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CANADA SMALL BUSINESS FINANCING PROGRAM: A FIRM- LEVEL ECONOMIC IMPACT ANALYSIS

2024

Innovation, Science and Economic Development Canada
Small Business Branch
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Canada 

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Cat. No. Iu188-168/2024E-PDF

ISBN 978-0-660-73011-0

This publication is available online and in PDF format at canada.ca/smeresearch. Cette publication est aussi disponible en français sous le titre *Programme de financement des petites entreprises du Canada : Une analyse de l'impact économique au niveau des entreprises*. To obtain a paper copy of this publication or an alternate format (Braille, large print, etc.), please fill out the [Publication Request form](#) or contact:

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ABSTRACT

This analysis evaluates the impact of the Canada Small Business Financing Program (CSBFP) on its recipient firms. The CSBFP helps small businesses to get loans from financial institutions by sharing the risk with lenders.

Using the *Survey on Financing and Growth of Small and Medium Enterprises 2020* and the Statistics Canada's Business Linkable File Environment, the analysis shows that between 2020 and 2021, CSBFP recipients experienced higher growth in revenue, profits and salary by 5.7, 6.3 and 5.6 percentage points respectively, compared with businesses that did not participate in the program. This corresponds to a rise in revenue in 2021 for CSBFP recipients of approximately \$69,000 and an increase in total profits of \$39,000, in comparison with non-CSBFP businesses. Moreover, CSBFP borrowers increased the total salary paid to employees in 2021 by \$14,000 more than businesses that did not participate in the program. Finally, CSBFP borrowers were 1.8 percentage points more likely to be active, that is to have non-zero employees, in 2021 compared with businesses that did not receive loans through the program.

Acknowledgements

The authors would like to thank their colleagues Lyming Huang, Ako Viou Bahun-Wilson, Mamour Fall, Steve Watton, Christine Landry-Fournier, Walter Collier and Christopher Cho from Innovation, Science and Economic Development Canada, and Ibrahim Bousmah from Treasury Board of Canada Secretariat, for their helpful comments and suggestions.

1. INTRODUCTION

Created in 1999, the Canada Small Financing Program (CSBFP) is celebrating its 25th anniversary this year. The program may be considered even older as it was built upon its predecessor, the *Small Business Loans Act*, which was launched in 1961. Since then, the program has undergone various changes and improvements, with the latest round of amendments dating back to July 2022.¹ The CSBFP is a government loan loss-sharing program administered by Innovation, Science and Economic Development Canada (ISED) designed to help Canadian small businesses obtain financing.

Small and medium-sized enterprises (SMEs)² face several barriers in accessing financing (OECD, 2019). Information asymmetry tends to distort the lending market to their disadvantage (Rao *et al.*, 2021).

Consequently, lenders consider SMEs riskier and may impose higher interest rates, which is a direct measure of inherent risk. Access to financing is essential for those SMEs as it can enable them to scale up. Start-ups, small enterprises and young enterprises represent a specific segment of SMEs that are further impacted by this distortion. In particular, they often have no collateral to provide, no credit history, and a lack of financial literacy (OECD, 2019).

SMEs are an important driver of the Canadian economy. In 2022, they represented 99.7% of employer businesses in Canada and they employed 7.8 million individuals, which is 63.8% of the total private labour force. SMEs accounted for nearly half of the GDP generated by the private sector in 2020 (ISED, 2024).

Statistics Canada's *Survey on Financing and Growth of Small and Medium Enterprises* 2020 shows that 10.3% of businesses with 1 to 4 employees that requested debt financing in 2020 saw their request³ rejected in comparison with 3.5% of businesses with 100 to 499 employees.

Moreover, businesses with 1 to 4 employees had an overall approval rate⁴ of 86.4% compared with 95.6% for businesses with 100 to 499 employees. This highlights the financing gap experienced by smaller enterprises as they are more likely to be rejected and tend to receive less than what they requested in terms of debt financing amount.

Between April 1, 2020, and March 31, 2021, the CSBFP registered 3,739 loans for a total value of \$875 million.⁵ More than 63,000 CSBFP loans were registered between 2010 and 2020 totalling \$11 billion. To be eligible, small businesses had to operate in Canada and had to have gross annual revenues of \$10 million or less.⁶

¹ See [2022 Changes to the Canada Small Business Financing Program](#).

² Innovation, Science and Economic Development Canada defines a SME as an enterprise with 1 to 499 paid employees. See [Innovation, Science and Economic Development Canada](#) (2024).

³ This is the outcome of the largest debt financing requested. The survey considers the following type of debt financing instruments: non-residential mortgage, line of credit, term loan and credit card.

⁴ Overall approval rate includes both full and partial approvals.

⁵ For comparison, between April 1, 2019, and March 31, 2020, 5,746 loans were made for a total value of \$1.3 billion.

⁶ Farming businesses are not eligible as there is a specific program for this industry sector: [Canadian Agricultural Loans Act Program](#).

In 2020, the maximum loan amount that could have been borrowed was \$1 million, of which a maximum of \$350,000 could have been used for equipment and leasehold improvements. The maximum government coverage period was 15 years for real property and 10 years for equipment and leasehold improvements.⁷

These were the program parameters before the amendments to the *Canada Small Business Financing Regulations* and *Canada Small Business Financing Act* that came into force on July 4, 2022. Eligible enterprises can now finance a maximum loan amount of \$1.15 million, which includes the following: \$1 million for term loans, of which a maximum of \$500,000 can be used for equipment and leasehold improvements, and a maximum of \$150,000 can be used for intangible assets and working capital costs; plus, a maximum of \$150,000 for lines of credit for working capital costs. The maximum period of government coverage on a CSBFP loan is 15 years for term loans. The maximum term for a line of credit is 5 years; however, at the end of the 5-year term, the lender and borrower have the option to renew for an additional 5 years or convert the remaining line of credit amount to a CSBFP term loan with a 10-year maximum coverage period.⁸

Financial institutions deliver the program and are solely responsible for approving any loans. The maximum allowable interest rate under the CSBFP is the prime rate plus 3% for term loans and prime rate plus 5% for lines of credit. An annual administration fee of 1.25% is paid by lenders on outstanding loan amounts. This fee can be included as part of the interest rate charged on the loan. There is also a 2% registration fee paid by borrowers that can be financed as part of the CSBFP loan. In the event a loan default, ISED reimburses up to 85% of eligible losses to financial institutions.

The main objective of this study is to determine if the CSBFP had any impact at the firm level on business recipients with respect to economic indicators such as revenue, employment, profits, salary, total assets, profit margin and labour productivity. In addition to these economic indicators, survival is also considered. This study reveals that the CSBFP positively affects businesses' growth between 2020 and 2021. CSBFP loans increased firms' growth in revenue, profits and total salary paid to employees by 5.7, 6.3 and 5.6 percentage points respectively compared with non-recipients of the CSBFP. Moreover, CSBFP borrowers were 1.8 percentage points more likely to be active, that is, to have non-zero employees, in 2021 compared with businesses that did not participate in the program.

The report is divided as follows:

- Section 2 presents a literature review of previous studies related to the assessment of the impact of the CSBFP on its recipient firms.
- Details on the data source used for this analysis are presented in section 3.
- The analytical framework and the empirical strategy are discussed in section 4.
- A detailed description of the variables used throughout this study and their summary statistics are given in section 5.
- Section 6 presents the results obtained and the main findings.
- Finally, section 7 proposes some conclusions.

⁷ See Innovation, Science and Economic Development Canada (2020).

⁸ See [2022 Changes to the Canada Small Business Financing Program](#) and Cho (2023).

2. LITERATURE REVIEW

The microeconomic impact of the CSBFP, that is, the impact of the program on its recipient firms, has been explored by several researchers over the past 15 years. This analysis draws heavily on those past studies. Chandler (2010, 2012) found that participation in the CSBFP increased salary growth by 9 percentage points, employment growth by 9 percentage points and revenue growth by 8 percentage points between 2004 and 2006. The author investigates the economic impact of the CSBFP by using the *Survey on Financing of Small and Medium Enterprises 2004*. The author suggests the use of a methodology that is robust to outliers (named robust regressions). Outliers tend to be found in the calculation of growth rates.

Song (2014) uses the *Survey on Financing of Small and Medium Enterprises 2007* to assess the extent to which participation in the CSBFP impacts businesses' growth for the period 2007 to 2009 for a variety of indicators. The report found that CSBFP participation had a positive impact on the growth of SMEs, increasing revenues by 9 percentage points, salary by 6 percentage points, profits and value added by 8 percentage points and labour productivity by 7 percentage points in comparison with SMEs that did not participate in the program. Those findings were obtained by using robust regressions. Song (2014) also developed another methodology by using matching estimators in order to support the robustness of the results obtained with robust regressions. By doing so, the author shows significant impact from the CSBFP for revenue, salary and labour productivity growth.

The last economic impact analysis of the CSBFP was conducted by Huang and Rivard (2019). To do so, they used the *Survey on Financing and Growth of Small and Medium Enterprises 2014* and a methodology similar to that used by Song (2014). They found that the program continued to positively affect the economic growth of CSBFP recipients from 2014 to 2016. Their main findings suggest that CSBFP loans increased business growth in revenues, profits and employment by 6, 7 and 3 percentage points compared with businesses that did not receive support from the program. Furthermore, Huang and Rivard (2019) showed that CSBFP borrowers' growth in revenues and profits was \$52,000 and \$22,000 higher, respectively, than that of businesses that were non-recipients of the CSBFP (non-CSBFP borrowers). Those findings were also supported by the use of another methodology, known as propensity score matching. Finally, the authors found that CSBFP borrowers were 3 percentage points more likely to be active⁹ in 2016 than non-CSBFP borrowers.

⁹ A business is active if the number of employees in 2016 is non-zero.

3. DATA

This analysis primarily uses data from the [*Survey on Financing and Growth of Small and Medium Enterprises* \(SFGSME\) 2020](#), which is the most recent data available to conduct the analysis. The target population of the SFGSME are businesses with 1 to 499 employees and with revenues of at least of \$30,000.¹⁰ Not-for-profit businesses, joint ventures and government agencies and businesses in selected industries¹¹ are excluded.

The survey collects information on SMEs and their requests to obtain external financing in 2020 such as government financing, debt financing, lease financing, trade credit financing and equity financing. Demographic information on the owner or the primary decision maker of the business, such as age or the highest level of education attained, is also collected. The survey also covers other topics including innovation activities, exporting and intellectual property, among other things.

The SFGSME sample was comprised of active businesses selected from Statistics Canada's Business Register and the base sample size was 19,283 businesses, representing a population of 788,690 SMEs. Data was collected between April 2021 and August 2021 for reference year 2020. The survey response rate was approximately 56%.

In addition to the base sample of SMEs, a subsample of 1,334 CSBFP recipients was selected from a list supplied to Statistics Canada. The response rate for this subsample was around 50%, representing a population of 2,459 SMEs under the CSBFP.

Enterprises from the sample were also linked to various administrative data,¹² such as the General Index of Financial Information unincorporated businesses (GIFI-T1), the General Index of Financial Information incorporated businesses (GIFI-T2) and the Payroll Deductions Account (PD7) for the period 2016 to 2021. This linkage enriches the information available via the survey by including annual financial information related to each business such as total revenue, total value of assets and liabilities and the average amount of payroll paid. For this report, financial variables from GIFI and variables from PD7 were adjusted for inflation and expressed in 2020 dollars using the [Consumer Price Index](#) from Statistics Canada.

This analysis considers the period 2020–2021, which is at the height of the COVID-19 pandemic that had severe repercussions on the Canadian economy and on SMEs in particular. During that period, the Government of Canada provided emergency response programs specifically designed to help businesses overcome the economic effects of the pandemic.

¹⁰ In the context of this analysis, this corresponds to the definition of a small and medium-sized enterprise (SME).

¹¹ These industries are identified by the 2017 [North American Industry Classification System](#): utilities (22); finance and insurance (52); management of companies and enterprises (55); educational services (61); public administration (91); automotive equipment rental and leasing (5321); commercial and industrial machinery and equipment rental and leasing (5324); outpatient care centres (6214); medical and diagnostic laboratories (6215); other ambulatory health care services (6219); general medical and surgical hospitals (6221); psychiatric and substance abuse hospitals (6222); specialty (except psychiatric and substance abuse) hospitals (6223); community food and housing, and emergency and other relief services (6242); and private households (814,110).

¹² This was made available via the [Business Linkable File Environment](#) (B-LFE) from Statistics Canada.

These additional supports included interest-free loans through the [Canada Emergency Business Account](#) (CEBA), as well as other business financing programs. Therefore, the lending market in 2020 was definitely different from past years and this is reflected in the results from the SFGSME: approximately 78% of SMEs requested government financing in 2020 compared with 4% in 2017.¹³ The effects of the pandemic on the results of this analysis are mitigated by the use of the rich dataset from the SFGSME that contains detailed information on businesses. After controlling for industry sector and whether a business received any COVID-19-related supports, there is no reason to believe that CSBFP borrowers and businesses that were non-recipients of the CSBFP would have been impacted dissimilarly.

4. ANALYTICAL FRAMEWORK

The analytical framework used in this analysis draws heavily from Chandler (2010, 2012), Song (2014) and Huang and Rivard (2019). This section is not intended to formally present the theoretical background, which would require a high level of formalism, as well as rigour, but to be a summary that establishes the main lines of thought behind the concepts. Several reference works are cited throughout the text, providing more substantial details.

Three specific groups, to be compared with CSBFP borrowers, are considered throughout this analysis. The first one is SMEs excluding CSBFP borrowers. This group will be referred to non-CSBFP borrowers in the text. The second group is constituted of businesses that requested debt financing in 2020 and had their request approved. The third group is comprised of businesses that had their debt financing request denied. Among the SMEs that requested debt financing in 2020, the group formed by SMEs with approved requests could be considered the most creditworthy, and those that were denied, the least creditworthy. CSBFP borrowers lie somewhere in between in that, despite their potentially low creditworthiness, their debt financing request was approved, but only with the help of the program. It is possible to enrich this analysis by assessing to what extent CSBFP borrowers stand out when compared with all SMEs, with SMEs that have high creditworthiness, and those SMEs with a low level of creditworthiness.

¹³ See [Summary of the Survey on Financing and Growth of Small and Medium Enterprises, 2017](#).

4.1. Robust estimators

The following model¹⁴ is considered:

$$\Delta e_i = \beta_0 + csbfp_i\alpha + f_i'\beta + p_i'\theta + \varepsilon_i, \quad (1)$$

where the index i corresponds to a unique business, Δe_i denotes growth for the economic indicator considered (revenue, profits, salary, employment, assets, profit margin or labour productivity), $csbfp_i$ indicates if a business is a recipient of the CSBFP, f_i' is a vector of firm characteristics, p_i' a vector of the primary decision-maker characteristics and ε_i is the error term. The vector f_i' contains variables such as size, firm age, innovation and export activities, motivation to expand in other markets, industry sector and location (provinces or territories and urban or rural). Information on the franchise status, requests for any COVID-19-related financing supports and temporarily closure status in 2020 because of the pandemic are also included. The vector p_i' includes the following variables: primary decision-maker age and highest education level attained, immigration status, and demographic majority ownership (women, visible minority or Indigenous).

Estimation of equation (1) requires careful consideration. The dependent variable in this case is defined as the growth rate of an economic indicator. The growth rate calculation of a continuous variable could introduce extreme values or outliers¹⁵ resulting in a skewed distribution for the dependent variable in this case. Outliers could also be present in the explanatory variables. Figure 1 illustrates an example of the type of outliers that could occur. The example is inspired to a large degree by the one presented in Verardi and Croux (2009). As mentioned by the authors, there are three types of outliers that could be distinguished: vertical outliers (or y-outliers), bad leverage points (x-outliers) and good leverage points.¹⁶

The presence of outliers could determine the type of estimator that can be used to estimate Equation (1). The ordinary least square (OLS) estimator may not be appropriate in this case as the OLS estimates are greatly sensitive to outliers and influential observations (Wooldridge, 2009). This means that removing outliers or influential observations could have a significant impact on the estimated coefficients in the model. Using OLS estimation in the presence of outliers could potentially result in biased estimates.¹⁷

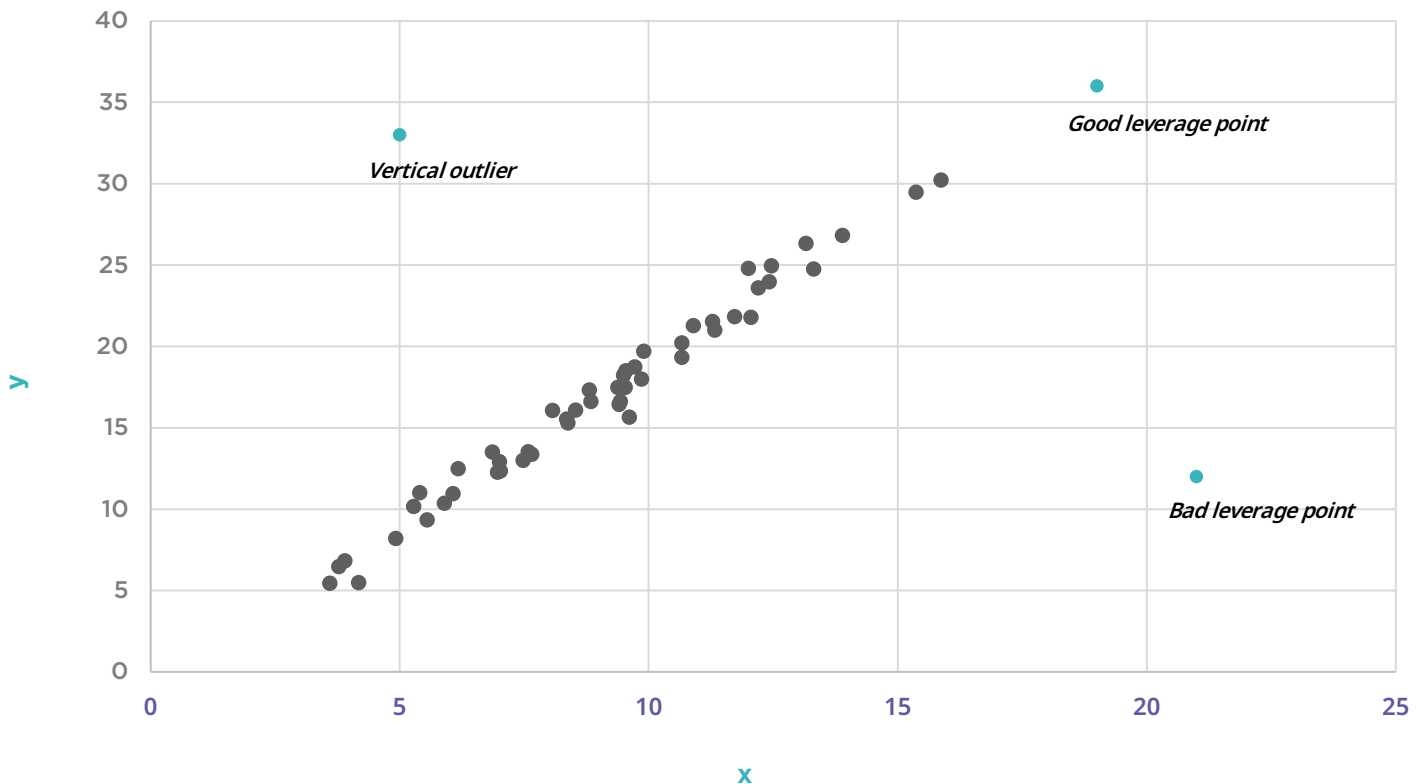
¹⁴ The model does not include a lagged dependent variable contrary to the models used by Huang and Rivard (2019). Including this variable leads to similar results in terms of statistical significance and magnitude of the estimated coefficients presented in the analysis and this, for the majority of economic indicators. Also, variables are contemporaneous to the year of treatment, which means that variables in 2020 were used instead of, let's say, variables from 2019. By using data before 2020, many observations were dropped, and the sample size was greatly diminished. This includes CSBFP borrowers that tend to be young businesses and start-ups. They were dropped due to the absence of data before 2020 (close to 20% of CSBFP borrowers were dropped).

¹⁵ As mentioned by Wooldridge (2009), the notion of outliers is somewhat vague. There is no formal definition of what constitutes an outlier.

¹⁶ See Rousseeuw and Leroy (1987).

¹⁷ The unbiasedness of the OLS estimates relies on assumptions that may be violated in the presence of outliers. For example, the linearity assumption or error term with conditional mean of zero assumption (Greene, 2012).

Figure 1: Example of outliers



Therefore, this led researchers to develop estimators that are less influenced by outliers and resistant to a certain level of “contamination” of the data. This concept is known as *breaking point*.¹⁸ The OLS estimator has a breaking point of zero, which means that it is not resistant to the presence of any outliers. The higher the value of the breaking point, the more resistant the estimator is to outliers and data contamination. Those estimators are called *robust estimators*. What distinguishes them from the OLS is essentially the *objective function* used to estimate the parameters of the model. In the case of the OLS, the square (quadratic) function is used. Put simply, the OLS estimates are calculated by minimizing the sum of the squared residuals. Outliers with high value residuals imply that their square value is also high.

Robust regression estimators use a different function¹⁹ than the square (quadratic) one. The objective function is, in general, selected due to its analytical properties such as boundedness, among other things.

Another property considered in parametric inference by statisticians concerns the *efficiency* of a given estimator. Roughly speaking, an unbiased estimator is efficient if it has the smallest variance. For example, the maximum likelihood estimator is asymptotically efficient as, roughly, among all well-behaved estimators and for large samples, it has the smallest variance (Wasserman, 2004). Comparison of the variance of two different estimators leads to the notion of *relative efficiency*.

¹⁸ See Pitselis (2013) for a formal definition.

¹⁹ For example, the absolute value function used with the median or L_1 estimators. Another example is Tukey's bisquare (biweight) function used with the S-estimators (Pitselis, 2013).

In the case of a robust estimator, the comparison is established with the maximum likelihood estimator.²⁰ There is often a trade off between a high breaking point and high relative efficiency with robust estimators.

Several types of robust estimators exist. The M-estimators²¹, developed by Huber (1964), is a particular class of such estimators. One disadvantage of the M-estimators is that they are not robust to x-outliers (but they are robust to y-outliers), which leads to a low breaking point. Depending on the objective function used, M-estimators have high relative efficiency.

Rousseeuw and Yohai (1984) introduced a robust estimator that has a high breaking point (that can reach 50%), called S-estimator. This estimator is robust to y-outliers and x-outliers; however, its relative efficiency is low. Another class of robust estimators is the MM-estimators, developed by Yohai (1987), which are calculated using the S-estimator and M-estimator in a three-stage procedure. These estimators have a high breaking point (50%) and high relative efficiency (as high as 85%). Equation (1) is estimated using the MM-estimators.

4.2. Probit model

Firm survival is another important economic indicator that will be assessed as follows. Consider the next model:

$$s_i^* = \beta_0 + csbfp_i\alpha + f_i'\beta + p_i'\theta + \varepsilon_i, \quad (2)$$

where s_i^* is a latent (unobserved) variable indicating the survival propensity of a business in 2021. The other variables are defined above in Equation (1). A binary variable s_i is observed indicating the sign of the latent variable s_i^* :

$$s_i = \begin{cases} 1 & \text{if } s_i^* > 0; \\ 0 & \text{if } s_i^* \leq 0. \end{cases}$$

Equation (2) is estimated²² using a probit model:

$$P(s_i = 1 | csbfp, \mathbf{f}, \mathbf{p}) = P(s_i^* > 0 | csbfp, \mathbf{f}, \mathbf{p}) = \Phi(\beta_0 + csbfp_i\alpha + f_i'\beta + p_i'\theta),$$

where Φ is the standard normal cumulative distribution (Gaussian distribution) and $\mathbf{f}, \mathbf{p}$ represent the firm characteristic and primary decision maker characteristic matrices respectively.

²⁰ Efficiency could be assessed assuming a specific distribution for the error term, including normal distribution. In this case, it is called *Gaussian efficiency*.

²¹ M-estimators could be computed by an iteratively reweighted least squares (IRWLS) algorithm (Rousseeuw and Leroy, 1987).

²² There is also a robust estimator for binary regression models such as probit and logit models, for example, robit regression (Liu, 2004). See Tabatabai *et al.* (2014) for other robust estimators. However, for this analysis the common probit model was used as the presence of outliers were not detected. The only continuous variables included was firm size, firm age and primary decision-maker age (see Table A3 in the Annex).

4.3. Average treatment effect

A different approach to determine the causal impact of the CSBFP on various outcomes for firms is considered in this analysis. This technique has the advantage of assessing the robustness of the results obtained with robust regressions and the probit model. However, in general, there are several pitfalls in determining causality.

Selection bias is one of the major concerns with the parametric models presented above. Participation in the CSBFP is not random and could be correlated with the outcome, which is, in this case, growth across various economic indicators. For example, program participants are already businesses that decided to request debt financing in order to grow or expand. As a consequence, the estimates would be biased and, in this case, one cannot conclude that growth is entirely due to the program.

Obtaining random participation would require selecting businesses to be recipients of the program at random, which would circumvent the selection bias issue; however this approach is highly unrealistic. This explains why researchers often rely on observational data to conduct such causal inferences²³ in business-related programs. The data used in the analysis have the advantage of containing a rich set of information on business characteristics and primary decision-maker characteristics that could help mitigate the selection bias.

In order to assess the impact of the CSBFP on recipient firms, one would need to know the outcome of a firm that did participate in the program as well as the outcome of that same firm had it not participated in the program. As an extreme example, to assess the impact of the program on firm revenue, first a firm would need to be a recipient of the program and its revenue would need to be observed thereafter. Then, that same firm would need to go back in time and not participate in the program in order to capture the revenue realized without participation. Obviously, only one potential outcome could be observed for a firm. The other potential outcome is called the *counterfactual*.

More formally, let D be a binary variable such that $D = 1$ if an observation receives a treatment and $D = 0$, otherwise. Observations with $D = 1$ are called the treatment group and those with $D = 0$, the control group. In this analysis, D corresponds to participation in the CSBFP: CSBFP borrowers are in the treatment group and other SMEs (non-CSBFP borrowers) are in the control group. Let Y^1 and Y^0 denote respectively the potential outcome variables with and without the treatment. Technically, we observed Y^1 for the treatment group and Y^0 for the control group. In this case, Y^0 is the counterfactual for the treatment group and Y^1 the counterfactual for the control group (Morgan and Winship, 2015). The difference between both potential outcomes, that is $Y^1 - Y^0$, is the key metric to be estimated.

Two parameters²⁴ are of interest: the *average treatment effect* (ATE) and the *average treatment effect on the treated* (ATET):

$$ATE = E(Y^1 - Y^0); \quad (3)$$

$$ATET = E(Y^1 - Y^0 | D = 1). \quad (4)$$

²³ The literature on causal inference is vast. See for instance Imbens and Rubin (2015), Angrist and Pischke (2009), Morgan and Winship (2015), Cunningham (2021).

²⁴ See Abadie and Imbens (2009).

This analysis will focus on the ATET. Since only one potential outcome is observed, estimations of Equations (3) and (4) are not direct and require a substitute for the counterfactual. This substitute is found by using a matching technique. Simply put, each observation in the treatment group is matched with an observation in the control group that looks alike, and the outcome for the counterfactual is approximated by using the outcome of this look-alike. Under specific assumptions, matching could reduce the selection bias mentioned earlier in observational studies [Rosenbaum and Rubin, (1984); Rubin (1973); Rosenbaum (2006)].

Different matching methods exist (Cameron and Trivedi, 2005). In this analysis, the *propensity score matching*²⁵ will be used. Matching is determined by a propensity score which corresponds to the probability of receiving a treatment: if $p(\mathbf{x})$ denotes the propensity score for a set of covariates $\mathbf{x}$, then $p(\mathbf{x}) = P(D=1|\mathbf{x})$.

For a given observation in the treatment group, this score is used to select which observation is close enough in the control group. This notion of distance is mathematically formalized.

To obtain the propensity score, a probit or logit model is often used. In this analysis, the following model is estimated:

$$P(csbfp_i = 1|\mathbf{f}, \mathbf{p}) = P(csbfp_i^* > 0|\mathbf{f}, \mathbf{p}) = \Lambda(\beta_0 + \mathbf{f}'\beta + \mathbf{p}'\theta),$$

where $csbfp_i^*$ is a latent variable denoting the propensity of being a recipient of the CSBFP, $\mathbf{f}, \mathbf{p}$ represent the matrices of the firm's characteristics and primary decision maker's characteristics, respectively, and $\Lambda(x) = \exp(x)/(1 + \exp(x))$. The relationship between the binary variable $csbfp_i$ and the latent variable $csbfp_i^*$ is defined as:

$$csbfp_i = \begin{cases} 1 & \text{if } csbfp_i^* > 0; \\ 0 & \text{if } csbfp_i^* \leq 0. \end{cases}$$

Important assumptions need to be satisfied for the identification of the ATE and ATET. They are listed below (Trivedi and Cameron, 2005):

- Unconfoundedness assumption (ignorability assumption or conditional independent assumption): conditional on $\mathbf{x}$ the potential outcomes (Y^1, Y^0) are independent (denoted by $\perp$) of the treatment.

$$(Y^1, Y^0) \perp D | \mathbf{x}.$$

This assumption means that, after controlling for observables, participation in the program (or the treatment) does not depend on the potential outcomes. In this case, observables are variables that determine the treatment assignment or program participation. An unobservable is a variable that has an impact on program participation and is not included in the model. This strong assumption implies that there is no omitted variable bias.

In particular, there exists a weak version of the unconfoundedness assumption for ATET:

- Unconfoundedness assumption (weak version) for ATET: $Y^0 \perp D | \mathbf{x}$.

Another assumption that needs to be satisfied is the balancing property, which stipulates that given the propensity score, the treatment assignment and observables (set of covariates) are independent. In other words, observations with the same propensity score have a random assignment to treatment.

²⁵ See Rubin (2001) for a short history of propensity scores.

One implication is that observations in the treatment group and the control group with the same propensity score have a similar distribution for the covariates $\mathbf{x}$ (Imbens and Rubin, 2015).

- Balancing property: $D \perp \mathbf{x} | p(\mathbf{x})$.

Assuming that the balancing property and the unconfoundedness assumption hold, it can be proven that the unconfoundedness also holds for propensity score: $(Y^1, Y^0) \perp D | p(\mathbf{x})$. This fundamental result (called the *Propensity Score Theorem*²⁶) allows us to reduce the dimension of the matching problem. Initially, it involves multiple covariates but with propensity score matching, only the score is used (which is a function of the covariates).

- Overlap assumption: $0 < P(D = 1 | \mathbf{x}) < 1$.

This assumption means that observations have a positive probability to be treated or non-treated, that is, to be a recipient or non-recipient of the program. For each value of the covariates in $\mathbf{x}$, there exists treated and non-treated observations.

- Overlap assumption (weak version) for ATET: $P(D = 1 | \mathbf{x}) < 1$.

Assuming that the previous assumptions hold, the following estimates for ATE and ATET

$$\widehat{ATE} = \frac{1}{N} \sum_{i=1}^N (\hat{Y}_{i,treat}^1 - \hat{Y}_{i,cont}^0)$$

$$\widehat{ATET} = \frac{1}{N_T} \sum_{i=1}^N (\hat{Y}_{i,treat}^1 - \hat{Y}_{i,cont}^0),$$

are unbiased, where N_T is the number of observations in the treatment group, and $\hat{Y}_{i,treat}^1, \hat{Y}_{i,cont}^0$ are the estimated outcome for the treatment group and the estimated outcome for the control group, respectively, obtained via matching.

Another advantage of the propensity score matching is that this model is non-parametric.²⁷ Parametric models such as the robust regressions and the probit model assume, among other things, that their functional form is correctly specified. How data is generated is usually unknown to the researcher and misspecified models could lead to biased estimators. Parametric models such as linear regressions also make assumptions about the distribution form of the error term (e.g. normality) and these assumptions may not hold. Non-parametric models do not make such assumptions and can therefore be considered more flexible and a good test to verify the robustness of the results obtained by the previous parametric models used in this analysis.

²⁶ See Angrist and Pischke (2009).

²⁷ Even though in the case where the propensity score is estimated via a parametric model such as a logit or a probit model, it is considered non-parametric (Ho et al., 2007). Roughly speaking, the propensity score has to be considered as a balancing score when the true propensity score is correctly estimated. In other words, achieving balance among the covariates is what matters and not the functional form of the model used.

5. VARIABLES AND DESCRIPTIVE STATISTICS

This analysis focuses on specific economic indicators that are listed and defined in Table 1. Moreover, the two measures of growth used are also presented in the table. Table 2 gives the definitions of the covariates used in the various models. Summary statistics are presented in tables 3, 4, 5 and 6. Table 3 and Table 4 present statistics for CSBFP borrowers, non-CSBFP borrowers and for all SMEs in the sample. Table 5 and Table 6 focus more specifically on approved, denied and CSBFP borrowers, as well as all CSBFP non-borrowers. Due to Statistics Canada confidentiality restrictions, statistics by industry sector and province (Tables 3 and 4) are only shown for the larger category of non-CSBFP borrowers (which includes approved and denied borrowers). All the estimates presented in the tables are unweighted.

Table 1: Economic indicator definitions used to assess the CSBFP

	Variable	Definition
Economic indicator	Revenue	Total value of revenue.
	Employment	Number of employees [†] .
	Profit	Total value of gross profit or loss.
	Salary	Total value of annual payroll.
	Assets	Total value of assets.
	Profit margin	Calculated as the total value of gross profit/loss divided by the total value of sales of goods and services.
	Labour productivity	Calculated as total sales of goods and services divided by total number of employees.
	Survival	Binary variable indicating firm active ^{††} in 2021.
Measure of growth	$\frac{(m_{2021} - m_{2020})}{ m_{2020} } \times 100$	$m_{2021} - m_{2020}$

Notes: [†]Information on the number of employees in 2020 is taken from the SFGSME 2020 and from PD7 for 2021. ^{††}A firm is active in 2021 if the number of employees is different from zero.

It is worth noting that, unlike Chandler (2010, 2012), Song (2014) and Huang and Rivard (2019), only a one-year period is considered in this analysis instead of a two-year period, essentially because of data limitations at the time when the study was conducted.

Table 2: Variable definitions

Variable	Definition
<i>Firm Characteristics</i>	
CSBFP	Binary variable indicating CSBFP borrowers.
Firm age	Number of years elapsed between 2020 and the year the firm was first established.
Firm size	Number of employees in 2020.
Return on assets (ROA)	Calculated as the value of gross profit/loss divided by the total value of assets.
Debt ratio	Calculated as the total value of liabilities in 2020 divided by total value of assets in 2020.
Innovation	Binary variable indicating firm innovated [†] over the period 2018–2020.
Export	Binary variable indicating firm exported in 2020.
Expand	Binary variable indicating firm intention to expand sales in a new market in the next 3 years (2021–2023).
Franchise	Binary variable indicating firm is a franchise.
Urban	Binary variable indicating firm operated in a urban [‡] region.
COVID-19 financing²⁸	Binary variable indicating firm request government support programs related to COVID-19. ^{††}
Closed	Binary variable indicating firm temporarily closed due to COVID-19 pandemic in 2020.
Region	Binary variables indicating firm operated in the following regions: Atlantic (New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador), Quebec, Ontario, Prairies (Manitoba, Saskatchewan, Alberta), British Columbia and the Territories (Yukon, Northwest Territories and Nunavut).
Industry sector	Binary variables indicating firm operated in the following sectors: primary (agriculture, forestry, fishing and hunting, mining and oil and gas extraction), manufacturing, construction, wholesale trade, retail trade, transportation and warehousing, professional, scientific and technical services, accommodation and food services, health care and social assistance, other services (except public administration), other sectors (information and cultural industries, real estate and rental and leasing, administrative and support, waste management and remediation services, arts, entertainment and recreation).
<i>Primary decision-maker characteristics</i>	
Age	Age of the primary decision maker of the firm in 2020.
Level of education	Binary variables indicating highest level of education attained by the primary decision maker: less than high school diploma, high school diploma, college/CEGEP, trade school diploma, bachelor's degree, master's degree or above.
Immigration status	Binary variable indicating primary decision maker born outside of Canada.
Visible minority	Binary variable indicating majority-ownership ^{†††} by a visible minority group.
Indigenous	Binary variable indicating majority ownership by Indigenous persons.
Women	Binary variable indicating majority ownership by women.

Notes: [†]Innovation is defined as follows: a new or significantly improved good or service, a new or significantly improved production process or method, a new organizational method, or a new way of selling goods or services. SFGSME collects information on innovation only on non-franchise businesses. Consequently, it is implied that franchises are not involved in innovation activities due to the nature of their business. Therefore, all franchises in the sample are non-innovative. ^{††}This would include but not be limited to: Canada Emergency Business Account (CEBA), Canada Emergency Wage Subsidy (CEWS), Canada Emergency Commercial Rent Assistance (CECRA). ^{†††}Majority corresponds to more than 50% ownership of a business.

²⁸ Binary variables for each of the COVID-19 program supports (CEBA, CEWS, CECRA, etc.) were used as different specifications in the models. Overall, similar results as those presented in the next section were obtained.

The distributions of CSBFP borrowers and non-CSBFP borrowers by region are roughly similar except for Ontario and the Prairies (Table 3). Thirty-seven percent of CSBFP borrowers hold operations in Ontario compared with 46% of non-CSBFP borrowers. Also, CSBFP borrowers are more likely to be located in the Prairies than non-CSBFP borrowers (21% versus 12%).

Table 3: Percentage of CSBFP borrowers and non-borrowers by region

Region	Non-CSBFP borrowers (%)	CSBFP borrowers (%)	Total (%)
Atlantic	8	7	8
Quebec	27	26	27
Ontario	46	37	46
Prairies	12	21	13
British Columbia and Territories	7	9	7
Total [†]	7,905	550	8,455

Note: [†]The number of observations is rounded to the nearest 5 in accordance with Statistics Canada confidentiality restrictions.
Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020 and Statistics Canada, Business Linkable File Environment.

As shown in Table 4, close to 40% of CSBFP borrowers are in the accommodation and food services sector and 19% in the retail sector. Only 1% of CSBFP borrowers are in the wholesale trade sector. In contrast, only 9% of non-CSBFP borrowers are in the accommodation and food services and 14% in the retail trade sector. Eleven percent of non-CSBFP borrowers are in the wholesale trade sector.

Table 4: Percentage of CSBFP borrowers and non-borrowers by industry sector

Industry	Non-CSBFP borrowers (%)	CSBFP borrowers (%)	Total (%)
Primary sector [†]	3	4	3
Construction	12	7	12
Manufacturing	11	6	11
Wholesale trade	11	1	11
Retail trade	14	19	14
Transportation and warehousing	10	3	9
Professional, scientific and technical services	12	4	12
Administrative and support, waste management and remediation services	3	2	3
Health care and social assistance	5	5	5

Accommodation and food services	9	39	11
Other services (except public administration)	8	6	8
Other sectors	1	3	1
Total^{††}	7,905	550	8,455

Notes: [†]The primary sector contains the following sector: agriculture, forestry, fishing and hunting, mining and oil and gas extraction. ^{††}The number of observations is rounded to the nearest 5 in accordance with Statistics Canada confidentiality restrictions.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020 and Statistics Canada, Business Linkable File Environment.

The median growth for each of the economic indicators is given in Table 5, except for the survival rate, where the percentage is given. The median is a more appropriate statistic to report than the mean as the calculation of growth tends to create skewed data with extreme values (outliers) that greatly influence the mean value.

There are important differences between CSBFP borrowers and non-CSBFP borrowers in terms of growth for some economic indicators. The median growth of revenue between 2020 and 2021 was higher for CSBFP borrowers than non-CSBFP borrowers (29.7% versus 15.2%) and the difference is statistically significant (Table 5). In addition, a statistically significant difference between the two groups for the median growth of profits and salary, with 26.3% and 34.9% for CSBFP borrowers and 14.3% and 12.8% for non-CSBFP borrowers, respectively, is shown in Table 5.

In contrast, the median growth of employment is lower for CSBFP borrowers than non-CSBFP borrowers (-17.2% versus -8.3%). Furthermore, the median growth of the total value of assets is lower for CSBFP borrowers than non-CSBFP borrowers (7.9% versus 12.2%).

The same phenomenon is observed for the previous economic indicators in terms of the difference level of growth between 2020 and 2021. For labour productivity and profit margin, no statistically significant difference for the median of growth is observed between CSBFP borrowers and non-CSBFP borrowers.

Finally, there is no statistically significant difference between CSBFP borrowers and non-CSBFP borrowers in terms of survival rate, with 96% of them being active in 2021.

Table 5: Summary statistics (median or percentage) by economic indicator

Variable	Non-CSBFP borrowers			CSBFP borrowers (4)	Statistically significantly different at the 5% level between (1) and (4) [†]
	All (1)	Approved (2)	Denied (3)		
<i>Economic indicator</i>					
Revenue (%)	15.17	19.73	19.27	29.65	Yes
Revenue (\$)	120,470.43	289,640.72	74,397.41	158,446.86	Yes
Employment (%)	-8.33	-13.93	-18.90	-17.22	Yes
Employment (difference)	-0.82	-1.83	-1.48	-1.33	Yes
Profits (%)	14.29	18.88	20.53	26.34	Yes
Profits (\$)	50,586.57	118,478.80	50,324.60	70,266.41	Yes
Salary (%)	12.77	17.03	18.50	34.87	Yes
Salary (\$)	32,765.69	85,892.46	33,331.11	41,679.93	Yes
Assets (%)	12.16	13.88	16.95	7.89	Yes
Assets (\$)	63,733.94	121,638.95	51,517.65	29,612.12	Yes
Profit margin (%)	0	0	0	0	No
Profit margin (difference)	0	0	0	0	No
Labour productivity (%)	0.63	0.77	5.54	-2.04	No
Labour productivity (difference)	0.02	0.02	0.10	0.01	No
Survival (%)	96	97	x ^{††}	96	No
Total ^{††}	7,905	1,475	80	550	-

Notes: [†]Quantile regressions were used to test statistically the difference between the two groups for all economic indicators but survival rate. In this case, a proportion test was used. For profit margin, bootstrapping was used with 1,000 replications.

^{††}The number of observations is rounded to the nearest 5 in accordance with Statistics Canada confidentiality restrictions. ^{†††}“x” indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

CSBFP borrowers tend to be younger and smaller (Table 6). They are also more likely to be a franchise than non-CSBFP borrowers. They are also less likely to export and to be innovative. Also, more CSBFP borrowers requested COVID-19 financing support in 2020 compared with non-CSBFP borrowers (87% versus 78%). Around 44% of CSBFP borrowers were temporarily closed in 2020 due to the pandemic of COVID-19 compared with 29% of non-CSBFP borrowers. In terms of majority ownership, Table 6 highlights significant differences between CSBFP borrowers and non-CSBFP borrowers. In particular, CSBFP borrowers are more likely to be majority owned by women than non-CSBFP borrowers (19% versus 13%). Also, close to 14% CSBFP borrowers are majority owned by a visible minority compared with 7% for non-CSBFP borrowers. Finally, 43% of CSBFP borrowers are majority owned by immigrants compared with 24% for non-CSBFP borrowers.

Table 6: Summary statistics (mean or percentage)

Variable	Non-CSBFP borrowers			CSBFP borrowers (4)	Statistically significantly different at the 5% level between (1) and (4) [†]
	All (1)	Approved (2)	Denied (3)		
Firm characteristics					
Firm size	47.39	65.42	40.73	14.81	Yes
Firm age	20.74	20.80	14.85	7.50	Yes
Return on assets	1.73	1.04	1.77	0.84	Yes
Debt ratio	1.07	0.81	1.37	1.08	No
Innovation (%)	31	41	34	26	Yes
Export (%)	19	24	16	6	Yes
Expand (%)	82	90	85	90	Yes
Urban (%)	82	80	85	81	No
Franchise (%)	10	11	x ^{††}	41	Yes
COVID-19 financing (%)	78	82	x	87	Yes
Closed (%)	29	30	44	44	Yes
Primary decision maker characteristics					
Age	52.67	51.10	47.10	44.33	Yes
Less than high school diploma (%)	7	7	28 ^{†††}	6	No
High school diploma (%)	21	19		16	Yes
College/CEGEP/trade school diploma (%)	29	29	34	32	No
Bachelor's degree (%)	28	30	23	33	Yes
Master's degree or above (%)	16	15	15	13	No
Immigration status (%)	24	22	26	43	Yes
Visible minority (%)	7	6	x	14	Yes
Indigenous (%)	x	x	x	x	No
Women (%)	13	11	15	19	Yes
Total ^{††††}	7,905	1,475	80	550	-

Notes: [†]Statistics tests for proportion and t-tests were used depending on the type of variable. ^{††}“x” indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*. ^{†††}For denied borrowers, the categories “Less than high school diploma” and “High school diploma” were aggregated to satisfied confidentiality requirements of the *Statistics Act*. ^{††††}The number of observations is rounded to the nearest 5 in accordance with Statistics Canada confidentiality restrictions. Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors’ calculations.

6. EMPIRICAL RESULTS

6.1. Robust regressions

Tables 7 and 8 summarize the results obtained from the robust regressions²⁹ for each economic indicator and for both definitions of growth. The numbers shown in the tables represent the estimated coefficient of the variable CSBFP, that is, the businesses that received financing through the CSBFP.

The results are shown for the three groups of comparison: non-CSBFP borrowers, approved borrowers and denied borrowers.³⁰ Detailed tables are available for the economic indicator revenue in the Appendix, as well as for survival.³¹

Between 2020 and 2021, CSBFP recipients experienced a growth rate in revenue of 5.7 percentage points higher than non-CSBFP borrowers. The difference in revenue between 2020 and 2021 was an additional \$69,098 for CSBFP borrowers over non-CSBFP borrowers. This finding is also supported if approved borrowers are considered and compared with CSBFP borrowers.

Also, the profit growth rate was 6.3 percentage points greater for CSBFP borrowers than for non-CSBFP borrowers over the same period. Recipients of the CSBFP saw an increase in profits of about \$38,993 compared with those that did not participate in the program. A similar result is observed between approved borrowers and CSBFP borrowers.

Furthermore, the results show that CSBFP borrowers had a growth rate of 5.6 percentage points higher in

paid salary between 2020 and 2021 compared with non-CSBFP borrowers. As for the difference in terms of dollars, CSBFP borrowers paid \$14,444 more in salary to their employees between 2020 and 2021 in comparison with non-CSBFP borrowers.

Finally, CSBFP borrowers were more likely to survive in 2021 compared with non-CSBFP borrowers. The CSBFP increased the probability of surviving by around 1.8 percentage points.

Table 7 reveals that there is no statistical difference between CSBFP borrowers and the other comparison groups (non-CSBFP, approved and denied borrowers) in terms of employment growth and labour productivity growth. For employment, the estimated coefficient is negative for CSBFP borrowers, but not statistically different from zero.

For total assets growth, one can also see that the CSBFP borrowers estimated coefficient is negative but not statistically significant from zero, except when compared with denied borrowers.

Comparable results are obtained when the difference level is considered for total assets, but with a positive coefficient when compared with denied borrowers (Table 8). In this case, the estimated coefficient is not statistically different from zero. These results are consistent with those observed in Table 5. Indeed, the median growth of assets for CSBFP borrowers is lower than the one for each group.

²⁹ Model specifications were determined for each economic indicator, in particular for their continuous variables (firm size, firm age and primary decision-maker age). For example, logarithm or second-degree polynomial were assessed. Similarly for the probit model used for survival. The Stata command *robreg mm* (version 2010) was used for the estimation.

³⁰ As mentioned in an earlier section, the results obtained with the comparison group containing denied borrowers have to be considered carefully due to the low number of SMEs (80) that had their debt financing request denied.

³¹ Detailed tables for all economic indicators are available upon request.

The results obtained for profit margin indicate a positive relationship between participation in the CSBFP and profit margin growth between 2020 and 2021, at the exception of the denied borrowers group. However, the estimated coefficient is only statistically significant with approved and denied borrowers. We observe a similar pattern with the results shown in Table 8 for profit margin in terms of the difference level, with the estimated coefficient only statistically significant for denied borrowers. Given the low levels in difference for profit margin (Table 8), the statistically significant coefficients obtained in Table 7 may not be economically significant.

Table 7: CSBFP estimated coefficients for each economic indicator growth 2020–2021

	Non-CSBFP borrowers	CSBFP borrowers	Denied borrowers
Revenue	5.69*** (1.56)	3.34 (2.11)	-0.62 (4.84)
Employment	-1.85 (1.79)	-2.91 (2.01)	-0.24 (5.32)
Profits	6.31*** (2.06)	2.87 (2.91)	-0.84 (6.53)
Salary	5.59*** (2.11)	2.70 (2.57)	-2.04 (6.67)
Assets	-1.59 (0.98)	-1.90 (1.41)	-8.18* (4.32)
Profit margins	0.14 (0.33)	1.02* (0.53)	-2.57** (1.21)
Labour productivity	0.38 (2.02)	0.61 (2.42)	-0.88 (5.79)
Survival [†]	0.018*** (0.01)	0.01 (0.01)	x ^{††} x

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses. [†]The estimates shown in the table correspond to the estimated average marginal effects calculated after the probit model. ^{††}“x” indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table 8: CSBFP estimated coefficients for each economic indicator growth (level difference) 2020–2021

	Non-CSBFP borrowers	CSBFP borrowers	Denied borrowers
Revenue	69,098.51*** (13,843.57)	64,229.18*** (24,055.68)	47,452.46 (32,451.19)
Employment	0.07 (0.19)	-0.25 (0.25)	0.58 (0.47)
Profits	38,993.08*** (7,832.49)	31,729.45** (12,618.58)	10,624.73 (24,504.79)

Salary	14,444.18*** (3,601.18)	6,019.60 (5,862.68)	6,807.21 (12,246.02)
Assets	-9,137.22 (5,870.96)	-13,083.04 (10,024.80)	3,136.32 (12,690.87)
Profit margins	0.0003 (0.001)	0.002 (0.002)	-0.01** (0.006)
Labour productivity	0.04 (0.06)	-0.007 (0.08)	-0.37* (0.19)

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

6.2. Propensity score matching

This section presents the results obtained from the propensity score matching. This alternative technique can be used to assess the robustness of the results obtained previously. CSBFP borrowers are matched with SMEs that did not participate in the program (the group called non-CSBFP borrowers in the previous section). This analysis does not consider matching applied only on the subgroup constituted of approved or denied borrowers as comparison is established against the larger population of SMEs (non-CSBFP borrowers).

The propensity score is calculated using a logit model³² which determines the probability or the likelihood of an SME to participate in the CSBFP.³³ The model includes several covariates, all related to firm characteristics and primary decision-maker characteristics. Variables listed in Table 2 were used to do so. For each of the economic indicators (except survival), the sample was restricted to observations that were not considered as outliers by the robust regressions used previously.³⁴ Results from Table 9 show that the average treatment effect on the treated (ATET) is close to the estimates arising from the robust regressions, specifically for revenue, profits and salary in terms of statistical significance and magnitude.³⁵ The only exception is for survival where the ATET is positive but not significant.

³² Various model specifications were assessed for the continuous variables (e.g., logarithm or second-degree polynomial). The Stata command *teffects psmatch* was used for the estimation. Matching is done with replacement. The number of matches per observations is one.

³³ See Appendix, Tables A5 and A7 for example with the economic indicator revenue.

³⁴ Outliers are identified with weight equals to zero in the robust regressions model (MM-estimators).

³⁵ This includes considering the overlap of the 95% confidence interval between the average treatment effect on the treated and the estimated coefficient from the robust regressions for each economic indicator.

Table 9: Average treatment effect on the treated by economic indicator growth 2020–2021

Economic indicator	Average treatment effect on the treated
Revenue	5.37** (2.54)
Employment	0.83 (1.65)
Profits	8.86*** (3.05)
Salary	7.24** (2.84)
Assets	0.32 (1.61)
Profit margins	-0.11 (0.62)
Labour productivity	-3.24 (3.16)
Survival	0.01 (0.02)

Notes: Robust standard errors derived by Abadie and Imbens (2006) are in parentheses. Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***.

Sources: Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table 10 present the results for the ATET for each economic indicator in terms of the difference level. The ATET is positive and statistically significant³⁶ for revenue, profits and salary, similarly to the estimates obtained with the robust regressions. The magnitude for each ATET is roughly in the same range as the estimates from the robust regressions.

Table 10: Average treatment effect on the treated by economic indicator growth (level difference) 2020–2021

Economic indicator	Average treatment effect on the treated
Revenue	78,751.75*** (24,793.47)
Employment	-0.15 (0.45)
Profits	58,517.58*** (16,383.90)
Salary	10,504.85* (6,139.64)

³⁶ The ATET for revenue and profit and their estimates from the robust regressions were statistically significant at the 1% level. The ATET for salary is statistically significant at the 10% level and the estimate from the robust regression was statistically significant at the 1% level.

Assets	2,598.77 (12,009.21)
Profit margins	0.0007 (0.003)
Labour productivity	-0.07 (0.09)

Note: Robust standard derived by Abadie and Imbens (2006) are in parentheses.

Sources: Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

The similarity in terms of statistical significance and magnitude show that the results obtained with the robust regressions and the propensity score matching are robust, specifically for revenue growth, profit growth and salary growth. This strongly suggests that the CSBFP recipients encounter higher growth for these economic indicators compared with other SMEs that do not receive support from the program.

The balance³⁷ of covariates was assessed for each propensity score matching model by using the standardized mean difference.³⁸ Overall, and for most of the covariates, the standardized mean difference was under 10%, which is considered a sign of balance.³⁹ Other balance diagnostics were also used, in particular visual ones⁴⁰. In all cases, there was no sign of imbalance. Finally, the overlap assumption (common support) was also assessed. In this case, we plot the densities of the propensity score (predicted probabilities) for the treatment group (CSBFP borrowers) and the control group (non-CSBFP borrowers).⁴¹ In all cases, there was not a significant amount of estimated density around one.⁴² Therefore, the common support assumption was assumed to not be violated.

6.3. Limitations

The results obtained and discussed in the analysis have to be carefully considered. A prudent approach would have been to interpret all the results in terms of correlation between program participation in the CSBFP and growth of the economic indicator instead of causal effect.

Since participation in the program is not random and this study relies on observational data, interpretation

of the results in terms of causality requires that strong assumptions are satisfied.

For example, the important assumption that relies on observables, specifically for the estimation of the average treatment effect on the treated. In this case, one has to assume that all variables that have an impact on participation in the program are included in the model.

³⁷ See Caliendo and Kopeinig (2008) for some guidance in implementing propensity score matching.

³⁸ See Zhang *et al.* (2019) or Austin (2009, 2011) for the formula used for continuous and binary variables.

³⁹ There is no clear consensus among empirical researchers on the threshold for the standardized mean difference to determine a sign of imbalance for the covariate. However, some suggested that 10% (and more) denotes meaningful imbalance (Austin, 2009).

⁴⁰ For example, the Stata command *tebalance density* was used. It produces kernel density plots of the propensity scores for raw and matched observations. A visual inspection shows if the fit is good between the treatment group and the matched one.

⁴¹ The Stata command *toverlap* was used in this case. Summary statistics were also analyzed and show that the propensity score of the treated was not too close from one.

⁴² Recall that only a weak version of the overlap assumption is considered in this analysis as the main objective is to estimate the treatment effect on the treated. In this case, the assumption requires no density mass around one. In general, the overlap assumption requires no estimated densities mass around zero and one.

Same year variables as when the treatment—that is, program participation—occurred were also used in the propensity score matching causing endogeneity due to simultaneity and biased estimates.

The use of lagged variables was not possible for a significant proportion of CSBFP borrowers, as they tend to be young businesses and startups and information was only available during the year they obtained the loan. Biased estimates due to omitted variables is also a risk for the robust regressions.

However, the use of a rich dataset such as the SFGSME linked with administrative data mitigate those risks. The SFGSME provides insightful information on the business's characteristics (age, size, industry sector) and also on the primary decision maker's characteristics that could explain participation in the CSBFP and motivation to grow.

Moreover, the results have to be interpreted in terms of the specific sample used in this analysis and not for the population of CSBFP recipients or the population of SMEs. Inference at the population level (CSBFP and SMEs) requires the use of weights as the SFGSME was designed as such. In this analysis, for both robust regressions and propensity score matching, the weights were not used. For the former, weights were not allowed. For the latter, only frequency weights can be used for the estimation. Weights for the survey are sampling weights, that is, the inverse of the probability that the observation is included in the sampling design.

Therefore, one has to keep in mind that the findings obtained in this analysis concern the sample used and may not be extrapolated to the overall population of CSBFP recipients.

7. CONCLUSIONS

The CSBFP is a government loan loss-sharing program that was created to facilitate access to financing for Canadian small businesses. The purpose of this analysis is to determine the impact of the CSBFP on various economic indicators on its recipient firms. The results obtained show that CSBFP recipients' growth for revenue, profits and total salary paid to employees between 2020 and 2021 were respectively 5.7, 6.3 and 5.6 percentage points higher than SMEs that did not receive debt financing through the program in 2020. This translates into an increase in revenue between 2020 and 2021 of \$69,098, a gain in total profits of \$38,993 and a rise in total salary for employees of \$14,444 for CSBFP recipients in comparison with SMEs that did not participate in the program. Furthermore, the report reveals that CSBFP recipients were 1.8 percentage points more likely to be active (survival rating) in 2021 compared with SMEs that did not participate in the program.

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APPENDIX

The following tables (A1 and A2) are shown as examples to illustrate the results obtained with the robust regressions for the economic indicator of revenue. Tables A3 and A4 concern the survival of SMEs in 2021 and show the results obtained with the probit model and the average marginal effects. Tables A5 and A7 present the estimated coefficients obtained with the logit model used to calculate the propensity score matching. Finally, Tables A6 and A8 show the summary statistics (standardized mean and variance) before and after matching of the covariates used in the logit model. Those tables can be used to assess if balance was achieved after matching the treatment group (CSBFP recipients) with non-CSBFP borrowers (control group).

Table A1: Robust regressions results: revenue growth 2020–2021

	Non-CSBFP borrowers		Approved borrowers		Denied borrowers	
	I	II	III	IV	V	VI
<i>Firm characteristics</i>						
CSBFP	8.19*** (1.50)	5.69*** (1.56)	5.44*** (1.71)	3.34 (2.11)	5.35 (3.84)	-0.63 (4.84)
Firm size	-	0.43** (0.22)	-	0.70 (0.57)	-	-0.74 -1.63
Firm age	-	-0.18*** (0.04)	-	-0.37*** (0.08)	-	-0.99*** (0.28)
Firm age squared	-	0.001** (0.0005)	-	0.003*** (0.0006)	-	0.007** -0.0034
Return on assets (Reference category: Quartile 4)						
Return on assets— Quartile 1	-	3.48*** (0.91)	-	5.41** (2.23)	-	15.51*** (5.42)
Return on assets— Quartile 2	-	3.93*** (0.85)	-	7.50*** (2.08)	-	20.34*** (4.67)
Return on assets— Quartile 3	-	1.87** (0.82)	-	4.42** (1.94)	-	9.52** (4.37)
Return on assets (Reference category: Quartile 1)						
Debt ratio— Quartile 2	-	0.77 (0.80)		0.52 (2.27)	-	9.07 (7.01)
Debt ratio— Quartile 3	-	2.67*** (0.84)		5.39** (2.21)	-	13.29** (6.56)
Debt ratio— Quartile 4	-	1.80* (0.97)		5.43** (2.45)	-	6.62 (6.47)
Franchise	-	-1.20 (1.0)		-1.47 (2.45)	-	-3.06 (4.39)
Innovation	-	1.22 (0.75)	-	2.63* (1.56)	-	3.12 (4.37)
Expand	-	1.25	-	1.37	-	x

		(0.78)		(2.13)		
Export	-	-1.27 (0.92)	-	-2.54 (1.91)	-	-
COVID-19 financing	-	0.44 (0.74)	-	-0.80 (1.81)	-	-0.11 (6.92)
Closed	-	6.99*** (0.80)	-	7.19*** (1.74)	-	8.60** (3.42)
Urban	-	-1.84** (0.79)	-	-0.59 (1.75)	-	-6.0 (5.37)
Industry Sectors (Reference category: retail trade)	No	Yes	No	Yes	No	Yes
Region (Reference category: Quebec)	No	Yes	No	Yes	No	Yes
<i>Primary decision maker characteristics</i>						
Age	-	-0.83*** (0.20)	-	-0.85* (0.43)	-	0.06 (0.97)
Age squared	-	0.006*** (0.002)	-	0.007* (0.004)	-	-0.0003 (0.01)
<i>Education (Reference category: Less than high school diploma)</i>						
High school diploma	-	-0.78 (1.50)	-	-2.13 (3.58)	-	-3.55 (5.50)
College/CEGEP/trade school diploma	-	-1.73 (1.47)	-	-1.69 (3.50)	-	-0.42 (5.02)
Bachelor's degree	-	-1.80 (1.51)	-	-2.02 (3.61)	-	1.60 (5.73)
Master's degree or above	-	-0.46 (1.65)	-	0.76 (4.04)	-	5.06 (7.64)
Women	-	-1.18 (0.96)	-	-4.48** (2.10)	-	0.64 (4.28)
Visible minority	-	-1.03 (1.34)	-	-1.28 (3.09)	-	x
Immigrant	-	-0.57 (0.84)	-	-2.44 (1.88)	-	-2.64 (4.72)
Indigenous	-	1.34 (2.55)	-	-4.54 (4.55)	-	x
Percentage of outliers	NA	7	NA	9	NA	11
Robust R ² (w)	0.008	0.08	-	0.12	-	0.23
Robust R ² (p)	0.002	0.03	-	0.04	-	0.07

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses. "x" indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*. Constants were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A2: Robust regressions results: difference in revenue 2020–2021

	Non-CSBFP borrowers		Approved borrowers		Denied borrowers	
	I	II	III	IV	V	VI
<i>Firm characteristics</i>						
CSBFP	77,200.31*** (12,237.20)	69,098.51*** (13,843.60)	17,212.58 (18,730.77)	64,229.18*** (24,055.70)	39,782.60** (19,880.22)	47,452.46 (32,451.20)
Firm size	-	8,472.19*** (740.40)	-	-2,971.79 (2,807.83)	-	7,836.75*** (2,637.93)
Firm size squared	-	-28.28*** (2.35)	-	186.91*** (5.72)	-	-32.05*** (6.60)
Firm age	-	-7,943.46** (3,244.79)	-	-24,073.20** (9,510.72)	-	- 39,560.15*** (9,305.50)
Return on assets (Reference category: Quartile 1)						
Return on assets— Quartile 2	-	-3,059.45 (9,678.33)	-	12,297.87 (29,702.20)	-	33,347.50 (27,301.82)
Return on assets— Quartile 3	-	-11,414.60 (9,563.52)	-	-7,099.73 (29,392.20)	-	12,574.19 (35,649.91)
Return on assets— Quartile 4	-	-27,603.33*** (9,315.10)	-	-48,867.50 (31,297.40)	-	-57,116.29* (33,833.53)
Return on assets (Reference category: Quartile 4)						
Debt ratio— Quartile 1	-	11,826.79 (8,778.01)		-44,715.0 (36,470.70)	-	-119.90 (59,505.67)
Debt ratio— Quartile 2	-	30,207.07754*** (9,102.57)		44,890.30 (30,001.0)	-	44,415.95 (37,905.02)
Debt ratio— Quartile 3	-	3.7282.32*** (8,788.82)		78,947.33*** (23,953.30)	-	41,385.50 (27,438.97)
Franchise	-	-4,233.48 (13,334.8)		-33,186.50 (34,774.70)	-	-43,014.80 (33,413.40)
Innovation	-	15,015.88* (8,138.60)	-	44,322.05 (28,088.50)	-	-14,525.90 (34,115.90)
Expand	-	22,954.43*** (7,817.50)	-	58,166.42* (33,043.60)	-	14,262.81 (29,487.70)
Export	-	13,359.59 (13,215.50)	-	62,763.05 (44,447.90)	-	-38,078.90 (45,839.80)
COVID-19 financing	-	-285.17 (8,186.42)	-	33,431.33 (29,759.20)	-	-46,805.20 (32,606.90)
Closed	-	-10,757.70 (6,806.76)	-	-34,051.30 (20,917.70)	-	-8,931.94 (20,609.0)
Urban	-	-940.72 (8,035.32)	-	13,889.38 (27,529.50)	-	41,987.09 (38,453.50)

Industry Sectors (Reference category: retail trade)	No	Yes	No	Yes	No	Yes
Region (Reference category: Quebec)	No	Yes	No	Yes	No	Yes
<i>Primary decision maker characteristics</i>						
Age	-	-77,006.51*** (15,616.1)	-	-21,292.30 (42,433.40)	-	-23,964.41 (49,087.51)
<i>Education (Reference category: Less than high school diploma)</i>						
High school diploma	-	-12,477.50 (13,453.80)	-	-21,292.30 (42,433.40)	-	7,277.55 (51,744.40)
College/CEGEP/trade school diploma	-	-28,895.69** (13,211.70)	-	-118.86 (41,429.10)	-	-3,928.93 (52,111.80)
Bachelor's degree	-	-32,121.25** (14,495.30)	-	-7,750.52 (44,400.80)	-	3,829.528 (53,146.40)
Master's degree or above	-	-12,876.50 (15,947.50)	-	29,206.24 (50,470.50)	-	26,254.07 (57,266.40)
Women	-	-22,070.06*** (8,265.78)	-	-56,238.52** (25,183.60)	-	-24,790.40 (23,175.30)
Visible minority	-	-11,572.10 (10,065.20)	-	-25,778.0 (29,439.50)	-	14,610.66 (26,249.30)
Immigrant	-	-18,333.45** (7,987.98)	-	-45,626.05* (24,635.50)	-	40,062.70 (27,228.30)
Indigenous	-	-29,471.10 (24,322.60)	-	-170,850.0 (147,547.0)	-	x
Percentage of outliers	NA	23	NA	-	NA	11
Robust R ² (w)	0.008	0.27	0.0006	-	0.007	0.39
Robust R ² (p)	0.002	0.03	0.0004	-	0.002	0.08

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses. "x" indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*. Constants were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A3: Probit model regression: survival in 2021

	Non-CSBFP borrowers	Approved borrowers
<i>Firm characteristics</i>		
CSBFP	0.31*** (0.12)	0.17 (0.15)
Firm size	0.24*** (0.03)	0.19*** (0.05)
Firm age	0.07** (0.03)	-0.01538 (0.05)

Return on assets (Reference category: Quartile 4)		
Return on assets—Quartile 1	-0.16** (0.07)	-0.02 (0.15)
Return on assets—Quartile 2	0.1 (0.08)	0.42** (0.18)
Return on assets—Quartile 3	0.15* (0.08)	0.27 (0.16)
Debt ratio (Reference category: Quartile 1)		
Debt ratio—Quartile 2	0.23** (0.09)	x
Debt ratio—Quartile 3	-0.04 (0.08)	x
Debt ratio—Quartile 4	-0.33*** (0.07)	x
Franchise	-0.20** (0.09)	0.07 (0.18)
Innovation	0.01 (0.06)	0.06 (0.13)
Expand	0.21*** (0.07)	0.30* (0.17)
Export	0.04 (0.09)	x
COVID-19 financing	0.36*** (0.06)	0.52*** (0.14)
Closed	-0.24*** (0.06)	-0.32** (0.13)
Urban	-0.17** (0.08)	x
Industry Sectors (Reference category: retail trade)	Yes	Yes
Region (Reference category: Quebec)	Yes	Yes
Primary decision maker characteristics		
Age	-0.09 (0.12)	-0.09 (0.26)
Education (Reference category: less than high school diploma)		
High school diploma	-0.13 (0.12)	-0.32 (0.31)
College/CEGEP/trade school diploma	-0.13 (0.12)	-0.40 (0.28)
Bachelor's degree	-0.02 (0.12)	-0.23 (0.29)
Master's degree or above	-0.04 (0.14)	-0.29 (0.32)

Women	-0.18** (0.07)	-0.34** (0.14)
Visible minority	-0.03 (0.10)	x
Immigrant	-0.07 (0.07)	-0.32** (0.14)
Indigenous	x	x
Pseudo R ²	0.16	0.21
Log pseudolikelihood	-1,249.95	-251.29

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses. "x" indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*. Constants were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A4: Average marginal effects

	Non-CSBFP borrowers	Approved borrowers
<i>Firm characteristics</i>		
CSBFP	0.02*** (0.006)	0.01 (0.008)
Firm size	0.02*** (0.002)	0.01*** (0.003)
Firm age	0.005** (0.002)	(0.001) (0.003)
Return on assets—Quartile 1	-0.01** (0.006)	-0.001 (0.009)
Return on assets—Quartile 2	0.007 (0.005)	0.02*** (0.008)
Return on assets—Quartile 3	0.01** (0.005)	0.01* (0.008)
Debt ratio—Quartile 2	0.01*** (0.005)	x
Debt ratio—Quartile 3	-0.003 (0.006)	x
Debt ratio—Quartile 4	-0.03*** (0.006)	x
Franchise	-0.02* (0.008)	0.004 (0.01)
Innovation	-	-
Expand	0.02*** (0.006)	0.02 (0.01)
Export	0.003 (0.006)	x

COVID-19 financing	0.03*** (0.006)	0.04*** (0.01)
Closed	-0.02*** (0.005)	-0.02** (0.009)
Urban	-0.01** (0.005)	x
<i>Primary decision maker characteristics</i>		
Age	-0.007 (0.009)	-0.006 (0.02)
High school diploma	-0.01 (0.01)	-0.02 (0.03)
College/CEGEP/trade school diploma	-0.009 (0.009)	-0.03 (0.02)
Bachelor's degree	-0.001 (0.009)	-0.01 (0.02)
Master's degree or above	-0.003 (0.01)	-0.02 (0.03)
Women	-0.01** (0.006)	-0.02** -0.01
Visible minority	-0.002 (0.007)	x
Immigrant	-0.005 (0.005)	-0.02** (0.01)
Indigenous	x	x

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parenthesis. "x" indicates that data were suppressed to meet the confidentiality requirements of the *Statistics Act*.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A5: Propensity score matching—Revenue growth 2020–2021: logit model regression

Variable	Estimated coefficient
<i>Firm Characteristics</i>	
Firm size (Reference category: 1 to 5 employees)	
5 to 9 employees	0.54*** (0.16)
10 to 19 employees	0.89*** (0.17)
20 to 49 employees	0.60*** (0.18)
50 to 499 employees	-0.96*** (0.28)
Firm age	-0.43***

	(0.06)
Return on assets (Reference category: Quartile 1)	
Return on assets—Quartile 2	-0.10 (0.16)
Return on assets—Quartile 3	-0.36** (0.15)
Return on assets—Quartile 4	-0.89*** (0.17)
Debt ratio (Reference category: Quartile 1)	
Debt ratio—Quartile 2	0.90*** (0.23)
Debt ratio—Quartile 3	1.37*** (0.22)
Debt ratio—Quartile 4	1.59*** (0.22)
Franchise	1.21*** (0.15)
Expand	0.49*** (0.18)
Export	-0.46** (0.23)
COVID-19 financing	0.29 (0.18)
Closed	0.14 (0.13)
Urban	-0.36** (0.15)
Industry Sectors (Reference category: retail trade)	Yes
Region (Reference category: Ontario)	Yes
<i>Primary decision maker characteristics</i>	
Age	0.07 (0.05)
Age squared	-0.001** (0.0005)
Education (Reference category: less than high school diploma)	
High school diploma	-0.28 (0.27)
College/CEGEP/trade school diploma	-0.04 (0.25)
Bachelor's degree	-0.35 (0.26)
Master's degree or above	-0.57*

	(0.30)
Women	0.13 (0.15)
Visible minority or Indigenous People	-0.23 (0.18)
Immigrant	0.39*** (0.14)
Pseudo R²	0.31
Log pseudolikelihood	-1,186.08

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A6: Covariate-balance summary statistics—Revenue growth 2020–2021

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
<i>Firm characteristics</i>				
Firm size (Reference category: 1 to 4 employees)				
5 to 9 employees	0.26	0.05	1.45	1.05
10 to 19 employees	0.35	-0.05	1.76	0.95
20 to 49 employees	0.13	-0.02	1.26	0.97
50 to 499 employees	-0.57	-0.01	0.25	0.96
Firm age	-1.05	0.01	1.24	1.04
Expand	-0.41	0.12	0.36	1.69
Export	0.74	0.01	2.52	1.00
Franchise	0.30	0.00	0.57	1.00
COVID-19 financing	0.28	0.04	1.19	1.02
Closed	-0.05	0.04	1.09	0.94
Urban	-0.05	0.06	1.09	0.92
Return on assets—Quartile 2	0.10	0.01	1.11	1.01
Return on assets—Quartile 3	0.03	0.05	1.03	1.05
Return on assets—Quartile 4	-0.24	-0.10	0.71	0.84
Debt ratio—Quartile 2	-0.19	0.01	0.78	1.02
Debt ratio—Quartile 3	0.25	-0.01	1.25	0.99
Debt ratio—Quartile 4	0.38	-0.04	1.37	0.99
Region (Reference category: Quebec)				
Atlantic	-0.05	-0.04	0.85	0.89

Prairies	0.26	0.03	1.60	1.04
Ontario	-0.19	0.02	0.94	1.01
British Columbia and Territories	0.06	0.12	1.22	1.49
Industry sector (Reference category: retail trade)				
Primary	0.05	-0.07	1.32	0.73
Construction	-0.16	-0.09	0.63	0.76
Manufacturing	-0.19	0.05	0.55	1.22
Transportation and warehouse	-0.26	-0.01	0.38	0.94
Professional	-0.30	-0.02	0.36	0.90
Accommodation and food services	0.72	0.02	2.88	1.01
Other services	-0.04	0.00	0.87	1.00
Admin	-0.02	0.03	0.88	1.18
Health	-0.05	0.06	0.82	1.37
Wholesale trade and others	-0.32	-0.02	0.34	0.90
Primary decision characteristics				
Age	-0.78	0.07	0.80	0.95
Age squared	-0.78	0.06	0.62	0.95
Education (Reference category: less than high school diploma)				
High school diploma	-0.10	-0.05	0.86	0.92
College/CEGEP/trade school diploma	0.11	-0.02	1.09	0.99
Bachelor's degree	0.08	0.04	1.07	1.04
Master's degree or above	-0.13	0.05	0.75	1.15
Women	0.16	-0.04	1.36	0.94
Visible minority or Indigenous people	0.25	0.01	1.86	1.01
Immigrant	0.44	0.14	1.38	1.06

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A7: Propensity Score matching—Level difference in revenue 2021-2021: logit model regression

Variable	Estimated coefficient
Firm Characteristics	
Firm size (Reference category: 1 to 5 employees)	
5 to 9 employees	0.69*** (0.14)
10 to 19 employees	0.95*** (0.16)
20 to 49 employees	0.79***

	(0.18)
50 to 499 employees	-0.48 (0.31)
Firm age	-0.43*** (0.05)
Return on assets (Reference category: Quartile 1)	
Return on assets—Quartile 2	-0.32** (0.15)
Return on assets—Quartile 3	-0.71*** (0.14)
Return on assets—Quartile 4	-1.29*** (0.16)
Debt ratio (Reference category: Quartile 1)	
Debt ratio—Quartile 2	0.90*** (0.23)
Debt ratio—Quartile 3	1.49*** (0.22)
Debt ratio—Quartile 4	1.65*** (0.22)
Franchise	1.33*** (0.14)
Expand	0.55*** (0.17)
Export	-0.37* (0.23)
COVID-19 financing	0.14 (0.16)
Closed	0.16 (0.12)
Urban	-0.30** (0.15)
Industry Sectors (Reference category: retail trade)	Yes
Region (Reference category: Quebec)	Yes
<i>Primary decision maker characteristics</i>	
Age	0.08* (0.05)
Age squared	-0.001** (0.0005)
Education (Reference category: less than high school diploma)	
High school diploma	-0.24 (0.25)
College/CEGEP/trade school diploma	0.06

	(0.23)
Bachelor's degree	-0.26 (0.24)
Master's degree or above	-0.34 (0.27)
Women	0.07 (0.14)
Visible minority or Indigenous People	-0.27 (0.17)
Immigrant	0.29** (0.13)
Pseudo R²	0.32
Log pseudolikelihood	-1,246.58

Notes: Estimates statistically significant at the 0.1, 0.05 and 0.01 levels are indicated, respectively, by *, ** and ***. Robust standard errors are in parentheses.

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.

Table A8: Covariate-balance summary statistics—Difference level in revenue 2020–2021

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
<i>Firm characteristics</i>				
Firm size (Reference category: 1 to 4 employees)				
5 to 9 employees	0.23	0.004	1.30	1.00
10 to 19 employees	0.28	-0.07	1.56	0.93
20 to 49 employees	0.13	-0.005	1.29	0.99
50 to 499 employees	-0.24	0.03	0.39	1.21
Firm age	-1.00	-0.04	1.15	1.03
Expand	0.26	-0.02	0.59	1.05
Export	-0.26	0.04	0.47	1.19
Franchise	0.79	-0.01	2.74	1.00
COVID-19 financing	0.20	0.01	0.70	0.99
Closed	0.23	-0.01	1.12	1.00
Urban	0.003	0.09	1.00	0.88
Return on assets—Quartile 2	0.12	-0.06	1.15	0.95
Return on assets—Quartile 3	-0.07	0.03	0.92	1.04
Return on assets—Quartile 4	-0.38	-0.01	0.57	0.99
Debt ratio—Quartile 2	-0.23	-0.01	0.70	0.99
Debt ratio—Quartile 3	0.31	0.04	1.35	1.02

Debt ratio—Quartile 4	0.38	-0.04	1.28	0.99
Region (Reference category: Quebec)				
Atlantic	-0.07	0.01	0.80	1.03
Prairies	0.20	0.09	1.43	1.15
Ontario	-0.12	-0.004	0.95	1.00
British Columbia and Territories	0.08	-0.03	1.28	0.93
Industry sector (Reference category: retail trade)				
Primary	0.07	0.02	1.40	1.09
Construction	-0.17	0.06	0.61	1.28
Manufacturing	-0.12	-0.06	0.67	0.81
Transportation and warehouse	-0.27	0.07	0.36	1.48
Professional	-0.36	-0.04	0.30	0.83
Accommodation and food services	0.71	0.11	2.54	1.06
Other services	-0.11	-0.07	0.72	0.79
Admin	-0.07	0.01	0.70	1.08
Health	-0.05	0.05	0.83	1.27
Wholesale trade and others	-0.22	-0.08	0.46	0.72
<i>Primary decision characteristics</i>				
Age	-0.72	-0.03	0.76	1.02
Age squared	-0.72	-0.02	0.59	1.00
Education (Reference category: less than high school diploma)				
High school diploma	-0.14	-0.09	0.81	0.86
College/CEGEP/trade school diploma	0.01	0.07	1.01	1.07
Bachelor's degree	0.15	-0.06	1.15	0.96
Master's degree or above	-0.02	0.06	0.95	1.14
Women	0.10	0.01	1.20	1.02
Visible minority or Indigenous people	0.20	-0.01	1.64	0.99
Immigrant	0.41	-0.05	1.31	0.99

Sources: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises*, 2020; Statistics Canada, Business Linkable File Environment; and authors' calculations.