



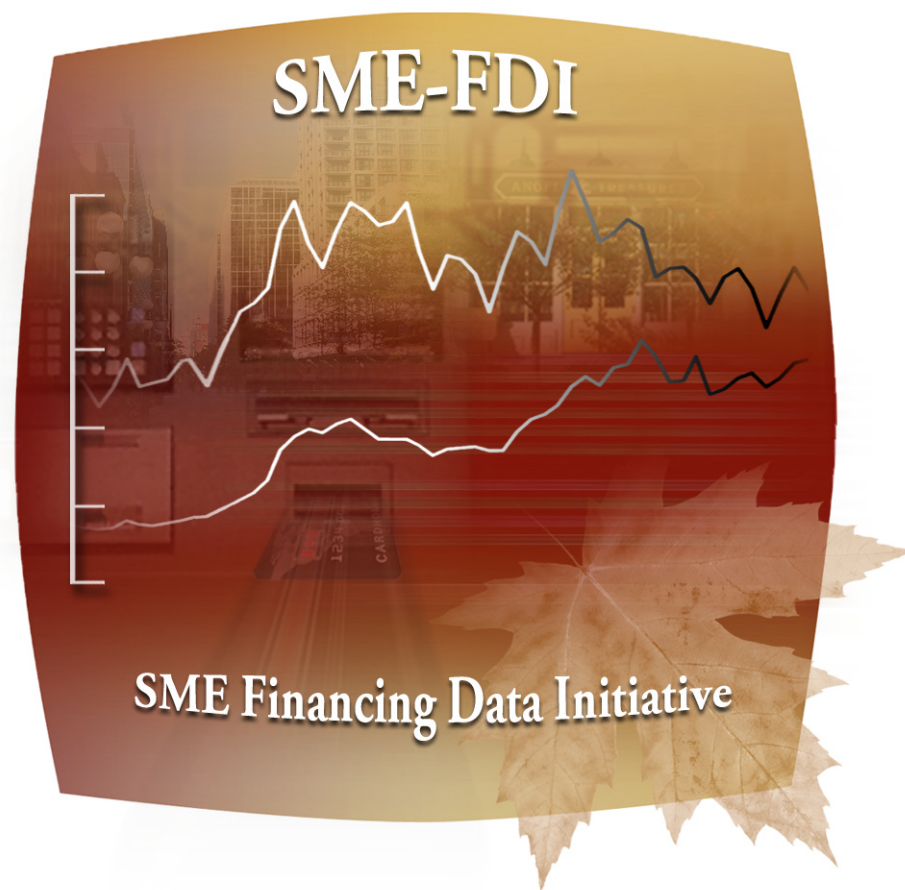
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# THE ECONOMIC IMPACT OF THE CANADA SMALL BUSINESS FINANCING PROGRAM

## WORKING PAPER

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**SMALL BUSINESS AND TOURISM BRANCH  
INDUSTRY CANADA**

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## **ABSTRACT**

This paper investigates the economic impact of the Canada Small Business Financing Program (CSBFP) by using the 2004 edition of the *Survey on Financing of Small and Medium Enterprises*. To avoid the usual self-selection problem associated with voluntary participation, the financing behaviour of the business and the intention to grow are used as control variables. Based on this analysis, the CSBFP would be responsible for the creation of 0.63 jobs per businesses participating in the program and for an increase of \$78 352 in revenues. The results indicate there was no statistically significant impact on profits and salaries.

JEL Classification: G14, G21

## **I. Introduction**

Small and medium-sized enterprises (SMEs) play a major role in the Canadian economy: 99 percent of businesses in Canada have fewer than 500 employees and they employ 64 percent of workers in the private sector (Industry Canada, 2008). These businesses face many challenges — one being access to financing. It is unclear to what extent SMEs suffer from credit rationing (Cressy, 2002; Parker, 2002), but numerous governmental programs have been put in place to facilitate access to financing. Usually, they take the form of guarantee or loss sharing programs. Such programs are popular among governments because the involvement of the private sector adds credibility to the endeavour and because an initially small cash outlay can leverage a great number of loans (Honohan, 2008).

For these programs to be successful, they need to balance the conflicting interests of governments, creditors and borrowers. It is easy to assess the benefit to creditors and borrowers, because they are free to participate. Consequently, their benefits must outweigh their costs. Unfortunately, the benefits to the government are harder to measure, but they can be divided into two categories: incrementality and impact. First, the government only wants to share the risk of lending to SMEs that lenders would not have financed on their own (Riding et al., 2007). Guaranteeing loans that do not need the program simply shifts risk from the private sector to the public sector without creating any new loans. Second, guarantees should go towards SMEs that generate economic impact, because guarantees should spur economic growth and create wealth.

The incrementality of the Canadian Small Business Financing Program (CSBFP) has already been assessed at 75 percent<sup>1</sup> (Riding et al., 2007), meaning that only 25 percent of CSBFP clients could have received a loan without the program. The objective of this paper is to determine the second benefit to government: the economic impact of the CSBFP. To measure the impact of the program, we use the growth of four variables: employment, total salary, revenues and profit. The *Survey on Financing of Small and Medium Enterprises, 2004* contains this information for 13 042 SMEs and identifies CSBFP

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<sup>1</sup> A newer unpublished report estimates the incrementality at 85 percent in 2007.

participants in the data set. This survey also allows us to address the issue of self-selection. All programs attract certain types of businesses, so, when evaluating the impact of the program, it is difficult to say whether, for example, high-growth businesses were attracted to the program or whether the program increased the growth of the participants. By addressing this issue, it is possible to remove the self-selection bias from the impact study. To do so, we compare the CSBFP participants with three types of SMEs: all SMEs, denied borrowers and accepted borrowers.

Participation in the CSBFP increases growth in employment, salaries and revenues by approximately 10 percentage points. Furthermore, the analysis shows that the suspected self-selection problem does not seem to be present: the coefficients accounting for CSBFP participation are stable across different specifications.

The rest of the paper is structured as follows: Section II introduces the CSBFP and presents previous research on guarantee programs; Section III describes the data used; Section IV presents the methodology; and Section V reviews the most important results and concludes.

## **II. Theory and Previous Evidence**

To receive a CSBFP loan in 2004, a SME would first need to seek financing at a financial institution. The financial institution can then choose to refuse the request, finance the SME with its own conventional products or make a loan and register it under the CSBFP. A loan can be registered under the CSBFP if the SME has revenues below \$5 million and the loan is smaller than \$250 000.<sup>2</sup> Under the CSBFP, Industry Canada and commercial lenders share the risk of providing small businesses with term loans for acquiring real property and equipment and making leasehold improvements. The Minister is liable to pay 85% of eligible losses on defaulted loans registered under the program.

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<sup>2</sup> In 2009, this amount was increased to \$350 000 for equipment or leasehold equipment and up to \$500 000 for real property.

To help offset the cost of claims for losses under the program the CSBFP charges the lender an upfront fee of 2 percent and a yearly fee of 1.25 percent of the value of the loan that is remitted by the lender through the interest rate. Furthermore the program caps the variable interest rate that lenders can charge SMEs at no more than 3 percent more than their prime rate and the fixed interest rate at the single-family mortgage rate plus 3 percent. In addition, there is a cap on claims for loss that limits the loss rates for CSBFP loans. These measures ensure that CSBFP loans are provided to those businesses that have viable projects but are riskier often due to lack of collateral, while riskier projects are simply refused financing. Riding et al. (2007) calculate that 75 percent of program participants would not have received a loan without the program, thus showing that the requirements of the CSBFP lead to incrementality.

A program must be incremental, but it must also have a significant economic impact. Two methods have been used in the literature to assess the impact of guarantee programs: a macro approach and a micro approach. Craig, Jackson and Thomson (2007a, 2007b) both use macro approaches and look at the regional impact of participation to a guarantee program. The first paper analyses the impact of the number of Small Business Administration (SBA) loans on growth of regional per capita income, while the second one uses the same method to study the impact of the same variable on the average annual level of employment. In both cases, the authors conclude that the number of SBA loans is positively correlated to higher per capita income and higher employment. It is, however, impossible to say whether the SBA loans spur economic development or whether the economic development increases the demand for SBA loans.

The micro approach, which consists of following individual program participants, avoids the problem of conflicting causality. Bradshaw (2002) compares the employment and economic activity of 759 firms having used the California State Loan Guarantee Program before and after the loan. Over the period of the loan, the number of employees of participants grew on average by 40 percent, while the average Californian SME shrank by 11 percent. The program would therefore be responsible for an economic growth of 50 percent. Furthermore, Kang and Heshmati (2008) find that guaranteed firms achieved better

performance (growth of sales and productivity) when using a pseudo-panel of the 20 702 applications of the Korea Technology Credit Guarantee Fund (KOTEC). The impact of the KOTEC varies greatly across industries. Finally, Industry Canada (2007) assesses that CSBFP created on average 1.8 new full-time jobs using self-administered questionnaires from participants.

The challenge of the micro approach, one which is not addressed in the previous literature, is to overcome the selection bias. Businesses that apply for guarantees are different from other businesses because they are oriented towards growth. Approximately 70 percent of SMEs are so-called lifestyle businesses (i.e., business that do not seek growth, McMahon, 2001). In that sense, if a program attracts high-growth SMEs, an economic impact study might be biased by comparing these high-growth SMEs with lifestyle businesses. Coleman (1999) shows that not considering this selection bias in impact studies of microfinance strongly over-estimates the impacts of the program.

This study uses the micro approach, but explicitly addresses the issue of self-selection. First, we include a lag variable for each growth indicator. Second, we compare program participants with other SMEs that seek debt financing. Finally, we include a variable that accounts for growth intentions. The significance of these variables and the changes in the coefficients accounting for CSBFP participation would give a good indication of the extent of the self-selection bias.

### **III. Data and Descriptive Statistics**

This analysis uses the *Survey on Financing of Small and Medium Enterprises, 2004*, a part of the Small and Medium-sized Enterprise Financing Data Initiative (SME FDI), which targets Canadian SMEs and investigates their financing behaviour.<sup>3</sup> The main objective of this survey conducted by Industry Canada, the Department of Finance and Statistics Canada was to determine what kind of SMEs request financing in the form of debt, leasing, equity and trade credit, and which are approved.<sup>4</sup> The results of the survey

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<sup>3</sup> Statistics Canada chose 34 363 SMEs from the Canadian Business Registry. Of these 21 710 were contacted, and 12 047 agreed to complete the phone interview and allowed Statistics Canada to share the information with Industry Canada.

<sup>4</sup> For more information on this survey, see the following website: [http://www.sme-fdi.gc.ca/eic/site/sme\\_fdi-prf\\_pme.nsf/eng/01561.html](http://www.sme-fdi.gc.ca/eic/site/sme_fdi-prf_pme.nsf/eng/01561.html)



were then linked to the tax files of the respondents to provide financial information for the five years preceding and following the survey. Finally, the CSBFP randomly selected participants to be surveyed and over-sampled.

A first analysis of difference in growth rates (Table 1) shows that CSBFP participants in the sample grew significantly faster than the three other categories of SMEs. For example, CSBFP borrowers grew 13.8 percent more than the average SME with respect to the number of employees and revenues. The difference in growth intention between CSBFP participants and all SMEs could account for the difference between the two groups. However, denied borrowers, whose employment and revenue grew more slowly than CSBFP borrowers, had higher growth intentions than CSBFP borrowers. As to their age and size, CSBFP borrowers are very similar to denied borrowers with an average age of 13 years and average size of 13 employees. However, when considering leverage, it is clear that denied borrowers are financially less healthy than CSBFP participants. Finally, CSBFP borrowers are not present in the same industries as all SMEs. They are over-represented in the wholesale and retail sector, while they are under-represented in professional services, tourism and knowledge-based industries. These samples are not representative of all CSBFP participants, because only participants who were in business from 2002 to 2006 are considered in this sample. Since this survivorship bias also affects the comparison groups, the growth comparison is still valid.

**Table 1: Comparison of CSBFP Participants and Non-Participants**

	CSBFP Non-Participant			CSBFP Participant
	<i>All SMEs</i>	<i>Denied</i>	<i>Approved</i>	
	(N = 2287)	(N = 131)	(N = 671)	(N = 218)
	Mean	Mean	Mean	Mean
Growth Rates 2004-2006				
Number of employee	2.2%	-3.3%	7.2%	16.0%
Salaries	13.8%	7.1%	17.4%	33.7%
Revenues	16.4%	27.6%	21.0%	30.2%
Profit	-33.4%	-50.4%	-26.0%	1.2%
Business Characteristics				
Growth intentions (binary)	50.2%	74.8%	63.5%	61.5%
Age of SME	16.7	14.3	16.3	13.2
Size (Full-time equivalent)	19.0	14.0	21.9	13.8
Return on Asset	4.4%	7.2%	3.2%	1.4%
Leverage	0.83	1.19	0.81	0.89
Economic Sectors				
Primary Sector	8.9%	5.3%	12.2%	6.0%
Manufacturing	16.2%	19.8%	17.3%	11.5%
Wholesale/Retail	20.6%	14.5%	20.1%	28.9%
Professional Services	8.9%	3.8%	7.7%	3.7%
Knowledge-Based	10.6%	16.0%	7.7%	6.9%
Tourism	14.6%	21.4%	12.8%	6.4%
Other Sector	20.0%	19.1%	22.1%	36.7%

#### **IV. Methodology**

In line with the existing literature, economic impact is measured through the growth of the following variables: revenues, number of employees, total salary and profit. The growth is calculated over two years from 2004 to 2006. This time span was chosen, because the guarantee was given in 2004 and two years give enough time for the firm to invest, while not exacerbating the survivorship bias.

The key variable to explain growth is CSBFP participation. SMEs who received a guarantee in 2004 were randomly over-sampled in the survey. These businesses are the ones considered CSBFP participants. It is possible that some of the surveyed SMEs participated in the program but are not identified as such, because they were randomly chosen from the business registry. This is highly unlikely though, because the program usually services 10 000 SMEs per year from a population of 1.3 million SMEs in Canada. To make sure that CSBFP participation only captures the impact of the program and not the self-selection into the program, we also use the following control variables. First, we include the lag of the dependent variable because businesses that have already experienced high growth will probably continue growing. To make sure that the lag is not impacted by the CSBFP participation, we take the lag growth of the dependent variable from the period 2002 to 2003. Second, owners answered whether they intended on expanding the scope of their business in the coming years. These businesses are expected to grow more than lifestyle businesses. Finally, even though Storey (1994, Table 5.7) shows that the literature on SME growth cannot identify key determinants, we take into consideration other variables that could have an impact on growth. The age and size of business should have a negative impact on growth based on Gibrat's Law (Santarelli, Klomp and Thurik, 2006). Financial indicators such as return on asset (profit/total asset) and financial leverage (debt/total asset) could also affect growth. The kind of industries in which an SME is active should finally also have an impact on its growth rate. The equation we are estimating is therefore:

$$EconomicIndicator = b_1CSBFP + b_2Selfselection + b_3Control + e$$

We use three samples to evaluate the coefficients to control for unobservable characteristics. First, we take all SMEs. This sample is the one usually taken by impact studies. The impact of the program should be larger for this sample because the self-selection bias is not accounted for, so CSBFP participation captures some of that bias. The second sample consists of program participants and denied borrowers. According to Riding and al. (2007), 75 percent of CSBFP participants would have been rejected had there not been the program. Consequently, had the program not existed, 75 percent of CSBFP borrowers would have been denied any financing. The difference in growth between these two groups can therefore be attributed to the program. One problem with this specification is that SMEs receiving money will necessarily do better than those not receiving any. Finally, to see if the program is well designed, we therefore consider a third sample: SMEs receiving financing and CSBFP participants. If the CSBFP is well designed and selects SMEs with high-growth potential instead of those safe SMEs with steady cash flows preferred by the banking system, this coefficient will still be positive. The value of the CSBFP coefficient (i.e., the impact of the CSBFP on growth) should continually decrease when comparing CSBFP borrowers with all SMEs (first sample), with denied borrowers (second sample) and with accepted borrowers (third sample) if self-selection is a major issue.

Using these three samples, we first model the growth rates of the economic indicators (revenues, number of employees, total salary and profit) over the 2004 to 2006 period. One problem with dealing with growth rates is their high variance and idiosyncratic nature. To make sure that the coefficients are robust to outliers, we use a so-called robust regression. This will have no significant impact on the value of the coefficients making them more robust.

To see if CSBFP participation increases growth for all economic indicators simultaneously, we perform a multiple analysis of covariance (MANCOVA) analysis with the three samples. This method enables multiple dependent variables while controlling for other relevant variables.

Growth rates could exaggerate the impact of the CSBFP, because small firms can grow a lot by hiring few employees. To evaluate the absolute number of jobs created for example, we use the absolute

difference in economic indicators from 2004 to 2006. In this case, the only sample used is the one combining CSBFP participants and denied borrowers.

## **V. Results**

### ***a) Growth Rates***

The results of the regression analysis show that the CSBFP has a positive and significant influence on the Canadian economy. The impact is greatest on growth in employment, salaries and revenues. In all three cases, participation in the CSBFP would account for approximately 10 percent growth (Tables 2, 3 and 4). Finally, the CSBFP does not account for any growth in profitability (Table 5). Possibly, growth in profitability following the investment only comes after a period longer than two years. This impact is clearly below the approximate 40 percent reported by Bradshaw (2002), who however reports that much of the growth is due to 12 firms that grew by more than 100 percent. By using robust ordinary least squares (OLS), some of these extreme observations would have been treated as outliers and not considered.

For every economic indicator, there are three comparison groups: all SMEs (I and II), denied borrowers (III and IV) and approved borrowers (V and VI), and for every sample there is one complete specification (odd column) with all self-selection and control variables and one simplified specification (even column) with only the intercept and the CSBFP participation. The coefficient of a given characteristic represents the contribution of that characteristic to the growth rate of the SMEs with that characteristic in the case of binary variables. For example, in column I and II of Table 2, we see that businesses participating in the CSBFP had between 9 and 11 percentage point higher growth than those that did not participate. In the case of a continuous variable, the coefficient represents the percentage point impact of an increase of one unit on the growth rate. The value of the intercept represents the average growth for all SMEs and can be attributed to the economic cycle.

**Table 2: Impact of CSBFP Loans on Salary Growth between 2004 and 2006**

	All SMEs		Denied Borrowers		Approved Borrowers	
	I	II	III	IV	III	IV
Intercept	-0.01 (0.69)	0.04 *** (0.00)	-0.05 (0.66)	0.00 (0.94)	-0.02 (0.67)	0.08 *** (0.00)
CSBFP Participation (binary)	0.09 *** (0.00)	0.11 *** (0.00)	0.12 ** (0.02)	0.15 *** (0.00)	0.07 ** (0.04)	0.07 ** (0.05)
Growth salary (02-03)	0.00 (0.80)		0.00 (0.90)		-0.01 (0.63)	
Growth intentions (binary)	0.08 *** (0.00)		0.02 (0.69)		0.09 *** (0.01)	
Age of SME	0.00 (0.38)		0.00 (0.36)		0.00 (0.98)	
Full time equivalent employment	0.00 (0.17)		0.00 (0.39)		0.00 (0.31)	
Return on Asset	0.07 *** (0.00)		0.05 (0.34)		0.02 (0.68)	
Leverage	-0.01 (0.24)		-0.07 *** (0.00)		-0.02 (0.41)	
Sectors	Yes	No	Yes	No	Yes	No
R square	0.018	0.003	0.057	0.016	0.016	0.003
Percentage of Outliers (%)	7.5	8.0	6.9	7.4	4.9	5.5
N	2505	2505	349	349	889	889

Note: All regressions are robust OLS, henceforth, the coefficients will remain unchanged if any one remaining observation is removed. (p-value) The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

**Table 3: Impact CSBFP Program on Employment Growth between 2004 and 2006**

	All SMEs		Denied Borrowers		Approved Borrowers	
	I	II	III	IV	III	IV
Intercept	-0.09 *** (0.00)	-0.02 *** (0.00)	-0.13 (0.17)	-0.05 * (0.07)	-0.07 (0.11)	0.01 (0.66)
CSBFP Participation (binary)	0.09 *** (0.00)	0.10 *** (0.00)	0.12 *** (0.01)	0.13 *** (0.00)	0.07 ** (0.02)	0.07 *** (0.01)
Growth employment (02-03)	-0.03 *** (0.00)		-0.05 * (0.07)		-0.04 *** (0.01)	
Growth intentions (binary)	0.07 *** (0.00)		0.04 (0.29)		0.08 *** (0.00)	
Age of SME	0.00 (0.68)		0.00 (0.45)		0.00 (0.82)	
Full time equivalent employment	0.00 (0.13)		0.00 (0.36)		0.00 (0.16)	
Return on Asset	0.04 *** (0.00)		0.01 (0.72)		-0.02 (0.62)	
Leverage	-0.01 *** (0.01)		-0.05 *** (0.00)		-0.05 ** (0.03)	
Sectors	Yes	No	Yes	No	Yes	No
R square	0.022	0.004	0.075	0.020	0.033	0.004
Percentage of Outliers (%)	7.4	7.7	5.7	6.9	6.5	6.7
N	2505	2505	349	349	889	889

Note: All regressions are robust OLS, henceforth, the coefficients will remain unchanged if any one remaining observation is removed. (p-value) The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

The most interesting result is the lack of changes across specifications. We assumed that the self-selection bias played a major role in the evaluation of loss-sharing or guarantee programs. In other words, participants would be more growth oriented than the usual SME, so the coefficient accounting for participation would be over-estimated when comparing participants with usual SMEs. However, the impact of the model is the same whether we compare participants to all SMEs, to denied borrowers or to accepted borrowers. In that sense, there does not seem to be a self-selection problem.

**Table 4: Impact of CSBFP Loans on Revenues Growth between 2004 and 2006**

	All SMEs		Denied Borrowers		Approved Borrowers	
	I	II	III	IV	III	IV
Intercept	0.07 *** (0.01)	0.07 *** (0.00)	0.28 *** (0.00)	0.07 ** (0.02)	0.04 (0.36)	0.09 *** (0.00)
CSBFP Participation (binary)	0.08 *** (0.00)	0.10 *** (0.00)	0.07 * (0.05)	0.10 *** (0.00)	0.09 *** (0.00)	0.09 *** (0.00)
Growth revenues (02-03)	0.00 (0.92)		-0.01 (0.34)		0.00 (0.99)	
Growth intentions (binary)	0.07 *** (0.00)		0.02 (0.61)		0.11 *** (0.00)	
Age of SME	0.00 (0.32)		0.00 (0.96)		0.00 (0.55)	
Full time equivalent employment	0.00 (0.84)		0.00 (0.35)		0.00 (0.94)	
Return on Asset	-0.05 *** (0.00)		-0.11 *** (0.00)		-0.10 *** (0.01)	
Leverage	0.01 (0.16)		-0.04 *** (0.00)		-0.01 (0.56)	
Sectors	Yes	No	Yes	No	Yes	No
R square	0.018	0.004	0.05	0.014	0.029	0.007
Percentage of Outliers (%)	8.0	8.0	7.8	7.2	6.3	7.2
N	2505	2505	349	349	889	889

Note: All regressions are robust OLS, henceforth, the coefficients will remain unchanged if any one remaining observation is removed. (p-value) The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.



**Table 5: Impact of CSBFP Loans on Profit Growth between 2004 and 2006**

	All SMEs		Denied Borrowers		Approved Borrowers	
	I	II	III	IV	III	IV
Intercept	-0.40 *** (0.00)	-0.32 *** (0.00)	0.35 (0.37)	-0.60 *** (0.00)	-0.25 (0.24)	-0.26 *** (0.00)
CSBFP Participation (binary)	0.04 (0.73)	0.03 (0.78)	0.29 (0.11)	0.31 * (0.06)	0.03 (0.84)	-0.02 (0.87)
Growth profit (02-03)	0.03 *** (0.00)		-0.01 (0.69)		0.03 ** (0.05)	
Growth intentions (binary)	0.07 (0.24)		-0.06 (0.75)		0.24 ** (0.03)	
Age of SME	0.00 (0.42)		0.00 (0.98)		0.00 (0.39)	
Full time equivalent employment	0.00 ** (0.02)		0.00 (0.57)		0.00 (0.12)	
Return on Asset	0.13 ** (0.02)		0.15 (0.38)		0.07 (0.69)	
Leverage	-0.01 (0.65)		-0.04 (0.46)		-0.14 (0.15)	
Sectors	Yes	No	Yes	No	Yes	No
R square	0.006	0.000	0.018	0.004	0.010	0.000
Percentage of Outliers (%)	16.6	16.8	15.5	15.5	17.7	17.3
N	2505	2505	349	349	889	889

Note: All regressions are robust OLS, henceforth, the coefficients will remain unchanged if any one remaining observation is removed. (p-value) The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

It is difficult to say whether this finding applies to other impact studies, but at least it does not invalidate the results of previous studies that did not deal explicitly with the issue of self-selection.

Finally, a MANCOVA analysis shows that CSBFP participation always plays a positive role in growth when CSBFP participants are compared to all borrowers, as shown in Table 6. If the comparison is done only with denied borrowers, CSBFP participation only has a significant impact on the number of

employees and salaries. CSBFP participation does not significantly explain the simultaneous growth rates when a comparison with approved borrowers is done.

**Table 6: MANCOVA Results Explaining Growth Rates Between 2004 and 2006 (p-values of CSBFP)**

Dependent Variables	Comparison Groups		
	All SMEs	Denied Borrowers	Approved Borrowers
Number of Employees, Salary, Revenue and Profit	0.01	0.12	0.17
Number of Employees, Salary and Revenue	0.01	0.08	0.14
Number of Employees and Salary	0.01	0.04	0.07
	N=2505	N=349	N=889

Note: The MANCOVA model includes the following variables: CSBFP participation (main variable), growth intention, age of SME, employment, return on assets and leverage.

***b) Absolute Differences***

To be able to put actual numbers on the impact, we also conducted OLS robust regressions to explain the differences between levels in 2004 and 2006 in a very similar framework as the extensive one used for Tables 2–5 comparing CSBFP borrowers with denied borrowers. The results show that the program would be responsible for the creation of 0.63 jobs and for an increase of \$78 352 in revenues (Table 7). The results indicate there was no statistically significant impact on profits and salaries. The number of jobs estimated contrasts with the 1.8 mentioned by Industry Canada (2007). It must be stressed that this number was calculated based on SMEs self-reported number of jobs created by the loan and is therefore not very reliable as already noticed by KPMG (2009, Section VI).

Of the approximately 11 000 CSBFP loans guaranteed in 2004 (Industry Canada, 2007), 75 percent were incremental (Riding et al., 2007) and they would have created 0.63 jobs each, meaning that CSBFP loans created approximately 5000 jobs. Assuming that the 2003–2004 cohort will cost between about \$28.1

**Table 7: Impact of CSBFP Loans on Economic Impact Differences between 2004 and 2006**

	<b>Salary</b>	<b>Employment</b>	<b>Revenues</b>	<b>Profits</b>
Intercept	36577.04 *	0.84	120052.40 *	-457.96
	(0.06)	(0.21)	(0.09)	(0.98)
CSBFP Participation (binary)	12793.24	0.63 **	78352.70 **	12508.37 *
	(0.15)	(0.04)	(0.02)	(0.07)
Lag Difference (02-03)	0.01	0.11 ***	-0.13 ***	0.38 ***
	(0.70)	(0.00)	(0.00)	(0.00)
Growth intentions (binary)	115.56	0.02	-7187.74	-2996.54
	(0.99)	(0.94)	(0.82)	(0.66)
Age of SME	-367.33	-0.01	-90.71	302.91
	(0.33)	(0.36)	(0.95)	(0.31)
Full time equivalent employment	1362.50 ***	-0.01 *	1337.25 **	158.07
	(0.00)	(0.05)	(0.04)	(0.26)
Return on Asset	-1089.81	0.21	-58406.60 *	-66804.10 ***
	(0.90)	(0.48)	(0.06)	(0.00)
Leverage	-10046.00***	-0.15	6429.13	-7785.23 ***
	(0.00)	(0.14)	(0.56)	(0.00)
Sectors	Yes	Yes	Yes	Yes
R square	0.049	0.025	0.032	0.058
Percentage of Outliers (%)	16.7	12.9	16.1	13.2
N	349	349	349	349

Note: All regressions are robust OLS, henceforth, the coefficients will remain unchanged if any one remaining observation is removed. (p-value) The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

and \$40 million<sup>5</sup> (19.5 million on a NPV basis) (Industry Canada, 2009) every job created costs between \$5620 to \$8000. Human Resources and Skills Development Canada (HRSDC 1998) offers some indication as to the cost per job of other public programs. The Local Economic Development Assistance Program (1980–1981), for example, spent approximately \$5000 per job, while the Young Canada Works Program (1977–1980) spent \$7260 per job and the New Employment Expansion and Development Program (1982–1983) generated jobs at a cost of \$11 900 per job. When taking into account inflation, the cost per job created by the CSBFP is very small, especially when considering that job creation is not the main objective of the CSBFP.

<sup>5</sup> The program costs in this equation exclude the salary and operating expensis for the program.

## **VI. Conclusion**

This paper attempts to quantify the economic impact of the CSBFP. To do so, we consider four key dependent variables: salary, employment, revenues and profits. Using a OLS robust regression, we estimate the coefficient taking into account CSBFP participation and determine the contribution of the program to the growth of the participant. To address the potential issue of self-selection, we include variables that capture growth intention and estimate the models in three different settings: with all SMEs, with denied borrowers and with approved borrowers.

The CSBFP is estimated to have an impact on growth slightly above 10 percentage points in the cases of salaries and employment and slightly below 10 percentage points in the case of revenues. This impact is very similar across different specifications, meaning that the self-selection problem is probably not as important as initially assumed. In the case of absolute differences, CSBFP borrowers would have hired 0.63 employees more than non-borrowers and had revenues \$78 352 superior to non-borrowers between 2004 and 2006.

This research offers only a preliminary analysis of the economic impact. Due to the variety of methods used in the literature on firm growth, it is difficult to determine which econometric method should be used when assessing the impact of a program on SME growth. Consequently, future research should focus on testing the present results using different econometric methods. Furthermore, the surprising absence of self-selection in guarantee programs should be confirmed using other similar programs.

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