattern for RPP contributions that rises sharply relative to total income assessed as one moves up the income scale as far as the $70,000-99,999 class. For the three highest income classes, this ratio declines reflecting the workplace-basis of Registered Pension Plans and common income sources of high earners in business, the professions, and self-employment. In contrast, the ratio of RRSP deductions to total income assessed continues to rise into the $150,000-$249,000 class before declining in the top income class. This pattern reflects both the higher savings rates of high earners and the impact of the dollar limitation on RRSP contributions. If the dollar ceiling were increased or eliminated, this would yield a
very disproportionate benefit for high earners, since very few lower to upper-middle earners exhaust their current contribution limits with the unlimited carry-forwards. In 2010 a total of 21 million Canadians had an aggregate of $633 billion of accumulated unused RRSP contribution room available.\textsuperscript{50}

Interest expense incurred by individuals for the purpose of financing investments held outside of RRSP/TFSAs—but not for consumption or home purchase—is deductible in the Canadian income tax. Table 2 shows the pattern of tax-deductible interest expense relative to total income rising sharply with income class. The classes with income above $100,000 (with just 6.0 percent of filers and 27.7 percent of total income) claim fully 53.3 percent of all interest expense; the 0.8 percent of filers with incomes above $250,000 alone claim 27.5 percent. A pure income tax with all financial incomes fully subject to tax on an accrual basis but with inflation indexing would allow the deduction of such interest expense but discounting for inflation. A pure consumption-based personal tax would not allow any interest expense to be deductible.\textsuperscript{51} Since the current Canadian personal tax is intermediate between income- and consumption-based for very high income groups, the unrestricted deductibility of investment-related interest is hard to justify in concept. The current treatment is also very favourable to high earners who can deduct their interest expense on borrowings used to finance leveraged investments whose returns are taxed on a deferred and half-rate basis. As a result, earners who are constrained by the RPP/RRSP dollar limits may face incentives that are pro-investment rather than neutral as would hold with a true consumption tax. Limiting access to interest expense deductibility could be justified for the current tax, and any measures to reduce the taxation of dividends or capital gains would bolster the argument for such reform.

Statistics compiled by the Canada Revenue Agency from tax returns do not include contributions to TFSAs, since these need not be reported by tax filers. Hence, we have no direct observations on the distributional pattern of TFSA contributions or which groups gain from the tax-free treatment of interest, dividends, and capital gains accruing in these

\textsuperscript{50} Statistics Canada, CANSIM database, v26560465, v26560468.

\textsuperscript{51} Alternatively, a consumption-based tax could allow full deductibility of interest expense but would simultaneously include in the tax base the amounts borrowed regardless of their use.
accounts. One might expect that the incentives implicit in TFSA would make them attractive to persons in a wide range of circumstances and at varying incomes. However, TFSA contributions are most compelling to high earners who have exhausted their contribution limits for RPP/RRSPs and who have taxable assets that can be transferred, directly or indirectly, into a TFSA. Analysis of proposals to increase the TFSA annual contribution allowance from its current $5,500 suggests that the additional tax benefits would go overwhelmingly to high earners and wealth holders (Kesselman 2012).

Pursuing any of the cited policy reforms to make the PIT more consumption-based would clearly reduce the system’s effective progressivity. Almost all of the advocates of these changes have ignored or downplayed this impact and the possible need for offsetting increases in the progressivity of the tax rate schedule—particularly for the highest income brackets that would benefit disproportionately from the reforms. Adverse distributional impacts of such reforms could be offset on average for taxpayers in any income range through changes in the tax rate schedule. Over the course of a lifetime, for any average level of earnings individuals with above-average savings would pay less than previously, and those with below-average savings would pay more than previously. That outcome accords with the nature and intention of a more consumption-based tax system. However, after the reform and for an extended transition period, the impacts would vary widely depending on the age or cohort of the individual and whether savings were held most in tax-deferred, tax-prepaid, or taxable forms. These variations were described in the previous subsection; some individuals would enjoy windfall gains of reduced taxes, with no incremental savings incentive, while others would suffer lump-sum losses.

DISCUSSION AND CONCLUSION

Many tax economists, policy analysts, and policy commentators have advocated making Canadian taxes more consumption based—either by shifting the tax mix to less use of PIT and greater use of GST/HST or by shifting the PIT base further toward consumption. However, most of these reform proposals suffer from critical deficiencies. Proponents of such policies have selected favourable studies that promise large gains in economic

52 In-kind contributions of eligible securities to a TFSA are permitted, but capital gains on such securities are deemed realized and taxable, whereas capital losses are denied any tax deduction.
incentives, efficiency, and growth, but these theoretical and econometric estimates are notoriously fickle and sensitive to key assumptions. Our review of the evidence suggests that the economic gains are unlikely to be dramatic and may be minimal or even non-existent. Proposals typically ignore the fact that Canada’s PIT base is already close to consumption for the great majority of taxpayers except those at the highest income and wealth levels. The effects of either type of reform on work incentives are likely to be minimal and could well be adverse rather than conducive to working. The impact of the proposed reforms on aggregate domestic savings are uncertain, but likely small at best, and even increased domestic savings are unlikely to translate into much greater domestic investment given the openness of the Canadian economy. Thus, the case for such reforms is undermined by several weak links, as it is based on asserted behavioural responses for which the analytical basis and empirical evidence are highly controvertible.

At the same time, Canadian advocates of consumption-based tax reforms have too often tended to ignore or minimize the adverse distributional impacts of their proposals. They have neglected the need to steepen the progressivity of the PIT rate schedule—cutting upper bracket rates much less than lower bracket rates—if a shift in the tax mix toward greater use of GST/HST is to avoid regressive impacts. Limited cuts in upper bracket PIT rates also imply that any associated efficiency gains will be correspondingly attenuated. Because the types of capital incomes currently subject to the PIT are highly concentrated at top incomes, the advocates have similarly neglected the need to increase upper bracket rates if a shift of the PIT base toward consumption is to avoid regressive impacts. Any incentive gains anticipated for higher earners are therefore likely to be muted or entirely absent. Thus, most proponents of consumption-based tax reform have overstated the efficiency gains while minimizing or entirely ignoring the equity losses. This difference should not be viewed as a doctrinal or ideological issue, but rather one of balancing empirical uncertainties. An unfortunate fact for policy analysis is that empirical results may be highly sensitive to methodologies, assumptions, and special circumstances. Nevertheless, policy changes that will affect millions of people should be based on firm, incontrovertible evidence, which has been shown lacking on the key issues at hand.

Pursuing reforms to shift Canadian taxes toward consumption at the business rather than personal level offers much better prospect of achieving vaunted gains in
investment, productivity, and growth. This difference follows from the cited openness of
the Canadian economy and international capital mobility, which impair the effectiveness
of PIT reforms and PIT-GST/HST tax-mix changes. For example, cuts in corporate tax
rates and increasing investment tax credits or depreciation rates on business capital will
stimulate investment; these changes are also among the most economically efficient of tax
reforms (Dahlby 2012 and studies cited therein). Moreover, harmonizing provincial sales
taxes with the GST moves the tax base from its hybrid form (with roughly 40 percent of
burden borne by business) to a true consumption-based tax. Tax harmonization is found
to be effective in raising business investment by reducing the cost of capital purchases
(Smart and Bird 2009b), while imposing only a slightly regressive impact on Ontario
households (Smart and Bird 2009a) and possibly a slightly progressive impact on BC
households (Kesselman 2011).\footnote{Refundable tax credits provided or enhanced along with the harmonization can fully offset any regressivity at the lowest incomes but leave unaffected incomes above the credit phase-out level.} Note that sales tax harmonization is primarily a tax base
reform and only to a minor extent a tax mix shift since most of the tax savings for business
is passed through to consumers via lower prices (Kesselman 2011; Smart 2011).

While this study focuses on the weakness of arguments to shift Canadian taxes
toward consumption at the personal level, our analysis also provides some preliminary
guidance for constructive reforms of capital income taxation. Smaller businesses enjoy
preferential tax treatment through low corporate tax rates and a lifetime capital gains
exemption; these provisions exert an inefficient bias toward over-investment in relatively
low-productivity sectors.\footnote{Such businesses also typically display lower rates of employee training, lower compensation and benefits for employees, and low rates of research, innovation, and export orientation. See Mintz (1997, 5.8) for a recommendation to reduce the tax rate differential accorded small business.} Others have proposed reforms to reduce or replace those
provisions, such as converting the lifetime capital gains exemption into an RRSP rollover
(Mintz 1997). The dividend tax credit also seems poorly justified in view of capital
mobility, such that it often acts as a subsidy to domestic savers without corresponding
inducement for greater business investment (Boadway and Bruce 1992). Reducing or
eliminating the dividend tax credit would save both levels of government billions in
Our earlier analysis of the interest expense deductions on leveraged investments also suggests little justification under either an income-based tax without accrual measure or a consumption-based tax without inclusion of borrowed funds. Limiting such deductions to the amount of capital income reported on the filer’s tax return would be justifiable and revenue enhancing. All of these reforms would be progressive in their overall impacts, which some observers would embrace; others might choose to maintain current progressivity by companion cuts in upper-bracket tax rates.

Advocates of making Canadian taxes more consumption oriented who neglect or dismiss the vertical equity impacts are implicitly endorsing a flatter, less progressive, or even regressive overall tax system. The appropriate degree of tax progressivity is ultimately not a technical choice but rather a matter for personal judgment and political process. Yet, the tax system’s inequality impacts and perceived fairness can have real-world effects that are relevant to policy formulation. One theoretical and cross-country empirical study found that greater inequality undermines support for pro-investment policies and in this way reduces economic growth (Persson and Tabellini 1994). Another cross-country empirical study found that greater income inequality shortens the duration and limits the sustainability of economic growth cycles (Berg et al. 2011). A study based on a US national survey found that the perceived degree of equity in taxation—whether the rich pay their “fair share”—affects taxpayer compliance (Roberts and Hite 1994). And a cross-country study of subjective well-being concluded that “respondents living in a nation with more-progressive taxation evaluated their lives as closer to the best possible life … than did respondents living in a nation with less-progressive taxation” (Oishi et al. 2012, 86). These varied findings suggest that moving the Canadian tax base further to consumption without neutralizing the inequality impacts could hinder economic growth, tax compliance, and societal well-being.

Our analysis of proposals to shift Canadian taxes further toward consumption has examined the implications of simultaneously applying conditions of revenue neutrality

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58 The dividend tax credit provision has a projected revenue cost of $3.75 billion for the federal treasury alone in 2011 (Canada Finance 2012, 18). A parallel adjustment of the tax inclusion rate for capital gains might be desired to maintain neutrality in corporate distributions policies.
and distributional neutrality. However, these conditions are not simply academic constructs as they have relevance to the political economy of real-world tax reforms. If reform is not undertaken on a distribution-neutral basis—such that high earners do not obtain disproportionate tax relief—it is also unlikely in practice to be revenue neutral. Middle and moderate earners will resist attempts to increase their own tax burdens, and they will be most oppositional if they see high income earners enjoying large tax relief. Thus, without distributional neutrality overall tax revenues are likely to decline, and with a progressive tilt to total public expenditures, the poor, the vulnerable, and lower earners are likely to suffer the most from the resulting spending cuts. Because of this political process, distributional neutrality plays a central role in assessing the proposed reforms.
REFERENCES


Table 1: Distribution-neutral trade-off between PIT Rate and GST/HST Rate*

<table>
<thead>
<tr>
<th>Initial PIT rate ($t_0$) for GST/HST rate 0</th>
<th>Spending rate ($A$)</th>
<th>PIT rate ($t_1$) for GST/HST rate 0.01</th>
<th>Decrease in PIT rate ($t_0 - t_1$) x 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.20</td>
<td>1.00</td>
<td>0.1920</td>
<td>0.80</td>
</tr>
<tr>
<td>0.20</td>
<td>0.95</td>
<td>0.1924</td>
<td>0.76</td>
</tr>
<tr>
<td>0.30</td>
<td>1.00</td>
<td>0.2930</td>
<td>0.70</td>
</tr>
<tr>
<td>0.30</td>
<td>0.95</td>
<td>0.2934</td>
<td>0.66</td>
</tr>
<tr>
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<td>0.90</td>
<td>0.2937</td>
<td>0.63</td>
</tr>
<tr>
<td>0.40</td>
<td>0.90</td>
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<td>0.40</td>
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<td>0.50</td>
<td>0.75</td>
<td>0.4963</td>
<td>0.37</td>
</tr>
<tr>
<td>0.50</td>
<td>0.66</td>
<td>0.4967</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Notes: *Illustrated for a 1 percentage point rate of GST/HST ($e =$ tax-exclusive rate = 0.01)

Formula: $t_1 = \frac{t_0 - Ae + t_0e}{1 + e(1 - A)}$ from Kesselman (1986, 87).

Where $A =$ spending rate out of after-PIT income (or $1 -$ saving rate)
Table 2: Distribution of Income Sources and Deduction Types, 2010 Tax Year (percents)

<table>
<thead>
<tr>
<th>Assessed income range</th>
<th>Loss-19,999</th>
<th>20,000-34,999</th>
<th>35,000-69,999</th>
<th>50,000-99,999</th>
<th>70,000-150,000</th>
<th>100,000-250,000</th>
<th>250,000+</th>
<th>All</th>
<th>100,000+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total returns</td>
<td>37.6</td>
<td>20.0</td>
<td>15.5</td>
<td>12.2</td>
<td>8.7</td>
<td>3.8</td>
<td>1.4</td>
<td>0.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total income assessed</td>
<td>8.8</td>
<td>13.1</td>
<td>15.7</td>
<td>17.3</td>
<td>17.3</td>
<td>11.0</td>
<td>6.5</td>
<td>10.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Interest incomea</td>
<td>10.6</td>
<td>15.8</td>
<td>14.5</td>
<td>13.4</td>
<td>11.7</td>
<td>9.0</td>
<td>7.4</td>
<td>17.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Taxable dividendsb</td>
<td>1.2</td>
<td>3.4</td>
<td>6.8</td>
<td>10.5</td>
<td>12.8</td>
<td>13.8</td>
<td>13.6</td>
<td>37.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Taxable capital gainsc</td>
<td>2.0</td>
<td>3.3</td>
<td>4.6</td>
<td>6.8</td>
<td>9.3</td>
<td>11.1</td>
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<td>RPP contributions</td>
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<td>24.7</td>
<td>35.2</td>
<td>15.8</td>
<td>4.6</td>
<td>1.8</td>
<td>100.0</td>
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<tr>
<td>RRSP deductions</td>
<td>1.2</td>
<td>5.4</td>
<td>11.3</td>
<td>17.5</td>
<td>22.4</td>
<td>20.5</td>
<td>12.9</td>
<td>8.9</td>
<td>100.0</td>
</tr>
<tr>
<td>RPP + RRSP</td>
<td>1.0</td>
<td>4.9</td>
<td>11.9</td>
<td>19.8</td>
<td>26.4</td>
<td>19.0</td>
<td>10.3</td>
<td>6.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Interest expensed</td>
<td>4.0</td>
<td>6.9</td>
<td>9.1</td>
<td>12.0</td>
<td>14.7</td>
<td>13.7</td>
<td>12.1</td>
<td>27.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Notes:  

a Includes bond, bank, and mortgage interest; income from trusts; foreign investment income.

b Taxable amount of dividends from Canadian corporations; includes 44 percent gross-up for eligible dividends and 25 percent gross-up for non-eligible dividends; offset by dividend tax credits.

c Taxable amounts are 50 percent of capital gains realized in 2010.

d Includes interest expense paid on money borrowed to earn investment income; fees for management or safe custody of investments; safety deposit box charges; accounting fees for recording investment income; investment counsel fees.

Source: Authors’ calculations from Canada Revenue Agency (2012, Table 2, All Returns).
Figure 1: Business Capital Investment vs. Corporate Gross Savings, % of GDP, Canada, 1985-2011

Source: Computed by authors from Cansim tables 378-0019 and 380-0002.
Figure 2: Business Capital Investment vs. Personal Savings, % of GDP, Canada, 1985-2011

Source: Computed by authors from Cansim tables 380-0004 and 380-0002.
Figure 3: Portfolio Investment in Foreign Stocks by Canadian Residents as % of Annual Personal Savings, 1990-2010

Source: Computed by authors from Cansim tables 376-0002 and 378-0018.