



CANADA SMALL BUSINESS FINANCING PROGRAM: COST-BENEFIT ANALYSIS MAY 2019

Innovation, Science and Economic Development Canada
Small Business Branch, Research and Analysis
Lyming Huang and Patrice Rivard

www.ic.gc.ca/SMEresearch

This publication is also available online in HTML in print-ready format at www.ic.gc.ca/SMEresearch.

To obtain a copy of this publication or an alternate format (Braille, large print, etc.), please fill out the [Publication Request form](#) or contact:

Web Services Centre
Innovation, Science and Economic Development Canada
C.D. Howe Building
235 Queen Street
Ottawa, ON K1A 0H5
Canada

Telephone (toll-free in Canada): 1-800-328-6189
Telephone (Ottawa): 613-954-5031
TTY (for hearing-impaired): 1-866-694-8389
Business hours: 8:30 a.m. to 5:00 p.m. (Eastern Time)
Email: ISED@Canada.ca

Permission to Reproduce

Except as otherwise specifically noted, the information in this publication may be reproduced, in part or in whole and by any means, without charge or further permission from the Department of Industry, provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that the Department of Industry is identified as the source institution; and that the reproduction is not represented as an official version of the information reproduced, or as having been made in affiliation with, or with the endorsement of, the Department of Industry.

For permission to reproduce the information in this publication for commercial purposes, please fill out the [Application for Crown Copyright Clearance](#) or contact the Web Services Centre (see contact information above).

© Her Majesty the Queen in Right of Canada,
as represented by the Minister of Industry Canada, 2019

Cat. No. Iu188-119/2019E-PDF
ISBN 978-0-660-30494-6

Aussi offert en français sous le titre *Programme de financement des petites entreprises du Canada : analyse coûts-avantages mai 2019*.

Table of Contents

Executive Summary	2
1. Introduction	2
2. Canada Small Business Financing Program	3
3. Empirical framework	4
3.1 Data sources	4
3.2 Benefits and costs.....	5
3.3 Cost-benefit analysis	5
4. Canada Small Business Financing Program costs.....	6
4.1 Program administrative costs – staff salaries and benefits	6
4.2 Program administrative costs – direct operating expenditures	8
4.3 Program administrative costs – capital expenditures.....	9
4.4 Direct program costs – claims paid on loan defaults	9
4.5 Loan default costs to lenders	16
5. Canada Small Business Financing Program benefits.....	17
5.1 Administrative and direct operating expenditures by lenders	17
5.2 Profits from loan interest	18
5.3 Profits for CSBFP borrowers	19
5.4 Employment creation by borrowers.....	20
5.5 Macroeconomic impacts of investment by CSBFP borrowers.....	23
5.6 Administration and registration fees paid by borrowers to Innovation, Science and Economic Development Canada	28
6. Net benefit of the CSBFP	29
7. Conclusions	35
References.....	36

Executive Summary

This study presents the analysis and findings of costs and benefits resulting from the Canada Small Business Financing Program (CSBFP), administered by Innovation, Science and Economic Development Canada, over a nine-year evaluation period (2008–2009 to 2016–2017). The cost-benefit analysis measures the CSBFP's net benefits/costs and performs a sensitivity analysis to determine the lower and upper bounds of these benefits/costs. Previous studies have outlined the effectiveness of the program in supporting access to financing for Canadian small and medium-sized enterprises. Results from this study are consistent with previous cost-benefit analyses and indicate that CSBFP loan expenditures have a strong multiplier effect on the Canadian economy, and that the program generates a substantial net social benefit under all scenarios (high, medium and low) assessed in the sensitivity analysis. Overall benefits of the CSBFP significantly outweigh costs, with social benefits exceeding social costs by nearly \$4 billion, or \$350 million or more annually. The CSBFP continues to benefit the Canadian economy, with every dollar spent on program costs contributing an additional five dollars of benefits.

1. Introduction

The Canada Small Business Financing Program (CSBFP) is a loan loss-sharing program designed to support access to financing for Canadian small and medium-sized enterprises (SMEs). The program partners with private sector financial institutions to share the risk of lending to facilitate access to affordable financing for SMEs to start up, expand and modernize their small businesses.

Innovation, Science and Economic Development Canada (ISED) conducts a comprehensive review of the program every five years in accordance with the *Canada Small Business Financing Act*. Each review includes an evaluation of whether the program continues to achieve its objective of improving access to financing for SMEs, thereby encouraging growth and job creation.

This study feeds into the upcoming CSBFP evaluation for the period 2014–2019 by using a cost-benefit analysis framework to estimate the net social benefit of the program. This analysis complements recent research reports examining whether the program improves access to financing (Rivard 2018) and whether it encourages growth and job creation (Huang and Rivard 2019). In particular, this study follows the methodology used in previous cost-benefit analyses of the CSBFP (KPMG 2009; Seens 2015) to provide a detailed analysis, by industry, province/territory and loan class, of the costs of administering the program and the economic benefits resulting from SMEs having increased access to financing. This detailed accounting of program costs and benefits is used to form a range of estimates of the CSBFP's

net social benefits for fiscal years 2008–2009 to 2016–2017.¹ Results suggest that the CSBFP continues to provide significant net social benefits, estimated at nearly \$4 billion over the nine-year evaluation period, with a positive net benefit of \$350 million or more annually.

The remainder of this report is organized as follows:

- Section 2: Overview of the program
- Section 3: Empirical framework for measuring the net social benefit
- Section 4: Program costs
- Section 5: Program benefits
- Section 6: Net social benefits of the CSBFP
- Section 7: Conclusions

2. Canada Small Business Financing Program

The primary objective of the CSBFP is to increase the availability of financing for the establishment, expansion, modernization and improvement of small businesses. In doing so, the program encourages economic growth and job creation by SMEs. The CSBFP came into existence on April 1, 1999, to replace the Small Business Loans Program (SBLP), which began in 1961. It is governed by the *Canada Small Business Financing Act* and its Regulations.²

Small businesses play a critical role in the Canadian economy, accounting for 98 percent of all businesses and 68 percent of job creation.³ Yet, small businesses face unique challenges in accessing financing. If credit markets are characterized by credit rationing, for example, riskier small businesses may be unable to borrow even when they are willing to pay higher interest rates.

The CSBFP, by sharing the risk of financing with lenders, is designed to facilitate access to financing for higher risk SMEs. Specifically, the program encourages lending to SMEs by reimbursing 85 percent of eligible losses to financial institutions in the event of default.

Under the program, a small business applies for a loan from a financial institution (e.g., chartered bank, credit union or Caisse populaire) of its choice. Financing under the program is available to all small businesses with gross annual revenues of \$10 million or less, except for agricultural businesses, not-for-profit organizations, and charitable or religious organizations.

¹ CSBFP fiscal years are from April to March.

² For more information, see <http://laws-lois.justice.gc.ca/eng/acts/C-10.2/index.html>.

³ ISED (2019).

Loan approval is determined by the lender. If approved, the lender registers the loan with the CSBFP. The lender is responsible for all aspects of loan administration, including disbursement of loan proceeds and, in the event of default, realization on security and guarantees.

The total loan amount, which cannot exceed \$1 million, can be used towards the purchase of real property, while a maximum of \$350,000 can be used for other allowable expenses, such as leasehold improvements, equipment and registration fees. The maximum period of government coverage on a CSBFP loan is 15 years for real property and 10 years for all other eligible expenses.

There are administrative costs associated with using the program: a one-time registration fee and an annual administration fee. The borrower may be responsible for paying the registration fee – 2 percent of the total loan amount – which can be financed as part of the loan. Lenders also pay an annual administration fee of 1.25 percent quarterly based upon their outstanding loan portfolio, which is included in the interest rate charged to borrowers. The lender submits both fees (registration fee and administration fee) to ISED, which are used to help offset government costs of paying claims on defaulted loans.

The interest rate applied to CSBFP loans depends upon the financial institution and general credit market conditions. However, the maximum interest rate for a variable loan is the lender's prime rate plus 3 percent and the maximum interest rate for a fixed loan is the lender's single family residential mortgage rate plus 3 percent.

3. Empirical framework

This study closely follows the methodology used in cost-benefit analyses conducted by KPMG (2009) and Seens (2015), including data sources, the cost-benefit framework and a nine-year period of analysis, which for this report includes fiscal years 2008–2009 to 2016–2017. One key advantage of this approach is that the estimates presented here are comparable with those of previous analyses.

3.1 Data sources

The following data sources are used:

- CSBFP database
- Economic impact studies of the CSBFP (Statistics Canada 2004; Statistics Canada 2009; Chandler 2010; Chandler 2012; Song 2014; Huang and Rivard 2019)
- Cost-benefit analyses of the CSBFP (KPMG 2009; Seens 2015)
- 2014 Canadian Input–Output Model simulations (Statistics Canada)
- Bank of Canada interest rates

While this analysis presents detailed accounts of the most important CSBFP costs and benefits, some costs and benefits were excluded. In particular, costs and benefits were excluded where data quality or availability precluded rigorous analysis. In these cases, the magnitude of the cost or benefit was insignificant compared with overall costs and benefits.

3.2 Benefits and costs

The net social benefit of the CSBFP is equal to program benefits less program costs. Program benefits and costs are measured as they were in previous CSBFP cost-benefit analyses.⁴ In particular, benefits are measured as the economic activity (e.g., jobs, investment and government revenue) attributable to incremental CSBFP lending (i.e., loans that would not have been made without the CSBFP).⁵ The following specific program benefits are assessed:

- Macroeconomic (direct and indirect) impact of expenditures by borrowers using CSBFP loans
- Expenditures made by lenders to administer the program, including 1) salaries and wages, and 2) direct operating expenditures
- Profits earned by lenders from interest on CSBFP loans
- Additional salaries and wages paid by borrowers
- Registration and administration fees paid by borrowers to ISED

The analysis weighs these benefits against the costs of running the program, both direct program costs and administrative costs. Specifically, the following costs are evaluated:

- Salaries and benefits of ISED staff involved in administration and management of the CSBFP
- Direct operating expenditures on the CSBFP, including information management and information technology (IM/IT), travel costs, supplies and contracting
- Capital expenditures, including purchasing IT systems and other assets
- Cost to ISED of loan defaults (payment of claims)
- Cost to lenders of loan defaults (loan losses)

3.3 Cost-benefit analysis

Pearce et al. (2006) describe the theoretical foundations of cost-benefit analysis as follows: for a program to be justified in a cost-benefit framework, its social benefits must exceed its social costs. In economic terms, increases in utility must exceed reductions in utility. This requirement implies that the program passes the Kaldor–Hicks compensation test, i.e., those made better off by the program could theoretically compensate those made worse off, leading to a Pareto-improving outcome.

⁴ Note that this framework assumes there is no social opportunity cost of CSBFP loans to lenders or to the government.

⁵ Incrementality is discussed further in Section 6.

This cost-benefit analysis evaluates whether the CSBFP passes this test, yielding a positive net benefit to society. In particular, in compounding⁶ net benefits by the social opportunity cost of capital, this analysis estimates the present value net benefit (PVNB) of the CSBFP as

$$PVNB = \sum_{t=-8}^0 \frac{(B_t - C_t)}{(1+r)^t}$$

where B_t and C_t are the total benefits and total costs, r is the discount rate and the years $t = -8, \dots, 0$ correspond to fiscal years 2008–2009 to 2016–2017 (i.e., the net social benefit is evaluated in its 2016–2017 present value).

Note that a PVNB greater than zero implies that the benefits of the CSBFP outweigh the costs. Alternatively, consider the ratio of the sum of compounded CSBFP benefits to the sum of compounded CSBFP costs:

$$\frac{\sum_{t=-8}^0 B_t / (1+r)^t}{\sum_{t=-8}^0 C_t / (1+r)^t}$$

where a ratio greater than one indicates that the program yields a positive net benefit to society.

4. Canada Small Business Financing Program costs

In this section, CSBFP costs – administration and loan default costs – are estimated. These costs include the following:

- Program administrative costs (e.g., salaries, wages and operating costs)
- Direct program costs (i.e., payment of default claims by ISED)
- Loan default costs (to lenders)

4.1 Program administrative costs – staff salaries and benefits

Program administrative costs include salaries, wages and benefits of staff involved in administration of the CSBFP. Program administration involves registering loans, processing claims, conducting research and developing program policies.

Using data from the Small Business Financing Directorate (SBFD) financial management system, the total annual cost of salaries and benefits for CSBFP staff is estimated as follows:

- **Add salary costs for staff involved in the CSBFP:** Salaries of all SBFD staff, including those from the following teams: Director’s Office; CSBFP Policy / Business Development Bank of Canada (BDC) / Organisation for Economic Co-operation and Development; Economic and Policy Analysis; Operations; and Registration, Program Integrity and Revenues.

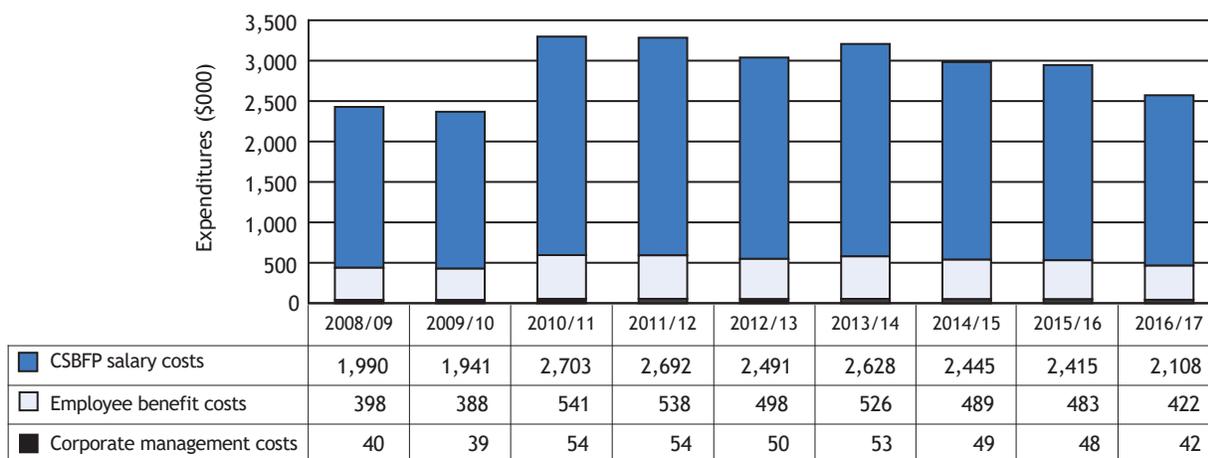
⁶ Cost-benefit analysis is typically forward looking and calculates the present value of future benefits and costs by discounting them using a given discount rate. As this analysis is backward looking, it compounds (rather than discounts) benefits and costs already realized using the discount rate.

- **Subtract salary costs for staff activities unrelated to the CSBFP:** SBFD staff spend a small portion of their time on activities unrelated to the CSBFP, such as administration of the Small Business Loans Program and Capital Leasing Pilot Project (CLPP), as well as support for the BDC.⁷ Salaries paid towards time spent on these activities are removed from total SBFD salaries.
- **Add corporate management costs:** Senior management (including the Director General of the Small Business Branch; Assistant Deputy Minister of Small Business, Tourism and Marketplace Services; and Deputy Minister of ISED) spend a portion of their time (estimated at 2 percent) on activities related to management and oversight of the CSBFP.
- **Add employee benefits costs:** Estimated at 20 percent of salary costs, the standard benefit calculation used across the Government of Canada.

Findings

Salaries, benefits and corporate management costs related to administration of the CSBFP totalled \$26 million over the nine-year period of analysis, averaging \$2.9 million per year (Figure 1). These costs increased sharply in 2010–2011 due to new collective agreements, organizational restructuring and one-time severance payments. From 2013–2014 to 2016–2017, salaries and benefits paid declined by \$0.6 million as the number of employees administering the program decreased.

Figure 1: Estimated Salary, Benefit and Corporate Management Expenditures of the CSBFP



Source: Small Business Financing Directorate financial management system.

⁷ The Small Business Financing Directorate included support for the Business Development Bank of Canada only until 2013, when the BDC portfolio was transferred to the Small Business Branch, Research and Analysis and BDC Directorate.

4.2 Program administrative costs – direct operating expenditures

The second component of program administrative costs is direct operating expenditures. This includes items such as overhead costs (e.g., staff training) and direct operating costs (e.g., resources, products, contracting and IM/IT). These items are reported by ISED as “operating and maintenance expenditures.”

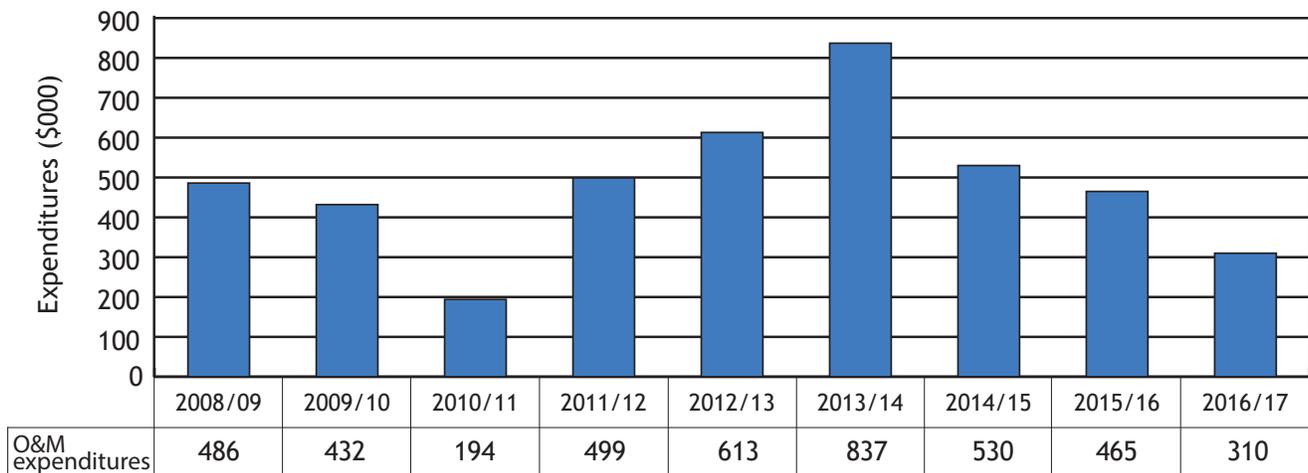
Using data from the Sbfd financial management system, the total annual cost of direct operating expenditures is estimated as follows:

- **Add the total operating and maintenance (O&M) budget of the Sbfd:** Include expenditures on transportation and communication (e.g., travel, postage, freight and telecommunications); information (e.g., publishing, printing and communications services); professional and special services (e.g., legal services, training and translation); rentals, repairs and maintenance (including of buildings); utilities, materials and supplies, and acquisition of other machinery (e.g., informatics equipment and parts, machinery and furniture) and all other expenditures (including accounts payable interest).
- **Subtract the share of the O&M budget unrelated to the CSBFP:** Similar to salaries and benefits, the portion of direct operating expenditures spent on the SBLP and CLPP is estimated and excluded.

Findings

Operating and maintenance expenditures of the CSBFP totalled \$4.4 million from 2008–2009 to 2016–2017 (Figure 2). High and low expenditures over this period are primarily associated with the cyclical nature of the five-year evaluation and statutory review of the program.

Figure 2: Estimated Operating and Maintenance Expenditures of the CSBFP



Source: Small Business Financing Directorate financial management system.

4.3 Program administrative costs – capital expenditures

The third component of program administrative costs is capital expenditures. Specifically, in 2008–2009, 2012–2013 and 2013–2014, information technology systems used for electronic registration were purchased. These items were expensed when they were purchased (rather than treated as assets and amortized over their expected economic lives), which may overstate their cost. However, as these expenditures are relatively small in comparison with total program costs, this treatment does not significantly impact the overall net-benefit estimate.

The total cost of capital expenditures is estimated by using data from the CSBFP database.

Findings

Capital expenditures for the CSBFP comprise a small proportion of administrative costs (and a much smaller proportion of overall program costs), totalling \$0.7 million for the nine-year evaluation period. In particular, capital expenditures of \$470,000, \$180,000 and \$30,000 were made in 2008–2009, 2012–2013 and 2013–2014 respectively.

4.4 Direct program costs – claims paid on loan defaults

Direct program costs of the CSBFP are relative to claims paid on loan defaults, the most substantial expense. Claims are typically submitted to the CSBFP, according to Canada Small Business Financing Program Guidelines,⁸ after realization on all security, guarantees or suretyships, or personal liability with proceeds applied to the loan. Occasionally, interim claims are made for losses, after realization on primary security and any additional security on business assets, but before realization on guarantees or suretyships. With an interim claim, a portion of the claim payment, based upon estimated guarantees and amounts yet to be paid, is held back until the final claim is made. If the lender realizes a larger amount than estimated by the interim claim, the difference is refunded to the CSBFP.

Using data from the CSBFP database, claims paid on loan defaults are calculated yearly as follows:

- **Add the total cost of claims paid.**
- **Subtract refunds on interim claims submitted in previous years.**

The CSBFP database also includes data on the number of claims.

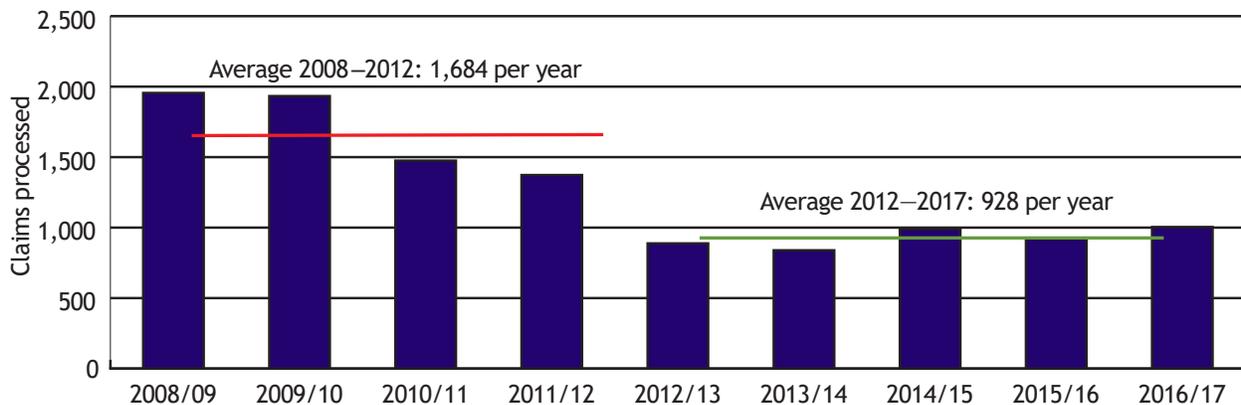
⁸ CSBFP Guidelines are detailed at https://www.ic.gc.ca/eic/site/csbfp-pfpec.nsf/eng/h_la03133.html.

Findings

As shown in Figure 3, from 2008–2009 to 2016–2017, ISED processed 11,378 claims on CSBFP loan defaults. There is a steep decline over the nine-year period, with the number of claims processed in 2012–2013 (888 claims) accounting for less than half of the 2009–2010 amount. Comparing claims during the first four years of the study period, when numbers averaged 1,684 annually, with claims in the latter five years, when numbers averaged 928 annually, highlights this decline. Claims paid on CSBFP loan defaults show a similar trend (Figure 4), with the value of claims dropping by over 50 percent from 2009–2010 to 2012–2013. Notably, the 2016–2017 value of \$62 million in claims paid is low even compared with prerecession levels, when total claims paid averaged \$75 million from 2003–2004 to 2006–2007.⁹

Figure 4 also compares the ratio of claims paid with the value of the outstanding loan portfolio, which provides a metric for the relative size of losses. The 2016–2017 share of claims paid relative to the value of the outstanding portfolio, 2.14 percent, was relatively low compared with the prerecession average of 2.81 percent from 2003–2004 to 2006–2007. This is due not only to historically low values of claims paid in recent years but also to steady increases in the value of the outstanding loan portfolio since 2009–2010.

Figure 3: Number of CSBFP Claims Processed



Sources: Internal CSBFP database; and authors' calculations.

A number of factors played a role in these steep reductions, the two most important of which are macroeconomic conditions and the Minister's liability limit.¹⁰ Clearly, there were important macroeconomic developments over these nine years, which impacted defaults. The Great Recession, and the economic recovery that followed, significantly impacted the market conditions in which CSBFP

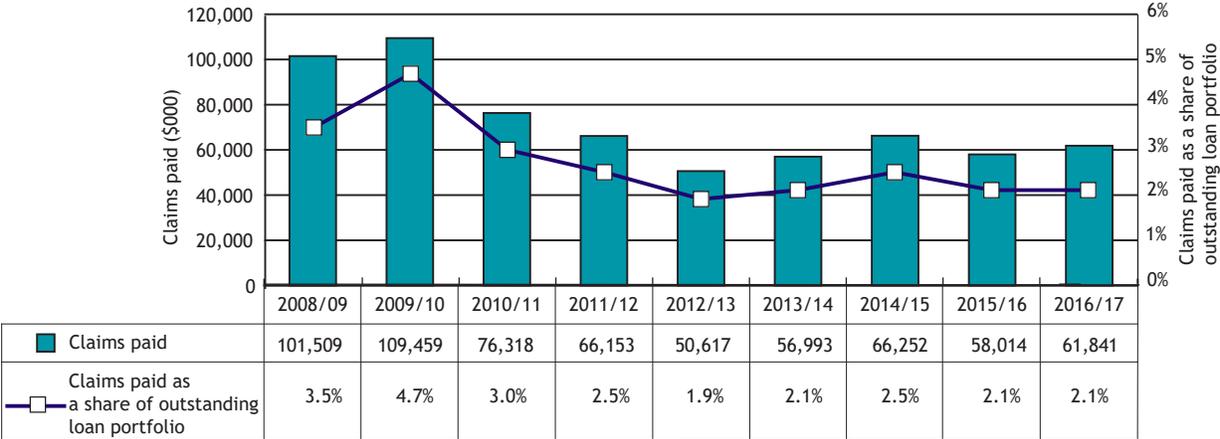
⁹ These values are not shown in Figure 4, but are available in Seens (2015).

¹⁰ For each five-year lending period, starting April 1, 1999, ISED limits its liability to lenders for CSBFP loan losses. For the largest lenders of CSBFP loans, the liability limit is roughly 10 percent (for loans made before March 31, 2009; for loans made after this date, the liability limit is 12 percent) of the value of all loans made by the lender in a five-year period.

borrowers operated. Claims were at their highest during the recession, and dropped dramatically as the economy recovered.¹¹ Note that ISED typically receives claims two to four years after loans are issued, and additional time is required to review, audit and process claims, so to the extent that the economic downturn impacted defaults, these effects tend to be observed with a lag in claims data.

The Minister’s liability limit also played a substantial role in declining claims. In particular, for CSBFP loans made during the 2004–2009 period, one of the largest program lenders reached its maximum liability limit in 2009–2010. Furthermore, of the other four major program lenders, two reached their liability limits in 2011–2012, one in 2012–2013 and one in 2013–2014. For the years 2010–2011 to 2013–2014 (and to a decreasing extent in subsequent years), this resulted in a steeper decline in claims following the recession than in defaults.

Figure 4: Claims Paid on CSBFP Loan Defaults

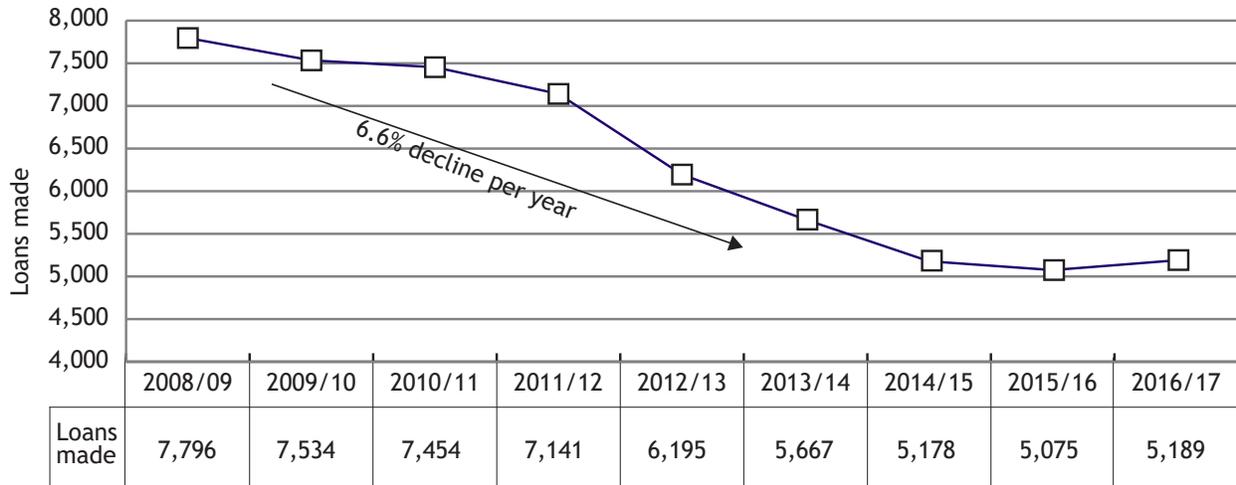


Sources: Internal CSBFP database; and authors’ calculations.

Two other factors were related to the downward trend in claims. First, the number of new loans issued decreased steadily, from 7,796 in 2008–2009 to 5,189 in 2016–2017 (Figure 5). This corresponds to a 33 percent decrease in the total number of loans issued between 2008–2009 and 2016–2017 (with an average annualized 6.6 percent decrease between 2008–2009 and 2014–2015). This trend predated the recession, extending back to 2003–2004. With fewer borrowers, there were fewer loan defaults. Second, maximum loan amounts increased significantly, from \$250,000 to \$500,000 in April 2009 and again from \$500,000 to \$1,000,000 in June 2015, for real property loans. One effect of these changes was an increase in the share of program loans for real property, as well as for leasehold improvements, and a shift away from equipment. As losses from defaults on lending for real property are more easily recovered and lending for equipment is riskier than for other asset types, this reduced ISED’s overall claim costs.

¹¹ The Canadian economy was also negatively affected, to a much lesser degree, by the oil price shock in 2014, though there is little evidence of any impact on CSBFP claims. Note that this lack of evidence is likely due more to other factors – the decrease in new borrowers and changes in CSBFP lending, which allowed loans for real property – that moved claims in the opposite direction, as discussed below.

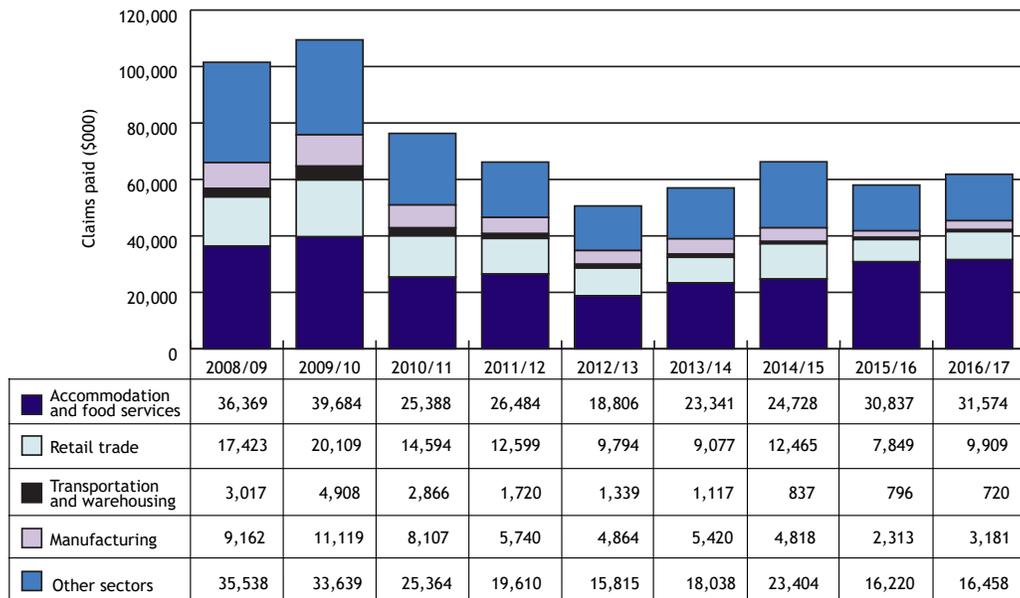
Figure 5: Total Number of Loans Made



Source: Internal CSBFP database.

The sectoral distribution of claims paid is illustrated in Figure 6. It focuses on the accommodation and food services, retail trade, manufacturing, and transportation and warehousing sectors as these sectors account for the majority of CSBFP borrowing.¹² In terms of claims, these sectors accounted for 73 percent of the total value of claims paid in 2016–2017: accommodation and food services (51 percent), retail trade (16 percent), manufacturing (5 percent), and transportation and warehousing (1 percent).

Figure 6: Claims Paid on CSBFP Loan Defaults, by Industry Sector



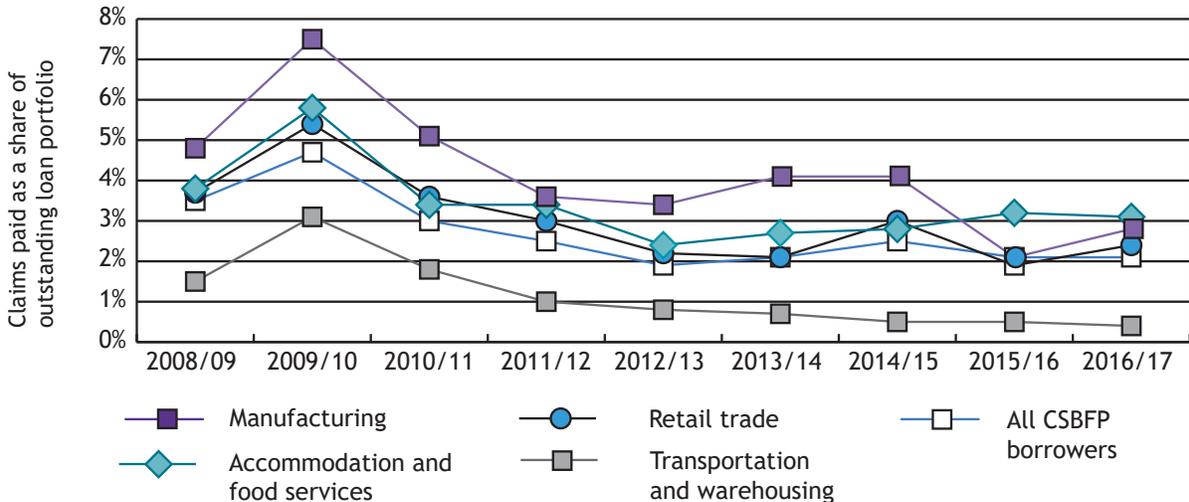
Source: Internal CSBFP database.

12 In 2016–2017, for example, these four sectors accounted for roughly 60 percent of the number and value of new loans, and the value of the outstanding loan portfolio.

The value of claims paid fell in nearly all sectors between 2008–2009 and 2016–2017.¹³ The largest declines occurred in retail trade, manufacturing, and accommodation and food services. Claims paid in these sectors fell by \$8 million, \$6 million and \$5 million, respectively, to \$10 million, \$3 million and \$32 million between 2008–2009 and 2016–2017.

Over this period, the sectoral distribution of claims paid changed substantially. With the value of claims paid decreasing in nearly all sectors from their recession-level peaks, the magnitude of declines in accommodation and food services and manufacturing drove these distributional changes – claims paid in accommodation and food services, which comprised 36 percent of total claims paid in 2008–2009, grew to 51 percent of total claims paid in 2016–2017, while the share for manufacturing dropped from 9 percent in 2008–2009 to 5 percent in 2016–2017.

Figure 7: CSBFP Claims Paid as a Share of the Outstanding Loan Portfolio, by Industry Sector



Source: Internal CSBFP database.

Figure 7 shows the sectoral distribution of CSBFP claims paid relative to the value of the outstanding loan portfolio. For 2016–2017, the share of claims paid for loans to small businesses in accommodation and food services (3.1 percent) was significantly higher than the average share for all CSBFP borrowers (2.1 percent). Shares for manufacturing (2.8 percent) and retail trade (2.4 percent) were also higher than the average, while the share for transportation and warehousing (0.4 percent) was substantially lower than the average.

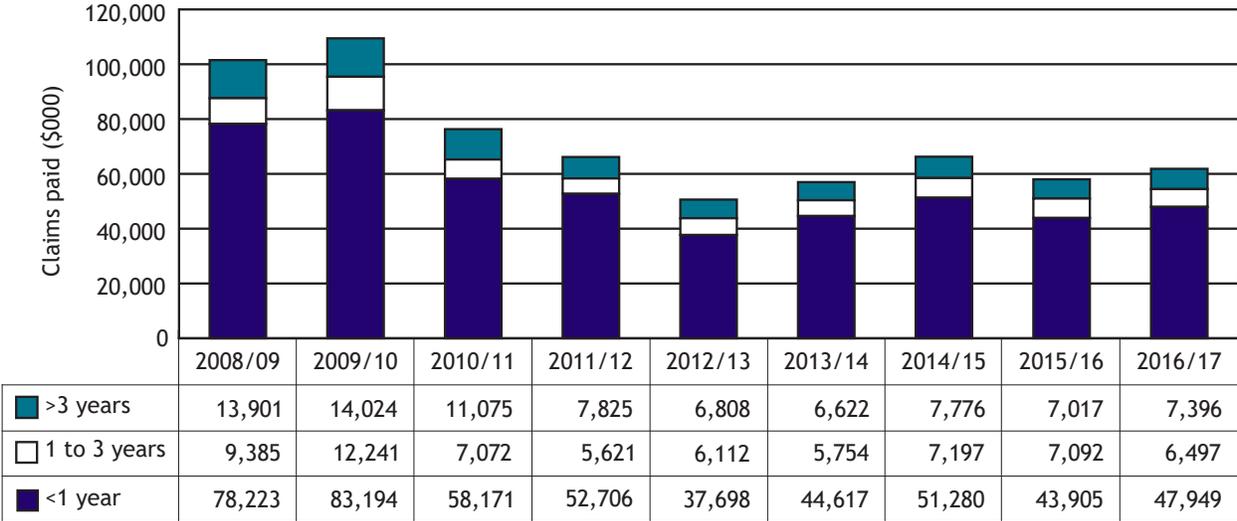
Figure 7 also shows interesting changes in claims paid as a share of the outstanding loan portfolio over time. Overall, shares decreased from recession-level highs until 2016–2017 in both the goods-producing and service-producing sectors. However, the decline in CSBFP loans to goods producers

¹³ Personal care services and repair and maintenance are two notable exceptions – claims grew exponentially as lending to these sectors grew from under \$5 million in 2008–2009 to over \$200 million in 2016–2017. These increases, however, are attributable more to reclassification of CSBFP loans to these sectors than actual changes in lending.

of 3.3 percentage points between 2009–2010 and 2016–2017 and 0.8 percentage points between 2014–2015 and 2016–2017 was relatively larger than the corresponding decreases of 2.5 percentage points and 0.3 percentage points in CSBFP loans to service providers. Within the goods-producing sector, shares declined dramatically over time in manufacturing and natural resources and mining, while decreases in construction were relatively modest. In the service-producing sector, shares for accommodation and food services decreased from 2009–2010 highs, but were relatively unchanged in recent years.

Changes in claims paid as a share of the outstanding loan portfolio over time in accommodation and food services and manufacturing are also notable relative to changes in other industries. The share of claims was consistently higher for loans to CSBFP borrowers in these two sectors from 2008–2009 to 2016–2017 than for loans to other CSBFP borrowers. However, the share of claims for manufacturing approached the average for all industries by the end of the nine-year period as CSBFP lending activity (i.e., new loans and outstanding loan portfolio) in the sector fell. By contrast, while the outstanding loan portfolio in accommodation and food services grew in both absolute and relative terms, the share of claims diverged from the average for all industries in 2015–2016 and 2016–2017.

Figure 8: Claims Paid on CSBFP Loan Defaults, by Age of Firm



Source: Internal CSBFP database.

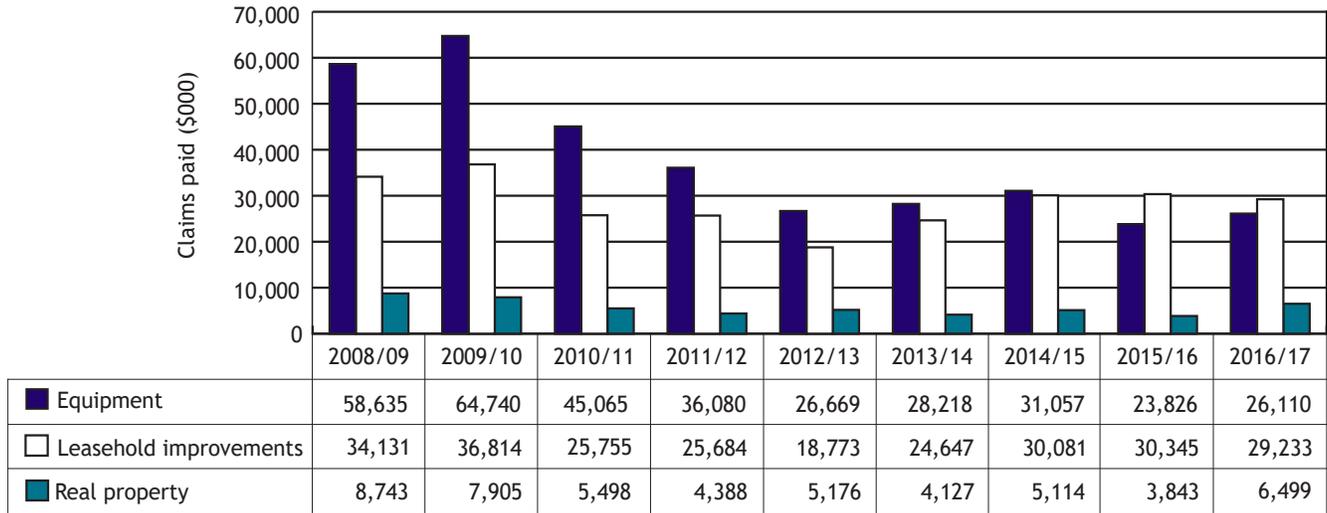
Figure 8 presents the distribution of claims paid by the age of firms. In 2016–2017, CSBFP claims paid for loans made to borrowers in operation for less than 1 year (\$48 million), between 1 and 3 years (\$6 million) and more than 3 years (\$7 million) accounted for 78 percent, 10 percent and 12 percent of total claims paid respectively. For the same year, the respective percentage shares of claims paid relative to the outstanding loan portfolio (not shown) were 2.8 percent, 1.9 percent and 0.9 percent.

The values of claims paid for all three firm age categories followed similar trends over time, declining significantly from recession-level peaks in 2009–2010, with decreases of similar magnitude. There was little change observed over the nine years in the percentage of claims paid by firm age when analyzing the shares of total claims paid relative to the outstanding loan portfolio.

Figure 9 shows claims paid on loan defaults by asset type. In 2016–2017, claims for equipment (\$26 million), leasehold improvements (\$29 million) and real property (\$6 million) loans represented 42 percent, 47 percent and 11 percent of total claims paid respectively.¹⁴

Figure 9 highlights the impact of the increases in eligible loan amounts from \$250,000 to \$1,000,000 described earlier, which resulted in CSBFP borrowers accessing larger loan amounts for real property. As lending shifted towards leasehold improvements and real property, and away from equipment, two corresponding changes in claims occurred. First, the total value of claims paid decreased dramatically both in value and relative to total lending. Second, the distribution of claims paid by asset type changed significantly, with the share of claims on loans for leasehold improvements increasing from 34 percent in 2008–2009 to 47 percent in 2016–2017,¹⁵ while the share of claims on loans for equipment decreased correspondingly (and the share of claims on loans for real property was roughly unchanged).

Figure 9: Claims Paid on CSBFP Loan Defaults, by Asset Type



Source: Internal CSBFP database.

14 Claims paid as a share of the outstanding loan portfolio by asset type were not calculated due to difficulties in classifying the outstanding loan portfolio by asset type.

15 Note that this trend predated the recession.

4.5 Loan default costs to lenders

According to CSBFP Guidelines, the lender's share of losses when borrowers default on their loans is 15 percent. In particular, claims paid by the CSBFP to lenders are based upon the remaining loan amount after all realizations (e.g., repossession actions or personal guarantees). The government-to-lender loss-sharing ratio for eligible claims, then, is 85 percent to 15 percent. Although not all claims submitted by lenders on CSBFP loans are eligible (e.g., claims submitted beyond the Minister's liability limit or those with insufficient documentation), this analysis considers only claims on eligible losses.

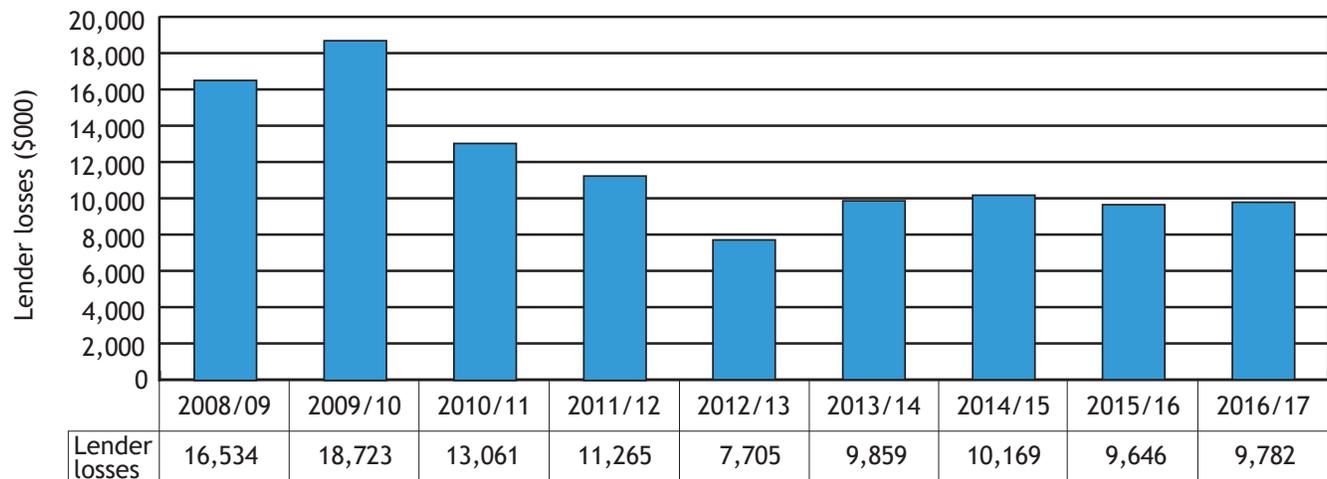
Using data from the CSBFP database, yearly loan default costs to lenders are calculated as follows:

- **Fifteen percent of eligible losses.**

Findings

Lenders' share of eligible losses totalled \$107 million from 2008–2009 to 2016–2017, averaging \$12 million per year (Figure 10). As they are directly proportional to claims paid, default costs to lenders declined substantially from their peak of \$19 million in 2009–2010 due to the economic recovery, lenders reaching their liability limits and other factors discussed above. Default costs have remained steady in recent years at roughly \$10 million annually from 2013–2014 to 2016–2017.

Figure 10: Loan Default Costs to Lenders



Source: Internal CSBFP database.

5. Canada Small Business Financing Program benefits

In this section, the benefits of the CSBFP are estimated. Benefits arise from the program when loans result in government revenue, job creation and new investment. Specifically, economic activity resulting from CSBFP loans includes the following:

- Administrative and direct operating expenditures by lenders
- Profits from interest on loans
- Salaries and wages paid by borrowers
- Gross domestic product (GDP) impacts (direct and indirect)
- Registration and administration fees collected by ISED

This section presents all benefits arising from the CSBFP without adjusting for incrementality. Adjustments for incrementality are discussed in Section 6.

5.1 Administrative and direct operating expenditures by lenders

Insofar as lenders hire additional staff for (incremental) CSBFP lending, these hires represent jobs through costs to lenders created as a result of the program. Lenders may, for example, hire dedicated CSBFP staff. Alternatively, to the extent that CSBFP loans increase overall commercial lending, additional labour may be required for the increase in commercial lending activity.

However, there are insufficient data to estimate the salaries, wages and benefits for these jobs. This is because lenders have very few staff dedicated to CSBFP lending, and do not collect data on the proportion of time spent on program loans by all staff involved in administration of all commercial lending (including CSBFP loans and all other commercial loans). Moreover, as noted in the 2009 CSBFP cost-benefit analysis (KPMG 2009), by lenders' own accounts such additional hiring is limited and would not significantly impact the overall estimate of net program benefits.

Likewise, lenders' expenditures towards administration of CSBFP loans (e.g., on legal fees or IT systems) generate economic activity. Similar to above, however, lenders do not collect the data necessary to generate an estimate of expenditures related to CSBFP administration. This absence of data reflects the fact that such expenditures are limited, and of a magnitude that would not significantly impact the overall analysis.¹⁶

¹⁶ The 2015 CSBFP cost-benefit analysis (Seens 2015) notes that administrative and direct operating expenditures could alternatively represent program costs, rather than program benefits. However, the limited magnitude of these expenditures means that whether they are treated as costs or benefits does not significantly impact the overall analysis.

5.2 Profits from loan interest

According to CSBFP Guidelines, the maximum interest rate lenders can charge on CSBFP loans is 1) the prime lending rate plus 3 percent for variable rate loans or 2) the single family residential mortgage rate plus 3 percent for fixed rate loans. ISED also collects an administration fee of 1.25 percent on outstanding loan balances, which is paid quarterly by lenders. The interest charged by lenders less the administration fee collected by ISED, then, is revenue collected by lenders. This revenue, net of capital costs and administration fees, gives loan interest profits.

Using loan data from the CSBFP database and interest rate data from the Bank of Canada, the annual revenue rate for loan interest is calculated as follows:

- **Add** the average interest rate charged above prime (CSBFP database).
- **Add** the business prime rate (Bank of Canada).
- **Subtract** the administration fee of 1.25 percentage points.
- **Subtract** the cost of funds, measured as the five-year Government of Canada benchmark bond yield (Bank of Canada).

The annual revenue rate is then multiplied by the corresponding outstanding CSBFP loan balance (CSBFP database), giving annual profits to lenders from loan interest.

Findings

As shown in Table 1, interest rates, including the average business prime rate, dropped sharply from 2008–2009 to 2009–2010 as the Bank of Canada dramatically reduced its overnight rate in response to the recession. Interest rates rose slightly from these historic lows in the subsequent two years as economic conditions improved, but remained well below prerecession levels. From 2015 to 2016, as the Canadian economy adjusted to lower oil prices, the Bank of Canada cut its overnight rate by a total of 0.5 percentage points; the business prime rate in 2015–2016 and 2016–2017 was correspondingly low. Interest rates on CSBFP loans were consistently set at 3 percentage points above the average business prime rate, the maximum allowable amount under program guidelines.

Table 1: Estimated Average Interest Rate Charged

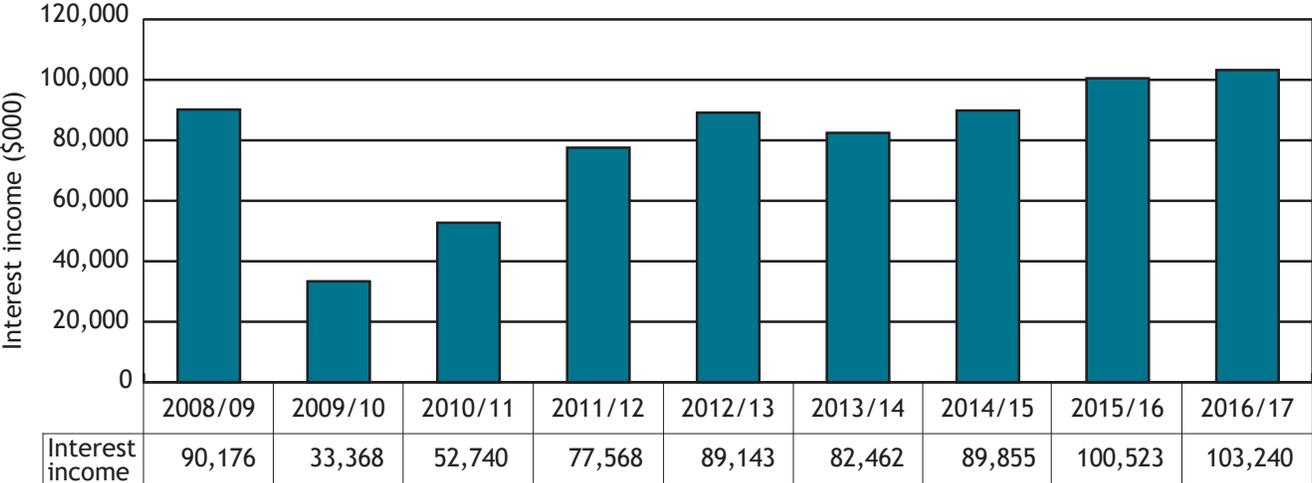
	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Average business prime rate (%)	4.04	2.25	2.79	3.00	3.00	3.00	2.96	2.74	2.70
Average rate charged above prime (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Average interest rate charged (%)	7.04	5.25	5.79	6.00	6.00	6.00	5.96	5.74	5.70
Cost of funds to lender (%)	2.70	2.57	2.45	1.78	1.35	1.69	1.33	0.81	0.87
Revenue rate (%)	3.09	1.43	2.09	2.97	3.40	3.06	3.38	3.68	3.58

Note: Revenue rate = average interest charged – cost of funds – 1.25%.

Sources: Internal CSBFP database; Bank of Canada; and authors' calculations.

The revenue rate on CSBFP loans halved from 3.09 percent in 2008–2009 to 1.43 percent in 2009–2010, concurrent with the drop in interest rates. In subsequent years, the revenue rate increased steadily to 3.58 percent in 2016–2017 as the cost of funds decreased substantially relative to interest rates. Figure 11 shows that interest income increased correspondingly. By this measure, then, lenders generated steady revenue from loans extended through the CSBFP, with average annual loan revenue of \$80 million.

Figure 11: Interest Income to Lenders on CSBFP Loans



Sources: Internal CSBFP database; Bank of Canada; and authors’ calculations.

5.3 Profits for CSBFP borrowers

Another channel for additional economic activity due to the CSBFP is borrower profits, i.e., investment from a program loan may allow borrowers to generate increased profits.

There is, however, insufficient evidence to generate a robust estimate of this impact. Previous economic impact analyses of the CSBFP in 2004, 2008, 2010 and 2014 did not find strong evidence that CSBFP participation increased profits. Although results of the 2019 economic impact analysis (Huang and Rivard 2019) imply that CSBFP loans significantly increased profits from 2014 to 2016, these results are not easily extrapolated to other years or to the entire 2014 population of CSBFP borrowers. Moreover, it is unlikely, based upon available evidence, that such profits would be of a magnitude that could impact the overall estimate of the net social benefit of the program.

5.4 Employment creation by borrowers

Within-firm employment creation expectations

Borrowers, in registering for CSBFP loans, submit a form that includes the number of (full-time equivalent) additional persons to be employed as a direct result of the loan.¹⁷ As the figure given is ex ante – the number of employees hired may turn out to be lower (or higher) than the number reported – it reflects expectations of, rather than actual, employment creation.

Using registration form data from the CSBFP database, the annual number of new jobs borrowers expect to create as a result of their program loans is estimated as follows:

- **The number of jobs borrowers expect to create as a direct result of CSBFP loans (self-reported on loan registration forms).**

These job creation expectations are then divided by the total number of CSBFP loans to generate an estimate of employment creation per loan.

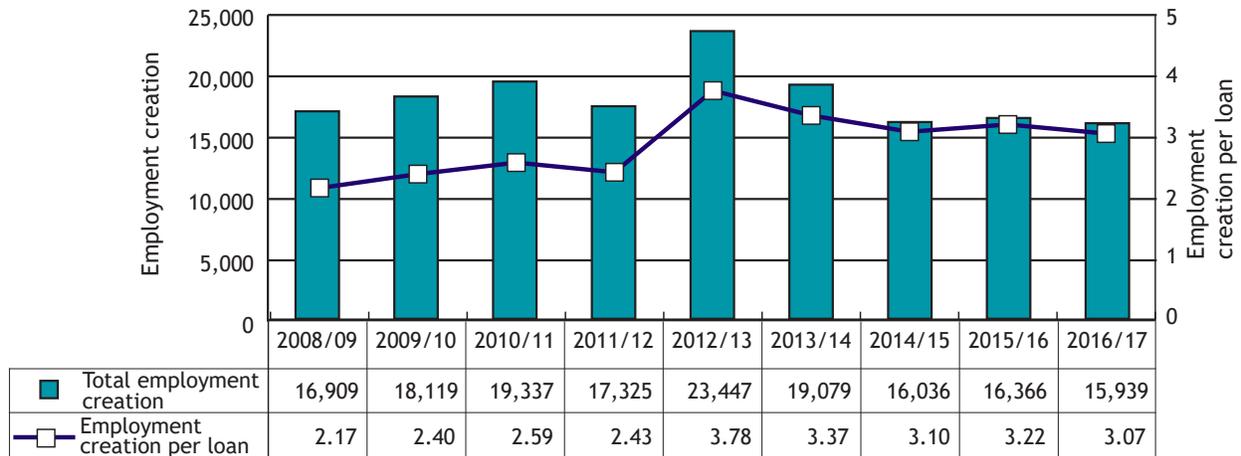
Findings

Canada Small Business Financing Program borrowers reported that, for the nine years from 2008–2009 to 2016–2017, an additional 163,000 full-time employees would be hired as a direct result of their loans (Figure 12), corresponding to an average of 18,000 new hires per year. Expected employment creation per loan remained fairly steady over the nine-year period outside of 2012–2013 when average expectations increased by over 50 percent to 3.78 employees hired per loan from the previous year's expectations of 2.43 employees hired per loan. The relative lack of change in expectations of total employment creation is of particular note in light of significant changes in expected employment creation per loan and in new loan activity.

Loan activity decreased steadily and substantially, with 7,796 new loans in 2008–2009 compared with 5,189 new loans in 2016–2017 (Figure 5). At the same time, borrowers increasingly anticipated more new hires as a result of their CSBFP loans, predicting an average of 2.17 new employees per loan in 2008–2009 and 3.07 new employees per loan in 2016–2017. Two factors may have played a role in the increased average employment creation expectations: economic conditions, which roughly correlate with the trend in borrowers' job creation expectations, and increases in the maximum loan amount, which allowed individual borrowers to finance larger investments with which to grow their businesses.

¹⁷ Note that while job creation expectation figures are of interest in the context of quantifying the economic benefits of the program, in the overall valuation of the net social benefit of the CSBFP, the appropriate metric is salaries and wages paid to actual (rather than expected) net hires – these figures are discussed below.

Figure 12: Total Expected Employment Creation and Expected Employment per Loan



Sources: Internal CSBFP database; and authors' calculations.

Salaries and wages for within-firm employment creation

While the number of jobs that borrowers expected to create as a result of receiving CSBFP loans is an important measure of the program's economic contribution, cost-benefit analysis requires dollar-value figures for costs and benefits to estimate the net social benefit. To quantify the benefit of within-firm employment creation in dollar terms, the appropriate metric is salaries and wages paid to employees hired by borrowers as a direct result of CSBFP loans.

As mentioned above, the CSBFP registration form includes figures on employment expectations. To move from employment expectations to actual employment, this analysis applies two assumptions to generate a conservative estimate of the latter figure. First, a 50 percent displacement rate is assumed as not all employees hired by borrowers represent net job creation in the economy.¹⁸ Many new hires, for example, may simply shift employment among employers. Second, expected net jobs created are further reduced as the number of employees actually hired may be less than the anticipated number. Data used for the 2010, 2014 and 2019 economic impact analyses (Chandler 2010; Song 2014; Huang and Rivard 2019), for example, suggested a ratio of actual to expected hires that is substantially less than one. This analysis, then, further reduces expected net jobs created by 50 percent for its estimate of net job creation.

Using consumer price index (CPI) data from Statistics Canada, and estimates of average salaries and wages paid to CSBFP employees from the 2009 and 2015 cost-benefit analyses (KPMG 2009; Seens 2015), average annual salaries and wages paid to new employees hired by CSBFP borrowers are estimated as follows:

¹⁸ The 2015 CSBFP cost-benefit analysis (Seens 2015) assumes a 50 percent displacement rate. This analysis uses the same rate for consistency between analyses.

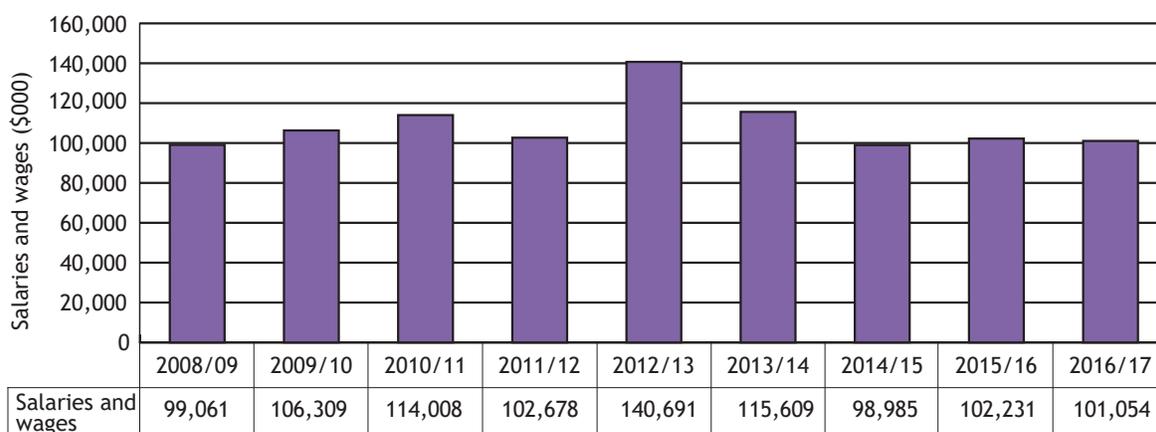
- **Average salaries and wages of CSBFP borrowers:** The 2009 and 2015 CSBFP cost-benefit analyses (KPMG 2009; Seens 2015) estimated average salaries and wages through linkages with administrative data and regressions. This analysis uses the estimates from previous analyses and inflates them by the CPI.¹⁹

Average salaries and wages are then multiplied by 25 percent of the jobs expected to be created by CSBFP borrowers to obtain estimates of total salaries and wages paid to net new employees hired by borrowers as a result of CSBFP loans.

Findings

Given the methodology used, estimates of salaries and wages paid to new employees of CSBFP borrowers are nearly proportional to the trend described above in expectations of total employment creation: total salaries and wages for employees hired as a result of CSBFP loans were roughly unchanged from 2008–2009 to 2016–2017 outside of a large increase in 2012–2013 due to an increase in the average job creation expectation (Figure 13). Note that the slight increase from 2008–2009 to 2016–2017 in estimated salaries paid to new hires, in contrast to the slight decrease in employment creation expectations over the same period, is due to the calculation used for average salaries, which increased by the rate of inflation.

Figure 13: Estimated Salaries and Wages Paid to New Employees of CSBFP Borrowers



Sources: Statistics Canada; internal CSBFP database; and authors' calculations.

Federal income tax on salaries and wages for within-firm employment creation

One of the economic benefits of the jobs created as a result of CSBFP loans is the taxes paid on income. In particular, federal income taxes paid enhance the fiscal position of the Government of Canada.

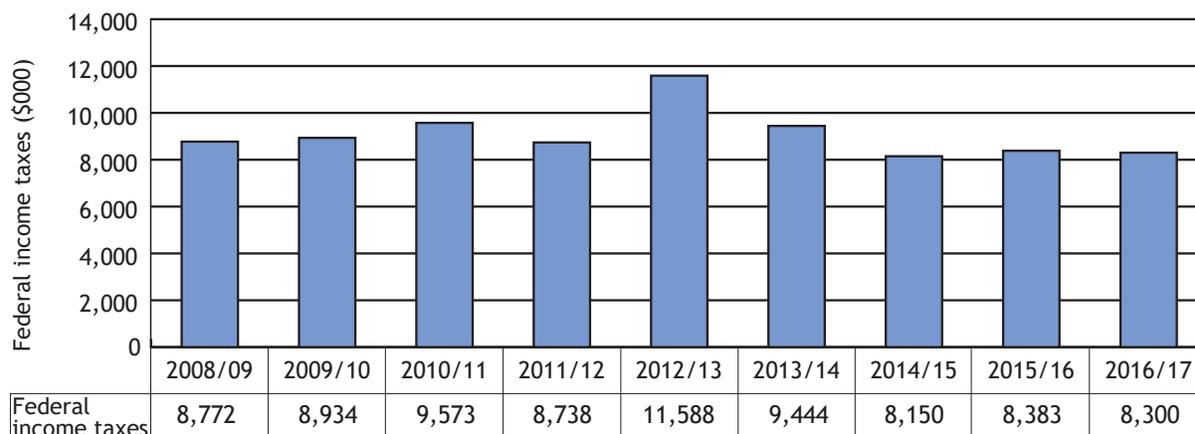
Using the above estimates of average salaries and wages paid to net new employees hired as a result of CSBFP loans, yearly federal income taxes paid on this income are estimated as follows:

¹⁹ For years for which data are available, a comparison of the estimated average wage (through data linkage or regression) and the average wage calculated simply as the inflated value of previous years suggests this approach yields reasonably precise estimates.

- **Average taxable income** is calculated as average income less the basic personal amount.
- **Average federal income taxes** are calculated as 15 percent of average taxable income.

Multiplying average federal income taxes by the number of new jobs created gives an estimate of the total federal income tax paid as a result of the CSBFP.

Figure 14: Estimated Federal Income Tax Remittance as a Result of Additional Salaries and Wages



Sources: Statistics Canada; internal CSBFP database; and authors' calculations.

Findings

Figure 14 shows the estimated federal income tax collected by the Government of Canada based upon the salaries paid to additional employees hired by CSBFP borrowers as a direct result of their loans. A total of \$82 million in income taxes was collected over the nine-year period, or an average of \$9 million per year. These estimates are directly proportional to estimates of within-firm employment creation and, therefore, follow the same trend over time.

5.5 Macroeconomic impacts of investment by CSBFP borrowers

Canada Small Business Financing Program financing is used by borrowers for investment, and that investment increases overall demand within the economy for machinery and equipment, property and leasehold improvements. This results in increased GDP and new jobs. This analysis uses Statistics Canada's Input–Output (IO) Model (Interprovincial Model), which is based upon data from Statistics Canada's Supply and Use Tables (SUTs), to measure the macroeconomic impact of the shock to demand that results from CSBFP financing.

Two basic price GDP impacts, direct and indirect, are presented as well as the corresponding job creation.²⁰ Direct impacts quantify the effect of increased production and imports necessary to meet

²⁰ In an IO framework, basic price valuation removes taxes and subsidies from market prices.

the demand for investment due to CSBFP loans. Indirect impacts estimate the upstream economic activity of producers of intermediate inputs used by directly impacted industries.

Consider, for example, the purchase of kitchen equipment by a restaurant using a CSBFP loan. This purchase requires additional production by kitchen equipment producers (as well as increased imports of kitchen equipment). In the IO modelling framework, this is the direct impact of the investment. Kitchen equipment producers, in turn, require additional materials, such as metals and electrical equipment, for increased production, which affects their upstream suppliers. Metal and electrical equipment producers must then increase production to meet the additional demand from kitchen equipment producers. In the IO modelling framework, this is the indirect impact of the investment.²¹ When production increases, additional labour is required as well. Applying GDP and labour to output ratios allows for estimates of GDP impacts and the corresponding out-of-firm employment creation.²²

Using data from the CSBFP database, Statistics Canada's Supply and Use Tables, and Statistics Canada's IO Model, annual direct and indirect GDP impacts, as well as the corresponding job creation, are estimated as follows:

- **Industry, province and asset type distribution of demand shock (CSBFP database):** The increase in demand (i.e., new spending in the economy) is equal to the value of loans issued, net of registration fees. To fit them into the IO modelling framework, data from the CSBFP database are used to estimate net loans issued by industry, province and asset type (i.e., equipment, leasehold improvements and real property).
- **Commodity distribution of demand shock (Statistics Canada SUTs):** The demand shock is further distributed by commodity to fit the commodity by commodity framework of the IO model. The CSBFP database lacks this detail, so the (commodity) patterns of investment spending, by industry, from SUTs are used. Canada Small Business Financing Program staff familiar with typical borrower expenditures verified the validity of these patterns.²³
- **Demand shock:** The value of net loans issued by industry, province and commodity is entered as a demand shock into the IO model.
- **Input–output simulation:** Detailed macroeconomic impacts, including GDP and job impacts, of the additional demand for investment due to CSBFP loans (i.e., demand shock) are estimated using Statistics Canada's IO Model.

21 The macroeconomic estimates can be considered conservative for two reasons. First, this analysis uses “open” rather than “closed” IO model results for more conservative estimates. In an open model, there is no link between factor incomes (to labour and capital) and household demand or investment. As a result, wages paid to the additional labour required for increased production are not fed back into the economy as additional household spending. A closed model includes the impact induced by linking factor incomes and household demand and investment. The estimates in this analysis, in this sense, likely underestimate the overall macroeconomic impact of CSBFP loans. Second, the IO model is a static model and, therefore, does not consider impacts in years subsequent to demand shocks. This likely understates the impacts over time.

22 Note that these job creation estimates represent economic activity corresponding to, rather than in addition to, GDP impacts. For this reason, neither the job creation estimates nor the estimated salaries and wages paid to new employees are included in the calculation of the overall net benefit of the CSBFP.

23 For the years 2008–2009 to 2011–2012, GDP impact estimates from the 2015 cost-benefit analysis (Seens 2015) are used. These estimates were based upon the 2010 IO model. The 2008–2009 and 2009–2010 estimates are based upon commodity patterns from the 2009 SUTs (at the time called IO tables). The 2010–2011 and 2011–2012 estimates are based upon commodity patterns from the 2010 SUTs. For the years 2012–2013 to 2016–2017, GDP impact estimates are based upon the 2014 IO model. The 2012–2013 estimates are based upon commodity patterns from the 2013 SUTs, while estimates for the remaining years are based upon commodity patterns from the 2014 SUTs.

Following the 2015 cost-benefit analysis (Seens 2015), macroeconomic impacts are estimated assuming 100 percent of a CSBFP loan amount contributes to economic activity in the year it is issued (e.g., a loan of \$50,000 used to purchase leasehold improvements in 2016 requires \$50,000 worth of additional production in 2016). This assumption, however, produces an estimate that should be considered as an upper bound as a loan used for real property or leasehold improvements may not require additional production if, for example, the property is purchased as is, or the leasehold improvements already exist. The 2009 cost-benefit analysis (KPMG 2009) accounted for this issue by assuming only half of loan amounts used for real property and existing leasehold improvements generated GDP impacts.²⁴

For a more conservative treatment, we reduce our initial estimates using ratios that approximate KPMG’s (2009) assumptions. In particular, our lower bound estimates for each year are calculated as follows:

- **Lower bound ratio** is equal to the sum of 1) half the ratio of new loans for real property (RP) and for existing leasehold improvements (ELI) to all new loans (NL) and 2) the ratio of new loans for new leasehold improvements (NLI) and for equipment (EQ) to all new loans, where ELI is estimated, following KPMG’s (2009) assumptions, as 23 percent of all loans for leasehold improvements, i.e.,

$$\text{lower bound ratio}_t = \left(0.5 \times \frac{RP_t + ELI_t}{NL_t}\right) + \frac{NLI_t + EQ_t}{NL_t} .$$

- **Lower bound estimates** are calculated as the product of the lower bound ratio and the upper bound (i.e., initial) estimate.²⁵

Findings: GDP impacts

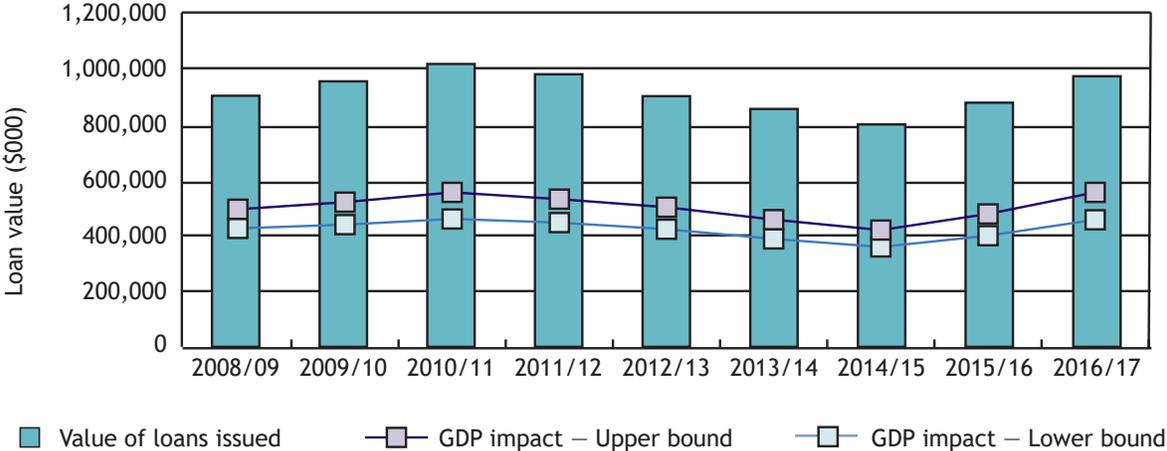
In 2016–2017, \$971 million in CSBFP loans was issued to borrowers to invest in equipment, leasehold improvements and real property, which is estimated to have generated between \$466 million and \$565 million in additional GDP (Figure 15). These estimates suggest that every dollar loaned to CSBFP borrowers resulted in between 48 and 58 cents of additional value-added to the economy. Roughly 60 percent of these impacts were direct (i.e., production by suppliers of the goods and services invested in by borrowers), while the remaining 40 percent were indirect (i.e., production upstream to suppliers of the goods and services invested in by borrowers). Corresponding closely to the regions where CSBFP loans were extended, 39 percent of GDP impacts occurred in Ontario, 26 percent in

²⁴ Until 2012, the CSBFP collected data from borrowers identifying the portions of loans to be used for existing and for new leasehold improvements. This information is no longer collected, however, as the amount of information required from borrowers/lenders when registering loans has been reduced to decrease the administrative burden.

²⁵ Note that replicating the KPMG treatment would apply the lower bound ratio to the demand shocks entered into the IO model, rather than to the estimates generated by the model. However, given that the IO model assumes relationships between demand and the production required to meet demand are linear, the approximation is likely fairly accurate. For example, comparing estimates of the five years that overlap between the 2009 and 2015 cost-benefit analyses (2003–2004 to 2007–2008) (KPMG 2009; Seens 2015), the average ratio of the 2009 GDP impact estimates to the 2015 GDP impact estimates is 0.87, which is equal to the ratio applied to the demand shocks used in the 2009 analysis.

Quebec and 18 percent in Alberta. Changes in impacts over time are due primarily to differences in the total value of loans extended through the CSBFP, although the increasing share of real property loans also played a role.

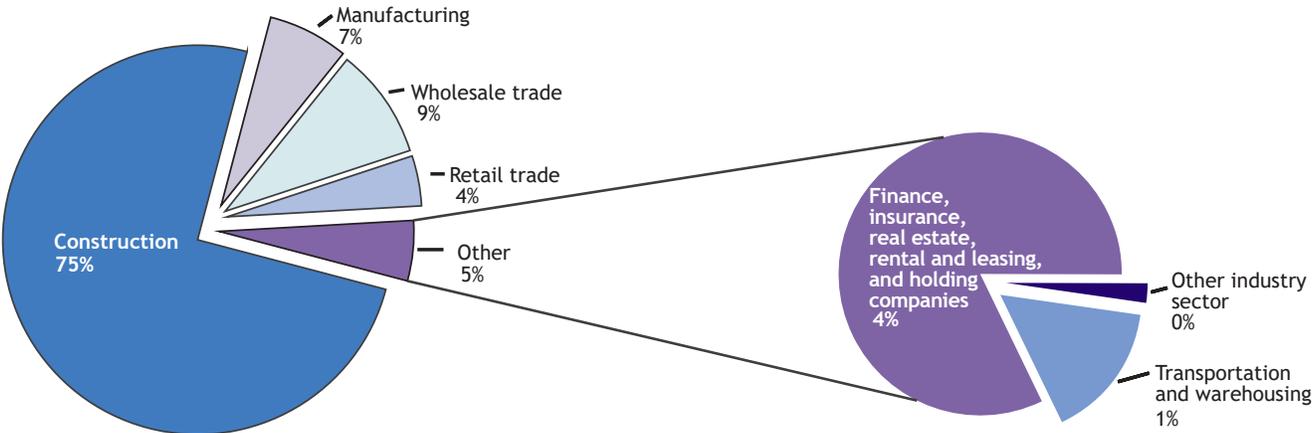
Figure 15: CSBFP Value of Loans Made and GDP Impact of Loans



Sources: Statistics Canada, Canadian Input–Output Model; and authors’ calculations.

Figure 16 presents the sectoral distribution of direct GDP impacts for 2016–2017. The construction industry benefited most from investments by CSBFP borrowers, with three quarters, or between \$201 and \$245 million, of GDP impacts concentrated in the sector. Manufacturing output also increased significantly, by between \$18 and \$22 million, in response to the additional investment. The remaining 18 percent of GDP impacts were in service industries supporting construction and manufacturing output, such as the wholesale trade and retail trade sectors. The sectoral distribution of GDP impacts has changed significantly over time, with construction accounting for an increasing proportion of GDP impacts as CSBFP loans are increasingly used for investment in real property.

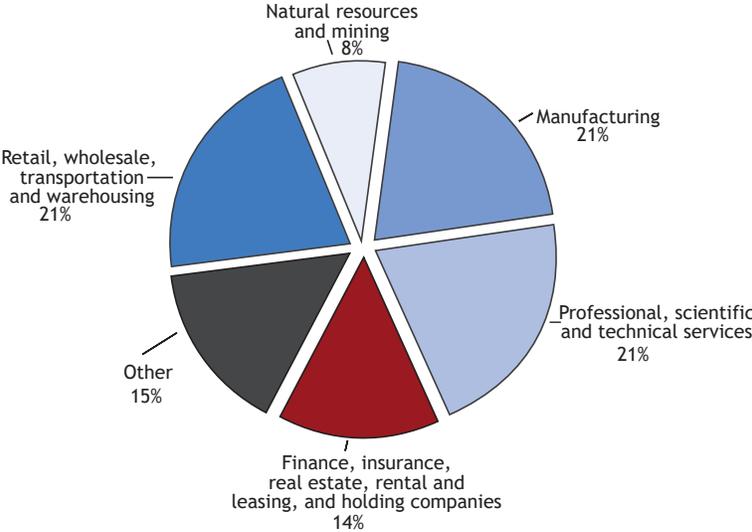
Figure 16: Direct GDP Impact, by Industry Sector, 2016–2017



Sources: Statistics Canada, Canadian Input–Output Model; and authors’ calculations.

The sectoral distribution of indirect GDP impacts for 2016–2017, illustrated in Figure 17, shows that industrial interlinkages result in economy-wide production in response to investment resulting from CSBFP loans, even when direct purchases are primarily from the construction sector. For example, indirect GDP impacts in the services sector account for 71 percent of additional upstream production compared with a share of less than 20 percent of direct GDP impacts. The composition of indirect GDP impacts has remained relatively unchanged over time.

Figure 17: Indirect GDP Impact, by Industry Sector, 2016–2017



Sources: Statistics Canada, Canadian Input–Output Model; and authors’ calculations.

Findings: Out-of-firm employment creation

As noted earlier, IO model estimates allow for estimates of out-of-firm employment creation corresponding to GDP impacts. Over the nine-year evaluation period, an average of between 4,600 and 5,450 jobs was created annually as a result of economic activity generated through investments by CSBFP borrowers, totalling between 41,400 and 49,050 jobs.

Findings: Taxes

The IO model also allows for specific estimates of the federal tax component related to GDP impacts. When economy-wide economic activity results as a response to lending under the CSBFP, corresponding federal taxes, such as the Goods and Services Tax and Harmonized Sales Tax, are paid; GDP impacts include these taxes, which can be expressed separately. Over the nine-year evaluation period, an annual average of between \$6.6 and \$7.8 million in federal taxes was collected on the additional production generated through investments by CSBFP borrowers, totalling between \$59.4 and \$70.2 million.

5.6 Administration and registration fees paid by borrowers to Innovation, Science and Economic Development Canada

As noted earlier, lenders collect registration and administration fees from borrowers, which are remitted to ISED. The registration fee is equal to 2 percent of the total loan value, and is often paid by the borrower when the lender registers the loan with ISED. This fee can be financed as part of the CSBFP loan. The administration fee is equal to 1.25 percent of the outstanding value of the loan, and can be included in the interest rate charged to the borrower.

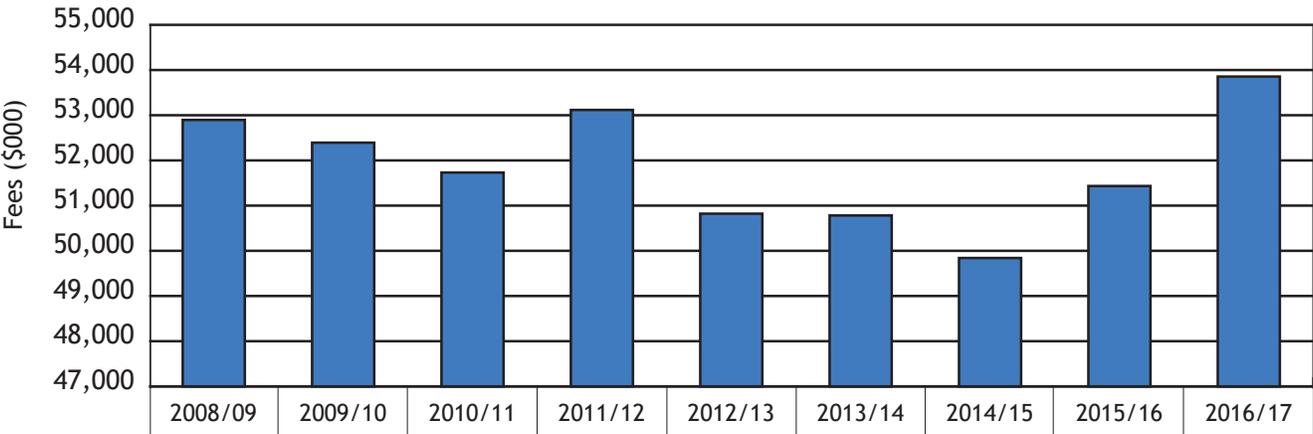
Using data from the CSBFP database, annual administration and registration fees are calculated as follows:

- **Registration fee:** 2 percent of total loans issued.
- **Administration fee:** 1.25 percent of lenders' total outstanding loan portfolio.

Findings

From 2008–2009 to 2016–2017, ISED collected \$467 million in registration and administration fees from the CSBFP, or \$52 million annually (Figure 18). Fees were steady throughout the nine-year period, remaining between \$49 and \$54 million, even as significant macroeconomic developments (discussed above) occurred.

Figure 18: Registration and Administration Fees



Source: Internal CSBFP database.

6. Net benefit of the CSBFP

This section presents estimates of the present value of net social benefits of the CSBFP, i.e., the present value of total program costs is subtracted from the present value of total program benefits to quantify the net impact of the CSBFP to the Canadian economy. Recall that a positive net benefit implies the program provides a net benefit to Canadians. The sensitivity of results to changes in key assumptions on the discount rate and on incrementality is also evaluated by comparing baseline estimates with estimates based upon assumptions of varying degrees of conservatism.

Discount rate

Costs and benefits are discounted to their 2016–2017 present values. Note that as this analysis is backward looking, in this context discounting to 2016–2017 compounds past costs and benefits by the discount rate (e.g., the 2016–2017 present value of the 2015–2016 net benefit is multiplied by one plus the discount rate).

Three discount rates are considered, as shown in Table 2. First, the Treasury Board of Canada Secretariat’s Canadian Cost-Benefit Analysis Guide (TBS 2007) recommends a discount rate of 8 percent. This rate is treated as the upper limit for the discount rate as the guide was published in 2007, when interest rates were relatively elevated. Second, the 10-year Government of Canada benchmark bond yield of 2.4 percent, published by the Bank of Canada, gives a lower limit for the discount rate based upon a conservative metric for the cost of funds. Finally, a discount rate of 5 percent is used as the baseline discount rate in this analysis. This rate not only falls roughly in between the upper and lower limits but also matches that of previous cost-benefit analyses, thereby offering comparability.

Table 2: Discount Rate

Scenario	Discount Rate (%)	Source
High	8	Treasury Board of Canada Secretariat
Medium (base case)	5	2015 CSBFP cost-benefit study
Low	2.4	10-year Government of Canada benchmark bond yields (average 2008–2009 to 2016–2017)

Sources: Treasury Board of Canada Secretariat (2007); Seens (2015); Statistics Canada; and authors’ calculations.

Incrementality rate

The incrementality rate, or the proportion of CSBFP loans that would have been rejected by lenders in the absence of the program, plays a critical role in this analysis. A loan is fully incremental if it would have been denied without the CSBFP. A loan is partially incremental if it would have been approved without the CSBFP, but on less favourable terms (e.g., higher interest rate or collateral).

The rate of incrementality directly impacts estimates of social benefits. For example, if no CSBFP loans are incremental then none of the economic benefits estimated above are attributable to the program (as the same level of investment would occur without the program). Clearly, this is not plausible as lenders have little incentive to use the CSBFP if they would have extended the same loans without it as the fees and capped interest rate reduce their profit margins, while the paperwork creates additional administrative burden. On the other hand, treating all CSBFP loans, and their corresponding investment and economic impact, as fully incremental (i.e., completely attributable to the CSBFP) may be an overly strong assumption.

Similar to the treatment of the discount rate, a range of incrementality rates is considered, as shown in Table 3. Under all incrementality scenarios, 25 percent of loans are not incremental (i.e., neither fully nor partially). The upper limit, based upon econometric and survey evidence, conservatively assumes 75 percent of CSBFP loans are fully incremental.²⁶ The lower limit assumes 25 percent of CSBFP loans are fully incremental, while 50 percent are partially incremental. The baseline scenario assumes 50 percent and 25 percent of CSBFP loans are fully and partially incremental respectively.

Table 3: Incrementality Rates

Scenario	Rate of Full Incrementality (%)	Rate of Partial Incrementality (%)
High	75	0
Medium (base case)	50	25
Low	25	50

Sources: KPMG (2009); and Seens (2015).

²⁶ Rivard (2018) and CSBFP Lender Awareness and Satisfaction Study (2014), available at [https://www.ic.gc.ca/eic/site/csbfp-pfpec.nsf/vwapj/CSBFP_Lender_Study_Final-eng.pdf/\\$file/CSBFP_Lender_Study_Final-eng.pdf](https://www.ic.gc.ca/eic/site/csbfp-pfpec.nsf/vwapj/CSBFP_Lender_Study_Final-eng.pdf/$file/CSBFP_Lender_Study_Final-eng.pdf).

Findings: Present value net benefit of the CSBFP (base case)

Table 4 summarizes the social costs of the CSBFP. Compounded program costs (i.e., applying the discount rate to prior years) peaked at \$184 million in 2009–2010 and declined rapidly to an average of \$79 million between 2012–2013 and 2016–2017. Social costs are driven by default costs, with claims paid and loan default costs to lenders accounting for 82 percent and 14 percent of total (uncompounded) costs respectively. Note that applying the discount rate magnifies social costs during the recessionary years, during which time costs were already at their highest levels over the evaluation period.

Table 4: Summary of CSBFP Costs (\$ thousands)

	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Salaries and benefits of program staff	2,428	2,368	3,298	3,284	3,039	3,207	2,983	2,946	2,572
Direct operating expenditures	486	432	194	499	613	837	530	465	310
Capital expenditures	470	-	-	-	180	30	-	-	-
Claims paid on loan defaults	101,509	109,459	76,318	66,153	50,617	56,993	66,252	58,014	61,841
Loan default costs to lenders	16,534	18,723	13,061	11,265	7,705	9,859	10,169	9,646	9,782
Total costs	121,427	130,982	92,871	81,201	62,154	70,926	79,934	71,071	74,505
Compounded costs (at 5%), in 2016 dollars	179,403	184,305	124,456	103,634	75,548	82,104	88,128	74,624	74,505

Sources: Internal CSBFP database; Small Business Financing Directorate financial management system; and authors' calculations.

CSBFP benefits, adjusted for incrementality, are summarized in Table 5. Total compounded program benefits range from a low of \$438 million in 2014–2015 to a high of \$654 million in 2008–2009. Program benefits, before applying the discount rate, are fairly steady over the nine-year period, while compounded program benefits declined by 28 percent between 2008–2009 and 2016–2017 (at a 4 percent annualized rate between 2008–2009 and 2016–2017). The largest contributors to program benefits are direct and indirect GDP impacts, which together accounted for over 60 percent of program benefits in 2016–2017.

Table 5: Summary of CSBFP Benefits (\$ thousands)

	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Interest revenues on loans	56,360	20,855	32,963	48,480	55,715	51,539	56,160	62,827	64,525
Salaries and wages paid by borrowers to new employees	61,913	66,443	71,255	64,174	87,932	72,255	61,866	63,894	63,159
Direct GDP impacts	160,928	166,189	173,552	168,488	158,869	144,458	133,118	147,438	167,977
Indirect GDP impacts	110,434	113,754	119,282	116,067	110,666	103,024	96,059	107,299	123,002
Administration and registration fees	52,895	52,393	51,732	53,117	50,822	50,782	49,841	51,434	53,856
Total benefits	442,530	419,634	448,784	450,326	464,004	422,058	397,044	432,892	472,519
Compounded benefits (at 5%), in 2016 dollars	653,818	590,469	601,413	574,744	563,999	488,586	437,740	454,537	472,519

Notes: Interest revenues, salaries and wages, and GDP impacts are adjusted for incrementality. GDP impacts are lower bound estimates.

Sources: Internal CSBFP database; Statistics Canada, Canadian Input–Output Model; and authors’ calculations.

Table 6 presents the total present value of net benefits over the evaluation period. Between 2008–2009 and 2016–2017, total compounded benefits exceeded total compounded costs by more than \$3.85 billion. Over the 2008–2009 to 2016–2017 period, the ratio of benefits to costs (total benefit-cost ratio) was 4.9. Therefore, for every dollar spent towards program administration or claims on defaults, the CSBFP generated 4.9 dollars of benefits.

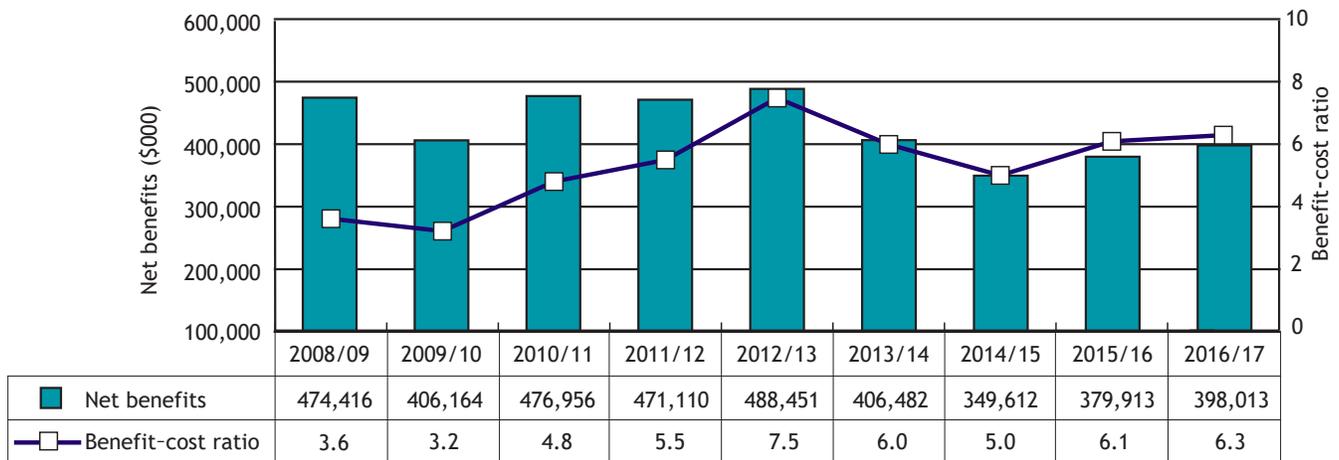
Table 6: Total Net Benefits and Total Benefit-Cost Ratio, 2008–2009 to 2016–2017

	Value
Total present value of program costs	\$986,706,528
Total present value of program benefits	\$4,837,823,485
Total present value of net program benefits	\$3,851,116,957
Total benefit-cost ratio	4.9

Sources: Internal CSBFP database; Statistics Canada, Canadian Input–Output Model; Small Business Financing Directorate financial management system; and authors’ calculations.

Figure 19 shows the compounded net benefits and benefit-cost ratio of the CSBFP from 2008–2009 to 2016–2017. With net social benefits of \$350 million or more in each of the nine years, the program resulted in a significant net social benefit for Canadians. The CSBFP had the most impact in 2012–2013 with net benefits of \$488 million, corresponding to a benefit-cost ratio of 7.5. This latter figure implies that for every dollar spent towards program costs, the CSBFP generated 7.5 dollars of benefits for the economy. Net benefits reached a low of \$350 million in 2014–2015, increasing in the next two years. In 2016–2017 net benefits totalled \$398 million, corresponding to a benefit-cost ratio of 6.3.

Figure 19: Compounded Net Benefits, 2008–2009 to 2016–2017



Sources: Internal CSBFP database; Statistics Canada, Canadian Input–Output Model; Small Business Financing Directorate financial management system; and authors’ calculations.

Findings: Sensitivity analysis

Estimated present value net benefits are sensitive to changes in assumptions. The results presented above, based upon the medium scenario, show that the benefits of the CSBFP from 2008–2009 to 2016–2017 significantly outweighed the costs. This section assesses the sensitivity of this result to changes in assumptions. Changing assumptions allows for a range of estimates, including a lower limit (i.e., conservative) for the net benefit and benefit-cost ratio. Table 7 summarizes the range of assumptions evaluated.

Table 7: Assumptions for Sensitivity Analysis

	Low Scenario	High Scenario
Discount rate (%)	3.50	8.00
Incrementality	25% full incrementality	75% full incrementality
	50% partial incrementality	No partial incrementality
Employment displacement rate (%)	75	25
Employment creation*	Employment creation is 25% lower	Employment creation is 25% higher

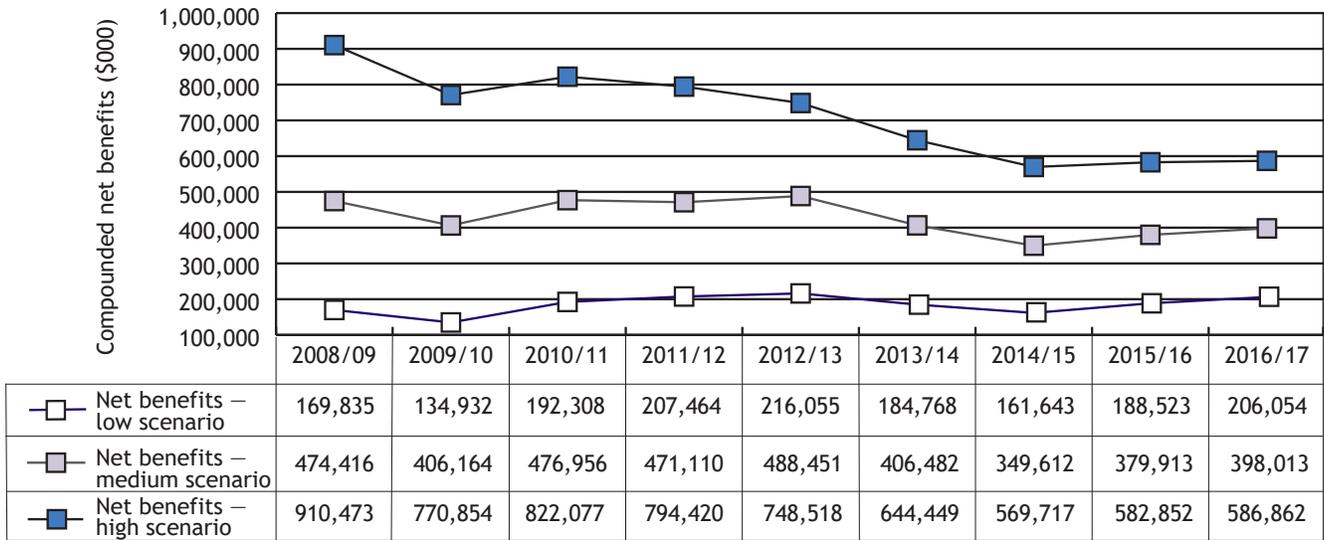
* As reported by borrowers on their loan registration form.

Sources: Treasury Board of Canada Secretariat (2007); Seens (2015); and KPMG (2009).

Figures 20 and 21 show, respectively, the estimates of compounded CSBFP net benefits and benefit-cost ratios for the low, medium (base case) and high scenarios. Under all three scenarios, program benefits largely exceed program costs over the 2008–2009 to 2016–2017 period. This indicates that the overall conclusion, that the CSBFP offers a significant net social benefit, remains unchanged even under the most conservative assumptions.

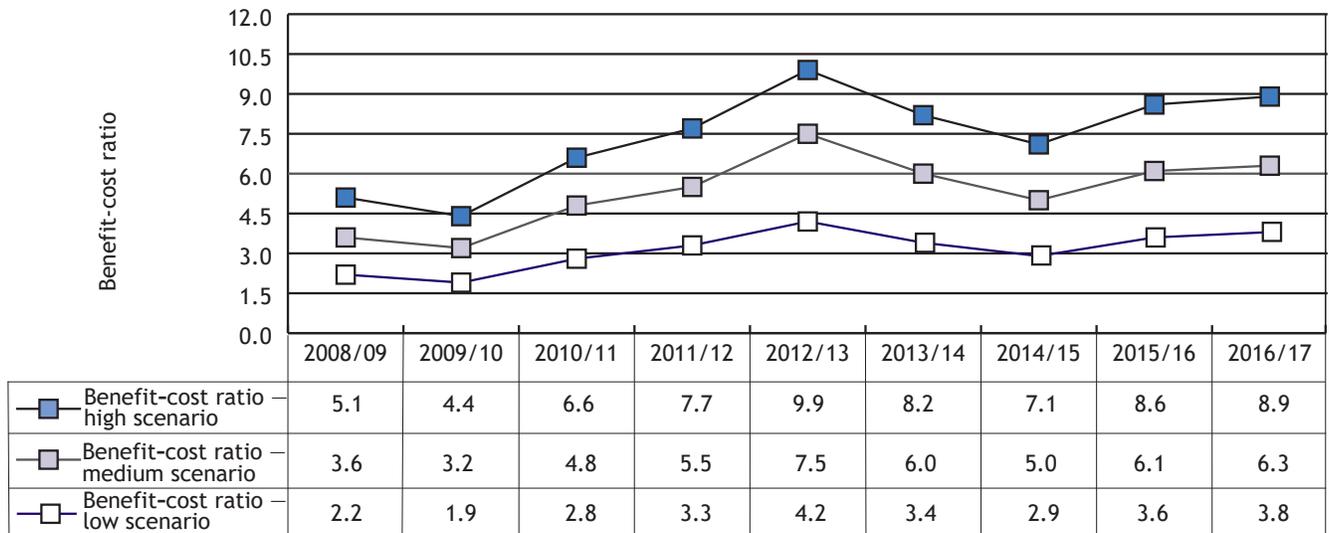
The low scenario shows that CSBFP net benefits totalled \$1.7 billion over nine years, with an average benefit-cost ratio of 2.9. In 2016–2017, for example, the program resulted in net social benefits of \$206 million, with a benefit-cost ratio of 3.8. By contrast, under the high scenario, total net benefits over the nine years exceed \$6.4 billion, with an average benefit-cost ratio of 6.7. In 2016–2017, for example, the high scenario gives a net benefit of \$587 million, with a benefit-cost ratio of 8.9.

Figure 20: Compounded Net Benefits – Low, Medium and High Scenarios



Sources: Internal CSBFP database; Statistics Canada, Canadian Input–Output Model; Small Business Financing Directorate financial management system; Seens (2015); KPMG (2009); and authors’ calculations.

Figure 21: Benefit-Cost Ratio – Low, Medium and High Scenarios



Sources: Internal CSBFP database; Statistics Canada, Canadian Input–Output Model; Small Business Financing Directorate financial management system; Seens (2015); KPMG (2009); and authors’ calculations.

7. Conclusions

Results of this analysis show that the CSBFP generated a substantial net social benefit for Canadians. In particular, over the nine-year period between fiscal years 2008–2009 and 2016–2017, the program resulted in social benefits that exceeded social costs by nearly \$4 billion, while for each year the net benefit totalled \$350 million or more.

The sensitivity analysis, which tests these results against a range of assumptions, strengthens the overall finding that the CSBFP continues to provide significant social benefits each year. Under the most conservative set of assumptions, for example, the lowest benefit-cost ratio calculated (in 2009–2010) implies that even during the recession the value of program benefits exceeded the value of program costs by a factor of two. By contrast, with more generous assumptions, program benefits exceed program costs by as much as a factor of 10, as calculated under the high scenario for 2012–2013.

In short, the findings of this report, which are consistent with those of previous cost-benefit analyses, provide strong evidence that, based upon a detailed accounting of the benefits and costs attributable to the program, every dollar spent on administering the CSBFP generates several dollars' worth of benefits to society.

References

- Chandler, Vincent (2010). “The Economic Impact of the Canada Small Business Financing Program.” Ottawa: Industry Canada.
- Chandler, Vincent (2012). “The economic impact of the Canada Small Business Financing Program.” *Small Business Economics*, 39(1), 253–264.
- Huang, Lyming and P. Rivard (2019). “Canada Small Business Financing Program: Economic Impact Analysis.” Ottawa: Innovation, Science and Economic Development Canada.
- Innovation, Science and Economic Development Canada (ISED) (2019). “Key Small Business Statistics – January 2019.” Ottawa: Innovation, Science and Economic Development Canada.
- KPMG (2009) (unpublished). “Study of the Economic Costs and Benefits of the Canada Small Business Financing Program.” Ottawa: KPMG.
- Pearce, David W., G. Atkinson and S. Mourato (2006). “Cost-Benefit Analysis and the Environment, Recent Development.” Paris: Organisation for Economic Co-operation and Development.
- Rivard, Patrice (2018). “Incrementality Study of the Canada Small Business Financing Program, March 2018.” Ottawa: Innovation, Science and Economic Development Canada.
- Seens, Daniel (2015). “Cost-Benefit Analysis of the Canada Small Business Financing Program.” Ottawa: Industry Canada.
- Song, May (2014). “Canada Small Business Financing Program: Updated and Extended Economic Impact Analysis.” Ottawa: Industry Canada.
- Statistics Canada (2004). “Longitudinal Economic Impact Study of the Canada Small Business Financing (CSBF) Program.” Ottawa: Statistics Canada.
- Statistics Canada (2009). “Economic Impact Study of the Canada Small Business Financing Program.” Ottawa: Statistics Canada.
- Treasury Board of Canada Secretariat (2007). “Canadian Cost-Benefit Analysis Guide: Regulatory Proposals.” Ottawa: Treasury Board of Canada Secretariat.