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Responsiveness of small businesses to corporate income taxation in Canada: A summary of new findings

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Abstract

Using the universe of firm-level tax returns for Canada this paper summarizes the new findings on the responsiveness of small businesses to corporate taxation over the 2001-2019 period. It quantifies the extent to which small businesses in Canada respond to discontinuities in the statutory corporate tax rates, estimates their bunching, and sheds light on real versus reporting responses. The study also contributes to the empirical literature by quantifying the responsiveness of corporate taxable income.

Keywords: Bunching, Small Business, Corporate Taxable Income Elasticity

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Introduction

Modern tax policy looks at how people and businesses react to changes in taxes. When taxes change individuals and businesses may work and invest more or less. One important measure is how much taxable income changes when income tax rates change. Because taxable income captures various behavioural responses of individuals and firms, such as work effort, investment decisions or occupational choice, with respect to income tax rates is a key indicator for evaluating the economic effects of tax policy and determining how efficient the tax system is. While much research has focused on how individuals respond to personal income taxation, less attention has been devoted to studying how businesses respond to corporate taxes, particularly for Canada.[1]

The forthcoming study by Lesica documents how small businesses in Canada respond to corporate tax changes between 2001 and 2019. Most country-specific studies focus on a single reform to study the responsiveness of businesses to corporate income tax changes. Lesica, uses a universe of firm-level tax returns over 19 years in Canada to examine the business responsiveness to multiple tax changes over time. Studying the responsiveness of small businesses to taxation is motivated by questions of whether and how differential income tax treatment for small businesses encourages or discourages growth, investment, productivity and income inequality. Understanding which types of firms are most responsive to taxes and how they react is important for tax policy design in Canada.

Overall, the analysis shows that many small businesses in Canada between 2001 and 2019 had their incomes concentrated around six small-business taxable income thresholds, i.e. tax corporate tax kinks. Moreover, small businesses adjusted their taxable income quickly when tax thresholds changed, which suggests the response is driven by tax planning behavior rather than economic decisions. Also, over time, the concentration of businesses around tax thresholds decreased as the small business tax threshold was raised and the difference between the lower small business rate and higher general corporate tax rates decreased.

Institutional background, data, and methodology

In Canada, an incorporated small business takes the legal form of a Canadian-controlled private corporation (CCPC), qualifying it for a reduced corporate income tax rate on active business income up to a specified limit. In theory, the policy rationale for a lower tax on small businesses rests on “entrepreneurship” and growth arguments: (1) owners are allowed to retain more earnings to be used as a source of new investments to grow their business, which is (2) supposed to incentivize small business ownership and risk taking as an important source of economic growth and job creation.

The tax reduction for eligible CCPCs is achieved through a small business deduction. Below a specified taxable income limit ($500,000 in 2019, the last year in the study) a CCPC pays a lower small business tax rate (around 15% vs around 26% for the general corporate rate). When the income limit of $500,000 is reached, the preferential tax treatment begins to disappear. For any taxable income declared above the small business deduction limit, the marginal tax rate increases to the general corporate rate. This

1. The degree of responsiveness of taxable income to changes in tax rates is characterized by the concept of elasticity of taxable income, defined as a percentage change in taxable income divided by the percentage change in the tax rate, as per Saez et al. (2012). For interpretation, elasticity of 0.5 means that a 10 percent increase in the tax rate is associated with a 5% decrease in taxable income. Elasticities are traditionally expressed in absolute values and a lower value means that taxable income is less responsive to tax changes.

jump in the tax rate at the small business deduction limit can be used to study the implications of tax structures for firm behavior.

Further, the amount of income eligible for the small business deduction is reduced on a straight-line basis when a CCPC's taxable capital used in Canada reaches $10 million, and it is eliminated at $15 million. Therefore, a CCPC can ensure it is eligible for the small business deduction and pay a lower small business tax if it maintains a taxable income below that limit which keeps the amount of taxable capital from growing. The discrete jump in the corporate income tax rate at the small business deduction limit therefore creates a distinct kink point which can be used to identify small businesses' responses.

The Canadian corporate income tax structure also changed over time. During 2001-to-2019 period, the applicable combined federal-provincial small business tax rate was reduced, from 20% in 2001 to 14% in 2019, while the taxable income limit to which this tax rate applies more than doubled from $200,000 to $500,000. These changes made a lower corporate tax rate available to more small businesses, including small businesses with higher taxable income.

To quantify the behavioural responses to these tax changes, the study uses an observed clustering of firms around tax kinks, i.e., bunching around small business deduction thresholds. Identifying bunching involves comparing firms' taxable income distribution to an estimated distribution of what would have occurred had there been no kink in the income tax schedule. An estimated distribution can be created by excluding the firms near the small business deduction limit. Comparing this estimated with the actual distribution allows one to quantify the extent to which firms are bunching around changes in tax rates. Because the small business deduction changed over time, tracking the number of firms at the kink over time provides insights into how responsive their taxable income is to tax changes, which is summarized by an elasticity parameter.[2]

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Results

Bunching at kinks in the corporate income tax schedule

Figure 1 reports evidence that bunching in the Canadian corporate tax schedule around respective kinks occurs over the 2001-to-2019 period. Each panel shows the estimated number of firms around the federal small business taxable income limit in effect during those years, and the estimated elasticity of taxable income, with standard errors in parentheses. Firms are grouped into taxable income bins of $1,000 for ease of exposition.

The figures reveal a clear and significant mass of firms at the small business kink, significantly more than the predicted count, shown by the smooth red line. The bunching mass is almost always greater to the left of the kink with a dip on the right. This suggests that companies are adjusting their reported income in response to tax incentives. If companies were only responding to normal business fluctuations, such as uncertainty in sales, expenses, production, etc., one would expect a more random, even distribution

2 This empirical strategy was initially proposed by Saez [2010] and Chetty et al. [2011], and a growing literature has since employed the bunching method to identify the causal effect of changing incentives, such as tax policy. Alternative methods are further explored in the full study.

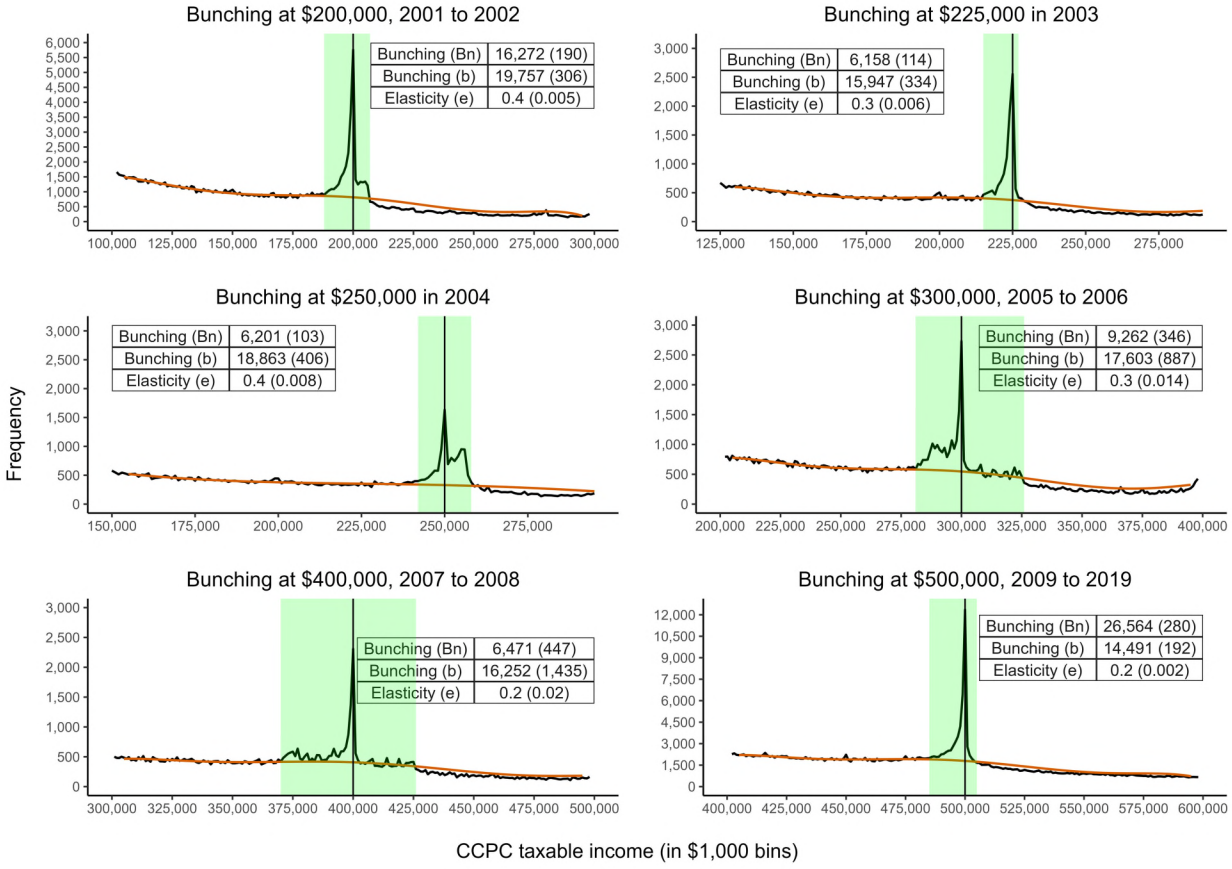
of firms around the small business deduction limit. Instead, the data suggest a specific pattern of tax-responsive behavior.

This is further supported by the fact that when the income limit for small businesses changed (for example, from $400,000 in 2008 to $500,000 in 2009), firms quickly adjusted their taxable income accordingly. Table 1 presents the estimated bunching and elasticities in relation to the kink points and corporate tax rates across years 2001 to 2019. Over time, the number of CCPCs adjusting their taxable income and bunching at the small business deduction threshold has decreased. This is partly due to the small business deduction limit being raised, which moved the threshold higher in the taxable income distribution, resulting in fewer firms being able to take advantage of the tax discontinuity created by the small business deduction. The underlying taxable income elasticity decreased as well, ranging from 0.3 in 2001 to 0.1 in 2019. These elasticity estimates can be compared with those observed for the United Kingdom from 2001 to 2008, where the small business taxable income elasticity ranged from 0.13 to 0.5, and for South Africa during 2010 to 2013 where the elasticity ranged from 0.17 to 0.7.[3]

However, the reduction in bunching and elasticity can also be observed even when the small business deduction remained constant. For the more recent 2009 to 2019 years, when the small business taxable income limit was stable at $500,000, the total number of CCPCs filing corporate tax returns increased by 36%. Meanwhile, the number of CCPCs bunching at the $500,000 tax kink decreased by 45% during the same period. The average elasticity of taxable income between 2009 and 2019 for small business was 0.16, compared to 0.22 for the earlier period 2001-2008.

3 See Devereux et al. [2014] for in the United Kingdom and Boonzaire et al. [2019] for South Africa estimates.

Figure 1
Bunching of small businesses around the small business deduction limits



Notes: This figure shows the observed distribution of Canadian-controlled private corporations' taxable income (TXI), the bunching (b) at the small business TXI kink, and the implied elasticity of TXI (e) for six kinks during the 2001-to-2016 period. Standard errors are calculated with a bootstrap procedure, shown in parentheses. The counterfactual distribution is estimated with a seventh degree polynomial, excluding the bunching window in the shaded area. Kinks are marked by a vertical line.
Source: Author's calculations. See Lesica (Forthcoming) for details.

Table 1
Corporate taxable income limits, tax rates, bunching, and elasticity estimates for 2001-to-2019

	Column 1	Column 2	Column3	Column 4	Column 5
Year	Tax kink - dollars	Small business tax rate	General corporate tax rate	Bunching	Elasticity
2001	200,000	0.196	0.405	18,718.00	0.31
2002	200,000	0.193	0.38	17,411.60	0.33
2003	225,000	0.19	0.359	15,335.20	0.29
2004	250,000	0.187	0.344	16,461.00	0.31
2005	300,000	0.186	0.342	15,969.50	0.25
2006	300,000	0.183	0.339	11,535.10	0.18
2007	400,000	0.183	0.339	15,345.30	0.18
2008	400,000	0.157	0.314	13,209.90	0.16
2009	500,000	0.158	0.309	18,070.00	0.18
2010	500,000	0.155	0.294	17,055.80	0.19
2011	500,000	0.153	0.277	15,583.00	0.19
2012	500,000	0.152	0.261	14,422.50	0.21
2013	500,000	0.152	0.262	12,695.00	0.18
2014	500,000	0.152	0.262	11,267.30	0.16
2015	500,000	0.152	0.267	10,110.90	0.14
2016	500,000	0.147	0.267	9,237.70	0.12
2017	500,000	0.144	0.267	10286	0.13
2018	500,000	0.141	0.268	8909.8	0.11
2019	500,000	0.139	0.267	8552.6	0.11

Notes: Column (1) indicates the federal small business deduction (SBD) limit at which the preferential small business tax rate increases to the general corporate rate, i.e., the tax kink. Columns (2) and (3) show those respective tax rates, calculated as a weighted average of combined federal-provincial marginal corporate tax rates, across 10 provinces, weighted by taxable income. Columns (4) and (5) show the estimated bunching and elasticity, respectively.
Source: Statistics Canada and author's calculations.

Economic versus reporting responses

Studies from other countries (see Best et al. [2015] and Boonzaaier et al. [2019]) suggest that firms' reactions to changes in tax thresholds, and how they cluster around these new thresholds, can indicate the nature of their responses.

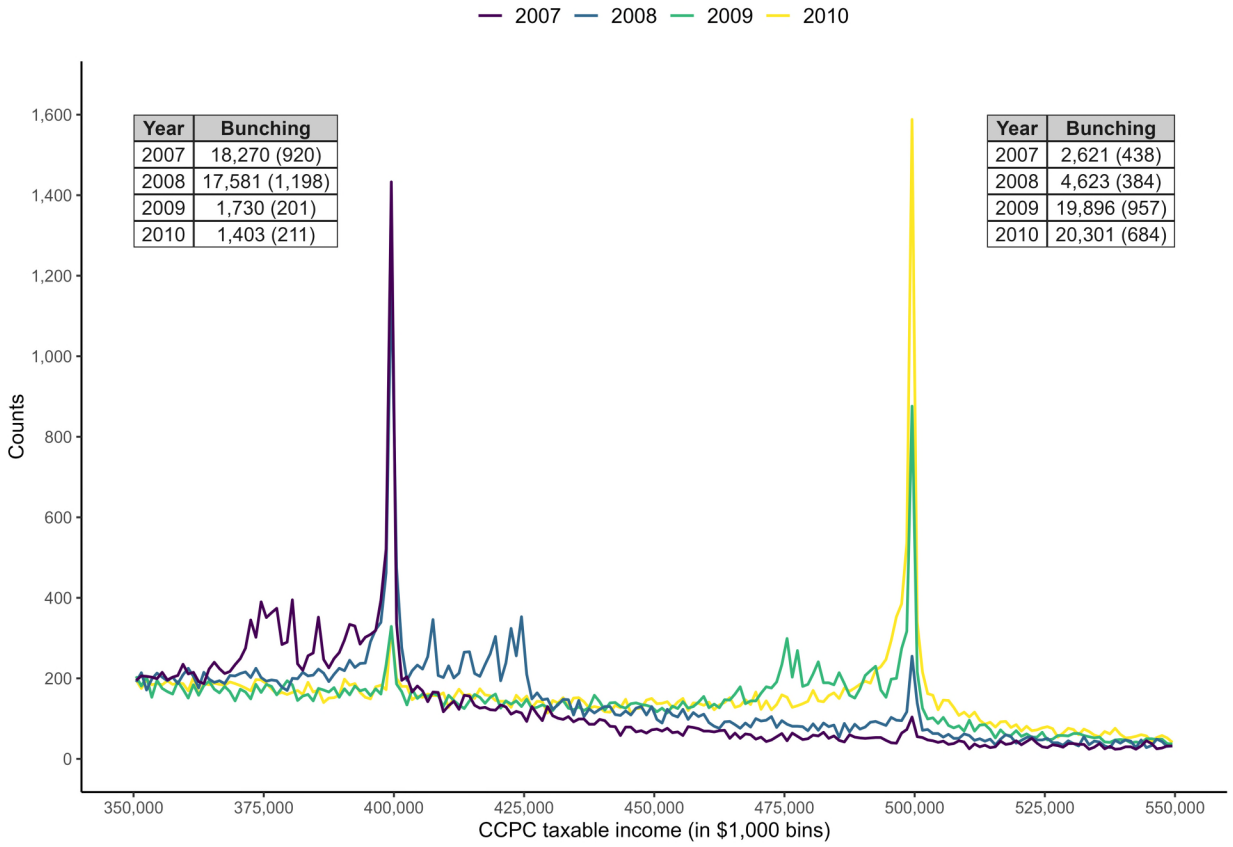
A significant level of bunching persistence suggests that the overall behavioural response may be driven by tax planning rather than economic responses which would result in firms clustering more randomly around the new kink. In other words, in the absence of significant adjustment costs, the bunching evidence suggests that firms tend to follow tax changes relatively quickly and precisely in reporting terms.

Examining the shape of bunching from 2007 – to 2010 reveals insights into the type of firms' response. During these four years, the small business deduction limit increased from $400,000 to $500,000, while the federal small business income tax rate decreased from 18% to 15.5%.

Figure 2 illustrates how firms reacted taxable income distribution as the kink increased. First, there are sharp bunching spike at the initial small business deduction limit in 2007 and 2008, but also after the small business deduction limit increased in 2009 and 2010. Second, excess mass at the initial kink moved

very quickly. Although some small remaining bunching mass appears at the old kink for 2009 and 2010 distributions, the persistence in bunching between pre- and post-change is much more pronounced. The level of persistence could be indicative that the overall behavioural response is mostly due to tax planning. After the threshold increases, CCPCs are almost entirely bunching at the new taxable income limit within a year. Further investigation shows that 20% to 30% of the excess mass comes from firms that repeatedly bunched in previous years.

Figure 2
Persistence in bunching after the change in the kink point



Notes: The figure shows the movement of the observed corporate taxable income (TXI) distribution following the change in the location of the corporate income tax (CIT) kink point between 2007 and 2010 in Canada. There is significant sharpness in the bunching before (2007 and 2008) and after (2009 and 2010) the kink increased from $400,000 to $500,000 in 2009. The accompanying movement of the excess mass of the corporate TXI rapidly follows the changes in the CIT kink point, although not immediately after the kink location shifts. Bunching standard errors in parentheses are calculated with a bootstrap procedure.
Source: Author's calculations. See Lesica (Forthcoming) for details.

Conclusion

The study sheds light on how tax policies can influence business behavior by examining how small businesses in Canada respond to corporate tax changes.

The baseline results indicate that firms respond strongly to tax incentives, with a significant bunching at the small business deduction threshold. This suggests that tax planning to avoid crossing the small business tax threshold influences bunching behavior.

The study also quantifies this effect and finds that bunching is highly persistent; after the small business deduction threshold increases, many firms cluster at the new kink within a year. Similar to studies on other countries graduated corporate income tax schedules, the highly persistent nature of the response to tax changes partly results from tax reporting behavior rather than real economic adjustments. Lastly, the study also quantifies this responsiveness by estimating the elasticity of corporate taxable income.

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