

The Cost to Canadians of Complying With Personal Income Taxes

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Executive summary

The Fraser Institute has published a series of studies over the past several years estimating the total compliance costs associated with Canada's tax system. The purpose of this research is to quantify tax compliance costs and to ensure that they are considered as part of the broader policy debate with respect to the economic costs of taxation.

This current study builds on this previous research by estimating the cost of complying with the personal income tax system in 2012. It updates past estimates for the average amount of time and financial resources that Canadians spend to comply with the system, and then calculates aggregate compliance costs in Canada.

The estimates are based on survey data collected by an outside polling firm covering different compliance costs. This includes direct costs such as the time spent on collecting, organizing, and completing tax forms, professional fees paid, and the financial costs related to software and other assistance products. It also incorporates data on the time and resources spent on appeals and tax planning.

Several methods were then used to estimate the total cost of complying with personal income taxes in 2012. The study estimates that Canadians spent between \$5.84 billion and \$6.96 billion complying with the personal income tax system in 2012.

To put this in perspective: we estimate that personal tax compliance represents 0.5 percent of total household income in 2012. This is roughly \$501 per year for each Canadian household, or more than what the average household spent on groceries per month in that same year, according to Statistics Canada data.

It is important to note that the analysis finds that these costs fall disproportionately on lower-income taxfilers who spend a greater share of their income complying with the personal income tax system. We estimate that the ratio of tax compliance costs relative to income ranges from 3.3 percent for the lowest-income group to 0.9 percent for the second lowest to 0.5 percent for the third lowest and 0.3 percent for the highest-income group.

The study also seeks to understand the incremental compliance costs incurred to claim a sample of 10 federal tax expenditures, such as the Children's Fitness Tax Credit and the stock options deduction. The purpose is to give Canadians a better sense of the added complexity and compliance costs associated with tax expenditures in the personal income tax system.

The survey asked respondents whether they had used any tax expenditures from the list of 10, representing a broad cross-section of different provisions in the personal income system. The results allow us to estimate the added cost of compliance associated with using these provisions. The study estimates that incremental compliance costs associated with the use of at least one of the 10 tax expenditures is \$49.8 (2007 dollars) or 20.3 percent higher, on average, than using none of them.

We also organized the 10 tax expenditures into two categories—"family or individual" tax expenditures and "investment" tax expenditures—to see which ones contribute more to overall compliance costs. The study finds that the total compliance costs associated with the use of any of the five "family or individual" tax expenditures is \$34.3 (2007 dollars) or 13.9 percent higher, on average, than using none of them, and that the use of at least one of the five "investment" tax expenditures is associated with an increase of \$58.2 (2007 dollars) or 24.0 percent in total compliance costs. These findings show that the net value of these tax expenditures can be lower than their statutory rate after accounting for the associated compliance costs.

The study estimates that the aggregate compliance costs borne by Canadian taxfilers who used at least one of the 10 tax expenditures cited in the survey was \$730.4 million (2007 dollars). Given that this only accounts for the 10 provisions from the survey, it provides an illustrative sense of the extent to which tax expenditures can contribute to overall compliance costs.

Although lowering tax compliance costs is a not a central goal of this analysis, a number of specific measures that could be taken to reduce them are available to Canadian governments. The most obvious would be to reduce tax policies that add complexity to the personal income tax system, such as tax expenditures.

Introduction

The complexity of Canada's income tax system imposes significant costs on Canadians. Previous research published by the Fraser Institute has sought to estimate the overall compliance costs to Canadian taxfilers. Past estimates put the total personal income tax compliance costs between \$4.6 billion and \$6.7 billion in 2011.

This means that Canadians are spending considerable time and resources just to comply with the personal income tax system. These resources could be better allocated to more productive activities such as investment or savings.

Different factors contribute to the tax system's complexity and cost. These include, for instance, the presence of multiple marginal tax rates and differing tax treatment for different types of income.

The panoply of tax credits, deductions, and other special preferences (broadly known as "tax expenditures") is also a source of the tax system's complexity. The number of tax expenditures in the federal government's personal income system has increased in recent years. A review of the Department of Finance's *Tax Expenditures and Evaluations* reports finds that the number of personal income tax expenditures grew, on average, by 1.4 percent per year between 1992 and 2012, and has experienced average annual growth of 3.0 percent from 2005 to 2012.

Virtually every federal budget since 2006 has contained new tax expenditures related to specific activities or eligible groups, such as using public transit, having a child participate in an athletic or recreational activity, or caring for an aging or ill relative. The most recent budget (2014), for instance, introduced a new tax credit for those who volunteer in search and rescue operations in their communities, and augmented existing credits for medical expenses and those who adopt a child.

^{1.} Vaillancourt, Roy-César, and Barros (2013) also estimated the compliance costs associated with other forms of taxes. For instance, the costs associated with personal property taxes in 2011 were estimated at between \$138.6 million and \$246.2 million. Similarly, the range of estimates for business tax compliance costs for 2011 were between \$14.5 billion and \$17.8 billion. An additional \$6.6 billion was collectively spent by governments across the country to administer the tax system.

This study builds on this past research by updating the overall costs incurred to comply with the personal income tax system. The micro analysis on compliance costs found in the paper is drawn from Vaillancourt, Roy-César, and Barros (2013) and is included in order to contextualize the overall cost estimates. We have relied on their methodology to update the personal income tax compliance cost estimates.²

The study also seeks to better understand the added costs incurred to claim specific federal tax expenditures. The purpose is to give Canadians a better sense of the added complexity and compliance costs associated with federal tax expenditures.

Although lowering tax compliance costs is not a central goal of this analysis, a number of specific measures that could be taken to reduce them are available. The most obvious would be to reduce tax policies that add complexity to the system, such as a large subset of tax expenditures.

The study has three sections. The first considers the factors that contribute to the complexity of the personal income tax system, with a particular focus on the added complexity caused by tax expenditures. The second provides estimates on the direct compliance costs across a range of different sociodemographic characteristics and tax-related issues such as the use of tax expenditures. The third updates our estimate for the overall compliance costs associated with the personal income tax system.

^{2.} This study does not update the estimated tax administration costs incurred by Canadian governments—including the cost of collecting taxes, maintaining records, and managing appeals and investigations at the federal, provincial, and municipal levels—because it is difficult to separate costs associated with personal and business income taxes and other forms of taxation.

1 Complexity in the personal income tax system

Canada's personal income tax system has become increasingly complex over the past several decades. Some evidence of this is that the federal Income Tax Act has grown from eleven pages in length at its inception in 1917 to over 3,200 pages in March 2014.

A number of factors have contributed to this growing complexity. The main ones are the differentiated tax treatment of various kind of income and of the different circumstances in which individual or families find themselves. The presence of multiple marginal rates, and other features—such as provisions that adjust income for a taxfiler's family status—also contribute to the system's complexity, and impose costs in the form of time and financial resources on individual taxfilers in order to comply.

These are not the only sources of complexity, however. One of the major causes of the system's complexity is the significant number of tax expenditures that have appeared and evolved over time. Tax expenditures are a key feature of the federal personal income tax system.³ The system is now characterized by different tax credits, deductions, preferential rates, and accelerated depreciations that constitute these tax expenditures. What are tax expenditures, and what is their magnitude in the federal personal income tax system?

A tax expenditure is a deviation from a benchmark tax structure that does not contain any preferential tax provisions. The benchmark typically includes the rate structure, accounting conventions, deductibility of compulsory payments, provisions to facilitate tax administration, and international tax obligations. Even still there is considerable debate about how to define

^{3.} This section is only referring to the tax expenditures in the federal government's personal income tax system. This is partly because the survey questions used for this study refer only to the use of federal tax expenditures. It is important to note, however, that provincial governments also have tax expenditures that in some cases mirror the federal government's tax provisions and in others reflect provincial priorities. We will use "tax expenditures" in this section for simplicity, but it refers specifically to federal tax expenditures.

a benchmark tax structure and therefore what to consider a tax expenditure. The federal Department of Finance uses a broad definition—only the most fundamental structural elements of the tax system, such as the progressive personal rate structure, are considered features of the benchmark. By defining the benchmark in this way, many tax provisions are characterized as tax expenditures. That said, the Department of Finance breaks them down into tax expenditures and Memorandum items—these items are somewhere between a straightforward tax expenditure and a fundamental structural element.

Since 1994, the federal government has been producing an annual report with individualized information on the forgone revenue represented by its various tax expenditures. The cost estimates show the amount by which federal tax revenues have been reduced as a result of the existence of each preference assuming that all other factors remain unchanged. The estimates do not account for behavioural changes by taxpayers, the effect on economic activity, or the interaction between individual tax expenditures. The department does not aggregate the total cost of the tax expenditures, in part because of this interaction between different tax provisions. Also, the existence of a progressive personal income tax structure means that, as tax expenditures are added up, the rate that should be used to evaluate them changes, and this is not accounted for in the summing up.

Still, it can be illustrative to look at the number of personal tax expenditures to understand the extent to which the system now deviates from the benchmark norm. A review of the Department of Finance's *Tax Expenditures and Evaluations* reports finds that the number of personal income tax expenditures grew, on average, by 1.4 percent per year between 1992 and 2012, and has experienced an average annual growth of 3.0 percent from 2005 to 2012 (**figure 1**). There were 109 tax expenditures in the personal income tax system in 2012. The estimated cost of these tax expenditures obtained by simply adding up each item and thus upward bias was \$65.6 billion (Canada, Department of Finance, 2014). To put this in perspective, the government collected \$125.7 billion in personal income tax revenues in the 2012/13 fiscal year (Canada, Receiver General for Canada, 2013).

^{4.} The 2013 tax expenditure report sets out a number of caveats to the estimates and projections. Among them it states that "the cost of each tax measure is determined separately, assuming that all other tax provisions remain unchanged. Many of the tax expenditures do, however, interact with each other such that the impact of several tax provisions at once cannot generally be calculated by adding up the estimates and projections for each provision" (Canada, Department of Finance, 2013: 9).

^{5.} This number of tax expenditures and estimate of forgone revenues excludes the Quebec Abatement, the transfer of income tax points to the provinces, and "Memorandum Items" in the *Tax Expenditures and Evaluation* report because they "may be considered part of the benchmark system" (Canada, Department of Finance, 2014: 9).

Figure 1: Number of tax expenditures, 1992–2012

Note: This number of tax expenditures excludes the Quebec Abatement, the transfer of income tax points to the provinces, and "Memorandum Items."

Source: Canada, Department of Finance (2012, 2013, 2014); calculations by authors.

One study (Sheikh, 2014) estimates that accounting for the forgone revenue represented by total government tax expenditures (personal, corporate, and sales tax) at both the federal and provincial levels would have increased the size of government relative to GDP from 44 percent to 54 percent in 2009, since transforming them into revenue and budgetary expenditures would flow them through the budgets of these governments.

Not all tax expenditures are created equal, however. As mentioned, the federal government "takes a broad approach" in determining what constitutes a tax expenditure relative to the benchmark tax structure, and even provides estimates for some measures that other jurisdictions consider to be part of the benchmark (Canada, Department of Finance, 2013: 9). This means that the potential revenue gain that would be realized by eliminating individual tax measures would depend on their interaction with other provisions and the extent to which other government policies would be adjusted.

There is no question though that there are a considerable number of tax expenditures that are part of the personal income tax system and which represent a significant cost in the form of foregone revenues. These tax expenditures cover a wide range of activities and cohorts, including tax subsidies for charitable and political donations, tax credits for education and textbook costs, and a series of tax measures related to retirement savings and pension income.

The system of tax expenditures can be complicated for taxfilers to navigate. A review of the various tax expenditures finds considerable overlap and apparent redundancies. That is not to say that the underlying policy objectives

for these measures are indefensible. But it does mean that the system may be unnecessarily complicated and contribute to higher compliance costs. A study by Clemens (2012), for instance, finds almost twenty credits or deductions dedicated to work-related expenses, including deductions for union and professional dues, a general employment credit, and a credit for those working overseas. This is not the only instance of duplicative or stacked tax preferences for certain constituencies or activities. Those attending postsecondary institutions benefit from tax credits for tuition, textbooks, interest on student loans, and general living costs incurred during the academic year, and if a student does not have income to report in a given year then he or she can carry forward these tax benefits to subsequent years or transfer them to a spouse or parent. There are also several different tax credits and deductions for older Canadians, including the Age Credit (available to any taxfiler who is aged 65 years old or older), the Pension Income Credit (available to anyone over 55 years old with eligible pension income), as well as pension income splitting which allows individual taxfilers to split up to 50 percent of their pension income with their spouse or common-law partner in order to lessen their tax liability. This layering of tax expenditures for certain population groups or activities can complicate the system and possibly lead to higher compliance costs.

The complexity of the tax expenditure regime may also contribute to low take-up, especially among certain groups. It is difficult to quantify the incidence of non-take-up or the reasons that taxfilers fail to claim credits or deductions for which they are eligible. There is not much empirical research in this area.

Some qualitative studies have sought to better understand the reasons eligible taxfilers do not use certain tax expenditures. Bunt, Adams, and Leo (2006) investigated the barriers to claiming the pension tax credit in the United Kingdom, and found that pensioners did not claim the credit for three reasons: concern about the interaction of the tax credit with other government payments; a mistaken belief that they are not eligible due to their capital or occupational pension; and a lack of awareness of the measure. A study published by the UK government (Breese, Maplethorpe, and Toomse, 2011) used survey data in an attempt to understand the reasons that eligible taxfilers did not claim certain tax credits, and found that awareness was not

^{6.} The 2012 federal budget announced the government's plan to phase out this credit over four years (Canada, Department of Finance, 2012: 426).

^{7.} Neill (2013) finds that the benefits from these post-secondary tax measures go disproportionately to students from relatively well-off families who are not relatively sensitive to the costs of post-secondary education, while students from lower-income families only benefit after they have finished their education and have enough taxable income to claim the credits.

the main issue but rather confusion about eligibility. Perceptions about high relative compliance costs, the net effect of a tax expenditure, and the extent to which these may affect take-up are not set out in these studies.

A recent Canadian study examined the awareness and use of the federal government's Children Fitness Tax Credit among parents. Fisher et al (2013) found that awareness of the tax credit was at 65 percent among survey respondents, with gender, age, education and income all being significantly associated with awareness. In particular, the study finds that women, parents between 40 and 49 years of age, those with post-secondary education, and those earning more than \$40,000 annually were all more likely to be familiar with the Children's Fitness Tax Credit.

The extent to which the system's complexity discourages the take-up of different tax expenditures will not be reflected in our estimates of the compliance costs. But the research shows that lack of awareness and confusion about eligibility, and interaction with other tax expenditures and government programs, can cause people not to use certain tax expenditures, and this may be driven in part by the system's complexity. It is worth noting that lower take-up for whatever reason mitigates the revenue loss and economic distortions that tax expenditures can cost.

In addition, the growing number of different tax expenditures in the personal income tax system is a source of growing complexity and in turn higher compliance costs. We provide estimates of the direct compliance costs associated with a sample of different tax expenditures in the next section of the paper.

^{8.} According to the study, over 8 in 10 (84 percent) of eligible non-recipients said that they had heard of tax credits.

^{9.} The Children's Fitness Tax Credit allows a taxpayer to claim a maximum of \$500 per child for fees related to registration or membership in a prescribed program of physical activity, lowering liability by 15 percent of \$500 (i.e., \$75).

2 Comparing compliance costs associated with the use of tax expenditures and other characteristics

There are a number of economic costs resulting from personal income taxation. The most direct cost of taxation is the tax itself. It is the amount of earnings that an individual forgoes when he or she pays taxes. Another cost of taxation is the incentive effects of taxes. Taxes create a wedge between what individuals earn and what they actually receive for their efforts. The incentive costs from taxes are a result of changed behaviour and forgone opportunities. For instance, a worker might decide to work less overtime because he or she deems the reward (that is, additional earnings) insufficient to compensate them for the extra effort.

The costs associated with complying with the tax system are frequently ignored in public policy debates. Compliance costs include the time required to collect and organize receipts, accounting and other professional fees, the time required to complete tax forms if professionals are not used, appeal costs if applicable, and the general costs of remitting returns. This analysis seeks to estimate these costs after accounting for a number of different characteristics, including the extent to which taxfilers may use tax expenditures.

Methodology and data sources

The study is based on survey data collected by Leger Marketing, a polling firm, on behalf of the Fraser Institute. Data was collected between April 21 and May 11, 2008, and the sample consists of 2,000 Canadians residing in 10 provinces who had filed a federal income tax return in 2007. The survey

^{10.} The overall margin of error for this study of this size is $\pm 2.2\%$, 19 times out of 20. The three territories were excluded because of the cost and difficulty of including them. They accounted for 67,920 of income tax returns filed in 2006, or 0.3 percent of taxfilers (24,141,700). The study also did not include a sample of those filing returns outside of Canada (78,780 in 2006). The same proportion of taxfilers from the territories and outside Canada holds for 2011.

includes 40 tax-related questions on the time and money spent on various taxfiling activities. For example, participants were asked about the different methods used for completing their income tax return, out-of-pocket expenses, and time spent on tax planning and completing their tax return.

The survey participants were also asked if they had claimed any federal tax expenditures from a list of 10 options. The range of federal tax expenditures was selected to provide for a broad cross-section of measures covering education, employment, health, general business and investment, and income maintenance and retirement. The length of the list is a compromise between what would have been ideal—all tax expenditures—and what was feasible in a phone survey, given budget constraints. The purpose was to discern the extent to which these federal tax expenditures contribute to overall compliance costs. This will be discussed in greater detail later in the study.

Additional questions about income level, source of income (e.g., wages, rental income, capital gains, and self-employment), and numerous demographic questions such as age, sex, education, location, language skills, and marital status, were also included.

The survey methodology and questionnaire (English version) can be found in Appendices A and B in Vaillancourt, Roy-César, and Barros (2013). 11

Defining compliance costs

Before analyzing the data gathered by the survey, it is important to set out the different types of costs associated with tax compliance. Six categories of compliance costs are used in our estimates.

- 1 Time on direct compliance is the sum of time spent readying and sorting tax-related information, time gathering documents, time preparing returns, time meeting preparers (paid and unpaid), and time of unpaid preparers. The first two activities are undertaken by all taxfilers, while the last three are undertaken according to the taxfiling mode selected.
- **2** Time on appeals and planning is the sum of the time spent on these two items. These are activities engaged in only by a subset of individuals and it is particularly small with respect to tax appeals.

^{11.} Specifically, Appendix A in that publication presents the main characteristics from the survey and sample and the characteristics for the taxfiler population in 2006. The survey sampled a smaller proportion of men and a larger portion of women than is found in the Canadian population. The survey results are weighted to correct this imbalance and ensure the results are representative of the Canadian population.

- **3 Total time** is the sum of the previous two categories.
- **4 Spending on direct compliance** is the sum of payments to tax preparers (the main expense), cost of purchasing software, and out-of-pocket expenses (such as postage and photocopies).
- 5 Total cost of direct compliance is the sum of the value in dollars of time spent on complying with the personal income tax system, calculated as the amount of time each individual spends multiplied by his or her wage rate (as reported in the survey or calculated using an assumed hourly rate of \$10), plus the total spending on direct compliance (as set out in #1 and #4).¹²
- **6** Total cost of tax activities is the sum of the value of time and dollars spent on direct compliance activities (as set out in #5) and on appeals and planning (as set out in #2).

These different categories help us to reach a comprehensive estimate of total compliance costs for individuals in the personal income tax system.

Descriptive statistics

The survey allowed us to break down the different modes of taxfiling and the demography, income levels, and tax-related choices related to the four types of tax preparation: self, using paper form; self, using software; friend, family, or not-for-profit group; or paid tax preparer. **Table 1a** sorts filers by socio-demographic characteristics, **table 1b** by income, and **table 1c** by income tax characteristics. There were only a small number of survey respondents who reported using internet-based software, so these filers were grouped with those who used software on their computers. ¹³ This information on tax filing mode is important in the analysis of compliance costs, since we show later in the paper that there are important cost differences among the various modes.

^{12.} The sample was divided among those who did not report a wage rate (514 individuals), those who reported a wage (1,071 respondents), and those who answered "I don't know" or refused to answer (415 individuals). For those who did not report a wage, an examination of the data showed that the vast majority were individuals who reported being "retired." Although those individuals do not have a wage, the time spent on income tax matters is not valueless: an imputed value of time of \$10 per hour was attributed to them. This was used as a reasonable estimation of the value of time of individuals not in the active workforce.

13. The authors acknowledge that the number of people filing their taxes online has increased since 2007, when the survey was conducted. For instance, that number was 3.7 million in 2009 (the latest year with available data), or 15 percent of all returns—up from 3.1 million in 2007 (about 13 percent of total returns), an increase of almost 20 percent (http://www42.statcan.gc.ca/smr08/2011/smr08_154_2011-eng.htm).

Table 1a Percentage of tax filers using a preparation mode, by sociodemographic characteristics of taxfilers, personal income tax, Canada, 2007

	Self, paper form (%)	Self, software (%)	Friend, family, or not-for-profit group (%)	Paid tax preparer (%)	Self, software / Self, paper (ratio)
Sex					
Men	15.3	18.4	17.2	49.1	1.2
Women	13.9	15.0	18.1	53.0	1.1
All tax filers	14.4	16.3	17.7	51.5	1.1
Minors in the household					
None	16.2	15.4	17.7	50.7	1.0
At least one	8.9	24.0	16.7	50.4	2.7
Age					
18–24	9.0	13.4	26.9	50.7	1.5
25–34	9.1	21.3	19.7	50.0	2.3
35–44	13.3	17.9	17.3	51.5	1.3
45–54	13.9	22.2	13.2	50.7	1.6
55–64	18.8	15.9	18.5	46.9	0.8
65+	14.1	7.6	19.4	59.0	0.5
Employment situation					
Employed full-time	14.1	24.2	15.2	46.5	1.7
Employed part-time	14.7	10.9	19.0	55.4	0.7
Unemployed	15.6	15.6	31.3	37.5	1.0
Homemaker	7.9	18.4	28.9	44.7	2.3
Retired	15.6	11.1	18.6	54.7	0.7
Other	7.5	15.0	12.5	65.0	2.0
Education					
Less than high school	8.2	5.5	28.8	57.5	0.7
High school completed	9.5	12.8	23.5	54.3	1.3
Post secondary technical school or college degree	13.3	18.2	16.6	52.0	1.4
Completed undergraduate degree	19.4	25.6	8.3	46.7	1.3
Post-graduate degree	19.3	27.9	13.6	39.3	1.4
Marital situation					
Married	13.0	17.8	15.4	53.8	1.4
Single	17.5	16.6	19.6	46.3	0.9
Other	15.8	10.6	24.8	48.8	0.7
Language skills					
Poor knowledge of English or French	14.3	16.8	17.6	51.3	1.2
Good+ knowledge of English or French	14.8	16.4	17.8	51.0	1.1
Region					
Atlantic	17.4	8.3	30.3	43.9	0.5
Quebec	14.8	12.0	19.9	53.2	0.8
Ontario	12.7	19.3	17.3	50.7	1.5
Prairies	14.2	22.1	12.4	51.2	1.6
British Columbia	18.7	11.6	14.1	55.6	0.6

Note: Percentages in first four columns sum across rows, but may not add up to 100 due to rounding. Source: Calculations by the authors using survey data.

The main findings shown in table 1a are as follows:

- Men are more likely than women to prepare their own income tax return.
- Households with children are more likely to use software to prepare their own income taxes.
- The self-preparing mode increases in frequency with age from 18–24 to 45–64 and then drops off. The use of software among those preparing tax returns themselves is highest in the 25–34 group and lowest among those 65 and older, as shown by the ratio in the rightmost column. The use of software also increases with education, as does the importance of self-preparation.
- Paid preparers are more often used by individuals who are employed.
- The use of paid preparers is highest among those 65 and older and married individuals. Regionally, use of paid tax preparers is highest in Quebec and British Columbia.
- Language skills are not related to tax preparation mode.

Table 1b shows that the use of paid preparers is significantly higher when taxable income is above \$100,000. Paid preparers are more often used by individuals with more complex sources of income, such as self-employment or rental properties, than by those with income from wages and salary.

Table 1c shows that paid preparers are used more often by those using the provisions of the Income Tax Act associated with less common types of investment in natural resources, the investment credit, or stock options. It also shows that taxfilers are more likely to use tax expenditures if their tax return is completed by a paid preparer.

Table 1b Percentage of tax filers using a preparation mode, by level and type of income of taxfilers, personal income tax, Canada, 2007

	Self, paper form (%)	Self, software (%)	Friend, family, or not-for-profit group (%)	Paid tax preparer (%)	Self, software / Self, paper (ratio)
Income					
Less than \$10,000	14.4	9.9	28.4	47.3	0.7
\$10,000-\$29,999	15.4	11.7	21.1	51.8	0.8
\$30,000-\$49,999	13.7	18.9	18.3	49.1	1.4
\$50,000-\$69,999	16.4	22.3	9.7	51.7	1.4
\$70,000-\$99,999	12.0	30.3	12.0	45.8	2.5
\$100,000-\$149,999	14.9	21.3	4.3	59.6	1.4
\$150,000 and greater	14.3	17.9	10.7	57.1	1.3
Type of income					
Wages and salary	14.8	20.7	15.5	49.1	1.4
Self-employment income	8.5	16.4	6.6	68.5	1.9
Child tax benefit	9.3	19.0	18.1	53.6	2.0
Government transfer payment	14.4	10.7	24.3	50.7	0.7
Private pension	19.0	13.3	13.3	54.5	0.7
Interest income	16.6	19.9	11.6	51.9	1.2
Dividend income	12.5	21.3	10.8	55.5	1.7
Rental income	6.9	14.5	15.9	62.8	2.1
Capital gains	15.1	21.6	8.2	55.2	1.4
Other investment income, Canadian	12.7	16.0	12.3	59.0	1.3
Investment income, non-Canadian	13.6	23.9	11.4	51.1	1.8
Labour income, non-Canadian	11.1	33.3	11.1	44.4	3.0
Pension Income, non-Canadiar	n 15.8	5.3	18.4	60.5	0.3

Note: Percentages in first four columns sum across rows, but may not add up to 100 due to rounding.

Source: Calculations by the authors using survey data.

Table 1cPercentage of tax filers using a preparation mode, by tax-related choices, taxfilers, personal income tax, Canada, 2007

	Self, paper form (%)	Self, software (%)	Friend, family, or not-for-profit group (%)	Paid tax preparer (%)	Self, software / Self, paper (ratio)
Experience with tax system					
4 years or less	11.6	11.6	25.3	51.6	1.0
5–9 years	7.6	20.2	16.8	55.5	2.7
10 years or more	15.2	16.3	17.4	51.1	1.1
Date return filed					
January 1–February 28	15.7	13.6	23.3	47.5	0.9
March	16.9	15.8	18.8	48.5	0.9
April 1–20	10.3	15.6	17.3	56.8	1.5
April 21–30	16.1	20.4	12.0	51.5	1.3
May 1 and later	13.2	26.4	17.0	43.4	2.0
Tax law provisions used					
Natural resources	12.5	7.5	15.0	65.0	0.6
Education and tuition	9.0	22.8	14.8	53.4	2.5
Stock options	8.5	14.1	16.9	60.6	1.7
LSVCC	14.3	21.4	14.3	50.0	1.5
Medical expenses	11.9	15.3	15.3	57.6	1.3
Child fitness	13.0	28.0	12.4	46.6	2.2
Urban transit	13.8	30.4	21.0	34.8	2.2
Pension income splitting	13.9	14.4	13.9	57.9	1.0
Foreign tax credit	19.7	31.1	8.2	41.0	1.6
Investment credit	13.0	13.0	6.9	67.2	1.0

Notes: LSVCC = Labour Sponsored Venture Capital Corporation.

Percentages in first four columns sum across rows, but may not add up to 100 due to rounding.

Source: Calculations by the authors using survey data.

Tables 2a, 2b, and 2c provide information about the six categories of compliance costs, based on sociodemographic characteristics, income, and income tax characteristics respectively. It is important to note that the reported findings on tables 2a–c are the average values for each category, and exclude outliers (responses that were more than twice the standard error above the mean for any answer to a compliance cost question). These results do not allow us to see how one characteristic or another affects the resources allocated to different tax compliance activities. This is the case since various characteristics might interact among each other. For this reason, the results of a multivariate analysis are reported later in this section.

^{14.} This was done to address any data abnormalities in terms of large variations in values or clustering. This strengthens our analysis by ensuring that the values of compliance costs reported in the study for a specific characteristic are a minimum, and not driven up by a small number of anomalous responses.

Table 2a Total costs (time or \$), by sociodemographic characteristics of taxfilers, personal income tax, Canada, 2007

	Time spent on direct compliance	Time spent on appeals, planning	Total time*	Spending on direct compliance (\$)	Total value, direct compliance (\$)	Total value, all compliance activities (\$)
Sex						
Men	5.65	2.46	8.41	61.90	203.51	253.79
Women	4.87	1.80	6.76	60.90	154.15	193.43
All taxfilers	4.99	1.97	7.16	61.39	173.25	216.53
Minors in the household						
None	4.65	1.78	6.70	59.58	145.22	200.45
At least one	6.11	2.63	9.25	61.23	192.62	289.40
Age						
18–24	5.67	2.44	7.64	48.77	122.56	148.59
25–34	4.73	1.89	6.83	57.27	158.87	205.75
35–44	5.77	2.49	8.90	58.69	204.91	281.36
45–54	5.07	2.01	7.56	61.12	200.00	249.45
55–64	5.47	2.18	7.30	62.95	177.61	207.91
65+	5.09	1.93	7.30	67.05	162.68	194.66
Employment situation						
Employed full-time	5.49	2.56	8.23	60.46	190.14	277.37
Employed part-time	5.78	1.85	7.65	65.96	179.47	223.89
Unemployed	4.10	1.31	5.49	32.82	94.05	116.26
Homemaker	4.37	1.89	6.59	49.43	145.13	188.24
Retired	4.30	1.70	6.44	63.20	113.62	131.71
Other	4.42	1.64	6.22	69.08	168.52	227.99
Education						
Less than high school	4.24	1.06	5.22	56.42	134.14	159.50
High school completed	4.85	1.64	6.76	60.25	161.83	189.12
Post secondary technical school or college degree	4.60	1.97	7.03	64.54	159.07	220.12
Completed undergraduate degree	5.83	2.49	8.46	59.42	205.14	259.87
Post-graduate degree	6.48	3.82	10.50	59.38	224.78	303.25
Marital situation						
Married	5.58	2.38	8.18	68.66	200.23	253.19
Single	4.77	1.61	6.43	44.81	135.89	167.89
Other	4.45	1.68	6.39	51.83	142.49	168.50

Continued on page 16.

Table 2a, continued

	Time spent on direct compliance	Time spent on appeals, planning	Total time*	Spending on direct compliance (\$)	Total value, direct compliance (\$)	Total value, all compliance activities (\$)
Language skills						
Poor knowledge of English or French	5.26	2.31	7.72	61.73	182.16	231.61
Good+ knowledge of English or French	5.30	2.14	7.65	61.31	179.60	225.17
Region						
Atlantic	5.23	2.42	8.30	47.32	139.87	186.34
Quebec	5.07	1.31	6.78	57.97	157.48	182.31
Ontario	5.15	2.41	7.57	58.53	178.82	225.78
Prairies	5.47	2.47	8.03	73.32	209.53	273.64
British Columbia	5.87	2.45	8.59	71.55	206.38	259.86

Note: *The sum is calculated using individual observations and not the means of time on direct compliance costs and time on appeals and planning. Then, responses that were more than twice the standard error above the mean were excluded. For this reason, it can differ from the sum of the means.

Source: Calculations by the authors using survey data.

The main findings shown in table 2a are as follows:

- Men incur higher compliance costs than women for all six items.
- Direct and total compliance costs first increase and then decrease with age, peaking in the 35–54 age range, while the three time-related measures show a slight downward trend with age.
- Total compliance costs of individuals with a post-graduate degree are twice those of individuals with less than high school education. There is an upward trend for all three time-related measures, but not for direct spending.
- Married taxfilers have higher compliance costs than others for all six measures. Their use of various child-related provisions of the income tax system, such as child-care expense deductions and the Registered Education Savings Plans, may explain this in part.
- Total compliance costs increase from east to west, in part due to higher wages. The total time spent in Atlantic Canada is actually higher than in the Prairies (8.30 versus 8.03 hours) but the direct compliance costs are \$69 higher in the Prairies, with only \$26 due to higher spending on direct compliance.
- Degree of knowledge of English or French has no impact on these 6 categories.

Table 2b shows that all six compliance categories increase in absolute value with income levels but the values of the last three measures decrease as a share of income. This means that while lower-income taxfilers incur a smaller tax compliance cost in dollar terms, as a share of income their cost is higher than it is for middle- and upper-income taxfilers, as illustrated in figure 2. The ratio of tax compliance costs relative to income ranges from 3.3 percent for the lowest-income group to 0.9 percent for the second lowest to 0.5 percent for the third lowest, and then tapers off at 0.3 percent.

Table 2b Total costs (time or \$), by level and type of income of taxfilers, personal income tax, Canada, 2007

	Time spent on direct compliance	Time spent on appeals, planning	Total time*	Spending on direct compliance (\$)	Total value, direct compliance (\$)	Total value, all compliance activities (\$)
Income						
Less than \$10,000	4.58	1.70	6.66	50.12	129.42	166.39
\$10,000-\$29,999	5.20	1.90	7.29	52.49	144.30	179.63
\$30,000-\$49,999	5.07	1.92	7.00	59.29	176.07	214.48
\$50,000-\$69,999	5.66	2.11	7.98	66.85	196.10	261.30
\$70,000-\$99,999	5.85	3.75	10.81	74.03	245.39	339.55
\$100,000-\$149,999	5.99	3.40	9.40	95.71	359.01	471.09
\$150,000 and greater	8.07	5.09	13.16	77.72	385.09	481.11
Type of income						
Wages and salary	5.21	2.32	7.74	60.16	191.64	239.95
Self-employment income	7.40	3.55	10.74	103.25	292.03	389.32
Child tax benefit	5.82	2.49	8.60	64.00	201.10	253.83
Government transfer payment	5.32	2.00	7.31	56.80	155.34	188.26
Private pension	5.48	2.32	7.59	68.90	188.82	229.35
Interest income	5.94	2.76	8.97	68.05	214.78	270.72
Dividend income	6.05	3.10	9.55	75.40	233.00	294.71
Rental income	6.52	2.93	10.45	84.76	271.45	332.35
Capital gains	6.23	3.29	9.94	75.28	248.92	316.76
Other investment income, Canadian	5.89	2.79	8.63	68.97	228.72	297.67
Investment income, non-Canadian	6.95	3.37	11.11	72.08	252.12	320.37
Labour income, non-Canadian	nc	nc	nc	nc	nc	nc
Pension Income, non-Canadian	5.22	1.40	6.62	70.08	136.12	154.57

Note: *The sum is calculated using individual observations and not the means of time on direct compliance costs and time on appeals and planning. Then, responses that were more than twice the standard error above the mean were excluded. For this reason, it can differ from the sum of the means.

Source: Calculations by the authors using survey data; "nc" = not calculated.

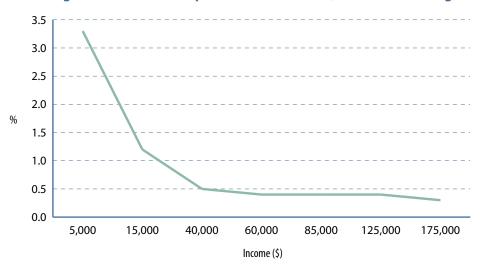


Figure 2: Ratio of all compliance costs to income, seven income categories

Source: Vaillancourt et al. (2013).

Table 2c shows that direct compliance costs are highest for filers using a paid preparer, followed by self-filers using software, and that they are lowest for those having their taxes prepared by a not-for-profit group, friend, or family member without payment. It also shows that average total compliance costs for those who use any of the 10 tax expenditures, which range between \$233 and \$344, exceed the overall average (around \$216).

To summarize, direct compliance costs are higher for those with higher income levels, ¹⁵ those who use tax preparers (such as accountants), and those who make use of certain tax expenditures, such as the Labour-Sponsored Venture Capital Tax Credit and ones related to the natural resource sector. ¹⁶ Compliance costs are lower for women, singles, those with less than high school education, and those earning less than \$30,000, though it is important to note that low-income earners spend a greater proportion of their income on tax compliance than middle- and high-income earners.

^{15.} This is partly driven by the fact that higher-income taxfilers earn higher wages which raises the estimate of the opportunity cost of their time spent on tax compliance.

^{16.} The federal government announced its intention to phase out the Labour-Sponsored Venture Capital Tax Credit in the 2013 budget.

Table 2c Total costs (time or \$), by tax-related choices of taxfilers, personal income tax, Canada, 2007

	Time spent on direct compliance	Time spent on appeals, planning	Total time*	Spending on direct compliance (\$)	Total value, direct compliance (\$)	Total value, all compliance activities (\$)
Return completion mode						
Self, paper	5.79	2.68	9.08	5.20	129.37	167.33
Self, software	6.07	2.93	9.02	33.27	182.75	251.29
Unpaid family / friend / NFP	5.66	1.26	6.86	9.79	109.80	135.26
Paid tax preparer	4.72	2.02	6.97	107.92	217.23	262.37
Experience with tax system						
4 years or less	6.25	2.56	8.48	46.44	142.83	174.55
5–9 years	5.05	2.09	6.67	58.74	167.17	192.25
10 years or more	5.21	2.12	7.58	62.37	181.19	227.89
Date return filed						
January 1–February 28	4.34	1.55	5.78	52.06	154.37	187.05
March	5.20	1.83	7.25	52.35	162.16	201.36
April 1–20	4.94	2.06	7.30	70.97	183.60	225.19
April 21–30	6.28	3.09	9.68	68.81	208.99	269.22
May 1 and later	6.13	3.82	9.69	57.15	251.45	355.96
Federal tax expenditure used						
Natural resources	7.80	1.40	15.01	80.09	234.35	340.32
Education and tuition	6.50	2.59	9.38	62.04	222.46	291.18
Stock options	6.73	3.11	9.93	78.10	276.53	344.68
LSVCC	6.32	2.48	8.80	80.12	273.13	343.76
Medical expenses	5.75	2.35	8.39	70.73	204.37	256.96
Child fitness	6.69	3.34	10.19	63.19	245.89	332.76
Urban transit	5.36	2.51	8.49	45.93	216.33	263.13
Pension income splitting	6.11	2.45	8.55	72.49	196.74	233.12
Foreign tax credit	8.22	5.11	14.51	66.95	249.31	311.36
Investment credit	5.99	2.78	9.51	85.15	248.73	298.24

Note: * The sum is calculated using individual observations and not the means of time on direct compliance costs and time on appeals and planning. Then, responses that were more than twice the standard error above the mean were excluded. For this reason, it can differ from the sum.

Source: Calculations by the authors using survey data.

Multivariate analysis

The information in tables 2a–c presents evidence on the average costs in time and financial resources for individuals with specific sociodemographic characteristics, types, and levels of income, and different methods for completing income tax returns. But the results associated with a given characteristic may be influenced by others—for instance, individual income tends to increase with more education. In order to better understand the interaction between these various factors, we have also carried out multivariate analysis using the technique of ordinary least squares. We present two analyses using two different dependent variables: the dollar value of compliance costs (2007 dollars) (table 3a), and the natural log of the dollar value of compliance costs, which can be interpreted as a percentage change (table 3b).¹⁷

Table 3a provides the results of our multivariate analysis and its findings with respect to the differences in direct compliance costs (in dollar values) across the various characteristics. We control for the use of tax expenditures in two ways. The first is by using an indicator variable equal to 1 if the taxfiler used any tax expenditure and zero otherwise (*Model 1*). This allows us to estimate the relationship between the use of any tax expenditure and direct compliance costs.

The second is by dividing tax expenditures into two categories: "family or individual" tax expenditures, which include measures related to public transit use, medical expenses, education and tuition, children fitness, and pension income splitting; and "investment" tax expenditures, which include the Foreign Tax Credit, the Labour-Sponsored Venture Capital Tax Credit, a deduction related to stock options, and measures related to the natural resource sector and general investment. We construct a separate indicator variable for these categories (*Model 2*). The purpose of the two categories is to estimate the relationship between different types of tax expenditures (broadly defined) and direct compliance costs, and to get a sense of which contribute more to overall compliance costs. ¹⁸

Model 1 provides the difference in direct compliance costs (2007 dollars) for those who used any of the tax expenditures after controlling for factors such as age, gender, education, employment situation, type of income, and so on, which we suspect influence compliance costs. ¹⁹ The estimate indicates that total direct compliance costs associated with the use of at least one personal income tax expenditure is \$49.8 higher (2007 dollars), on average, than using none. ²⁰

^{17.} The analysis excludes appeals and tax planning.

^{18.} We also calculated the direct compliance cost associated with each of the 10 personal income tax expenditures; however, the results are not presented due to small sample sizes.

^{19.} For those who used any of the 10 tax expenditures asked about in the survey, the average number of tax expenditures used by these respondents is 1.6.

^{20.} Overall, as shown by the R-square, about one fifth (0.21) of the total direct compliance costs are explained by the variables used; this a reasonable result for survey based analysis.

Table 3a Multivariate analysis of total direct compliance costs, Canada, 2007 (Dependant variable: \$ compliance cost)

	MODEL Coefficie \$		MODEL 2 Coefficier \$	
Use of tax expenditure provision (none as reference)				
Any tax provision	49.8	***		
"Individual or family" tax expenditure			34.3	*
"Investment" tax expenditure			58.2	*
Sex (women as a reference)				
Men	17.3		17.5	
Minors in the household (none as reference)				
At least one	47.9	*	48.6	*
Employment situation (employed full-time as reference)			
Employed part-time	-32.9		-30.9	
Unemployed	-50.7	+	-46.6	+
Homemaker	-21.3		-17.0	
Retired	-125.5	***	-120.7	***
Other	-50.6		-48.6	
Age (18-24 as reference)				
25–34	-11.5		-11.9	
35–44	34.7		34.0	
45–54	-14.8		-14.3	
55–64	28.0		28.5	
65+	37.6		34.0	
Education (some high school or less as reference)				
High school completed	0.8		1.5	
Post secondary technical school or college degree	-15.4		-15.5	
Completed undergraduate degree	41.9	+	45.1	+
Post-graduate degree	46.7		47.9	
Marital status (married or living in common-law as reference	ce)			
Single	-26.4	+	-26.7	+
Other	7.4		8.5	
Region (Atlantic as reference)				
Quebec	-41.2	+	-38.4	
Ontario	-27.6		-26.9	
Prairies	-3.7		-4.0	
British Columbia	0.4		3.4	

Continued on page 22.

Table 3a, continued

	MODEL 1 Coefficient \$	MODEL 2 Coefficient \$
Income (less than \$10,000 as reference)		
\$10,000-\$29,999	-11.0	-9.9
\$30,000–\$49,999	15.8	18.7
\$50,000–\$69,999	8.2	10.6
\$70,000–\$99,999	43.2	46.1
\$100,000-\$149,999	67.7	73.9
\$150,000 and greater	189.9 *	185.6 *
Experience with the tax system (first year as reference)		
2-4 years	49.0	43.9
5–9 years	74.3	68.6
10 years or more	51.3	43.0
Native language (no as reference)		
Yes	5.7	6.3
Type of income (no income as reference)		
Wages and salary	-25.6	-27.5
Self-employment income	109.0 ***	108.3 ***
Child tax benefit	6.5	6.2
Government transfer payment	9.0	9.2
Private pension	-0.4	-1.8
Interest income	21.9	24.4
Dividend income	17.5	11.6
Rental income	51.3 +	42.6
Capital gains	50.8 +	48.4 +
Other investment income, Canadian	3.7	-6.1
Investment income, non-Canadian	31.5	17.0
Labour income, non-Canadian	86.5	85.2
Pension income, non-Canadian	-47.9	-53.2
Preparation mode (self, using paper form as reference)		
Self, using software	43.2 +	44.1 +
Self, using online software	4.9	5.2
Not-for-profit (NFP)	10.7	9.8
Friend or family	15.4	14.8
Paid tax preparer	102.7 ***	101.8 ***
Constant	44.1	53.7
N	1,196	1,196
Adjusted R ²	0.21	0.21

Note: Bolded estimates are significant at either a 90% (+), 95% (*), 99% (**) or 99.9% (***) level. All are based on robust standard errors.

Source: Calculations by the authors using survey data.

Results from Model 2 shows that after controlling for the factors set out above, the total direct compliance costs associated with the use of "family or individual" tax expenditures is \$34.3 higher (2007 dollars), on average, than not using them.²¹ The use of "investment" tax expenditures is associated with an increase of \$58.2 (2007 dollars) in total direct compliance costs.²² These findings show that the net average value of these tax expenditures—after accounting for the costs associated with direct compliance—can be lower than their statutory rate.

We are able to calculate the aggregate cost borne by Canadian taxfilers who use at least one of the 10 tax expenditures cited in the survey by applying the percentage of survey respondents who used at least one of the 10 expenditures (59 percent) to the general taxfiling population and multiplying the average incremental direct compliance costs associated with the usage of these tax expenditures.²³ We estimate that the aggregate direct compliance costs associated with these 10 expenditures is \$730.4 million (2007 dollars).

We used the same method to calculate the aggregate compliance costs associated with both the "family or individual" and "investment" tax expenditure categories. The aggregate direct compliance costs for the "family or individual" category is estimated to be \$477.6 million (2007 dollars). The aggregate direct compliance costs for the "investment" category is \$190.3 million (2007 dollars).

Another way of reporting these results is in terms of average percentage difference in direct compliance costs relative to the non-use of tax expenditures (table 3b). After controlling for the same factors, the direct compliance costs associated with the use of any of tax expenditures is, on average, 20.3 percent²⁴ higher than not using them (second column of table 3b).²⁵

Using the two categories described above, the results are as follows: the use of a "family or individual" tax expenditure is estimated to increase one's total direct compliance costs by 13.9 percent, and in the case of "investment" tax expenditures the direct compliance costs increase, on average, by 24.0 percent.²⁶

^{21.} For those who used any of the "family or individual" tax expenditures, the average number of tax expenditures used by these respondents is 1.4.

^{22.} For those who used any of the "investment" tax expenditures, the average number of tax expenditures used by these respondents is 1.3.

^{23.} According to CRA, there were 24.6 million taxfilers in 2007, which means that approximately 14.7 million taxfilers used at least one of the 10 tax expenditures cited in the survey. With respect to the "family or individual" tax expenditures, approximately 57 percent of respondents reported using at least one of them. About 13 percent reported using at least one of the "investment" tax expenditures.

^{24.} Exp (0.185) - 1 = 0.203.

^{25.} The R-square shows that about one-third (0.34) of the percentage change in total direct compliance cost is explained by the variables used. This is a reasonable result for survey-based analysis.

^{26.} Exp (0.13) - 1 = 0.139; Exp(0.215) - 1 = 0.240

Table 3bMultivariate analysis of total direct compliance costs, Canada, 2007
(Dependant variable: log of compliance cost)

	MODEL 1 Coefficient \$	MODEL 2 Coefficient \$
Use of tax expenditure provision (none as reference)		
Any tax provision	0.185 ***	
"Individual or family" tax expenditure		0.130 **
"Investment" tax expenditure		0.215 **
Sex (women as a reference)		
Men	0.100 *	0.101 *
Minors in the household (none as reference)		
At least one	0.098	0.100
Employment situation (employed full-time as reference)	
Employed part-time	-0.022	-0.015
Unemployed	-0.172	-0.157
Homemaker	-0.155	-0.139
Retired	-0.445 ***	-0.428 ***
Other	-0.101	-0.094
Age (18-24 as reference)		
25–34	0.062	0.061
35–44	0.237	0.235
45–54	0.071	0.073
55–64	0.196	0.198
65+	0.178	0.165
Education (some high school or less school as reference))	
High school completed	-0.010	-0.007
Post secondary technical school or college degree	0.028	0.028
Completed undergraduate degree	0.180 *	0.191 *
Post-graduate degree	0.248 *	0.252 *
Marital status (married or living in common-law as referen	nce)	
Single	-0.153 *	-0.154 *
Other	-0.051	-0.047
Region (Atlantic as reference)		
Quebec	-0.160 +	-0.150
Ontario	-0.103	-0.100
Prairies	0.076	0.075
British Columbia	0.012	0.024

Continued on page 25.

Table 3b, continued

	MODEL 1 Coefficient \$	MODEL 2 Coefficient \$
Income (less than \$10,000 as reference)		
\$10,000-\$29,999	-0.016	-0.012
\$30,000-\$49,999	0.106	0.117
\$50,000-\$69,999	0.205 *	0.214 *
\$70,000-\$99,999	0.347 ***	0.358 ***
\$100,000-\$149,999	0.549 ***	0.572 ***
\$150,000 and greater	0.688 ***	0.673 ***
Experience with the tax system (first year as reference)		
2-4 years	0.179	0.160
5–9 years	0.124	0.104
10 years or more	0.018	-0.012
Native language (no as reference)		
Yes	0.035	0.037
Type of income (no income as reference)		
Wages and salary	-0.124 +	-0.131 +
Self-employment income	0.304 ***	0.302 ***
Child tax benefit	-0.004	-0.005
Government transfer payment	0.001	0.002
Private pension	0.037	0.032
Interest income	0.068	0.077
Dividend income	0.033	0.011
Rental income	0.269 **	0.236 **
Capital gains	0.129 +	0.121
Other investment income, Canadian	0.037	0.001
Investment income, non-Canadian	0.091	0.038
Labour income, non-Canadian	0.233	0.228
Pension income, non-Canadian	0.083	0.063
Preparation mode (self, using paper form as reference)		
Self, using software	0.413 ***	0.416 ***
Self, using online software	0.267 *	0.268 *
Not-for-profit (NFP)	-0.187	-0.190
Friend or family	0.206 *	0.204 *
Paid tax preparer	0.731 ***	0.727 ***
Constant	4.065 ***	4.099 ***
N	1,196	1,196
Adjusted R ²	0.34	0.34

Note: Bolded estimates are significant at either a 90% (+), 95% (*), 99% (**) or 99.9% (***) level. All are based on robust standard errors.

Source: Calculations by the authors using survey data.

It is difficult to reach generalized conclusions about what these findings mean for the wide range of tax expenditures that are currently part of the personal income tax system. It is possible that the direct compliance costs associated with using certain tax provisions may be higher or lower than the average estimates that we have calculated. But it does provide a useful sample of tax expenditures and the extent to which their usage is associated with incremental compliance costs for taxfilers who use them.

Tables 3a and 3b also provide some additional details on the difference in direct compliance costs across various sociodemographic characteristics. The characteristics in bold are "reference groups" to which other indicators in the same category are compared. For instance, "No income of this type" is the reference category for each type of income. This means that in table 3a the estimate for self-employment income shows that those who report self-employment income are more likely, on average, to incur higher direct compliance costs than those who do not report any income.

Our results show the following for the various sociodemographic characteristics covered in the survey:²⁷

- Gender has no impact on direct compliance costs.
- Households with at least one child incur higher direct compliance costs, on average.
- Retired tax filers spend less in direct compliance costs than those who have a full-time job.
- Age, schooling, marital status, and region of residence have no impact on direct compliance costs.
- Belonging to the highest income group (\$150,000+) increases direct compliance costs.
- Poor language skills in English or French, or years of tax-filing experience, have no impact on direct compliance costs.
- Receipts of self-employment income increase direct compliance costs.
- Filers using a paid preparer spend more than other filers.

^{27.} We report as having an impact coefficients significant at the 95% + level; in the table we flag those with a significance level of 90% with a + since some readers may deem this to be significant.

Conclusion

Using survey data, we are able to estimate the time and financial resources spent complying with the personal income tax system. The descriptive statistics show the extent to which taxfilers with different sociodemographic characteristics use different ways to prepare and file their income tax returns and the average direct compliance costs across a range of different characteristics, including the use of tax expenditures. We find, for instance, that low-income earners tend to spend a greater proportion of their income complying with the tax system.

We also carried out multivariate analysis to account for the interaction between different characteristics captured in the survey data. This analysis allows us, for instance, to disaggregate the different tax expenditures in order to see which ones are associated with higher direct compliance costs. Our analysis finds that, after controlling for a range of factors, the total direct compliance costs associated with the use of any of the 10 expenditures listed in the survey is, on average, \$49.8 (2007 dollars) or 20.3 percent higher than for those who did not claim a tax expenditure.

3 Aggregate personal income tax compliance costs

The survey data results also allow us to estimate the overall time and financial resources spent complying with the personal income tax system in Canada. The Fraser Institute has previously produced estimates for aggregate direct compliance costs—most recently for 2011. This paper updates these estimates for 2012.

Using the methodology described by Vaillancourt and Clemens (2008), we estimate the number of taxfilers to be 26,934,289 in 2012.²⁸ We have rounded this number to 26,934,000 for the purpose of our calculations. We present five possible results obtained, respectively, through the following steps:

- 1 Applying the methodology used by Vaillancourt and Clemens to the results of table 2a.
- **2** Correcting these results for a possible over-estimation associated with the use of the income tax system to deliver social policy programs.
- **3** Using a value of time higher than \$10 for those without a reported wage.
- **4** Correcting for the differences in the age distributions for the population as a whole and for taxfilers.
- **5** Correcting for the various forces that bias downwards our results.

These are the same scenarios and calculations used in Vaillancourt, Roy-César, and Barros (2013).²⁹

^{28.} The number of taxfilers in 2012 was estimated based on the average growth rate over the previous five years (1.7 percent), as applied to the number of taxfilers in 2010, the latest year for which we have final data.

^{29.} Greater detail on the methodologies used for each of the scenarios can be found in Vaillancourt, Roy-César, and Barros (2013: 36–37).

Straightforward methodology

Multiplying 26,934,000 income tax returns by the relevant average compliance cost—also rounded to account for measurement error (\$189.1 to \$190 and \$236.3 to \$235³⁰)—yields a total direct compliance cost of \$5,117,460,000 and a total compliance cost of \$6,329,490,000.

Impact of social policy programs

As mentioned earlier, some taxfilers complete an income tax return in order to access social programs that are delivered through the tax system. Vaillancourt, Roy-César, and Barros (2013) estimate that 10 percent of returns are only filed to secure access to social programs. This would amount to 2,693,400 taxfilers in 2012 as per our calculations. Assuming that these taxfilers are predominantly in the lowest income group, we can reduce the aggregate totals by multiplying the average direct compliance and total compliance costs for this income group by the number of estimated taxfilers. Excluding these costs treats them as social policy costs rather than as related to tax compliance. This yields an adjusted total of \$4,740,384,000 for total direct compliance costs and \$5,844,678,000 for total compliance costs.

Using a higher assumed value for the time of some taxfilers

As discussed, we have used an assumed wage rate of \$10 per hour for those survey respondents who did not report a wage, including retirees. It could be argued that \$10 is too low a value to place on the time of retirees. These respondents numbered 514 or 25.7 percent of the sample, which we have rounded to 25 percent. Increasing the assumed wage to \$12 per year—a 20 percent increase—would increase the average time costs for these taxfilers by 5 percent from \$122.1 to \$128.2, and would increase the total direct compliance cost per filer to \$195.2. Rounding this per-filer cost to \$195 leads to an aggregate direct compliance cost of \$5,252,186,000. Our results are not very sensitive to the changes proposed here.

Using taxfiler weights

The sample was weighted for population and not taxfilers when the results were produced. There are however differences in the age distributions of the population and taxfilers. We have therefore used adjusted age distribution weighting using CRA's 2011 tax information (calculated by authors based on CRA (2013)). This seeks to recognize that taxfilers in different age groups have different average compliance costs, and we want to certain groups not to disproportionately influence the overall average. This adjustment results

^{30.} These figures come from Table 2a and have been adjusted by inflation to reflect 2012 amounts using Statistics Canada (2014a). Measurement errors make precise numbers less valid; rounding mitigates the impression of exact measurement.

in aggregate direct compliance costs of \$5,252,130,000 and aggregate total compliance costs of \$6,598,830,000.

Correcting for downward bias

The calculations in the study reflect a series of assumptions, such as value of time of friends and family, and methods, such as excluding outliers, that were aimed at biasing our results downward. Increasing the estimates reached using the straightforward methodology by 10 percent (a reasonable adjustment for downward bias), we have aggregate direct compliance costs of \$5,629,206,000 and total compliance costs of \$6,962,439,000.

The updated figures discussed above are summarized in **table 4**.

Table 4Results of calculating the 2012 personal income tax compliance cost

Calculation	Direct compliance cost \$ millions	Total compliance cost \$ millions
Straightforward methodology	5,117.5	6,329.5
Adjusting for social policy programs	4,740.4	5,844.7
Adjusting for higher assumed value of the time of some taxfilers	5,252.2	n/a
Adjusting using taxfiler weights	5,252.1	6,598.8
Correcting downward bias	5,629.2	6,962.4

Sources: Vaillancourt and Clemens (2008); Statistics Canada (2014a); Canada Revenue Agency (various years); calculations by authors.

Summary

Direct tax compliance costs for personal income taxes in 2012 range from \$4,740,384,000, or 0.26 percent of GDP, to \$5,629,206,000, or 0.31 percent of GDP (calculated by authors based on Statistics Canada, 2013a). The lowest direct compliance costs are the equivalent of 0.99 percent of total tax revenues collected and the highest represent 1.18 percent of total tax revenues (calculated by authors based on Statistics Canada, 2014b).

Total tax compliance costs for the same period range between \$5,844,678,000 (or 0.32 percent of GDP) and \$6,962,439,000 (or 0.38 percent of GDP). The lowest total compliance costs are the equivalent of 1.22 percent of total tax revenues collected and the highest represent 1.46 percent of total tax revenues (calculated by authors based on Statistics Canada, 2014b).

To put this in perspective: \$6.9 billion (the high end estimate for total compliance costs) is 0.5 percent of total household income, or roughly \$501 per year for each Canadian household—which amount, according to Statistics Canada data, is roughly the equivalent of what the average Canadian household spent on groceries per month in 2012 (calculated by authors based on Statistics Canada, 2014c).31

^{31.} The average size of a household in 2011 was 2.5 people, according to the latest Census (Statistics Canada, 2013b).

Conclusion

This study has sought to calculate the cost of complying with the federal government's personal income tax system. It builds on past research published by the Fraser Institute, including the most recent study by Vaillancourt, Roy-César, and Barros in April 2013.

The purpose is to update the estimates for the amount of time and resources that Canadians spend to comply with the personal income tax system. We are also able to extract some findings on which sociodemographic groups are more likely to experience the highest average compliance costs, and on the types of income and tax-related choices that are associated with higher average compliance costs.

Using proprietary survey data we are able to calculate estimates for direct compliance costs and total compliance costs. This provides a comprehensive estimate for the time and resources expended on complying with the tax system, including the time spent on collecting, organizing, and completing tax returns, professional fees paid, and software and other tax assistance products.

Several methods were used to estimate the cost of complying with the personal income tax system in 2012. The range for direct compliance costs is \$4.74 billion to \$5.63 billion. The range for total compliance costs is \$5.84 billion to \$6.96 billion. To put this in perspective, \$6.9 billion represents 0.5 percent of total household income in 2012.

We have also sought to better understand the extent to which tax expenditures add complexity to the system and are associated with higher tax compliance costs. The federal government has increased the number of tax expenditures in the personal income tax system.

We asked survey respondents whether they had used any tax expenditures from a list of 10, representing a broad cross-section of the different provisions in the personal income tax system, and then sought to estimate the incremental compliance costs associated with using these provisions. We estimate that total compliance costs associated with the use of at least one of the personal income tax expenditures is \$49.8 (2007 dollars) or 20.3 percent higher, on average, than using none of them.

We also organized the 10 expenditures into two categories—"family or individual" tax expenditures and "investment" tax expenditures—in order to see which of these contributes more to overall compliance costs. We estimate that the total compliance costs associated with the use of "family or individual" tax expenditures is \$34.3 (2007 dollars) or 13.9 percent higher, on average, and that the use of "investment" tax expenditures is associated with an increase of \$58.2 (2007 dollars) or 24.0 percent in total compliance costs. These findings show that the net value of these tax expenditures can be lower than their statutory rate after backing out the associated compliance costs.

Appendix: Empirical methodology

This study uses data from a survey collected by Leger Marketing, a polling firm, on behalf of the Fraser Institute, between April 21 and May 11, 2008. The sample consists of 2,000 Canadians residing in 10 provinces who had filed a federal income tax return in 2007. The survey includes 40 tax-related questions on the time and money spent on various taxfiling activities. The survey methodology and the English version of the survey questionnaire can be found in Appendices A and B in Vaillancourt, Roy-César, and Barros (2013).

The model used for estimating the dollar value of direct compliance costs (2007 dollars), as presented in table 3a, is:

Equation (1): compliance_i =
$$\beta P_i + \alpha x_i + \eta_i$$

In equation (1), $compliance_i$ denotes the direct compliance cost of individual i, P is the dummy variable denoting the use of tax expenditures (P=1 if the taxfiler used at least one of the tax expenditures asked in the survey and zero otherwise), x is a vector of control variables such as age, marital status, gender, education, presence of children in the household, employment situation, amount and type of income, region of residence, preparation mode, native language of the respondent, and familiarity with the income tax system, and η is an error term which includes unobserved factors; α and β are coefficient estimates. In other words, the model controls for age, marital status, gender, education, presence of children in the household, employment situation, amount and type of income, region of residence, preparation mode, native language of the respondent, and familiarity with the income tax system.

The model used for estimating the natural log of the dollar value of direct compliance costs (2007 dollars) as presented in table 3b, is:

Equation (2):
$$\log (compliance_i) = \beta P_i + \alpha x_i + \eta_i$$

In equation (2), $log(compliance_i)$ denotes the natural log of the dollar value of direct compliance cost of individual i. The other variables are similar to those explained above.

The technique applied to estimate these equations was Ordinary Least Square (OLS). OLS is one of several statistical techniques that can be used to establish the net effect of a specific variable—an independent or explanatory variable—on another variable—a dependent or explained variable. The net effect is the impact of the change in one unit of the independent variable on the dependent variable. This net effect is quantified in the units of the dependent variable.

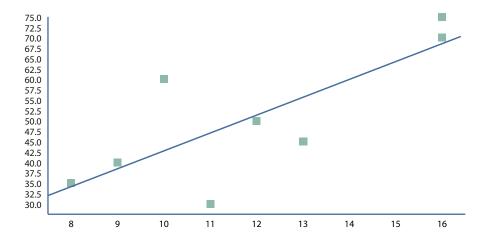
This net effect is the impact, measured in units of measurement of the dependent variable, of a change in one unit of the independent variable.

The specific technique used fits a hyper plane with its dimensions equal to the number of X variables plus one to the data by minimizing the distance between the hyper plane and the data set.

The following graph presents the results of a simple two dimensions (planes) regression; the line represents the fitted value obtained from the regression and the points the original observations.

If the line went through all the points, a highly unlikely event, the fit would be perfect and the R-squared would be 1. For survey data, it is fair to say that the R-squared rarely exceeds 0.5, since variables available are never sufficient in coverage/number to account for all the determinants of a given phenomenon.

Finally, while many explanatory variables can be used simultaneously to explain a dependent variable, not all of them have a real or significant impact on this explained variable. One uses a statistical tool called a t-test to ascertain if an independent variable has an impact different from zero on the dependent variable. It is customary to use a 95% significance level to ascertain this.



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