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# Cost-Benefit Analysis of the Canada Small Business Financing Program

## January 2015



Small Business Branch
Reseach and Analysis Directorate

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# Contents

# 1. Introduction

## 1.1 Aims of the Study

This study has 4 objectives:

- Measure the cost of resources devoted to administering the Canada Small Business Financing Program (CSBFP);
- Measure the direct and indirect economic benefits that result from the program that might not otherwise accrue to the economy in the absence of the program;
- Calculate program net benefits/costs; and
- Perform a sensitivity analysis to determine the lower and upper bounds of program net benefits/costs.

The report is organized into 7 sections. Section 1 outlines the aims of the study and scope of the project. In Section 2, the history of the CSBFP and program details are summarised. In Section 3, an empirical framework for measuring program costs/benefits is presented. Section 4 and Section 5 are devoted to assessing cost and benefits respectively. Finally, Section 6 showcases the net benefits of the program and Section 7 presents a sensitivity analysis. Section 8 is the conclusion.

## 1.2 Scope of the Project

The project is a review of the CSBFP, a government funded program designed to support access to financing for Canadian small and medium-sized enterprises (SMEs). CSBFP reduces the risks of loan losses to lenders by agreeing to cover lenders for up to 85% of the value of defaulted loans. The program is partially funded through loan registration and administration fees. The remainder is funded through government contributions.

In this analysis, the following elements are considered:

- Different providers of SME financing, namely banks, credit unions and Caisses populaires;
- Financing for equipment, leasehold improvements, software and real property;
- Number and value of loans insured;
- Location of SME loans insured across Canada and, where applicable, presents evidence by sector or region; and
- The 2003/2004 to 2011/2012 time period.

Methodological procedures and assumptions of the 2009 KPMG Cost/Benefit analysis are maintained to ensure consistency and preserve comparability through time.

The study was conducted by the Small Business Branch of Industry Canada. It is intended to form one piece of a larger body of information relied on by government to improve the evaluation of the program. In accordance with the *Canada Small Business Financing Act*, it also forms part of the Comprehensive Review Report to Parliament.

# 2. Canada Small Business Financing Program (CSBFP)

## 2.1 History

While small businesses are an important part of the Canadian economy, they face unique challenges when it comes to access to financing. The CSBFP is designed to help businesses with their financing needs by helping to fill gaps in the lending market for certain types of SMEs and, in particular, higher-risk SMEs.

The program was launched on January 19, 1961, as part of a job creation strategy and was called the Small Business Loans (SBL) Program. It contributed to the development of SMEs by promoting business start-up and expansion. Under the program, the government made it easier for SMEs to get loans from financial institutions by sharing default risks with lenders and, in particular, higher-risk SMEs.

At that time, only seven chartered banks and four types of businesses qualified as eligible lenders/borrowers. The annual gross revenues of eligible borrowers could not exceed $250,000 and the maximum loan value was $25,000. Loans provided under the program could be used to fund equipment, as well as renovation and improvement of the workplace. In its first year of existence, the program provided 2,977 loans, totaling more than $25.5 million. By comparison, in 2011, 7,141 loans to SMEs were approved, for a total value of more than $978 million.

As the program evolved, parameters were revised to better reflect economic conditions. In 1993, the maximum loan amount was increased to $250,000 and the eligibility criteria were broadened to make the program accessible to more SMEs. In addition, the number of financial institutions considered eligible lenders increased and the types of eligible enterprise grew to better reflect business needs. In 2009, the maximum loan amount was again revised from $250,000 to $500,000, of which $350,000 could be used for purposes other than the purchase of property, including leasehold improvements and the purchase or improvement of new or used equipment.

Overall, the program has become a key tool for stimulating the growth of SMEs in Canada, supporting the development of communities, creating jobs and contributing to economic activity. Between 2003 and 2011, the CSBFP enabled small businesses to access more than 81,000 loans, representing almost $9 billion.

## 2.2 Program Details

The program's main objectives are:

- To help new businesses get started and established firms to make improvements and expand;
- To improve access to loans that would not otherwise be available to SMEs; and
- To stimulate economic growth and create jobs for Canadians.

SMEs operating for profit in Canada with gross annual revenues of $5 million or less are eligible to participate in the program. Farming businesses, not-for-profit organizations, charitable and religious organizations are not eligible.

Up to a maximum of $500,000 in financing is available for any one borrower, of which no more than $350,000 can be used for purchasing leasehold improvements or improving leased property and purchasing or improving new or used equipment.

Financial institutions, specifically banks, Caisse populaires, and credit unions, deliver the program. The decision to grant a loan rests entirely with the lender. The lender reviews the businesses and makes decisions regarding their loan applications. If approved, the lender registers the loan with the government.

Loans approved under the program can be used for financing up to 90% of the cost of:

- Purchasing or improving land, real property or immovables;
- Purchasing new or existing leasehold improvements; and
- Purchasing or improving new or used equipment.

Loans cannot be used to finance items such as goodwill, working capital, inventories, franchise fees and research and development.

The cost of using the program depends on the financial institution which grants the loan. The interest rate may be variable or fixed. With variable rate loans, the maximum interest rate charged is the lender's prime rate plus 3%. With fixed rate loans, the maximum interest rate charged is the lender's single family residential mortgage rate plus 3%. A registration fee of 1.25% of the total amount loaned under the program must also be paid by the borrower to the lender but can be financed as part of the loan. The registration fee and a portion of the interest are submitted to Industry Canada by the lender to help offset the government's costs of running the program. Lenders also have the option to take additional security in the assets financed and to request an additional unsecured personal guarantee for up to 25% of the total amount loaned.

## 3. Empirical Framework

In this section, the empirical framework for cost-benefit analysis of the CSBFP is presented.[1] In section 3.1, data and model variables are discussed and section 3.2 outlines the estimation process.

### 3.1 Data and Variables of Analysis

The objective of this empirical analysis is to quantify and understand variations over time in costs and benefits generated for society from the CSBFP. The main benefits of interest are the direct and indirect effects of the program on economic activity, which are measured by changes in GDP. To capture all effects of the program, other variables and economic actors with the potential to benefit from the program had to be considered.

The following sources were used to conduct the study:

- CSBF Program Database;
- The Economic Impact Study of the Canada Small Business Financing Program, Industry Canada, 2010 and 2014;
- Canadian Input-Output Model, Statistics Canada;
- 2009 KPMG Financial Institution Survey;
- Study of the Economic Costs and Benefits of the Canada Small Business Financing Program, KPMG, 2009;
- Bank of Canada Interest Rates; and
- Consultations with CSBF program staff.

Data that failed quality checks to ensure consistency and representativeness was excluded from the analysis.

1. The analysis covers the CSBF program only and does not consider the impact of the SBL program. The impact of the Capital Leasing Pilot Project (CLPP) introduced between 2002 and 2007 has also been excluded.

### 3.1.1 Model Variables

The main question of interest is whether the CSBFP generates net benefits for society and if so, how much. GDP impacts are used as the main indicator of program benefits.

There are additional benefits that result from CSBFP-related activities and so, the following variables are considered:

- Expenditures made by lenders to administer the program including 1) salaries and wages; and 2) direct operating expenditures;
- Additional salaries and wages paid by borrowers;
- Interest revenues earned by lenders from CSBF loans;[2] and
- Registration and administration fees paid by borrowers to Industry Canada.

The costs of resources devoted by Industry Canada to administer the program and costs born by financial institutions and borrowers that would otherwise not be incurred in the absence of the program have also been considered:

- Salaries of Industry Canada staff involved in the administration and management of the CSBFP;
- Direct operating expenditures for the CSBFP including IM/IT leases, travel costs, supplies, and professional contracts;
- Capital expenditures including purchases of IT systems and other tangible assets;
- Costs of loan defaults to Industry Canada (payment of claims); and
- Costs of loan defaults to lenders (loan losses).

*Time period*

For all variables, data was collected from 2003/2004 to 2011/2012.

## 3.2 Estimation Process

In economic theory, Pareto Efficiency is the primary basis upon which government programs are evaluated. Pareto efficiency is attained when no one can be made better off from a program without making someone else worse off or when those who gain from the program can reasonably compensate those who lose, such that society is still left better off with the program than without. Such a program is said to provide "Pareto Improvements." In economic theory, it is generally accepted that government programs that produce Pareto Improvements should be supported or implemented while those that do not should be avoided.

The aim of cost-benefit analysis is to provide a basis upon which to assess whether a program can provide Pareto Improvements. Ideally, benefits should outweigh costs and net benefits should be maximized.

Program net benefits are measured by discounting program benefits and costs over time by the social opportunity cost of capital. This can be expressed as follows:

$$NPV = \sum_{t=1}^{n} \frac{(B_t - C_t)}{(1+r)^t}$$

2. There was a lack of information on key interest rates and capital cost measures when this study was first done in 2009—data that is critical for properly measuring social costs. As such, a survey of 30 financial institutions across Canada was conducted which provided a better understanding of net interest revenues generated from the program for lenders. Given that the prime interest rate, business borrowing rates, and yields on long-term government bonds remain little changed since 2009, it was not necessary to repeat the survey in 2013.

Where $B_t$ is the benefit in year t, $C_t$ is the cost in year t, and $r$ is the discount rate. In general, when NPV>0, there are positive net benefits from a program (generates a Pareto Improvement). If deciding between different program structures, it is advisable to select the one that generates the highest NPV.

Alternatively, a program's benefit-cost ratio (BCR), measured as the discounted present value of program benefits divided by the discounted present value of program costs, could be used to assess a program. It provides a sense of how much in benefits are generated per dollar of costs and complements the NPV calculation. This is expressed as:

$$BCR = \frac{\sum_{t=1}^{n} \frac{B_t}{(1+r)^t}}{\sum_{t=1}^{n} \frac{C_t}{(1+r)^t}}$$

Ideally, the BCR should be greater than 1.

## 4. Estimated Cost for the CSBF Program

This section assesses the key cost of the CSBF program, including:

- Program administrative costs (salaries, wages, operating and maintenance costs, and capital expenditures);
- Direct program costs born by Industry Canada (payment of claims); and
- Loan default costs to lenders.

### 4.1 Salaries and Benefits of Staff Administering the CSBF Program

*Methodology*

To determine the total cost of the CSBF program to the government, it is necessary to measure the internal costs of managing and administering the program. This includes the cost of salaries and benefits paid to program staff who register loans, process claims, perform research functions and develop program policies. Specific costs studied and measurement processes followed include:

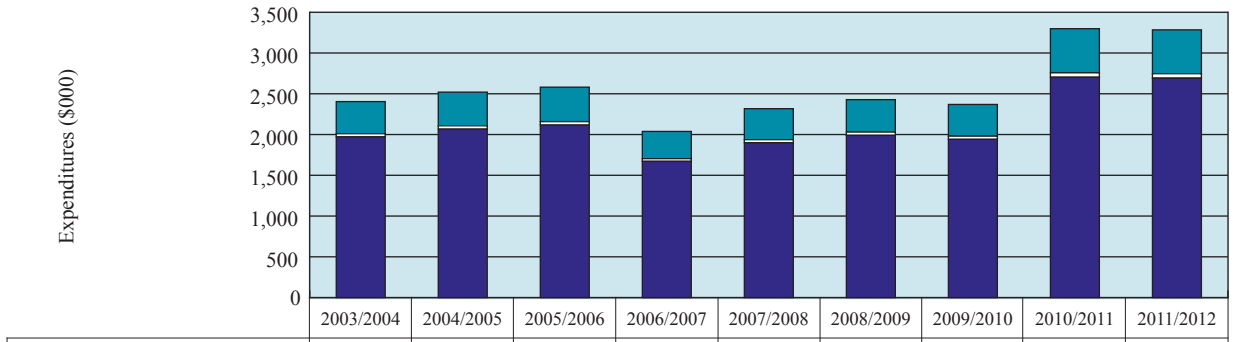
- **Total Salary Costs Attributable to the CSBF Program**. Data was obtained from the Small Business Financing Directorate financial management system for the time period 2003/2004 to 2011/2012 on the total salaries of all staff within the Small Business Financing Directorate (SBFD), including staff from the following teams: Director's Office; CSBFP Policy / BDC / OECD; Economic and Policy Analysis; Operations; and Registration, Program Integrity and Revenues.
- **Estimate costs of other staff activities not attributable to the CSBF program**. Staff within the Small Business Financing Directorate also spent a portion of their time on activities other than the CSBF loan guarantee program. As a result, salary costs of staff time spent on these activities was removed. In particular, the costs of administering the Small Business Loans Program (SBLP), the Capital Leasing Pilot Project (CLPP), and support for the Business Development Bank of Canada have been estimated and subtracted from the total Small Business Financing Directorate (SBFD) salaries.

- **Estimate corporate management costs**. Corporate management costs and the costs of senior management (including DG, ADM, and DM) who oversaw CSBFP activities were approximated at 2 percent of salaries.
- **Estimate employee benefit costs**. Total benefits were calculated as 20 percent of salary costs. This is the standard benefit calculation method used across the federal government.

*Findings*

Total salary costs averaged $2.1 million per year between 2003/2004 and 2011/2012 to support CSBFP related activities (Figure 1). This equated to a total cost of about $19 million over the evaluation period. There were minor differences in salary costs between years from 2003/2004 to 2009/2010 with cost falling from $2 million to $1.9 million. However, salary, benefit and management costs increased sharply in 2010/2011. Most of the increase was attributed to the signing of new collective bargaining agreements, an organizational restructuring, and one-off costs related to severance payments.

**Figure 1: Total Salary, Benefit and Corporate Management Expenditures of the CSBF Program**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Employee benefit costs | 394 | 413 | 423 | 334 | 380 | 398 | 389 | 541 | 538 |
| Corporate management costs | 39 | 41 | 42 | 33 | 38 | 40 | 39 | 54 | 54 |
| Total CSBFP salary costs | 1,971 | 2,066 | 2,116 | 1,671 | 1,899 | 1,990 | 1,941 | 2,703 | 2,692 |

Source: Internal CSBFP Database.

## 4.2 Direct Operating Expanditures of the CSBFP

*Methodology*

Administrative costs of the program include overhead costs (such as training for staff, etc.) and direct operating costs (such as resources, products, contracting, and IM/IT). Industry Canada reports these items together as Operating and Maintenance expenditures (the following costs do not account for office space leasing provided by PWGSC).

Annual data was obtained from the Industry Canada financial management system for the time period 2003/2004 to 2011/2012 on the total Operating and Maintenance budget of the Small Business Financing Directorate (SBFD). O&M expenditures include:

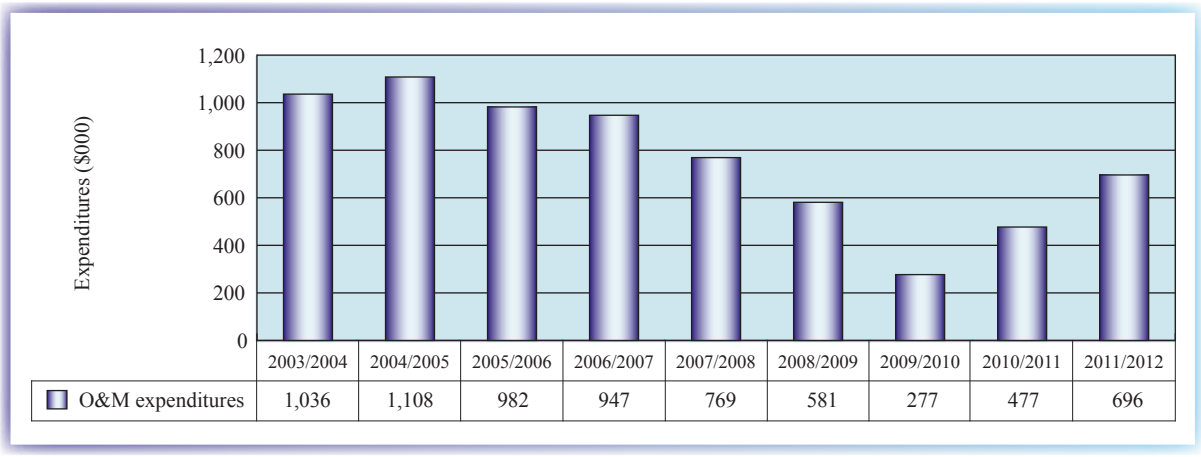
- Transportation and Communications (including travel; postage and freight; computer telecommunications; and other telecommunications);
- Information (including publishing, printing and exposition; communications professional services);

- Professional and Special Services (including legal services; training; other professional services; hospitality; temporary help; other special services/fees; translation services);
- Rentals;
- Repairs and maintenance (including repairs of buildings);
- Utilities, materials and supplies;
- Other machinery acquisition (including informatics equipment and parts; machinery, furniture and parts); and
- All other expenditures (including other expenditures; accounts payable interest). O&M annual expenditures were adjusted to include only the share of costs attributed to the CSBFP. That is, any share of O&M costs attributable to the SBLP, CLPP, or BDC were removed. Professional Fees were included in their entirety (excluding professional fees for tourism policy and research where these appear) and were not prorated as it is understood that these fees are paid for activities supporting the CSBFP.

*Findings*

O&M expenditures attributable to the CSBFP totaled almost $7 million over the evaluation period, averaging $0.8 million per year (Figure 2). Annual costs varied significantly between years, fluctuating between a high of $1.1 million in 2004/2005, to $0.3 million in 2009/2010. O&M expenditures bared little relationship with the number of loans registered or the number of claims processed. Expenditures fell steadily between 2003/2004 and 2009/2010 only to rise again through 2011/2012. A significant decline in professional service expenditures helps explain the decline in costs between 2003/2004 and 2009/2010. Nonetheless, professional service expenditures remain the largest component of O&M expenditures followed by "other expenditures" and transportation and communications expenditures. An increase in professional service expenditures and other machinery acquisitions partially offset by a decrease in maintenance and repair fees helps explain the uptick in O&M expenditures in 2011/2012.

**Figure 2: Estimated Operating and Maintenance Expenditures of the CSBF Program**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| O&M expenditures | 1,036 | 1,108 | 982 | 947 | 769 | 581 | 277 | 477 | 696 |

Source: Internal CSBFP Database.

## 4.3 Capital Expenditures

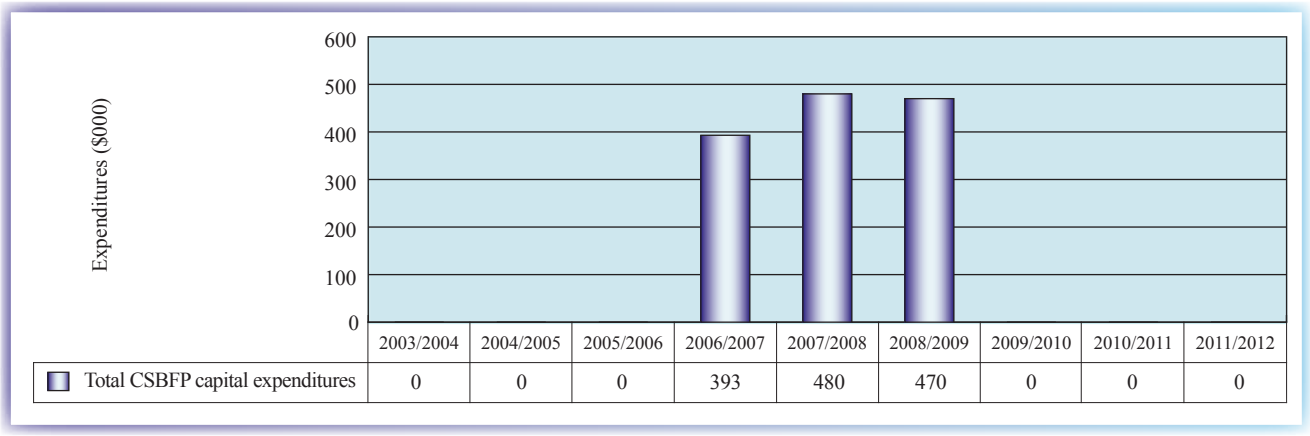
*Methodology*

Data on CSBFP capital expenditures, including purchases of Information Technology (IT) and vehicles, was obtained from the CSBF Program Database. Capital expenditures were expensed when incurred and not amortized over the assets' expected economic lives; consequently, they likely overestimate this component of costs. Because they only represent a small fraction of total costs (<0.5 percent), however, this overestimation will have a negligible impact on the final net-benefit calculations.

*Findings*

Capital expenditures on IT systems for electronic registration totaled $1.3 million over the evaluation period, with all expenditures taking place between 2006/2007 and 2008/2009 (Figure 3). Spread over the period, capital expenditures averaged about $0.45 million per year. Recall that all costs have been expensed as incurred rather than being amortized over the assets' useful lives.

**Figure 3: Capital Costs of the CSBF Program**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Total CSBFP capital expenditures | 0 | 0 | 0 | 393 | 480 | 470 | 0 | 0 | 0 |

Source: Internal CSBFP Database.

## 4.4 Number of Claims and Claims Paid on Loan Default

*Methodology*

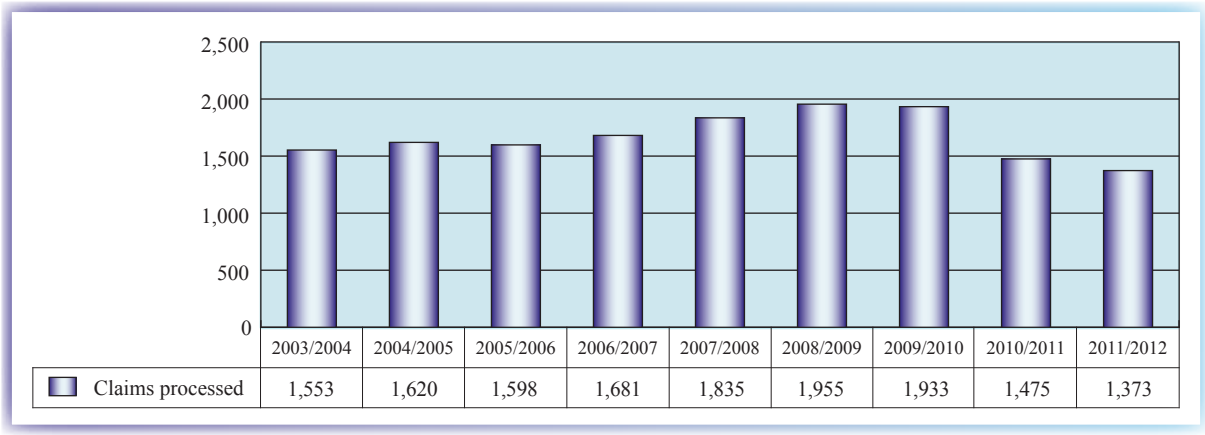
Claims may be submitted to the CSBF program in several forms, as defined by the Canada Small Business Financing Guidelines. They are usually made after realization on all security, guarantees or suretyships and/or personal liability is complete, and all proceeds have been applied to the loan.[3] Data on the annual volume and number of claims paid each year were obtained from the CSBF Program Database for 2003/2004 to 2011/2012. The cost of claims in a given year was calculated as the cost of claims submitted that year less refunds on previous years' interim claims.

3. An interim claim for loss is made when realization on the primary security and any additional security on the business assets is complete, but before the lender has fully implemented a compromise or fully realized on the guarantees or suretyships or personal liability of the sole proprietor or partner. For an interim claim, a portion of the claim payment will be held back until a final claim is made and is based on estimated guarantees and amounts yet to be paid. Occasionally, a lender may realize a larger amount than was estimated at the time of the interim claim. In this case, the Industry Canada share of the amount must be refunded to the CSBF program.

*Findings*

Figure 4 presents the number of CSBFP claims processed per year over the evaluation period.

**Figure 4: Number of CSBFP Claims Processed**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Claims processed | 1,553 | 1,620 | 1,598 | 1,681 | 1,835 | 1,955 | 1,933 | 1,475 | 1,373 |

Source: Internal CSBFP Database.

On average, 1,669 CSBFP claims are processed per year on defaulted small business loans. The majority of claims are received within 2 to 4 years after loans are issued. Staff time required to register a new loan is significantly lower than the time required to review, audit, and process a claim. Total claims processed over the evaluation period equaled 15,023. Annual claims remained fairly stable in the early years of the evaluation period but rose significantly in 2007/2008 as the financial crisis and recession unfolded and reached a high of 1,955 in 2008/2009. In 2010/2011, claims dropped by almost 25 percent. Several factors can help explain this. Primarily, many large lenders had reached their maximum liability claim limits between 2004 and 2009, at which point subsequent claims were no longer submissible to Industry Canada.[4] In addition, the economic recovery was well underway at this point, and the steady decline in the number of loans over the review period may have also contributed to the decrease in claims.

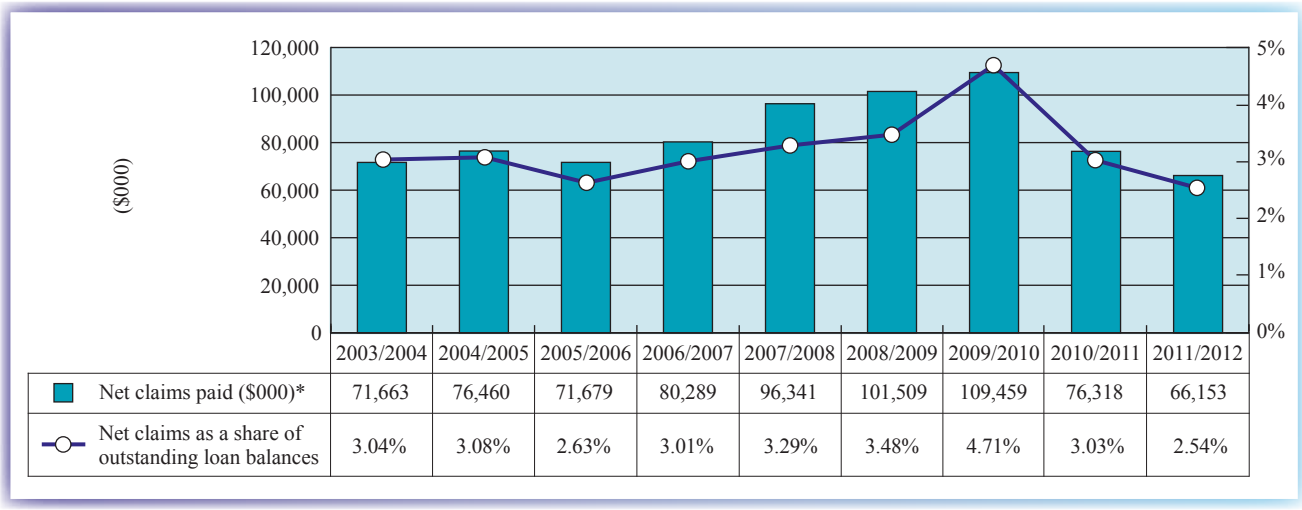
Figure 5 presents the dollar value of claims paid on defaulted loans in isolation and expressed as a percentage of outstanding loan balances. Consistent with the findings in Figure 4, the value of claims paid was fairly steady at the beginning of the evaluation period, averaging about $75 million per year between 2003/2004 and 2006/2007, only to rise sharply in 2007/2008 and continue to rise to a high of $109 million in 2009/2010.

4. For each five year lending period, the CSBFP has an established Ministerial liability limit which restricts the total amount of eligible claims that can be paid to an individual lender. Claims are paid on each loan that defaults (i.e. 85 percent of the eligible loss) until a lender reaches this maximum limit (cap) in claim payments. For large volume lenders, this liability limit was roughly 10% of the value of all loans made by a lender from 2004-2009. Once this limit is reached, no further claims can be paid on defaulted loans made during the period.

During the 2008-09 and 2009-10 fiscal years, the CSBF Program experienced a significant increase in claims from the major financial institutions. As a result, three of the major financial institutions reached their liability limits, one in 2009, one in 2011 and one in 2012 for loans they had made from 2004-2009. As a result of reaching this limit, subsequent claims for losses on loans made during the 2004-09 period were no longer submitted to Industry Canada.

As such the reduction in claims shown in Figure 4, net claims paid in Figure 5, and lender losses in Figure 8, are due to the fact that a few lenders no longer submitted claims for loss to Industry Canada for payment. It does not reflect a decrease in the amount of losses realized on these loans. Lenders who hit their caps were responsible for 100% of any further losses that incurred on loans made from 2004-2009, but Industry Canada does not have any data about the actual losses that lenders have incurred after claim payments ceased.

**Figure 5: Net Claims Paid on CSBFP Loan Defaults**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Net claims paid ($000)* | 71,663 | 76,460 | 71,679 | 80,289 | 96,341 | 101,509 | 109,459 | 76,318 | 66,153 |
| Net claims as a share of outstanding loan balances | 3.04% | 3.08% | 2.63% | 3.01% | 3.29% | 3.48% | 4.71% | 3.03% | 2.54% |

Source: Internal CSBFP Database.
*After refunds on previous year's expenses.

Expressed as a percentage of outstanding loan balances, claims paid remained flat through 2008/2009 as growth in claims paid was matched by growth in new loans issued and higher outstanding loan balances. At the peak of the recession, claims paid as a percentage of outstanding loan balances spiked to almost 5%. This was driven by both an increase in claims paid and a decrease in outstanding loan balances as new loan issuance declined.

Table 1 presents data on net claims paid by sector. Net claims paid were notably higher on loans to businesses in the Accommodation and Food Service sector. Specifically, net claims averaged about $29 million per year, or 35% of total claims. This compared to the retail sector in which claims paid on loan defaults averaged about $14 million per year, or 17 percent of total claims. Average annual claims paid on defaulted loans to businesses in the other services sector and the manufacturing sector were third and fourth highest at about $13 million and $9.5 million per year respectively. The share of total claims for these sectors averaged 15 percent and 11 percent respectively. On average across sectors, the share of total claims were similar for agriculture, arts, and transportation at about 3 percent per year. Overall, it should be noted that claims levels were generally in-line with the respective levels of lending by sector.

Net claims paid varied significantly between years. Claims grew significantly on defaulted loans in the accommodation and food services sector (15 percent per year), the transportation and warehousing sector (16 percent per year), retail trade sector (11 percent per year), and the educational services sector (13 percent per year) between 2003/2004 and 2009/2010. There was negative growth in claims paid on loans to businesses in the professional, scientific and technical services sector (-16 percent per year) and the real estate and rental and leasing sector (-11 percent).

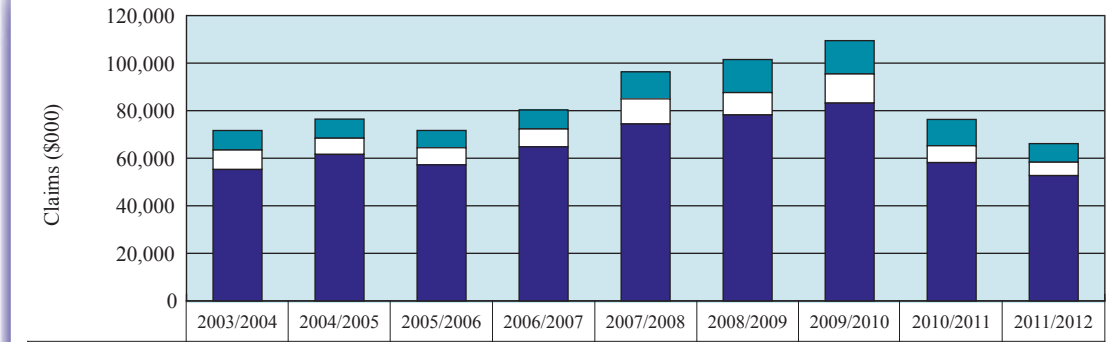
**Table 1: Net Claims Paid on CSBFP Loan Defaults by Sector ($000)**

| Sector | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Accommodation and food services | 20,777 | 25,212 | 24,026 | 30,811 | 33,760 | 36,369 | 39,684 | 25,388 | 26,484 |
| Admin and support, waste management | 601 | 312 | 476 | 210 | 400 | 315 | 331 | 344 | 475 |
| Agriculture, forestry, fishing and hunting | 2,564 | 1,988 | 2,390 | 2,046 | 2,823 | 3,676 | 3,425 | 1,198 | 1,000 |
| Arts, entertainment and recreation | 3,493 | 3,238 | 2,625 | 3,027 | 3,721 | 3,627 | 2,596 | 1,621 | 1,943 |
| Construction | 1,504 | 1,612 | 1,231 | 810 | 1,382 | 1,479 | 1,970 | 1,534 | 2,287 |
| Educational services | 628 | 319 | 502 | 756 | 361 | 968 | 1,306 | 625 | 545 |
| Finance and insurance | 0 | 162 | 67 | 178 | 419 | 253 | 489 | 58 | 22 |
| Health care and social assistance | 1,395 | 2,354 | 1,548 | 902 | 1,627 | 932 | 1,543 | 1,466 | 1,592 |
| Information and cultural industries | 279 | 315 | 406 | 159 | 561 | 346 | 240 | 394 | 524 |
| Manufacturing | 11,692 | 9,921 | 8,374 | 9,432 | 11,691 | 9,162 | 11,119 | 8,107 | 5,740 |
| Mining, and oil and gas extraction | 179 | 298 | 48 | 102 | 299 | 0 | 203 | 370 | 173 |
| Other services | 10,344 | 11,427 | 11,145 | 12,453 | 15,249 | 19,442 | 17,754 | 11,562 | 5,758 |
| Personal care services | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 1,363 | 3,337 |
| Professional services | 2,733 | 2,831 | 1,307 | 925 | 1,293 | 1,327 | 989 | 1,410 | 342 |
| Real estate, and rental and leasing | 675 | 1,131 | 163 | 1,122 | 2,270 | 1,121 | 339 | 981 | 263 |
| Repair and maintenance service | 0 | 0 | 0 | 0 | 139 | 0 | 450 | 258 | 661 |
| Retail trade | 10,474 | 11,885 | 14,245 | 12,268 | 15,392 | 17,423 | 20,109 | 14,594 | 12,599 |
| Transportation and warehousing | 2,066 | 1,513 | 1,052 | 2,559 | 2,043 | 3,017 | 4,908 | 2,866 | 1,720 |
| Utilities | 30 | 0 | 0 | 239 | 223 | 100 | 0 | 210 | 0 |
| Wholesale | 2,230 | 1,942 | 2,076 | 2,290 | 2,689 | 1,931 | 2,002 | 1,970 | 689 |
| **Total** | 71,663 | 76,460 | 71,679 | 80,289 | 96,341 | 101,509 | 109,459 | 76,318 | 66,153 |

Source: Internal CSBFP Database.

Figure 6 presents data on net claims paid by age of defaulting firm. Total claims were consistently higher on defaulted loans of start-up businesses (businesses that were in operation for less than 1 year). Specifically, claims paid on loan defaults of start-ups totaled $586 million over the evaluation period, averaging $65 million per year. As a percentage of total claims paid in any given year, claims paid on loans to start-ups averaged 80 percent. Claims paid on defaulted loans of businesses that were 1 to 3 years old totaled $75 million over the evaluation period. Total claims grew by about 7 percent per year between 2003/2004 and 2009/2010 before reversing by 42 percent in 2010/2011 and 21 percent in 2011/2012. As previously explained, the sharp reversal was driven by lender liability limits reached on claims paid in prior years, the economic recovery, and declining overall lending under the CSBFP. Claims are now below pre-recession levels. As a percentage of total claims paid in any given year, claims on loan defaults for businesses between 1 to 3 years old averaged 10 percent.

**Figure 6: Net Claims Paid by Age of Defaulting Firm**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| >3 years | 8,210 | 8,037 | 7,268 | 7,993 | 11,382 | 13,901 | 14,024 | 11,075 | 7,825 |
| 1 to 3 years | 8,179 | 6,809 | 7,210 | 7,526 | 10,535 | 9,385 | 12,241 | 7,072 | 5,621 |
| <1 year | 55,273 | 61,614 | 57,201 | 64,770 | 74,424 | 78,223 | 83,194 | 58,171 | 52,706 |

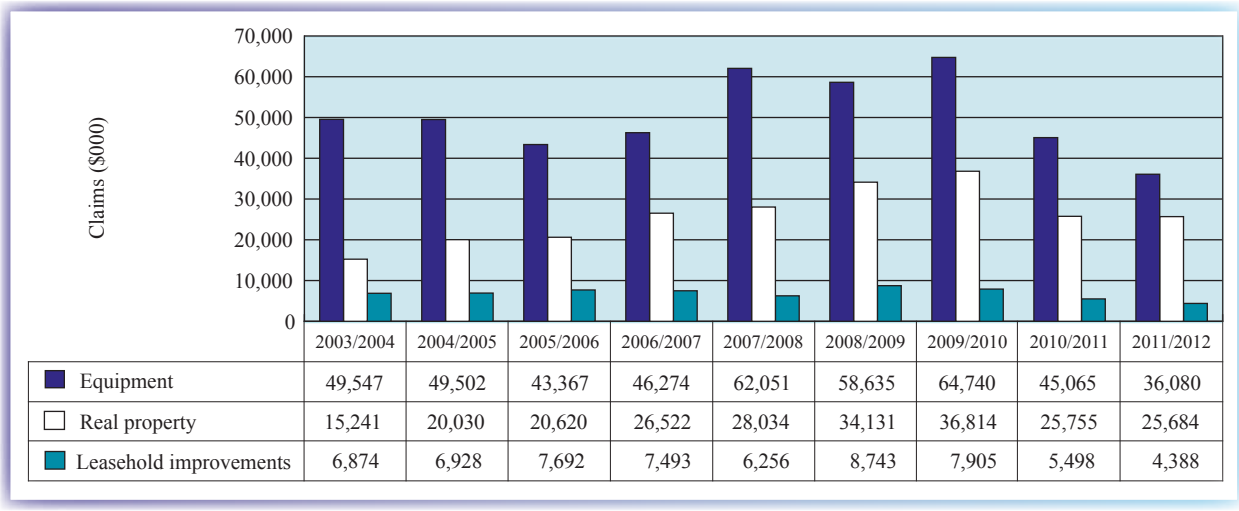
Source: Internal CSBFP Database.

Growth in claims between 2003/2004 and 2009/2010 was highest on loan defaults of older businesses (businesses more than 3 years old) which saw claims rise by 9 percent per year from $55 million in 2003/2004 to $83 million in 2009/2010. In total, claims on defaulted loans of older businesses equaled $90 million over the evaluation period. This amounted to about $10 million per year. As a percentage of total claims paid, however, claims on defaults of businesses over 3 years old averaged only 12 percent. These findings confirm that defaults of younger businesses continue to represent a primary CSBFP cost driver.

Figure 7 presents data on net claims paid by asset type. Claims made by lenders that issued loans for equipment purchases averaged $51 million per year. Loan default claims made by lenders that issued loans for real property and leasehold improvements averaged $26 million and $7 million per year respectively. Expressed as a percentage of total loan default claims, claims on equipment, real property and leasehold improvements over the evaluation period averaged 61 percent, 31 percent and 8 percent respectively.

Claims across all asset types increased over the 2003/2004 to 2009/2010 period. Claims related to defaults on real property purchases grew most rapidly, averaging 16 percent per year. This compared to growth of 5 percent per year for equipment and 2 percent per year for leasehold improvements.

**Figure 7: Net Claims Paid by Asset Type**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Equipment | 49,547 | 49,502 | 43,367 | 46,274 | 62,051 | 58,635 | 64,740 | 45,065 | 36,080 |
| Real property | 15,241 | 20,030 | 20,620 | 26,522 | 28,034 | 34,131 | 36,814 | 25,755 | 25,684 |
| Leasehold improvements | 6,874 | 6,928 | 7,692 | 7,493 | 6,256 | 8,743 | 7,905 | 5,498 | 4,388 |

Source: Internal CSBFP Database.

## 4.5 Loan Default Cost to Lenders

*Methodology*

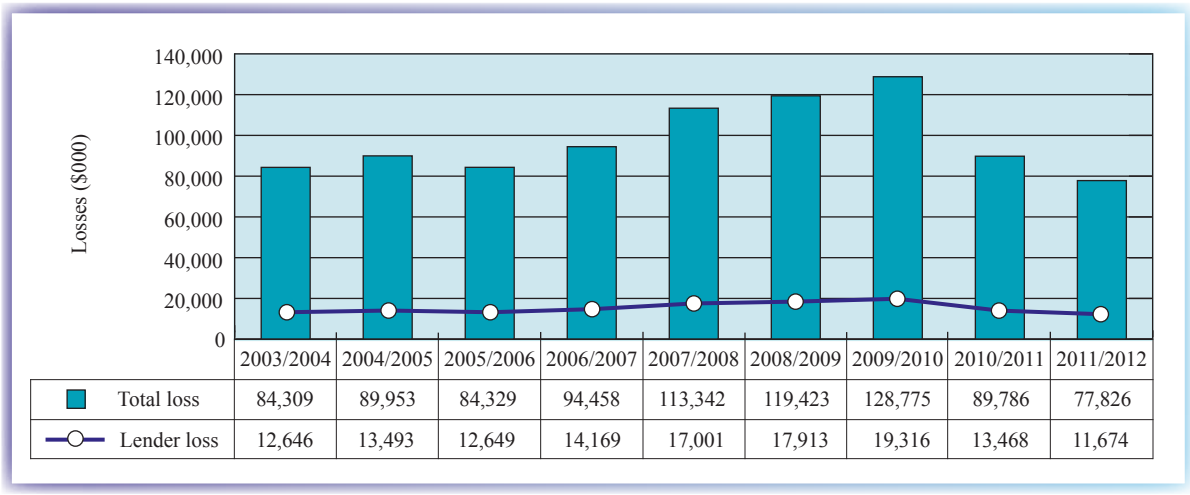
According to CSBF Program Guidelines, lenders cannot avoid absorbing a 15 percent share of losses by taking compensatory security of any kind or by making a claim against the borrower/guarantor after payment of the claim. Therefore, the claims that lenders are eligible to make are based on the loan amount after all repossession actions, personal guarantees, etc. are realized. In addition, once the loan is subrogated to Industry Canada, lenders cannot take further action to recover losses. Consequently, there is a loss sharing ratio between the government and the lender of 85 percent and 15 percent respectively. For this analysis, therefore, lender losses are calculated as 15 percent of the total value of loan losses after any realizations have been made.

*Findings*

Figure 8 shows lender losses on loan defaults between 2003/2004 and 2011/2012. Losses remained fairly stable in the early years of the evaluation period averaging $13 million per year between 2003/2004 and 2006/2007. This was due to relatively stable loan default claims over the period. Losses jumped by 20 percent in 2007/2008, 14 percent in 2008/2009 and 13 percent in 2009/2010 due to a growing number of loan defaults and an increase in loan size per defaulted loan.

The rising trend in "known" lender losses reversed in 2010/2011 falling from $19 million in 2009/2010 to $13 million. Lender losses continued to fall in 2011/2012 to $11 million as the number of "known" defaults declined and the net principal outstanding on defaulted loans fell to $75 million. A principal reason for this was that fewer large lenders were able to submit claims for loss to Industry Canada because they had already reached their liability limits. Lenders who hit their limits were responsible for 100 percent of any losses incurred beyond that level. The data in Figure 8, and in particular for 2010/2011 and 2011/2012, does not capture the value of losses incurred by lenders after claim payments ceased.

**Figure 8: Loan Default Costs to Lenders**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Total loss | 84,309 | 89,953 | 84,329 | 94,458 | 113,342 | 119,423 | 128,775 | 89,786 | 77,826 |
| Lender loss | 12,646 | 13,493 | 12,649 | 14,169 | 17,001 | 17,913 | 19,316 | 13,468 | 11,674 |

Source: Internal CSBFP Database.

# 5. Estimated Benefits of the CSBF Program

This section of the report assesses key program benefits, including:

- Administrative expenditures by lenders;
- Interest revenues on loans;
- Salaries and wages paid by borrowers;
- Direct GDP impacts;
- Indirect GDP impacts; and
- Administration and registration fees collected by Industry Canada.

The findings presented in this section are NOT adjusted for incrementality. Adjustments for incrementality will be made in Section 6.

## 5.1 Administrative Expenditures by Lenders (Salaries, Wages, and Benefits)

Theoretically, incremental salaries, wages and benefits paid by lenders for staff and management to deliver the CSBF Program would have a positive impact on the economy. Why such expenditures made by lenders are considered benefits rather than costs is a subject of debate and for the purpose of this study has been chosen to maintain consistency with the assumptions of the 2009 KPMG study. In that study it was assumed that lenders had full autonomy in granting CSBF loans, received interest revenues for that purpose, and would not bear those expenditures if it was not beneficial to do so.

That being said, the decision to view these expenditures as a benefit will not impact the assessment as, for various reasons, they will not be included in the calculation of program net benefits.

- **Insufficient data**: Generally, lenders do not measure the salary costs of administering CSBF loans, rather those costs are reported as part of total salary costs for loan officers, account managers, administrative staff, legal, and other staff who are involved in administering business loans and provide other types of financing for SMEs. Estimating the proportion of time spent, and hence costs, of administering CSBF loans given extreme variability in loan practices across lenders was not possible with an acceptable degree of confidence.
- **Few dedicated staff**: For many lenders, CSBF loans are administered by loan officers in the commercial lending department as part of the normal portfolio of financing options, and the volume administered by each is relatively low (KPMG, 2009). Furthermore, a large number of lending organizations do not hire additional staff to administer CSBF loans and administering these loans represents a small proportion of their time (KPMG, 2009).

Because only a small number of lenders have staff solely dedicated to CSBFP loans and because CSBFP loan activities represent only a small share of loan officer total time, it is unlikely that the exclusion of salaries and wages paid by lenders to administer the program will have a significant impact on the assessment of net benefits.

## 5.2 Direct Operating Expenditures by Lenders

Direct operating expenditures measure any non-salary costs associated with CSBFP administration that would otherwise not be born by lenders in the absence of the program. Some examples of direct expenditures made by lenders include legal expenditures, IT systems to meet required reporting on CSBF loans, and registration of loans for real property purchases. They also include the costs of administering claims such as repossession activities, professional fees, purchases, etc. As with salaries paid, these expenditures will also have positive impacts on the Canadian economy. The choice to view these expenditures as a benefit rather than a cost for the purpose of this study was done to maintain consistency with the 2009 KPMG study. Again, it is assumed that lenders have full autonomy in granting CSBF loans, receive interest revenues for that purpose, and would not bear those expenditures if it was not beneficial to do so.

A survey was conducted by KPMG in 2009 with selected lenders who would be knowledgeable about the program. As part of the survey, lenders were asked to assess the direct operating expenditures of administering CSBFP loans. Limited information was available on the amount and types of direct expenditures made by lenders. Also, given the small size of the survey and extreme variability in CSBFP related activities across lenders, it was not possible to approximate these costs with an acceptable degree of confidence. Consequently, direct operating expenditures made by lenders were not included in the calculation of net program benefits nor for the purpose of this study were they included.

Based on the order of magnitude of direct operating expenditures for loans identified through lender interviews in 2009, it is unlikely that the exclusion of direct operating expenditures paid by lenders to administer the program will have a significant impact on the assessment of the net program benefits.

## 5.3 Interest Revenues on Loans

CSBFP parameters allow lenders to charge a maximum interest rate of prime plus 3 percent on loans registered with Industry Canada. Of the interest charged, lenders are required to remit a 1.25%/annum administration fee to Industry Canada while the remainder can be retained by the lender to cover costs and as profit. Interest revenues on loans represent revenue to lenders, where net revenues are the difference between the interest charged to borrowers, and lenders' cost of capital plus administration fees. Assumptions on the lenders' cost of capital were confirmed through 2009 KPMG survey interviews and in discussions with the Canadian Bankers Association. As the interest rate environment has changed little since 2009, it is reasonable to assume that responses remained applicable through 2011/2012. The following analysis showcases net revenues on CSBFP loans.

*Methodology*

1. **Interest rate data**. Data was obtained from the CSBF Program Database for the time period 2003/2004 to 2011/2012 on the annual average rates charged by lenders above prime. Data on business prime rates administered by chartered banks was obtained from the Bank of Canada.
2. **Calculation of cost of funds to lenders**. The cost of funds to lenders was estimated as the 5-year Government of Canada benchmark bond yields, obtained from the Bank of Canada. This assumption was confirmed through 2009 KPMG stakeholder interviews and was maintained for the purpose this study.
3. **Interest revenue calculation**. To estimate interest revenues earned by lenders on CSBF loans, the cost of funds to lenders and the administration fee rate (1.25%) remitted to Industry Canada were subtracted from the total interest rate charged on loans. This rate was then multiplied by the outstanding loan balance under the CSBF program for each year.

*Findings*

The average business prime rate rose steadily during the economic expansion of 2003/2004 and 2007/2008 (Table 2). It fell sharply in 2009/2010 as the economy slipped into recession and the Bank of Canada cut rates. The prime rate reversed slightly with the rebound in the economy in 2010/2011 but still remains below pre-recession levels. Lenders charged the maximum rate of prime plus 3 percent in each year over the evaluation period. Average interest rates charged by lenders, therefore, varied between a low of 5.25 percent in 2009/2010 and a high of 9 percent in 2007/2008. The average rate charged by lenders over the full evaluation period was 7.15 percent.

**Table 2: Estimated Average Interest Rate Charged**

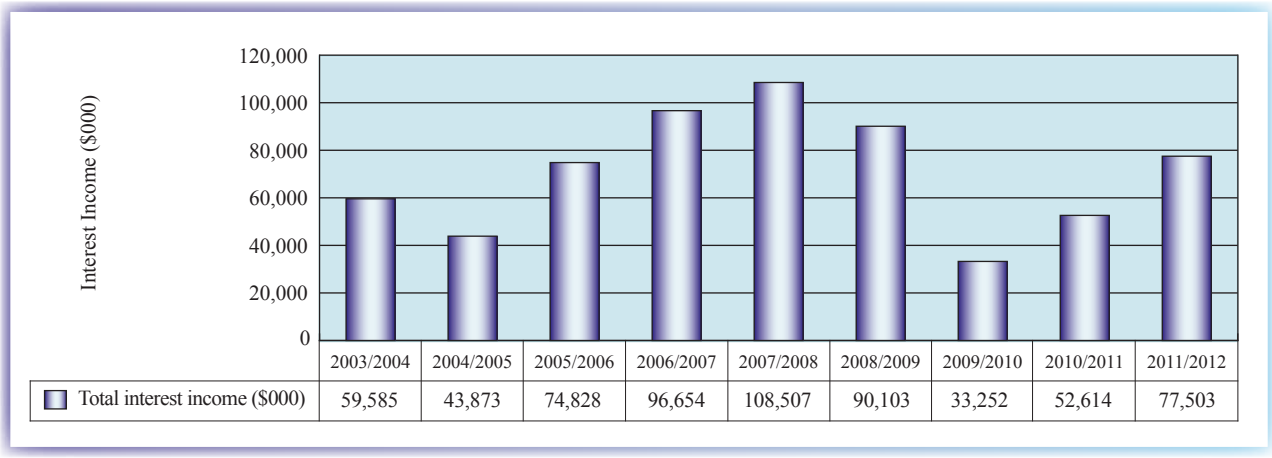
| Interest Rate | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Average business prime rate | 4.58% | 4.02% | 4.69% | 5.98% | 6.00% | 4.04% | 2.25% | 2.79% | 3.00% |
| Average rate charged above prime | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% | 3.00% |
| **Average interest rate charged** | 7.58% | 7.02% | 7.69% | 8.98% | 9.00% | 7.04% | 5.25% | 5.79% | 6.00% |
| Cost of funds to lenders | 3.80% | 3.85% | 3.69% | 4.11% | 4.04% | 2.70% | 2.57% | 2.45% | 1.78% |
| **Revenue rate*** | 2.53% | 1.77% | 2.75% | 3.62% | 3.71% | 3.09% | 1.43% | 2.09% | 2.97% |

Source: Internal CSBFP Database.
*After admin fees (1.25%) and cost of funds.

The cost of funds to lenders followed a similar trend as the business prime rate with the average 5-year benchmark government bond yield reaching a high of 4.11 percent in 2006/2007 and a low of 1.78 percent in 2011/2012. The spread between the average interest rate charged on loans and the cost of funds (revenue rate) fluctuated over the evaluation period trending generally upwards between 2003/2004 and 2007/2008, reversing in 2009/2010 at the height of the recession, and rebounding with the economy in 2010/2011. The average spread over the evaluation period was 2.67 percent.

Estimates of total income generated over the evaluation period are presented in Figure 9. Income was calculated by multiplying the average revenue rate in each period by the outstanding loan balance of CSBFP loans. Lender income grew from approximately $60 million in 2003/2004 to a high of $109 million in 2007/2008. The income trend reversed course in 2008/2009 falling to $90 million and continued to fall to a low of $33 million in 2009/2010 mainly due to a sharp decline in revenue rates and the write-off of non-performing loans. Income rebounded in 2010/2011 (+58 percent) and 2011/2012 (+47 percent) as both revenue rates and outstanding loan balances increased. Annual income earned by lenders over the full evaluation period averaged $71 million per year.

**Figure 9: Interest Income to Lenders on CSBFP Loans**




Sources: Internal CSBFP Database and Bank of Canada.

## 5.4 Profits for CSBFP Borrowers

Findings from Industry Canada's 2014 Economic Impact Study produced inconsistent results regarding the relative profit potential of CSBFP borrowers compared to other borrowers. Statistics Canada's 2008 and 2004 economic impact studies also did not produce statistically significant results confirming whether there are incremental profits for CSBFP borrowers. As such, incremental profits were not included in the calculation of program net benefits.

## 5.5 Employment Creation and Salaries and Wages paid by Borrowers

### *Within-Firm Employment Creation*

As part of the loan registration process, borrowers are asked to identify how many additional employees (full time equivalents) they are expected to hire as a direct result of the loan.

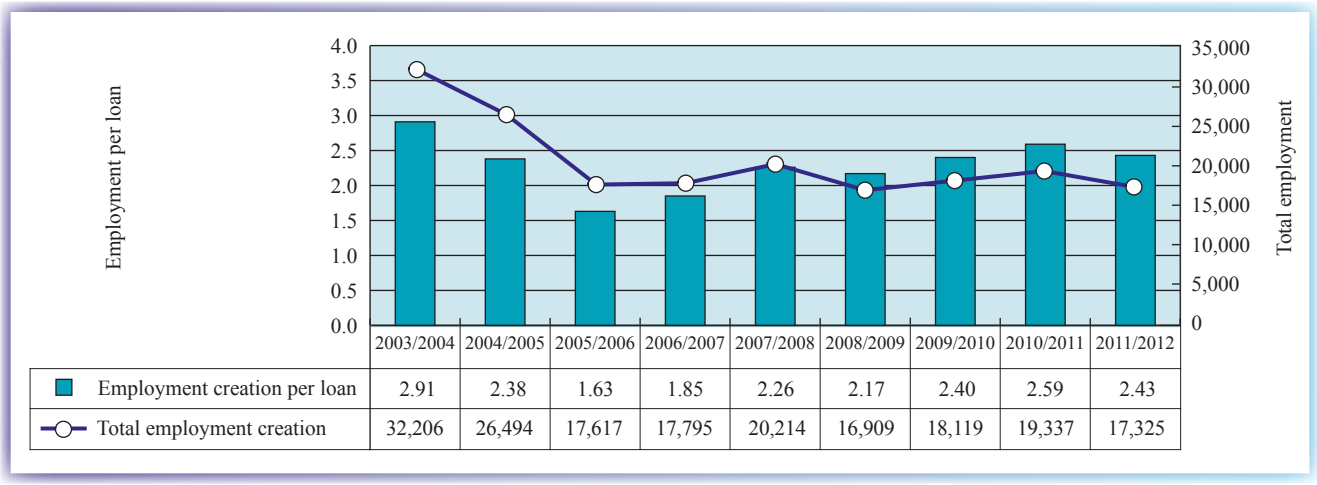
*Methodology*

Employment data is self-reported data collected through CSBFP registration forms and stored in the CSBF Program Database. For this section, it was assumed that without the CSBF loan, borrowers would not have received financing elsewhere and no employment growth would have taken place. Therefore, it is assumed that all additional employment was incremental.

*Findings*

Total employment creation expected by borrowers after being approved for a CSBFP loan is presented in Figure 10.

**Figure 10: Total Employment Creation and Employment Creation per Loan**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Employment creation per loan | 2.91 | 2.38 | 1.63 | 1.85 | 2.26 | 2.17 | 2.40 | 2.59 | 2.43 |
| Total employment creation | 32,206 | 26,494 | 17,617 | 17,795 | 20,214 | 16,909 | 18,119 | 19,337 | 17,325 |

Source: Internal CSBFP Database.

Expectations declined sharply since the start of the decade but have since stabilized from about 32,000 in 2003/2004 to, on average, 18,000 per year in 2005/2006 through 2011/2012. Total employment creation over the evaluation period equaled 186,000 FTEs. On a per loan basis, borrowers expect each loan to generate positions for about 2 additional full time employees. Some variation in employment creation per loan was observed over the evaluation period but it was minimal, fluctuating between 2 to 3 employees. Though not shown here, employment expectations were highest among start-up businesses (<1 year old) and businesses using loans for leasehold improvements.

### *Salaries and Wages Paid by Borrowers*

Additional salaries and wages represent value resulting from employment creation (made possible through the receipt of a loan), and subsequent capital investment. The following analysis does not take into account additional wages paid to new part-time and/or temporary employees. It also applies a 50-percent employment displacement rate. That is, it is assumed that 50-percent of additional jobs created and, hence, additional labour income generated, are not net new jobs but have been shifted from one employer to another. The rate of employment displacement was estimated by averaging annual net new employment creation by gross new employment creation per period using data from Industry Canada's *Key Small Business Statistics* publication. This assumption is necessary so as to not overstate the income figures.

The analysis is based on within-firm employment creation data from the previous section, tax-linked data provided by Statistics Canada, results from the 2009 KPMG study, and linearly interpolated data. It is also important to note that, while regression analysis was used to estimate any missing salary data and firm survival rates, the estimates represent conditional mean values for CSBFP borrowers that do not control for firm location, industry, size, age, or other firm characteristics that may impact changes over time. For the following analysis, it has been assumed that the above-mentioned characteristics were held constant.

*Methodology*

1. **Estimate of within-firm employment creation**. Data on the average number of employees created per firm between 2003/2004 – 2011/2012 for nine cohorts of CSBFP borrowers were obtained from Figure 10 above.

   While it is possible that total employment creation could match expected employment creation, it has been conservatively assumed that it would not. That is, the gross number of jobs created would equal 50 percent of the expected number of jobs created, as reported by borrowers on their loan registration forms. This assumption is based on data from the 2010 and 2014 CSBFP Economic Impact studies which, taken together, suggest that for about every 2.54 jobs CSBFP borrowers expect to create, on average only about 1.21 jobs are ever actually created (or 48 percent without rounding).

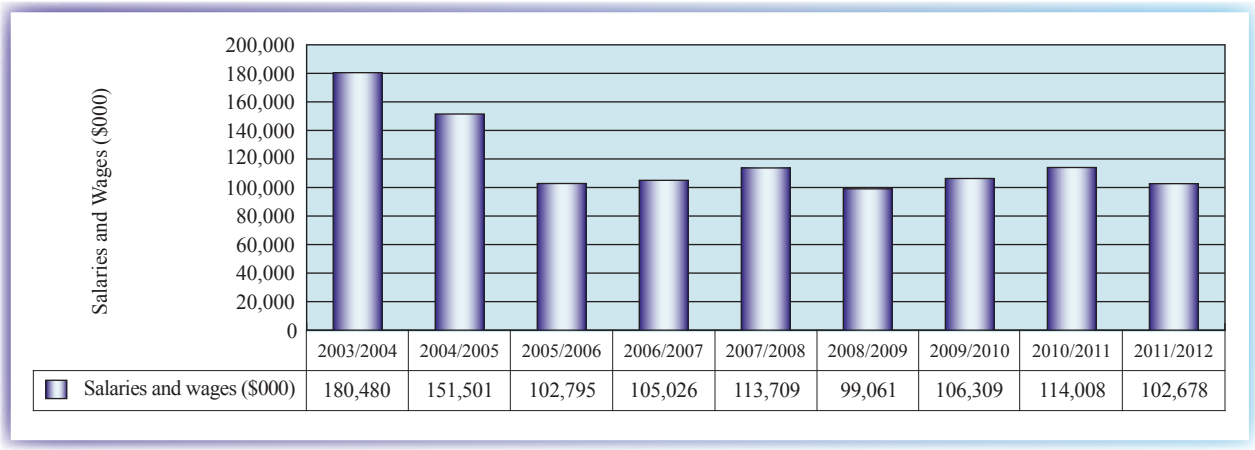
   Furthermore, all additional employment between 2003/2004 and 2011/2012 was adjusted downwards based on a conservative 50-percent employment displacement rate. As explained above, it is unrealistic to assume that all jobs created are net new jobs. Many jobs represent a transfer of employment from one firm to another with no "real" employment creation effects.

   Also, for this section, it was assumed that without the CSBFP loan, borrowers would not have received financing elsewhere and no employment creation would have occurred. Therefore, it was assumed that all additional employment was incremental.
2. **Estimate of additional salaries and wages by cohort of CSBFP borrower**. Data on additional average salaries and wages paid between 2005/2006 and 2008/2009 were obtained from tax linked Statistics Canada data. Data for 2003/2004 and 2004/2005 were obtained by adjusting backward for inflation. Data for 2010/2011 and 2011/2012 were obtained using regression analysis.

*Findings*

Figure 11 presents data on salaries and wages for each year of the evaluation period.

**Figure 11: Salaries and Wages Paid to New Employees of CSBFP Borrowers**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Salaries and wages ($000) | 180,480 | 151,501 | 102,795 | 105,026 | 113,709 | 99,061 | 106,309 | 114,008 | 102,678 |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

As can be seen, additional salaries and wages paid by CSBFP borrowers were highest at the start of the evaluation period. Salaries and wages peaked in 2003/2004 as both employment levels and real wages were high. In 2005/2006, employment creation expectations for new cohorts of borrowers fell. This reversed in 2006/2007 and 2007/2008, then fell again in 2008/2009 as the recession unfolded. Although at a much lower level today than at the beginning of the period, additional salaries and wages paid to new employees has stabilized at approximately $106 million per year since 2005/2006.

## Out-of-firm Employment Creation

As a result of the additional demand of CSBFP borrowers for the goods of their suppliers, the suppliers must also increase employment to support the higher production and sales.

*Methodology*

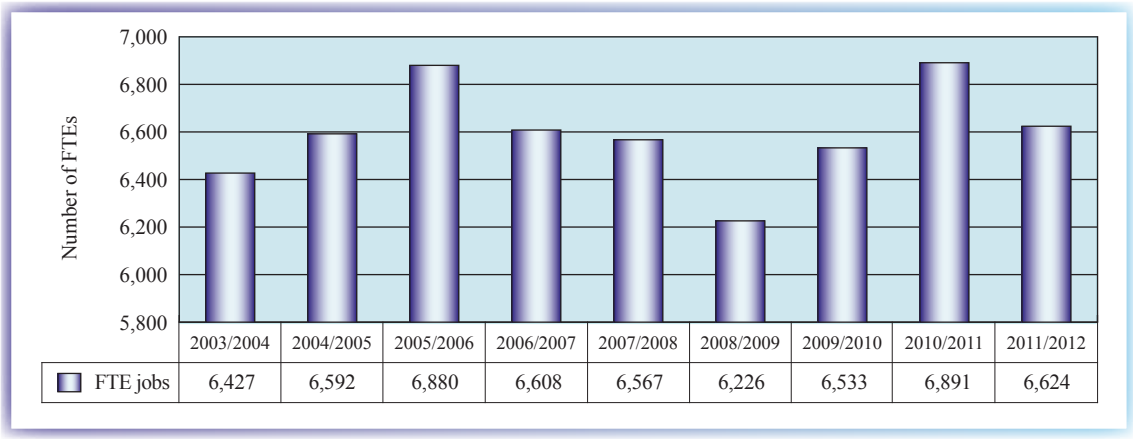
The Statistics Canada Canadian Input-Output Model was used to estimate the employment impacts among CSBFP suppliers. The number of direct full-time equivalent (FTE) jobs was measured. Specifically, out-of-firm employment creation, as presented in Figure 12, measures the number of jobs created in firms that supplied CSBFP borrowers with the loan-eligible assets they purchased. The number of jobs shown does not take into account part-time and/or temporary jobs. It is also important to note that the analysis does not adjust for incrementality nor does it account for any employment displacement that might have taken place.

*Findings*

About 59,000 gross new jobs were created over the evaluation period, or about 6,600 per year.

Job creation triggered by CSBFP lending activities peaked in 2005/2006, reached its lowest level in 2008/2009, and has since returned to pre-recession levels. The majority of jobs were created in Quebec, Ontario, Alberta and British Columbia. Significant employment was also created in the construction and manufacturing industries.

**Figure 12: Out-of-Firm Employment Creation**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| FTE jobs | 6,427 | 6,592 | 6,880 | 6,608 | 6,567 | 6,226 | 6,533 | 6,891 | 6,624 |

Sources: Internal CSBFP Database and Bank of Canada.

## 5.6 Direct GDP Impacts of Expenditures by CSBFP Borrowers

Direct expenditures by borrowers backed by CSBFP loans on machinery and equipment, real property, and leasehold improvements have a positive direct and indirect economic impact on the economy by stimulating expenditures on goods and services and boosting income. The Statistics Canada Canadian Input-Output Model was used to estimate these impacts for the years in which the expenditures were made.[5] Specifically, direct GDP at basic prices[6] by industry was used to gauge the contribution of loan expenditures to economic output. Evaluated at basic prices, GDP impacts reflect factor incomes attributed to wages and salaries, supplementary labour income, mixed income and other operating surplus, plus indirect taxes on production less subsidies on production. In the following analysis, it is assumed that there is no social opportunity cost to expenditures made by CSBFP borrowers, including expenditures on salaries and wages. In particular, it is assumed that growth in GDP as a result of expenditures made by CSBFP borrowers does not crowd out private and public sector investment.

*Methodology*

It was necessary to obtain information on the likely types of expenditures made by CSBFP borrowers:

1. **Loan expenditure data was obtained from the CSBF Program Database**. Loan amounts from the CSBF Program Database were obtained for each cohort by industry sector, province, and the following asset types: equipment, new and existing leasehold improvements, and real property.
2. **Registration Fees**. Many borrowers finance their registration fee as part of their loans. These fees do not contribute to economic activity and hence were removed when calculating Input/Output shock variables.
3. **Identify common expenditures by commodity by industry sector**. Types of expenditures for equipment, leasehold improvements, and real property were assumed to follow similar patterns as other borrowers in the Input/Output model and were supported by CSBF program staff knowledgeable in typical borrower expenditures.

5. Attempts were not made to model the multiplicative impact of expenditures made in one year on GDP in subsequent years. Only the current period impact was measured and, hence, the results presented here likely underestimate the total GDP impact over time.

6. GDP at basic prices is GDP at market prices minus taxes less subsidies on products. GDP at basic prices is also equal to the traditional value at factor cost plus taxes less subsidies on the factors of production (labour and capital).

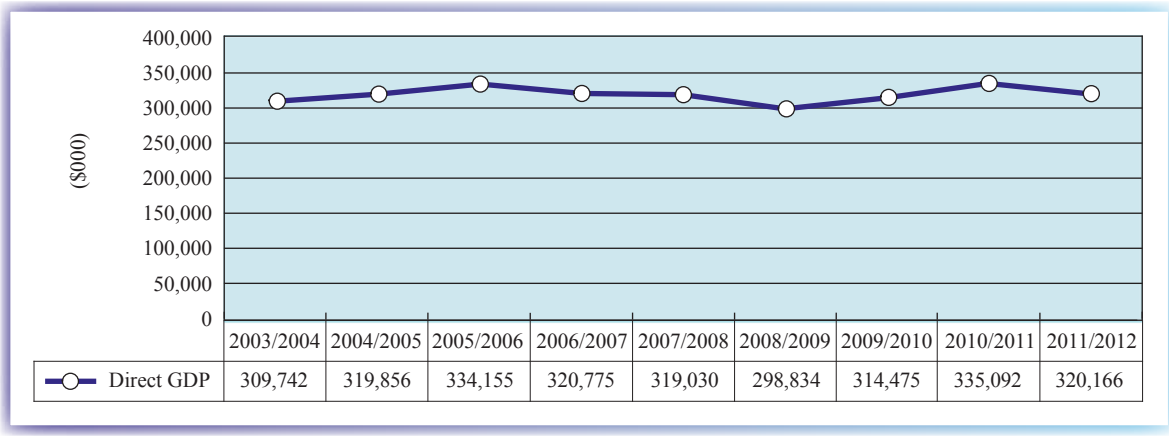
4. **Estimate commodity expenditures for each sector and province**. Actual loan expenditures adjusted for financed registration fees were then apportioned across commodities. Because a certain portion of loans were used to purchase existing leasehold improvements and real property,[7] some of the assets purchased were created in previous years, and their transfer from one entity to another does not contribute to GDP to the same extent as the original creation of the asset. Although the purchase of these pre-existing assets would have resulted in some contribution to GDP for that year (e.g. salaries and wages, and profits to retailers, wholesalers, and real estate agents), a large part of the value-add to the economy for their creation would have already accrued in previous years. Therefore, to be consistent with 2009 KPMG assumptions, it is assumed that only half of payments to suppliers for real property, and existing leasehold improvements, contributed to GDP in the year the loans were issued.

For analysis of economic impacts by the Input-Output model, it was also assumed that international and provincial imports are allowed to meet output requirements.

*Findings*

Figure 13 presents the direct GDP impact of expenditures made by CSBFP borrowers on capital equipment, real property and leasehold improvements for fiscal years 2003/2004 through 2011/2012. The direct GDP impact was highest in 2010/2011 coming out of the recession when the total value of CSBFP-backed loans issued surpassed $1 billion.

**Figure 13: Direct GDP at Basic Prices ($000), 2003/2004-2011/2012**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Direct GDP | 309,742 | 319,856 | 334,155 | 320,775 | 319,030 | 298,834 | 314,475 | 335,092 | 320,166 |

Source: Statistics Canada, Canadian Input-Output Model.

With the value of loans issued remaining fairly stable over the period,[8] the direct GDP impact also remained fairly stable averaging about $320 million per year. Direct GDP impacts equaled about 33 percent of the total value of loans issued. The total direct impact over the evaluation period was $2.9 billion.

Table 3 presents the direct GDP impacts by region.

As expected, direct impacts are largest in Ontario and Quebec given the large concentration of businesses operating in these regions. Specifically, direct GDP impacts accruing to businesses in Ontario and Quebec represented, on average, 40 percent and 33 percent per year. Businesses in Alberta and British Columbia also benefited significantly, accruing direct GDP impacts of about $32 million and $18 million per year respectively.

7. In the 2009 KPMG study, it was assumed that about 5 percent and 20 percent of CSBFP loans were used to purchase leasehold improvements and real property respectively. The same assumption was used in this study.

8. CSBF Program Database.

**Table 3: Direct GDP at Basic Prices by Region ($000), 2003/2004-2011/2012**

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Newfoundland and Labrador | 3,064 | 2,871 | 2,457 | 1,894 | 2,730 | 2,125 | 1,886 | 2,791 | 1,718 |
| Prince Edward Island | 1,401 | 748 | 879 | 933 | 819 | 856 | 796 | 737 | 1,727 |
| Nova Scotia | 7,707 | 6,811 | 5,593 | 5,686 | 6,545 | 6,333 | 5,734 | 5,348 | 6,244 |
| New Brunswick | 8,526 | 6,937 | 7,940 | 6,676 | 5,459 | 7,059 | 9,400 | 8,848 | 8,769 |
| Quebec | 108,796 | 110,885 | 118,992 | 107,028 | 98,466 | 97,509 | 99,375 | 110,536 | 108,297 |
| Ontario | 112,505 | 123,053 | 126,984 | 133,414 | 143,673 | 121,470 | 125,871 | 133,951 | 122,541 |
| Manitoba | 8,017 | 8,206 | 8,728 | 7,723 | 6,770 | 7,066 | 7,722 | 6,439 | 7,452 |
| Saskatchewan | 8,820 | 9,909 | 11,107 | 9,175 | 8,925 | 8,611 | 9,025 | 9,671 | 10,719 |
| Alberta | 29,371 | 30,327 | 31,905 | 29,356 | 28,205 | 31,056 | 35,704 | 40,592 | 34,828 |
| British Columbia | 20,970 | 19,574 | 19,241 | 18,646 | 17,217 | 16,702 | 18,719 | 15,794 | 17,809 |
| Yukon | 353 | 364 | 66 | 125 | 104 | 18 | 28 | 46 | 37 |
| Northwest Territories | 195 | 154 | 244 | 102 | 104 | 18 | 202 | 254 | 16 |
| Nunavut | 16 | 18 | 17 | 18 | 13 | 11 | 13 | 84 | 9 |
| Canadian territorial enclaves abroad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 309,742 | 319,856 | 334,155 | 320,775 | 319,030 | 298,834 | 314,475 | 335,092 | 320,166 |

Source: Statistics Canada, Canadian Input-Output Model.

Furthermore, while not shown here, the majority of the direct GDP impact accrued to businesses in the construction, manufacturing, and wholesale trade sectors. This result is consistent across years. Businesses in the retail trade sector as well as the transportation and warehousing sector also benefited significantly.

## 5.7 Indirect GDP Impacts of Expenditures by CSBFP Borrowers

Expenditures made by the suppliers of final good producers and the expenditures between suppliers also generate indirect GDP impacts for the Canadian economy through salaries, wages, benefits, and company profits. When suppliers sell assets to final goods producers which are then purchased by CSBFP borrowers using loaned funds, there is an indirect impact on economic growth triggered by the purchases of final goods by intermediary suppliers.

Indirect GDP at basic prices was measured using the Input-Output model which tracks the value contributions of expenditures between intermediary suppliers. In the following analysis, it is assumed that there is no social opportunity cost on expenditures made by suppliers to suppliers, including expenditures on salaries and wages. In particular, it is assumed that growth in GDP as a result of expenditures made by suppliers do not crowd out other activities that contributed to GDP.

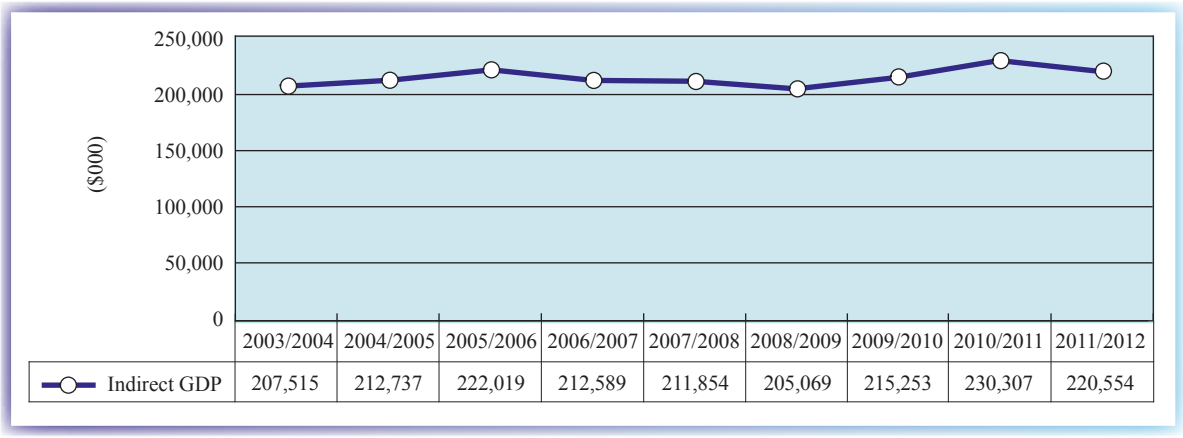
*Methodology*

The Statistics Canada Canadian Input-Output Model was used to estimate the impacts of loan expenditures in the Canadian economy. Indirect GDP at basic prices was the measure used to value the contribution of expenditures on suppliers made by businesses that supplied CSBFP borrowers with the assets that they purchased. As described in section 5.6, it was assumed that half of payments to suppliers to purchase existing real property or leasehold improvements contributed to GDP in the year the loans were issued. It was also assumed that international and provincial imports were allowed to meet output requirements.

*Findings*

Figure 14 depicts the contribution of expenditures made through CSBFP-backed loans to indirect GDP (at basic prices) for each year of the evaluation period.

**Figure 14: Indirect GDP at Basic Prices ($000), 2003/2004-2011/2012**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Indirect GDP | 207,515 | 212,737 | 222,019 | 212,589 | 211,854 | 205,069 | 215,253 | 230,307 | 220,554 |

Source: Statistics Canada, Canadian Input-Output Model.

Indirect GDP estimates were adjusted for the share of loans that were used to purchase pre-existing assets. All estimates presented in Figure 14 account for these adjustments. Indirect GDP impacts resulting from CSBFP-backed loan expenditures ranged from a low of $205.1 million in 2008/2009 to a higher of $230.3 million in 2011/2012. These findings highlight a strong multiplier effect throughout the economy, with the indirect GDP impact equaling about 70 percent of the value of the direct impact and 40 percent of the value of the total impact.

Table 4 presents the indirect impacts by sector.

The indirect impacts of expenditures made by CSBFP borrowers are spread across almost all sectors. Businesses in the manufacturing sector and the professional, scientific and technical services sector seem to benefit the most, with on average $49 million and $42 million accruing to each sector respectively. Businesses in wholesale trade, transportation and warehousing, and the finance sector also benefited significantly, with on average $22 million, $14 million and $35 million in indirect GDP accruing to each sector respectively.

**Table 4: Indirect GDP at Basic Prices ($000), 2003/2004-2011/2012**

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Crop and animal production | 412 | 419 | 437 | 416 | 413 | 403 | 427 | 453 | 437 |
| Forestry and logging | 788 | 786 | 821 | 785 | 788 | 780 | 823 | 854 | 825 |
| Fishing, hunting and trapping | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Support activities for agriculture and forestry | 169 | 171 | 178 | 170 | 168 | 164 | 172 | 181 | 175 |
| Mining, quarrying, and oil and gas extraction | 7,546 | 7,757 | 8,188 | 7,875 | 7,801 | 7,674 | 7,764 | 8,241 | 7,610 |
| Utilities | 4,861 | 5,005 | 5,265 | 5,002 | 4,860 | 4,562 | 4,755 | 4,979 | 4,756 |
| Residential construction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-residential building construction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Engineering construction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Repair construction | 2,035 | 2,114 | 2,211 | 2,094 | 2,019 | 1,881 | 1,977 | 2,139 | 2,045 |
| Other activities of the construction industry | 816 | 834 | 858 | 824 | 816 | 811 | 854 | 902 | 855 |
| Manufacturing | 46,954 | 48,071 | 50,138 | 48,153 | 48,541 | 47,510 | 49,926 | 53,267 | 51,186 |
| Wholesale trade | 21,060 | 21,597 | 22,525 | 21,604 | 21,627 | 20,902 | 22,024 | 23,237 | 22,293 |
| Retail trade | 4,972 | 5,109 | 5,361 | 5,087 | 4,927 | 4,584 | 4,768 | 4,987 | 4,770 |
| Transportation and warehousing | 13,508 | 13,946 | 14,591 | 13,796 | 13,387 | 12,524 | 13,191 | 13,857 | 13,270 |
| Information and cultural industries | 8,375 | 8,636 | 9,043 | 8,543 | 8,279 | 7,862 | 8,307 | 9,137 | 8,734 |
| Finance, insurance, real estate, rental and leasing and holding companies | 33,945 | 34,991 | 36,498 | 34,958 | 34,526 | 32,621 | 34,297 | 36,361 | 34,716 |
| Owner occupied dwellings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Professional, scientific and technical services | 40,283 | 40,978 | 42,605 | 41,063 | 41,748 | 41,614 | 43,695 | 47,507 | 45,690 |
| Administrative and support, waste management and remediation services | 10,767 | 11,068 | 11,545 | 11,068 | 10,975 | 10,568 | 11,106 | 12,058 | 11,516 |
| Educational services | 271 | 277 | 289 | 279 | 276 | 261 | 273 | 285 | 272 |
| Health care and social assistance | 384 | 391 | 408 | 386 | 382 | 373 | 389 | 430 | 416 |
| Arts, entertainment and recreation | 681 | 708 | 744 | 700 | 670 | 618 | 647 | 700 | 672 |
| Accommodation and food services | 2,148 | 2,216 | 2,326 | 2,187 | 2,111 | 2,015 | 2,121 | 2,329 | 2,233 |
| Other services (except public administration) | 2,753 | 2,817 | 2,939 | 2,804 | 2,788 | 2,751 | 2,908 | 3,213 | 3,057 |
| Repair, maintenance and operating and office supplies | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Advertising, promotion, meals, entertainment, and travel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transportation margins | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-profit institutions serving households | 241 | 249 | 261 | 247 | 239 | 227 | 238 | 259 | 249 |

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Government education services | 929 | 921 | 958 | 918 | 927 | 920 | 966 | 1,031 | 1,024 |
| Government health services | 240 | 246 | 257 | 243 | 240 | 230 | 240 | 263 | 251 |
| Other federal government services | 1,069 | 1,081 | 1,121 | 1,075 | 1,090 | 1,034 | 1,093 | 1,162 | 1,113 |
| Other provincial and territorial government services | 757 | 757 | 793 | 730 | 713 | 712 | 744 | 832 | 812 |
| Other municipal government services | 1,545 | 1,588 | 1,654 | 1,576 | 1,537 | 1,461 | 1,542 | 1,637 | 1,571 |
| Other aboriginal government services | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 207,515 | 212,737 | 222,019 | 212,589 | 211,854 | 205,069 | 215,253 | 230,307 | 220,554 |

Source: Statistics Canada, Canadian Input-Output Model.

The indirect impacts of expenditures made by CSBFP borrowers are spread across almost all sectors. Businesses in the manufacturing sector and the professional, scientific and technical services sector seem to benefit the most, with on average $49 million and $42 million accruing to each sector respectively. Businesses in wholesale trade, transportation and warehousing, and the finance sector also benefited significantly, with on average $22 million, $14 million and $35 million in indirect GDP accruing to each sector respectively.

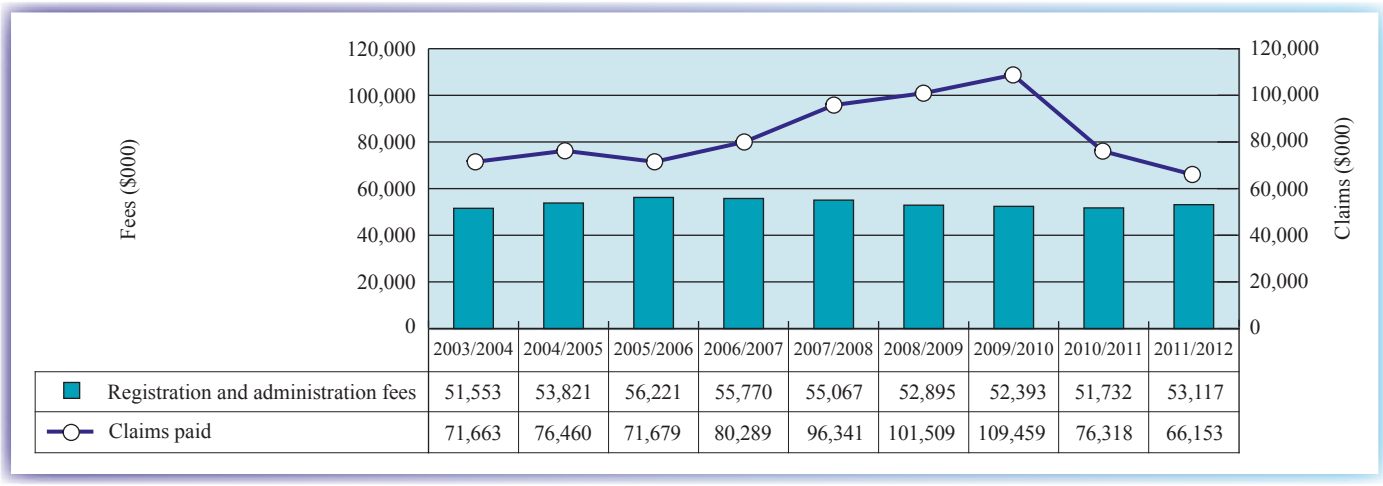
## 5.8 Administration and Registration Fees Paid by Borrowers to Industry Canada

Registration and administration fees are directly proportional to the value of loans registered under the CSBF program. A 2 percent registration fee is paid on the total value of the loan when it is registered by the lender with Industry Canada. An administration fee of 1.25 percent per annum is paid on the outstanding value of each loan. These fees are remitted to Industry Canada quarterly.

*Findings*

Total registration and administration fees received by Industry Canada are shown in Figure 15. Total fees received fluctuated only modestly over the evaluation period averaging approximately $54 million per year.

**Figure 15: Registration and Administration Fees, and Claims Paid**



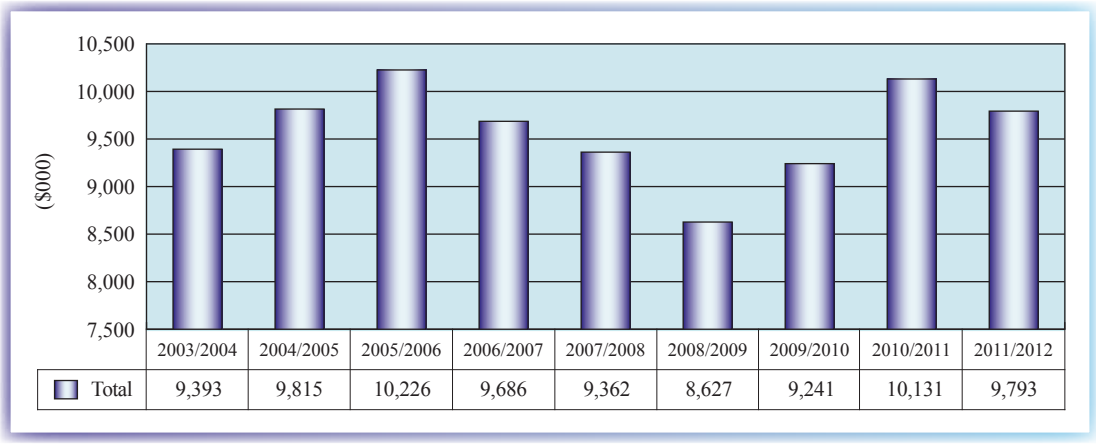

Source: Internal CSBFP Database.

While total fees received each year have remained fairly constant over the evaluation period, total claims paid consistently exceed fees. The average shortfall equaled about $30 million per year. Excluding the 2007/2008 to 2009/2010 financial crisis/recessionary period in which claims rose to unprecedented highs, average claims paid per year equaled $72 million and the average shortfall equaled $19 million per year. This shortfall fell to its lowest level at $13 million in 2011/2012; however, this was principally on account of liability claim limits being reached.

It is important to note that this analysis has not taken into account additional tax dollars generated for the federal government from expenditures made by CSBFP borrowers. The Statistics Canada Canadian Input-Output Model was used to estimate the tax impacts. In particular, the model generates estimates of the total GST, federal gas tax, duty tax, excise tax, and air tax generated directly or indirectly on CSBFP borrower expenditures. Provincial and municipal tax estimates were also generated but are not presented here.

Figure 16 shows the federal taxes generated off CSBFP-backed loan expenditures. Total taxes are directly proportional to the expenditures made by CSBFP borrowers. Total federal taxes generated were consistently above $9 million each year and exceeded $85 million over the full evaluation period.

**Figure 16: Federal Sales and Excise Taxes**



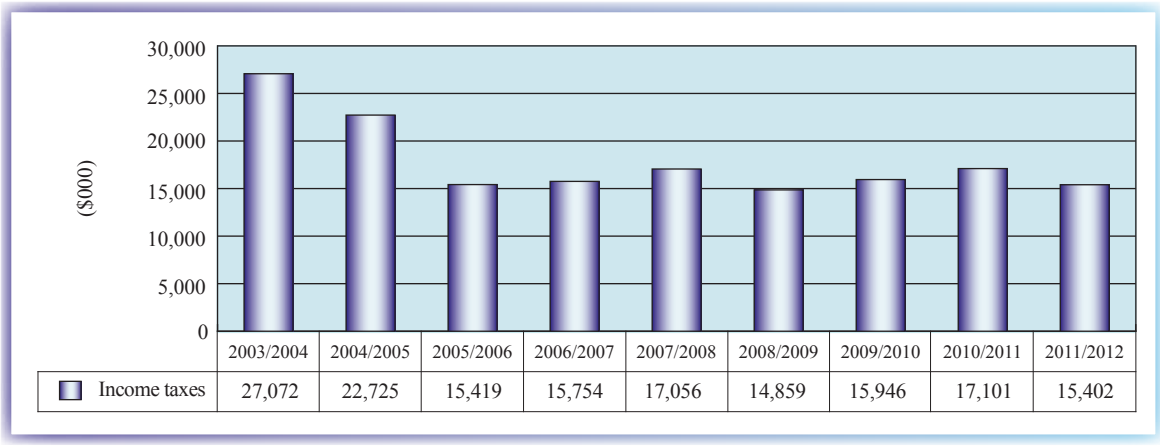

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Total | 9,393 | 9,815 | 10,226 | 9,686 | 9,362 | 8,627 | 9,241 | 10,131 | 9,793 |

Source: Internal CSBFP Database.

Furthermore, since an increase in expenditures (triggered by an increase in CSBFP-backed loans) led to an increase in employment, any additional wages collected by these employees would have resulted in additional income taxes collected by the government (Figure 17).

As discussed in section 5.5, loan registration forms were used to determine an anticipated level of within-firm employment creation. These estimates were then used to calculate additional salaries and wages paid to employees following adjustments for firm survivability and employment displacement whereby a portion of the additional jobs created were not assumed to be net new jobs. Rather, they were assumed to be jobs shifted from other employers. A 50 percent displacement rate was used. This assumption implies that for every 10 new jobs created, 5 jobs went to workers employed in other firms, and 5 jobs went to people that were unemployed. Income taxes generated from already employed workers do not represent net new taxes for government. Data was then obtained from Revenue Canada on federal marginal tax rates for 2003/2004 to 2011/2012. The appropriate marginal tax rate was determined based on average salaries paid by CSBFP borrowers. Rates were then applied against total additional wages and salaries identified in Figure 11.

**Figure 17: Federal Income Tax Remittances Due to Additional Salaries and Wages**



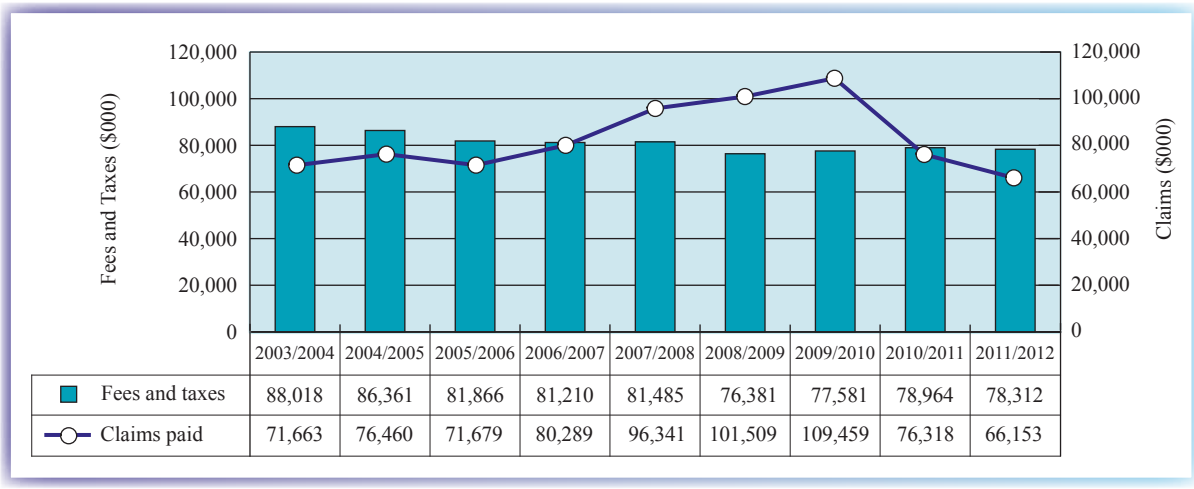

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Income taxes | 27,072 | 22,725 | 15,419 | 15,754 | 17,056 | 14,859 | 15,946 | 17,101 | 15,402 |

Sources: KPMG; Statistics Canada; Canada Revenue Agency; CSBFP Database; and author's calculations.

These findings have significant implications for the analysis of the cost recovery of the program. While the program was not cost-recoverable in any year when considering costs against administration and registration fees alone, it was recoverable in 6 of 9 years, and 97 percent overall, when fees and taxes were considered together.

As can be seen in Figure 18, comparing fee income and total tax revenues against claims paid between 2003/2004 and 2011/2012 showed that the program was cost recoverable prior to, and after coming out of, the last financial crisis and economic recession. During the crisis/recession (2007/2008-2009/2010), however, outgoing claims grew substantially above incoming sources of revenues and resulted in an average shortfall of about $24 million per year.

**Figure 18: Taxes, Registration and Administration Fees, and Claims Paid**




| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Fees and taxes | 88,018 | 86,361 | 81,866 | 81,210 | 81,485 | 76,381 | 77,581 | 78,964 | 78,312 |
| Claims paid | 71,663 | 76,460 | 71,679 | 80,289 | 96,341 | 101,509 | 109,459 | 76,318 | 66,153 |

Sources: KPMG; Statistics Canada; Canada Revenue Agency; CSBFP Database; and author's calculations.

## 6. Estimated Net Program Benefits

To analyze the net impact of the CSBFP on the Canadian economy, it was necessary to compare the discounted present value of program costs to the discounted present value of program benefits. The following section describes the estimated net benefit calculations.

Methodology

1. **Assumptions on Discount Rate**: Time-value-of-money has been accounted for in the calculation of the net present value of the program over time, using a blended risk-free-equivalent discount rate that is based on Bank of Canada 10-year benchmark bond rates over the time period analyzed (Table 5). Other rates typically regarded as 'social discount rates' were applied to the model as part of the sensitivity analysis. In particular, the Treasury Board Secretariat identified 8 percent as the appropriate discount rate in the Canadian Cost-Benefit Analysis Guide. However, for today's standards, this rate is considered relatively high. There has been a trend toward the use of a lower social discount rate. The British Treasury prescribes a 3.5 percent discount rate. A lower rate based on CPI or short-term GIC rates may also be used as a discount rate.

**Table 5: Discount Rates**

| Scenario | Discount Rate | Source |
|---|---|---|
| High | 8% | Treasury Board Secretariat |
| Medium (Base Case) | 5% | 2009 KPMG CSBFP Cost/Benefit Study |
| Low | 3.5% | 10-Year Government of Canada Benchmark Bond Yield (average 2003/2004 to 2011/2012) |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

2. **Assumptions on Rate of Incrementality**: For the purpose of the Cost-Benefit Study, the term 'rate of incrementality' refers to the percentage of full financial incrementality or partial financial incrementality. A CSBF loan demonstrates full financial incrementality if no loan would have been granted to the borrower in the absence of the CSBF program. Therefore, the borrower would not have qualified for a loan if the CSBF program were not available. Therefore, the rate of full financial incrementality refers to the percentage of CSBFP borrowers that would not have qualified for a loan if the CSBF program were not available.

   A CSBF loan demonstrates partial financial incrementality if a smaller loan would have been granted to a borrower in the absence of the CSBFP. Therefore, the rate of partial financial incrementality refers to the percentage of CSBFP borrowers that would have received a smaller loan if the CSBF program were not available. In the analysis of net benefits, it is assumed that a loan of half the size would have been granted in the absence of the CSBF program. Partial incrementality may include more favourable loan terms that would not have been received without the loan, also known as loan quality incrementality. For the purposes of this study, any differences in loan terms due to the CSBF program are not included due to the difficulty in obtaining accurate data.

   It has been conservatively assumed that the rate of full and partial incrementality remains unchanged throughout the study period. The rate of incrementality was determined based on findings from two incrementality studies (Table 6). In particular, the *Incrementality of CSBF Program Lending*, Volumes 1, 2 and 3, Equinox Management Consultants Ltd. (2004), and *Sources of Portfolio Risk and Revenue Generation of the Canada Small Business Financing Program*, Phase 2, Equinox Management Consultants Ltd. (2008).

   The rate of full and partial incrementality has been applied to determine the benefits that were incremental to CSBFP borrowers, i.e. these benefits would not have accrued if the CSBF program were not available.

In particular, interest revenues on loans, increased salaries and wages paid by borrowers, growth in GDP resulting from payments to suppliers as a result of loans, and growth in GDP resulting from payments of suppliers to suppliers are adjusted for incrementality.

**Table 6: Rates of Incrementality**

| Scenario | Rate of Full Incrementality | Rate of Partial Incrementality |
|---|---|---|
| High | 75% | 0% |
| Medium (Base Case) | 50% | 25% |
| Low | 25% | 50% |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

3. **Net Benefits and Cost Benefit Ratios**: The net benefits and cost-benefit ratios for the CSBF Program have been calculated for each fiscal year in the study period. The net present value (NPV) of all costs and benefits were calculated using a 5 percent discount rate to be consistent with the discount rate applied in the 2009 KPMG cost/benefit study, though this is higher than the average Government of Canada 10-year benchmark bond rate of 3.5 percent over the study period. All benefits, with the exception of administration and registration fees paid, are adjusted for the rate of incrementality of the loan since a portion of CSBFP borrowers may have received all or part of the financing they required in the absence of the CSBF program. Net benefits for each fiscal year are calculated as total benefits adjusted for incrementality less total costs for each fiscal year. The benefit-cost ratio for each year is calculated as the benefits adjusted for incrementality divided by total costs for that year.

*Findings*

CSBF program costs between 2003/2004 and 2011/2012 are summarized in Table 7. Program costs increased from about $130 million in 2003/2004 to $145 million in 2009/2010. The growth in program costs was largely due to continued growth in claims paid and loan default costs to lenders. Program administration costs by Industry Canada (i.e. salaries and benefits, O&M, and capital expenditures) represent on average less than 4 percent of total program costs.

**Table 7: Summary of CSBFP Costs ($000)**

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Salaries and benefits of program staff | 2,404 | 2,520 | 2,581 | 2,038 | 2,317 | 2,428 | 2,369 | 3,298 | 3,284 |
| Direct operating expenditures | 1,036 | 1,108 | 982 | 947 | 769 | 581 | 277 | 477 | 696 |
| Capital expenditures | 0 | 0 | 0 | 393 | 480 | 470 | 0 | 0 | 0 |
| Claims paid on loan defaults | 71,663 | 76,460 | 71,679 | 80,289 | 96,341 | 101,509 | 109,459 | 76,318 | 66,153 |
| Loan default costs to lenders | 12,646 | 13,493 | 12,649 | 14,169 | 17,001 | 17,913 | 19,316 | 13,468 | 11,674 |
| Total costs | 87,749 | 93,581 | 87,891 | 97,836 | 116,908 | 122,901 | 131,421 | 93,562 | 81,807 |
| **Discounted costs (at 5%)** | 129,645 | 131,678 | 117,783 | 124,866 | 142,103 | 142,274 | 144,892 | 98,240 | 81,807 |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

CSBF program benefits are summarized in Table 8.

**Table 8: Summary of CSBFP Benefits ($000)**

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 |
|---|---|---|---|---|---|---|---|---|---|
| Interest revenues on loans | 37,241 | 27,420 | 46,767 | 60,409 | 67,817 | 56,314 | 20,783 | 32,884 | 48,440 |
| Salaries and wages paid by borrowers to new employees | 112,800 | 94,688 | 64,247 | 65,641 | 71,068 | 61,913 | 66,443 | 71,255 | 64,174 |
| Direct GDP impacts | 193,589 | 199,910 | 208,847 | 200,485 | 199,394 | 186,771 | 196,547 | 209,432 | 200,104 |
| Indirect GDP impacts | 129,697 | 132,960 | 138,762 | 132,868 | 132,409 | 128,168 | 134,533 | 143,942 | 137,846 |
| Administration and registration fees | 51,553 | 53,821 | 56,221 | 55,770 | 55,067 | 52,895 | 52,393 | 51,732 | 53,117 |
| Total benefits | 524,880 | 508,799 | 514,844 | 515,173 | 525,754 | 486,062 | 470,699 | 509,245 | 503,680 |
| **Discounted benefits (at 5%)** | 775,487 | 715,932 | 689,940 | 657,506 | 639,057 | 562,678 | 518,945 | 534,707 | 503,680 |

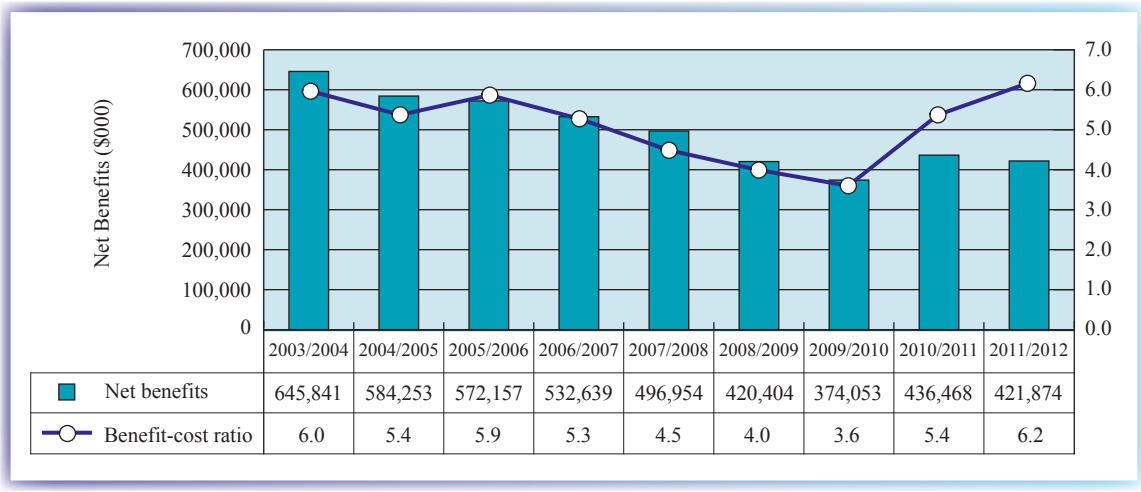
Sources: Statistics Canada; CSBFP Database; and author's calculations.

Total annual benefits range from a low of $504 million 2011/2012 to a high of $775 million in 2003/2004 due to benefits accruing both as a result of new loans issued and the compounding effect of loans issued in previous years. The largest contributors to program benefits are direct GDP effects, wages and salaries paid by borrowers to new employees, and indirect GDP effects.

Figure 19 presents net program benefits when discounted at a rate of 5 percent. Net program benefits are at the highest in 2003/2004. A decline was observed in net benefits through 2009/2010 due to high claims paid, loan default cost to lenders, and a decline in salaries and wages paid to new employees.

Figure 19 also presents the benefit-cost ratio for each year over the study period. The benefit-cost ratio identifies the dollar value of benefits that accrue to society for every dollar of cost related to the program. The benefit-cost ratio decreased after 2003/2004 as claims paid increased and continued on a downward trend through 2009/2010 only to recover in 2010/2011 and 2011/2012 as claims paid decreased and GDP impacts increased.

**Figure 19: Discounted Net Benefits ($000), 2003/2004-2011/2012**




Sources: Statistics Canada; CSBFP Database; and author's calculations.

Total net benefits over the evaluation period are presented in Table 9. Benefits exceeded costs by a significant margin. Specifically, NPV of program benefits totaled $5.6 billion between 2003/2004 and 2011/2012 compared to $1.1 billion in costs. Alternatively stated, for every dollar in costs, about $5.0 in benefits were created for the Canadian economy.

**Table 9: Total Net Benefits and Benefit-Cost Ratio, 2003/2004-2011/2012**

| Category | Value |
|---|---|
| NPV of program costs | $1,113,288,000 |
| NPV of program benefits | $5,597,931,000 |
| Net program benefits | $4,484,643,000 |
| Total benefit-cost ratio | 5.0 |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

## 7. Sensitivity Analysis

It is useful to assess by how much model results can change when key assumptions are changed. Accordingly, a sensitivity analysis was conducted. The analysis presents two additional scenarios (low and high scenarios) in addition to the main Cost-Benefit analysis presented above (which constitutes the 'medium' scenario). The methodology used to calculate net benefits and benefit-cost ratios is the same as described above with changes made to assumptions on discount rates, rates of incrementality, employment displacement rates, and rates of employment creation.

*Methodology*

Table 10 summarizes the changes made to key assumptions.

**Table 10: Assumptions for Sensitivity Analysis**

| | Low Scenario | High Scenario |
|---|---|---|
| Discount rate | 3.5% | 8.0% |
| Incrementality | • 25% full incrementality<br>• 50% partial incrementality | • 75% full incrementality<br>• No partial incrementality |
| Employment displacement rate | 75% | 25% |
| Employment creation | • Employment creation is 25% lower. That is, gross jobs created equal 25% of the expected number of jobs created as reported by borrowers on their loan registration forms. | • Employment creation is 25% higher. That is, gross jobs created equal 75% of the expected number of jobs created as reported by borrowers on their loan registration forms. |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

*Findings*

Table 11 presents findings from the sensitivity analysis for the low, medium and high scenarios. In the high scenario, the benefit-cost ratio is 8.1, an increase of 3.1 over the medium scenario. The increase is driven by a rise in direct and indirect GDP. In addition, about a third of the increase is attributed to the change in discount rates.

**Table 11: Net Benefits ($000) and Benefit-Cost Ratios—Low, Medium and High Scenarios**

| | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Low scenario** | | | | | | | | | | |
| Net Benefits | 347,743 | 327,603 | 354,953 | 331,095 | 304,256 | 259,393 | 227,007 | 289,875 | 293,257 | 2,735,182 |
| Benefit-cost ratio | 3.7 | 3.5 | 4.0 | 3.7 | 3.1 | 2.8 | 2.6 | 4.0 | 4.6 | 3.5 |
| **Medium scenario** | | | | | | | | | | |
| Net Benefits | 645,841 | 584,253 | 572,157 | 532,639 | 496,954 | 420,404 | 374,053 | 436,468 | 421,874 | 4,484,644 |
| Benefit-cost ratio | 6.0 | 5.4 | 5.9 | 5.3 | 4.5 | 4.0 | 3.6 | 5.4 | 6.2 | 5.0 |
| **High scenario** | | | | | | | | | | |
| Net Benefits | 1,330,268 | 1,139,682 | 997,693 | 911,767 | 846,284 | 696,147 | 617,962 | 666,001 | 608,247 | 7,814,050 |
| Benefit-cost ratio | 11.5 | 9.9 | 9.7 | 8.5 | 7.1 | 6.0 | 5.3 | 7.8 | 8.5 | 8.1 |

Sources: Statistics Canada; CSBFP Database; and author's calculations.

In the low scenario, the benefit-cost ratio is 3.5, a decrease of 1.5 from the medium scenario. The decrease is driven by a fall in direct and indirect GDP, a reduction in wages and salaries, and a decrease in the discount rate.

The sensitivity analysis demonstrates that program benefits significantly exceed program costs even when benefit-cost model assumptions are varied. The difference between the high and low scenarios totaled about $5 billion mainly due to the differing discount rate, employment creation, employment displacement, and incrementality assumptions. Total program net benefits of the medium scenario were about $1.7 billion higher than the low scenario and about $3.3 billion lower than the high scenario.

## 8. Conclusion

The cost-benefit analysis of the Canada Small Business Financing Program focused on costs to administer the program including salaries and benefits of Industry Canada staff, direct operating expenditures, capital costs, and costs of loan defaults to both lenders and Industry Canada. The analysis focused on the benefits generated through the program to various agents, including additional salaries and wages paid to new employees, interest revenues earned by lenders, direct and indirect GDP impacts to the economy, and registration and administration fees collected by the program.

Consistent with past studies, the analysis validated the program's creation of significant net benefits for the Canadian economy. The estimate of net benefits is based on a nine-year evaluation period, 2003/2004 to 2011/2012, using a 5 percent discount rate to calculate the present values of both costs and benefits. The total net present value of costs of the program were $1.1 billion whereas the total net present value of benefits of the program were $5.6 billion, resulting in total net benefits of $4.5 billion. This translates into a benefit-cost ratio of 5.0, indicating that for every dollar in cost born by the program, $5.0 in benefits are generated for society.

A sensitivity analysis of costs and benefits was also tested under low and high scenarios. This involved varying the discount rates, rates of incrementality, employment creation and employment displacement assumptions and assessing the results on net program benefits. Variations in these estimates led to the same conclusion, namely that CSBFP benefits significantly outweighed costs.