



Innovation, Science and  
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# THE IMPACT OF REGULATORY COMPLIANCE COSTS ON BUSINESS PERFORMANCE

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# ABSTRACT

## Governments enact laws and regulations to promote the economic and social welfare of private sector businesses.

Regulations are in place to support a fair and competitive marketplace, as well as to protect workers, consumers, and the environment. However, any unnecessary red tape associated with complying with those regulations negatively impacts business productivity. To help eliminate the regulatory burden associated with the federal regulatory system, the Canadian government launched the Paperwork Burden Reduction Initiative in 2005 and the Red Tape Reduction Action Plan in 2012. It is important for policy-makers and the general public to understand how the regulatory burden faced by firms affects business performance.

This paper summarizes the results of an econometric analysis of SME regulatory compliance costs using data from Statistics Canada's 2011 *Survey of Regulatory Compliance Costs* and Canada Revenue Agency's General Index of Financial Information. The study examines those firm characteristics likely associated with higher regulatory compliance costs as well as the impact of regulatory burden on firm productivity and business growth.

Empirical findings reveal that the regulatory burden faced by an SME is affected by its size and revenue. The larger a firm's size and revenue, the lower the intensity of regulatory compliance costs on that firm. There is a negative relationship between a firm's regulatory burden and its productivity. A one percent rise in the intensity of regulatory compliance costs is associated with a 0.1 percent decline in a firm's labour productivity.

**Regulatory burden also adversely impacts business performance and employment growth. For every one percentage point increase in the growth rate of regulatory compliance cost intensity, there is a 1.6 percentage point decline in a firm's revenue growth rate and a 0.5 percentage point decline in its employment growth rate.**

# INTRODUCTION

Governments enact laws and regulations to promote the economic and social welfare of private sector businesses. Regulations are in place to support a fair and competitive marketplace, as well as to protect workers, consumers, and the environment. Unnecessary red tape, however, will hinder businesses from using resources productively and innovatively.

As a result, these regulations increase operational costs for businesses, which, in turn, lower profits. Moreover, the efforts and costs that firms expend to comply with unnecessary aspects of any regulatory regime can impede a firm's ability to meet its business performance goals. Firms likely adjust their capital and labour inputs to accommodate regulatory compliance costs. In this way, regulatory burden could impact various aspects of a firm's business operations, including resource allocation, production, productivity, profitability and expansion.

On the other hand, regulatory burden may act as a barrier to entry, deterring launching new firms and reducing market competition. This will positively affect an existing firm's business performance. Therefore, the sign and magnitude of the impact of regulatory burden could theoretically be ambiguous for an individual firm.

In Canada, for example, firms need to complete and submit federal or provincial/territorial articles of incorporation for corporate registration and change of business status. Employers need to deduct Canada Pension Plan contributions, Employment Insurance premiums and income taxes from their employees and remit them along with a remittance form to the Government of Canada. Businesses in Canada are also responsible for collecting sales taxes (Goods and Services Tax/Harmonized Sales Tax or provincial sales tax) and remitting them to the government on a regular basis. When an employee leaves a job, the employer must submit an official Record of Employment, which is used to determine if the employee qualifies for Employment Insurance benefits. These types of regulations are needed to provide the policies and structures that allow societies to function properly and to address important social and economic issues.

Compliance with these regulations, however, generates operating costs for firms, which include wages/salaries paid to internal staff for preparing, completing and submitting paperwork to comply with regulations. They may also include fees paid to external service providers for completing the required red tape paperwork. Other expenses, such as electronic hardware and software purchased for regulatory compliance, are also incurred. According to the SME Regulatory Compliance Cost Report (Seens, 2013), the total regulatory compliance cost (RCC) to Canadian

small and medium-sized enterprises (SMEs) was \$4.76 billion in 2011, which was approximately \$3,500 per business or 0.3 percent of business sector revenues.

To help SMEs eliminate unnecessary paperwork burden from the federal regulatory system, the Canadian government launched the Paperwork Burden Reduction Initiative (PBRI) in 2005. The initiative ranges from simplification of claims and forms to elimination of regulations. It introduces the use of electronic or online processing tools and attempts to harmonize requirements between jurisdictions. In 2012, the federal government launched the Red Tape Reduction Action Plan, which requires departments, through the Administrative Burden Baseline, to provide a count of federal regulations that impose a compliance burden on businesses.

As a component of the PBRI, the *Survey of Regulatory Compliance Costs* (SRCC) is conducted to measure the extent of the regulatory burden faced by SMEs in Canada. Two reports based upon SRCC data (Seens, 2010, 2013) estimated the cost of regulatory compliance at the aggregate industry and size level and for the overall economy. It is also interesting, however, to explore how the regulatory burden varies with a firm's age, size and revenue, after controlling for other characteristics. For example, are young and small firms affected disproportionately by regulatory compliance requirements in comparison with older and larger firms? A more important question is how regulatory compliance affects business performance. This study answers some of these questions in an effort to provide the evidence that policy-makers need to develop more targeted and effective public policies.

Most existing studies analyze regulatory costs and their economic impact at the national level. For example, the 2013 SME Regulatory Compliance Cost Report found that the burden rate, or RCC as a share of business revenue, was higher for small firms than for large firms in Canada. Crain and Crain (2010) estimated the impact of government regulations on national gross domestic product per capita for 25 Organisation for Economic Co-operation and Development countries and found that less stringent regulations could improve a country's aggregate economic activity. A report by the Swedish Agency for Growth Policy Analysis (2010) found a negative relationship between regulatory burden and capital stock elasticity, suggesting that high regulatory burden can impede firms' ability to adapt to external changes.

Using Global Entrepreneurship Monitor data and the World Bank's "Doing Business" index, Van Stel et al. (2007) analyzed nascent and young firms across 39 countries. They found that the relationship between the business formation rate and the administrative considerations of starting a business was statistically insignificant. Perhaps restricted by data availability, however, their study did not examine the impact of regulatory burden on existing firms' business performance.

Although these studies provide informative findings at the country level, they may aggregate away the heterogeneity across different types of firms. There is a limited amount of research examining the impact of regulatory burden at the firm level, where production and regulatory compliance actually take place. To fill this knowledge gap, this paper analyzes the impact of regulatory burden by exploring firm-level variations in performance.

# DATA

## This study combines SRCC and General Index of Financial Information (GIFI) data for empirical analysis.

The SRCC, a key component of the PBRI, was last conducted by Statistics Canada for the 2011 and 2018 reference years. This study used data from 2011 to track the performance of participating firms for five years beyond the survey date. The survey collects information about the regulatory burden faced by Canadian SMEs to comply with various government regulations; more specifically, the costs of completing the required forms associated with those regulations. A list of the regulations covered by the 2011 SRCC is presented in Appendix 1.

The SRCC consists of two components: the main component and the service provider component. The main component collects information about the internal cost<sup>1</sup> that SMEs incur to comply with each regulation within the scope of the survey. The service provider component is conducted to estimate the external costs, associated with regulatory compliance, paid by SMEs to various service providers. The total regulatory compliance costs for an SME is the sum of these internal and external costs.

The target population for the main component of the SRCC consists of all establishments with fewer than 500 employees and revenue between \$30,000 and \$50 million in selected industrial sectors. For the 2011 iteration of the SRCC, a sample of around 30,000 firms was selected for the main component, with a 35 percent response rate, while a sample of 5,000 service providers was selected for the service provider component, with a 38 percent response rate.<sup>2</sup>

With assistance from Statistics Canada, the 2011 SRCC data were merged with the GIFI data to obtain firm level characteristics for more in-depth analyses. The GIFI variables used in this study are listed in Appendix 2. To study the impact of regulatory burden on business growth, firm level GIFI data over the period 2011 to 2016 were included in the dataset. The merged data contain 6,416 establishments in 2011 and 35,581 observations over the six-year period.

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<sup>1</sup> The internal cost includes wages paid to owners, managers and staff for time spent retrieving and reviewing information, completing forms, logging submissions, dealing with follow-up, training staff to handle compliance activities, and meeting and communicating with service professionals. The survey questionnaire for the SRCC is available from [Statistics Canada](#).

<sup>2</sup> This information is available from [Statistics Canada](#).

**Table 1: SME employment size distribution by age, 2011 (percentage)**

	Employment size				Overall
	0-4	5-19	20-99	100-499	
Age (years)					
<b>1-5</b>	65.9	26.2	7.4	0.5	<b>14.9</b>
<b>6-10</b>	64.1	28.8	6.8	0.4	<b>24.9</b>
<b>11-15</b>	62.5	30.0	7.2	0.4	<b>19.2</b>
<b>16-20</b>	54.8	32.8	11.2	1.2	<b>22.0</b>
<b>21+</b>	36.9	44.8	17.1	1.2	<b>19.0</b>
<b>Overall</b>	<b>56.8</b>	<b>32.6</b>	<b>9.9</b>	<b>0.7</b>	

Source: Statistics Canada, 2011 SRCC data.

Based upon the main component of the 2011 SRCC, Table 1 shows the sample distribution of firms by age and employment group. In general, the vast majority (57 percent) of firms have fewer than five employees, around 10 percent have 20 to 99 employees and less than 1 percent has 100 to 499 employees.<sup>3</sup>

It is also clear that younger firms tend to be smaller in size, whereas older firms tend to be larger. For example, over 60 percent of firms less than 16 years old were microfirms that employed fewer than five workers, whereas that share dropped to around 37 percent for firms more than 20 years old. Of firms less than 16 years old, 0.5 percent or less had more than 100 employees, whereas the share is more than doubled (1.2 percent) for firms at least 16 years old.

<sup>3</sup> Around 61 percent of the SRCC establishments were matched with the GIFI data. The representativeness of the merged data was checked. A comparison with the original SRCC data shows that the merger tends to favour larger companies. In particular, it shifts about 9 percentage points from firms with 0-4 employees to those with 5-19 employees. Therefore, generalizing the quantitative analysis, based upon the merged data, with all Canadian firms is not recommended.



# EMPIRICAL ANALYSIS

## Which firm characteristics are associated with high regulatory compliance costs?

Answers to this question would help identify how different types of firms are affected by regulatory burden: young or old, and small or large. Previous studies identified variations in regulatory compliance costs by firm size and industry. For example, the SME Regulatory Compliance Cost Report (Seens, 2013) found that, in 2011, the cost per employee was higher for smaller Canadian firms than for larger firms. In the United States, Crain and Crain (2010) found similar results: the regulatory cost for small businesses was 36 percent higher in 2008 than that for large firms.

This study defines RCC intensity as a measure of the regulatory burden. Mathematically, it is the proportion of a firm's operating expenses<sup>4</sup> that is spent on regulatory compliance:

$$RCC\ intensity = \frac{Total\ regulatory\ compliance\ cost}{Operating\ expenses}$$

Table 2 shows that the average RCC intensity varies across firms of different ages and sizes. Among each age group, firms with more than 100 employees have the lowest RCC intensity. For firms more than 16 years old, RCC intensity declines with employment size. On the other hand, for firms less than 16 years old, there is no clear pattern between employment size and RCC intensity for firms with fewer than 100 employees.

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<sup>4</sup> A company's operating expenses are equal to its total revenue minus the cost of sales and minus net income before tax.

**Table 2: Average RCC intensity by age and employment size, 2011  
(percentage)**

	Employment size			
	0-4	5-19	20-99	100-499
Age (years)				
1-5	2.0	2.1	2.9	0.4
6-10	2.1	1.2	0.6	0.6
11-15	1.7	1.1	1.8	0.9
16-20	1.8	1.2	0.9	0.6
21+	2.2	1.1	0.8	0.7

Sources: Statistics Canada, 2011 SRCC data; and Canada Revenue Agency, 2011 GIF1 data.

Cross-tabulation in Table 2 simply presents the average RCC intensity by age and employment size. It does not control for other factors that can affect RCC intensity. To address this concern, a more sophisticated regression model and analysis was performed to examine how RCC intensity is affected by a variety of firm characteristics.

In this model, the natural logarithm of RCC intensity is expressed as a linear function of firm characteristics as follows:

$$\ln(RCC\_INT) = \beta_1 AGE + \beta_2 EMP + \beta_3 REV + \beta_4 IND + \beta_5 PROV + \beta_6 INC + \varepsilon \quad (1)$$

Where,

1. *RCC\_INT* is RCC intensity;
2. *AGE* is a vector of age groups with five-year intervals in 2016;
3. *EMP* indicates one of the four categories of employment size: 0-4, 5-19, 20-99 and 100-499;
4. *REV* indicates the revenue quartile for a firm among all companies;

5. *IND* refers to the firm's industrial sector, as measured by the two-digit North American Industry Classification System;<sup>5</sup>
6. *PROV* is the province where the firm is located; and
7. *INC* is an indicator for whether the firm has been incorporated.

Due to the log-linear format of equation (1), each of the coefficients ( $\beta$ ) equals the proportional change in RCC intensity associated with one unit change in the associated independent variable.

Table 3 presents ordinary least squares (OLS) regression results for equation (1). A firm's age has no statistically significant effect on RCC intensity until it is at least 26 years old. Compared with firms that are less than five years old (reference group), firms at least 26 years old have an RCC intensity that is 46 percent lower. Considering the average RCC intensity for firms less than five years old is around 2 percent (Table 2), the estimated effect can be interpreted as a decline of 0.92 percentage points. One possible explanation for this finding is that older firms may have accumulated more knowledge and experience in dealing with regulatory compliance and in reducing relevant costs.

**Table 3: Effect of firm characteristics on RCC intensity, 2011**

Variable	Estimated coefficient
<b>Age (reference: less than 5 years)</b>	
6-10 years	0.053 (0.077)
11-15 years	-0.024 (0.078)
16-20 years	-0.022 (0.077)
21-25 years	-0.0001 (0.077)
26+ years	-0.459** (0.203)

<sup>5</sup> The industrial sectors include manufacturing; retail trade; accommodation and food services; professional, scientific and technical services; and other services.

**Employment Size (reference: 0–4 employees)**

5–19	-0.105* (0.058)
20–99	-0.400*** (0.078)
100–499	-0.835*** (0.094)

**Revenue Quartile (reference: 0–25%)**

25–50%	-0.326*** (0.078)
50–75%	-0.605*** (0.080)
75–100%	-0.884*** (0.094)

 **$R^2$** **0.109****Number of observations****6,301**

Sources: Statistics Canada, 2011 SRCC data; and Canada Revenue Agency, 2011 GIF1 data. Observations with missing values are excluded.

Note 1: Robust standard errors in parentheses.

Note 2: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Note 3: The model controls for the industrial sector (reference: professional, scientific and technical services), the province where the firm is located (reference: Ontario) and an indicator for whether the firm has been incorporated.

There is a negative relationship between employment size and RCC intensity. For example, compared with firms with fewer than five employees (reference group), those with 100 to 499 employees have a lower RCC intensity by 83.5 percent, or 1.67 percentage points.<sup>6</sup> This is

<sup>6</sup> Using statistics from Tables 1 and 2, the weighted average RCC intensity can be calculated for each size category. For firms with 0 to 4 employees the average RCC intensity is around 2 percent, 83.5 percent of which is 1.67 percent.

probably due to economies of scale as the fixed costs associated with regulatory compliance costs are likely similar for most firms of all sizes, resulting in larger firms having lower average regulatory compliance costs.

RCC intensity is also negatively related to a firm's revenue (measured by quartile). Firms in the highest quartile (75–100 percent) have an RCC intensity that is 88.4 percent lower than those in the lowest quartile (0–25 percent). While the fixed part of regulatory compliance costs is similar across firms, those earning higher revenues tend to have higher operating costs and, in turn, lower RCC intensities.

## What is the impact of regulatory burden on labour productivity?

Heavy regulatory burden also likely affects a firm's productivity. To comply with onerous regulations, a firm must spend resources that could otherwise have been allocated to productivity- and efficiency-enhancing investments, such as research and development or new product development. In an international study, Alesina et al. (2005) found that lighter regulatory burden reduced the costs of adjusting the capital stock and increased productivity.

To explore the impact of regulatory compliance costs and other factors on labour productivity, a regression model was constructed. In this model, revenue per employee ( $\frac{REV}{EMP}$ ) is used as a measure of a firm's labour productivity, with its natural logarithm expressed by a linear combination of the natural logarithm of RCC intensity and other factors as follows:

$$\ln\left(\frac{REV}{EMP}\right) = \theta \ln(RCC\_INT) + \gamma_1 \ln(CAPITAL) + \gamma_2 \ln(WAGE\_BILL) + \beta_1 AGE + \beta_2 IND + \beta_3 PROV + \beta_4 INC + \varepsilon \quad (2)$$

Where,

1. *CAPITAL* is a firm's net capital, or the total tangible capital less depreciation; and
2. *WAGE\_BILL* is the total wage bill.

The coefficient  $\theta$  measures the elasticity of productivity with respect to the RCC intensity.

Coefficient estimates presented in Table 4 show a negative relationship between RCC intensity and productivity. For every one percent increase in RCC intensity, the firm's labour productivity declines by 0.087 percent.

**Table 4: Effect of RCC intensity and other factors on labour productivity, 2011**

Variable	Estimated coefficient
$\ln(\text{RCC intensity})$	-0.087*** (0.014)
$\ln(\text{Capital})$	0.029*** (0.004)

**Age (reference: 1–5 years)**

6–10 years	-0.013 (0.034)
11–15 years	0.006 (0.036)
16–20 years	-0.012 (0.033)
21–25 years	0.077** (0.033)
26+ years	0.185*** (0.058)

**$R^2$**

**0.384**

**Number of observations**

**6,288**

Sources: Statistics Canada, 2011 SRCC data; and Canada Revenue Agency, 2011 GIFI data. Observations with missing values are excluded.

Note 1: Robust standard errors in parentheses.

Note 2: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Note 3: The model controls for the industrial sector, the province where the firm is located, an indicator for whether the firm has been incorporated and the total wage bill.

## How does regulatory burden affect business performance?

The PBRI aims to reduce red tape to allow entrepreneurs to better focus on improving the performance of their businesses. To explore the impact of RCC intensity and other factors on business performance, a regression model was constructed. In this model, firm level revenue growth over the 2011–2016 period is used as a measure of business performance, with its natural logarithm expressed by a linear combination of the natural logarithm of RCC intensity and other factors as follows:

$$\Delta \ln(REV) = \theta \Delta \ln(RCC\_INT) + \gamma_1 \Delta \ln(CAPITAL) + \gamma_2 \Delta \ln(WAGE) + \gamma_3 \Delta \ln(EMP) + \beta_1 AGE + \beta_2 IND + \beta_3 PROV + \beta_4 INC + \varepsilon \quad (3)$$

Where,

1. *REV* is net revenue; and
2. *WAGE* is wage per employee.

Given the logarithm format of *REV* and RCC intensity, the coefficient  $\theta$  estimates the percentage point change in the revenue growth rate with respect to a percentage point change in the growth rate of RCC intensity.

As the SRCC data are cross-sectional and the RCC intensity is only observed for 2011, estimates of RCC intensity values for each year during the observation period are needed to construct a panel. For this purpose, the coefficients from equation (1) are applied to the 2012–2016 observations to compute the “fitted” values of the RCC intensity. The difference between the observed 2011 value and the “fitted” value is then used as the independent variable in equation (3).

The OLS regression results from this model are presented in Table 5. There is a significant and negative relationship between the regulatory burden and a firm’s performance. Every one percentage point increase in the growth rate of RCC intensity is associated with a 1.6 percentage point decline in the revenue growth rate.

**Table 5: Effect of the change in RCC intensity and other factors on the revenue growth rate, 2012–2016**

Variable	Estimated coefficient
$\Delta \ln(\text{RCC intensity})$	-1.623*** (0.084)
$\Delta \ln(\text{Capital})$	0.059*** (0.009)
$\Delta \ln(\text{Wage})$	0.155*** (0.020)
$\Delta \ln(\text{Employment})$	0.241*** (0.053)

**Age (reference: 1–5 years)**

6–10 years	-0.184*** (0.028)
11–15 years	-0.228*** (0.028)
16–20 years	-0.205*** (0.027)
21–25 years	-0.184*** (0.027)
26+ years	-0.397*** (0.034)

**$R^2$**

**0.223**

**Number of observations**

**35,539**

Sources: Statistics Canada, 2011 SRCC data; and Canada Revenue Agency, 2011–2016 GIFI data. Observations with missing values are excluded.

Note 1: Robust standard errors in parentheses.

Note 2: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Note 3: The model controls for the industrial sector, the province where the firm is located, an indicator for whether the firm has been incorporated and the wage per employee.



## What is the effect of the regulatory burden on employment growth?

In addition to the financial cost of compliance with government regulations, regulatory burden can also impact a firm's incentive to expand its business. A PBRI goal is to free up firm level resources for business expansion and job creation. The following regression model was constructed to explore the impact of RCC intensity on employment growth:

$$\Delta \ln(EMP) = \theta \Delta \ln(RCC\_INT) + \gamma_1 \Delta \ln(CAPITAL) + \gamma_2 \Delta \ln(WAGE) + \beta_1 AGE + \beta_2 REV + \beta_3 IND + \beta_4 PROV + \beta_5 INC + \varepsilon \quad (4)$$

The OLS regression results for equation (4) are presented in Table 6. A firm's employment growth is negatively related with its regulatory burden. For every one percentage point increase in the growth rate of RCC intensity, there is about a 0.5 percentage point decline in the firm's employment growth.

Table 6 also shows that capital investment has a mild positive effect upon employment growth. There is no clear pattern between the business scale, measured by revenue quartile, and employment growth. Compared with the reference group (firms in the lowest 25 percent quartile), those in the 25–75 percent revenue category experienced slightly lower employment growth rates. However, the employment growth rate for firms in the highest quartile (above 75 percent) is not significantly different from that for the reference group.

**Table 6: Effect of the change in RCC intensity and other factors on the employment growth rate, 2012–2016**

Variable	Estimated coefficient
$\Delta \ln(\text{RCC intensity})$	-0.493*** (0.020)
$\Delta \ln(\text{Capital})$	0.008*** (0.002)

**Age (reference: 1–5 years)**

6–10 years	-0.003 (0.007)
11–15 years	-0.025*** (0.007)

16-20 years	-0.018*** (0.006)
21-25 years	-0.020*** (0.006)
26+ years	-0.087*** (0.008)

**Revenue Quartile (reference: 0-25%)**

25-50%	-0.028*** (0.007)
50-75%	-0.028*** (0.007)
75-100%	-0.010 (0.007)

**$R^2$**  **0.185**

**Number of observations** **35,581**

Sources: Statistics Canada, 2011 SRCC data; and Canada Revenue Agency, 2011-2016 GIF1 data. Observations with missing values are excluded.

Note 1: Robust standard errors in parentheses.

Note 2: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Note 3: The model controls for the industrial sector, the province where the firm is located, an indicator for whether the firm has been incorporated and the wage per employee.

# ROBUSTNESS CHECK

The measure of RCC intensity used in the analysis reported in sections 3.1 to 3.4 is based upon the total of all types of regulatory compliance covered by the SRCC. It is possible, however, that RCC factors and their economic impact can vary across different types of regulatory compliance.

To address this concern, a robustness test was performed. The various regulations were first categorized into three subgroups and then a correlation analysis was conducted within each group.

## *Tax-related regulations have a strong correlation among them:*

- ✓ T4s (statement of remuneration paid), T4As (statement of pension, retirement, annuity and other income) and T5018s (statement of contract payments)
- ✓ Federal and provincial business income tax return filings
- ✓ Corporate income tax instalments
- ✓ Federal and provincial sales tax remittances (Goods and Services Tax/Harmonized Sales Tax or provincial sales tax)

## *Employee-related regulations have a weak correlation:*

- ✓ Payroll remittances
- ✓ Record of Employment
- ✓ Workers' compensation remittances

### *Other regulations have a very weak correlation:*

- ✓ Workers' compensation claims
- ✓ Corporate registration (annual filing/business status change) forms
- ✓ Municipal and provincial government regulations
- ✓ Other mandatory federal government regulations

Based upon the correlation estimates within each group, a regression analysis of the tax-related regulations was conducted. The regression results are similar to those obtained when all of the regulations were modelled together. A possible explanation is that tax-related regulations account for the majority of regulatory compliance costs captured by the SRCC and dominate the empirical findings. The results presented in this report stood up to the robustness test described in this section.

# CONCLUDING REMARKS

Over the 14 years following the launch of the PBRI, there has been a lack of firm-level studies on key aspects of the cost of regulatory compliance faced by Canadian SMEs.

This paper helps fill this knowledge gap through an empirical analysis using data from the *Survey of Regulatory Compliance Costs* and the General Index of Financial Information. It examines how regulatory burden is affected by firm characteristics and its impact on business performance.

The empirical findings reveal that the regulatory burden faced by a Canadian SME is significantly affected by its size and revenue. The larger the firm and its revenue, the lower the RCC intensity, defined as regulatory compliance costs as a percentage of a firm's operating costs. Firms with more than 100 employees have half the RCC intensity of firms with fewer than five employees. This is likely a result of economies of scale. There is no clear pattern in the relationship between regulatory burden and a firm's age.

There is a negative association between a firm's regulatory burden and its productivity. A one percent rise in RCC intensity is correlated with a 0.1 percent decline in the firm's labour productivity. Regulatory burden also adversely impacts business performance and employment growth. For every one percentage point increase in the growth rate of RCC intensity, there is a 1.6 percentage point decline in a firm's revenue growth rate and a 0.5 percentage point decline in its employment growth rate.

In sum, this study provides strong empirical evidence to support the PBRI and the Red Tape Reduction Action Plan. It found that regulatory compliance costs can hinder SME performance and employment growth, especially for smaller firms. These results suggest that it is important for governments to minimize unnecessary red tape, while maintaining the effectiveness of the regulatory regime to provide policies and structures that safeguard society's ability to function properly and address important social, environmental and economic issues.

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# Appendix 1: Government regulations covered by the 2011 *Survey of Regulatory Compliance Costs*

## Tax information

- ✓ T4s (statement of remuneration paid), T4As (statement of pension, retirement, annuity and other income) and T5018s (statement of contract payments)
- ✓ Federal and provincial business income tax return filings
- ✓ Corporate income tax instalments
- ✓ Federal and provincial sales tax remittances (Goods and Services Tax/Harmonized Sales Tax or provincial sales tax)

## Normal operations

- ✓ Payroll remittances
- ✓ Record of Employment
- ✓ Workers' compensation remittances

## Other

- ✓ Workers' compensation claims
- ✓ Corporate registration (annual filing/business status change) forms
- ✓ Municipal and provincial government regulations
- ✓ Other mandatory federal government regulations

# Appendix 2: Variables from GIFI and the Business Register

## GIFI, 2009–2014

- |  |                                      |  |
|--|--------------------------------------|--|
| – Total tangible capital assets (2008)                               | – Purchases/cost of materials (8320) | – Employer’s portion of employee benefits (8622) |
| – Total accumulated amortization of tangible capital assets (2009)   | – Cost of sales (8518)               | – Contributions to deferred income plans (8623)  |
| – Total intangible capital assets (2178)                             | – Gross profit/loss (8519)           | – Salaries and wages (9060)                      |
| – Total accumulated amortization of intangible capital assets (2179) | – Net non–farming income (9369)      | – Commissions (9061)                             |
| – Total current assets (1599)  | – Direct wages (8340)                | – Crew share (9062)                              |
| – Total long–term assets (2589)                                      | – Benefits on direct wages (8350)    | – Bonuses (9063)                                 |
| – Total sales of goods and services (8089)                           | – Trades and subcontracts (8360)     | – Directors’ fees (9064)                         |
| – Total revenue (8299)   | – Employee benefits (8620)           | – Management salaries (9065)                     |
|  | – Group insurance benefits (8621)    | – Employee salaries (9066)                       |
|  |                                      | – Subcontracts (9110)                            |

## Business Register, 2011

- Business age
- Employment
- Industry (four–digit North American Industry Classification System)
- Province