



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Community Futures Program

Western Economic Diversification Canada Performance Report

ROUND FIVE (2007-12)

Performance Measurement Unit

Policy and Strategic Direction Branch

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Table of Contents

EXECUTIVE SUMMARY	2
MATCHING PROCESS.....	3
Methodology	3
RESULTS	5
Share of Firms by Industry	5
Concentration Index.....	6
Employment Dynamics.....	7
Business Survival Rates	9
Financial Indicators	11
CONCLUSION.....	14
Appendix: Acronyms and Definitions.....	15

EXECUTIVE SUMMARY

This report is a continuation of a performance measurement strategy used to evaluate Community Futures (CF) loan client success by comparing several indicators of business success with those results from comparable firms for the period 2007 to 2012. These indicators include industry concentration, employment growth, firm longevity, sales growth, and labour productivity growth, which are measured using data obtained from Statistics Canada.

Notwithstanding the data suppression issue when analyzing the industry concentration for CF assisted firms; the data analyzed at an aggregate level showed the following results:

- CFs in Western Canada were able to obtain business numbers (BN) for 3,705 active clients, more than in previous years. Of these, 1,492 (40%) were linked to the Longitudinal Employment Analysis Program (LEAP) and 1,215 (33%) were linked to both the Longitudinal Employment Analysis Program (LEAP) and the General Index of Financial Information (GIFI).
- In terms of employment growth from 2007 to 2012, CF assisted firms increased their number of employees by 7.92% annually compared to a 0.93% compounded annual employment growth rate in non-assisted firms.
- In terms of sales, from 2007 to 2012 CF assisted firms exhibited a 10.23% compounded annual sales growth rate compared to a 2.76% compounded annual sales growth rate for non-assisted firms. In addition, it appears that CF loan clients were able to withstand initial shocks to economic activity better than those firms without CF assistance and that their sales growth tends to outperform sales growth for comparable firms.
- CF assisted firms exhibited significantly stronger firm longevity than those firms in the comparable group, especially in the long run.

Overall, the data demonstrates Community Futures organizations' lending activity is making a difference. Although the comparable group appears to lend to a slightly more diversified clientele base, in recent years CF organizations have made strides in diversifying their clientele, according to the Herfindahl Index. CF assisted firms generally outperformed the comparable group in terms of job growth, firm longevity, and sales growth.

MATCHING PROCESS

Methodology

The performance report requires linking CF assisted businesses to a number of administrative data files from Statistics Canada in order to obtain data for performance indicators such as dynamics of employment (employment and payroll growth), firm longevity (business survival rate calculated using the entries and exits of firms), and financial performance (sales growth).

Compared to previous rounds of matching, the methodology for round five has been slightly changed. A list was compiled and provided to Statistics Canada by each regional development agency (RDA) of CF assisted firms by ACOA, CanNor, CED-Q, FedDev, FedNor, and WD. Duplicate clients were removed based on business numbers (BNs) and the legal and/or operating names. Unlike previous rounds that linked the list of clients to the Business Registry (BR), then LEAP and GIFI files, the list of clients was directly linked to the LEAP files after cleaning the list of duplicates. Only those enterprises that had matching records in the LEAP and GIFI were retained for analysis of financial performance.

Table 1: Results from the Matching Process by Regional Development Agency

	ACOA	CanNor	CED-Q	FedDev	FedNor	WD
Number of non-duplicate records	6,502	94	4,468	3,232	1,663	3,705
Number/ Share of firms found in 2012 LEAP with LEAP information	2,604 (40%)	45 (48%)	1,953 (44%)	1,495 (46%)	717 (43%)	1,492 (40%)
Number/ Share of firms found in 2012 LEAP with both GIFI and LEAP information	2,205 (34%)	42 (45%)	1,735 (39%)	1,219 (38%)	608 (37%)	1,215 (33%)

Under the new methodology, final matching of firms with both GIFI and LEAP information improved compared to the previous match. The final matching rates are higher for all regions except ACOA, which is the same as its previous match. WD increased its match rate by two percentage points to 33% in round five compared to round four.

Although the methodology has changed, there is still some data suppression within certain industries for some indicators. However, the data suppression is not high enough to warrant excluding the analysis of performance in some areas. The strength of the analysis of the CF program in Western Canada overall is not lessened, but the ability to investigate differences between some industries for employment growth and business survival rates is compromised. Some instances of suppression are reduced in round five compared to four, permitting comparison across all industries in the areas of share of firms and sales growth.

Statistics Canada also provided a set of tables for firms that did not receive support under CF programs. Therefore, performance results for CF assisted firms can be evaluated against a control group of comparable firms that are similar in size and geographic location. The comparable group of non-assisted firms are then compared to the group of CFP-assisted firms by:

- industry concentration including share of firms by industry and the Herfindahl Index;
- employment dynamics;
- business survival rates; and
- financial indicators.

Statistics Canada provided us with data from the LEAP and GIFI matching processes. For those firms matched to the LEAP, data for employment, payroll, and number of enterprises were only provided for the years 2007 and 2012. In contrast, financial data for firms matched to the GIFI were provided for the years 2007 through 2012. We chose to calculate measures for the share of firms by industry, penetration rates, and employment growth using the dataset retrieved from the LEAP matching process. Results for sales growth are taken from firms that were matched to the GIFI.

Since growth in terms of sales or employment is not constant over a five year period, an average annual growth rate can misrepresent the fluctuations of sales or employment figures from year to year. In order to overcome this limitation, we chose to calculate growth rates using the compounded annual growth rate formula. In doing so, the growth rate incorporates the compounded effect of growth in employment and sales. The average annual growth rate and compounded annual growth rate are as follows:

$$\text{Average Annual Growth Rate} = \frac{\text{Total Growth Rate}}{\# \text{ of years}}$$

$$\text{Compounded Annual Growth Rate} = \left(\frac{\text{End Value}}{\text{Beginning Value}} \right)^{\frac{1}{\# \text{ of years}}} - 1$$

RESULTS

This section summarizes results for CF assisted firms in Western Canada. Performance results for CF assisted firms in other parts of Canada are to be carried out by the respective RDA. Data tabulations are presented by industry as classified by North American Industry Classification Systems (NAICS), and by enterprise size as measured by the number of employees, referred to as average labour units (ALUs). The crude petroleum and liquid natural gas extraction sectors¹, the utilities sector, and the finance and insurance sector are excluded from this analysis. Larger enterprises with more than 100 ALUs are also excluded.

Share of Firms by Industry

The distribution of firms by industry during 2012 for both CF assisted firms and comparable firms is represented in Table 2. This representation is helpful as it demonstrates the concentration or importance of specific industries relative to the pool of CF assisted enterprises in Western Canada. Note that the same measure is provided for the share of firms by industry in the group of comparable firms.

Table 2: Share of Firms by Industry for Western Canada, 2012

<i>Industry</i>	<i>Enterprise size (ALU)</i>	<i>CF Assisted Firms</i>	<i>Comparable Firms</i>
Total (All selected NAICS)	All sizes	100.00%	100.00%
	Less than 20 ALU's	94.59%	93.95%
	20 to 100 ALU's	5.41%	6.05%
Agriculture, Forestry, Fishing and Hunting	All sizes	3.96%	10.63%
Mining and Oil and Gas	All sizes	1.26%	3.68%
Construction	All sizes	10.90%	17.66%
Manufacturing	All sizes	8.29%	4.09%
Wholesale Trade	All sizes	3.24%	3.57%
Retail Trade	All sizes	19.82%	10.26%
Transportation and Warehousing	All sizes	7.93%	7.36%
Information and Cultural Industries	All sizes	1.62%	0.74%
Real Estate and Rental and Leasing	All sizes	1.53%	4.93%
Professional, Scientific, and Technical Services	All sizes	6.22%	12.93%
Management of Companies and Enterprises	All sizes	0.90%	2.02%
Administrative and Support, Waste Management and Remediation Services	All sizes	4.59%	4.57%
Arts, Entertainment, and Recreation	All sizes	2.97%	1.79%
Accommodation and Food Services	All sizes	13.15%	6.16%
Other Services ¹	All sizes	13.60%	9.59%
Source: CDER, Statistics Canada, 2015			

¹ Service industries that support the repairs and maintenance of equipment and capital used in oil and gas extraction are included in "Other Services".

Just over 94% of CF assisted firms are small businesses (less than 20 employees). Of all CF assisted firms, Retail Trade had the highest industry concentration (19.82%), followed by Other Services (13.60%) and Accommodation and Food Services (13.15%). Meanwhile, of comparable firms, Professional, Scientific, and Technical Services accounted for 12.93%, which is around 6 percentage points higher than their CF assisted counterparts. Construction accounted for 17.66%, also just over 6% higher than the share of CF assisted firms in that industry, and the comparable group of Agriculture, Forestry, Fishing and Hunting firms totalled 10.63% of enterprises, while CF assisted firms in this industry accounted for only 3.96%.

Concentration Index

The Herfindahl Index (HI) is a measure of economic diversity, as it indicates the extent to which a regional economy is dominated by a number of industries. The index ranges from 0, where several industries have small and equal shares of the market economy, to 100, where one industrial sector has perfect market composition (full specialization). Thus, a lower HI measure indicates a highly diversified economy.

In 2012, the HI for the group of CF assisted firms measured 10.89. This is a slight improvement from last year, where the index measured 10.97 but still a small increase from scores of 10.52 and 10.47 in 2009 and 2010, respectively. The HI has seen an increase of 1.20 since 2007, when it was at 9.68, which suggests that the diversity amongst CF loan clients has decreased. Prior to 2011, however, the HI had been trending downwards over three years, suggesting that the 2011 HI may be an anomaly in an otherwise increasingly diverse economy. This is further supported by the HI decrease seen in 2012.

The HI for comparable firms has also been trending upwards in recent years but at diminished rate. In 2012, the index measured 9.78, which is a slight decrease from 10.03 in 2011. This is also slightly below scores of 9.97 and 9.94 for the years 2009 and 2010, respectively. Overall, the HI at 2012 has increased by only 0.31 since 2007, when it was at 9.47. This group of firms appears to be slightly more diversified than the group of CF loan clients; however, over time the CF-assisted group of firms has made strides in diversifying its client base.

Employment Dynamics

This section investigates employment trends for firms that have received CF assistance over a five-year period and compares the results to those of the comparable group. Note that growth rates for some industries were not calculated if either the number of ALUs for 2007 and 2012 were suppressed for confidentiality. Table 3 summarizes compounded annual job growth rates for CF loan clients and comparable firms between 2007 and 2012 by industry.

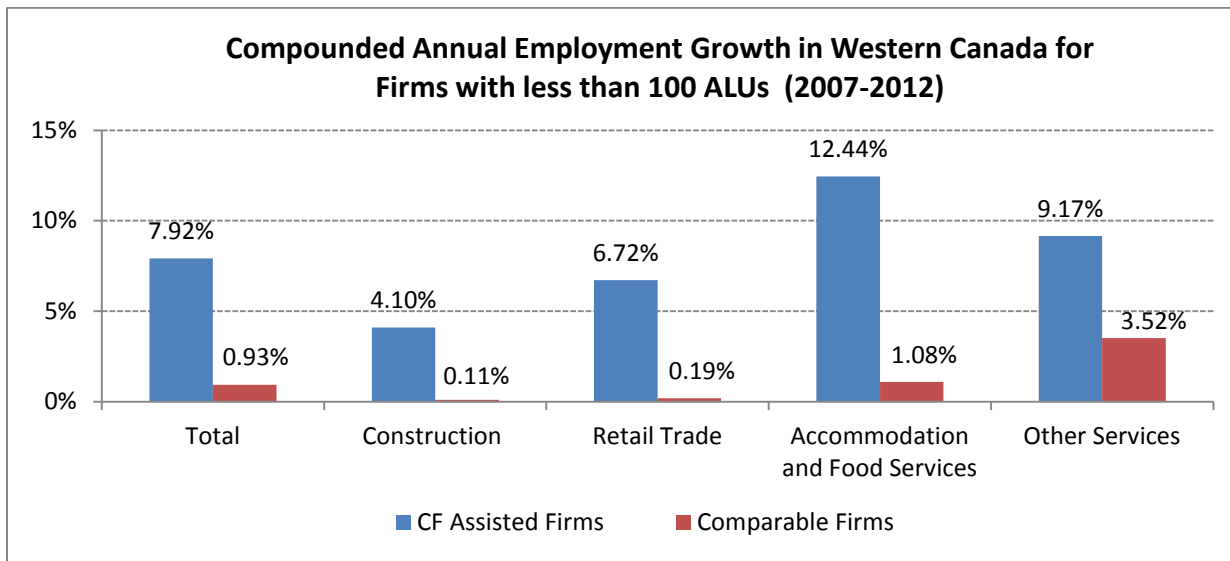
Table 3: Compounded Annual Growth in Employment by Industry in Western Canada, 2007-2012

<i>Industry</i>	<i>Enterprise size (ALU)</i>	<i>CF Assisted Firms</i>	<i>Comparable Firms</i>
Total (All selected NAICS)	All sizes	7.92%	0.93%
	Less than 20 ALU's	9.54%	1.23%
	20 to 100 ALU's	5.20%	0.56%
Agriculture, Forestry, Fishing and Hunting	All sizes	9.68%	1.70%
Mining and Oil and Gas	All sizes	X	2.02%
Construction	All sizes	4.10%	0.11%
Manufacturing	All sizes	3.07%	-1.34%
Wholesale Trade	All sizes	3.91%	0.71%
Retail Trade	All sizes	6.72%	0.19%
Transportation and Warehousing	All sizes	9.36%	2.94%
Information and Cultural Industries	All sizes	3.97%	3.14%
Real Estate and Rental and Leasing	All sizes	3.47%	-2.54%
Professional, Scientific, and Technical Services	All sizes	11.73%	2.00%
Management of Companies and Enterprises	All sizes	X	-3.32%
Administrative and Support, Waste Management and Remediation Services	All sizes	15.17%	2.22%
Arts, Entertainment, and Recreation	All sizes	5.93%	3.64%
Accommodation and Food Services	All sizes	12.44%	1.08%
Other Services	All sizes	9.17%	3.52%
Note: X refers to suppression due to confidentiality Source: CDER, Statistics Canada , 2015			

In general, CF assisted firms outpaced comparable firms in terms of job growth across most industries.

- All sizes of CF assisted firms were more successful in creating jobs than the comparable group of firms (7.92% vs. 0.93%).
- Small-sized firms (less than 20 employees) demonstrated considerable job growth of 9.68%, compared to only 1.70% in comparable firms.
- CF assisted firms in Administrative and Support, Waste Management and Remediation Services saw the greatest compounded annual growth measured at 15.17%, as opposed to comparable firms that exhibited job growth of 2.22%.
- Manufacturing saw the least growth exhibited by CF Assisted Firms (3.07%) and Management of Companies and Enterprises was one of three industries showing negative growth in the sample of Comparable Firms (-3.32%).

For key industries (as determined by share of total industry), CF assisted firms outpaced those firms in the comparable group in terms of job growth. In some industries CF loan clients outperformed the comparable group by a significant margin, such as Agriculture, Forestry, Fishing, and Hunting, and Professional, Scientific, and Technical Services.



This is similar to the trends displayed in the analysis of employment growth in round four, 2006-2011. CF Assisted Firms consistently saw higher compounded annual employment growth than their comparable counterparts did. Total, Construction, and Retail Trade industries saw diminished compounded growth in CF Assisted Firms in round five as compared to four but increased growth in Accommodation and Food Services and Other Services. Employment growth in comparable firms lessened across every industry above, with the exception of Other Services. The ongoing, strong, positive growth in the number of jobs could be the result of an economic rebound from the aftermath of the 2008 financial crisis, with new results from 2012, 2011 and 2010 demonstrating that CF-assisted firms were able to weather the economic impacts better than the

comparable group. It could also be due to firms that exhibit higher growth in employment being captured in this analysis. This turnaround in employment growth performance is most likely attributable to both an economic rebound and different data for CF assisted firms.

Business Survival Rates

Firm longevity is evaluated by using a measure of the overall business survival rate for CF assisted firms and comparable firms. For this report, business survival rates are calculated as the ratio of the number of firms that remain in the market after a specific period of time over the number of firms that were in operation in 2002. For example, the 5-year business survival rate is interpreted as the percentage of businesses that remain in the market after five years.

The chart below shows that CF loan clients in Western Canada have been more successful in remaining in business than those firms in the comparable group. Firm longevity for CF assisted firms remains higher in later years. The business survival rate for CF assisted firms was 71% for the fifth year following entry, compared to 46% for comparable firms. This is a more pronounced difference than in the previous analysis of 2006-11 data.

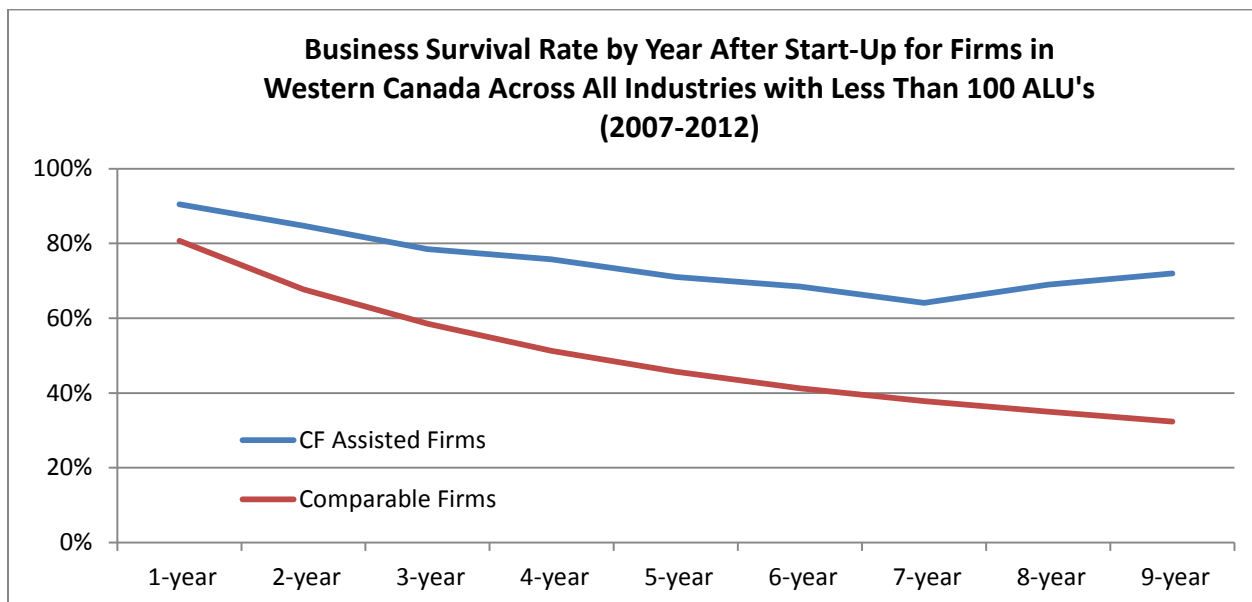


Table 4: Business Survival Rates for the Fifth Year Following Entry by Industry in Western Canada, 2002-2012

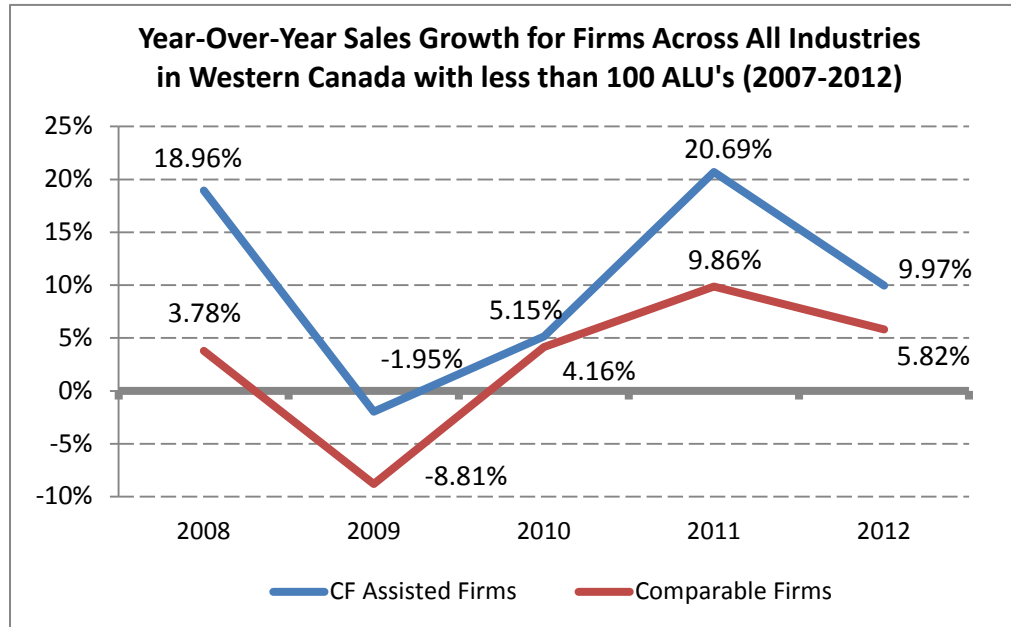
<i>Industry</i>	<i>Enterprise size (ALU)</i>	<i>CF Assisted Firms</i>	<i>Comparable Firms</i>
Total (All selected NAICS)	All sizes	71%	46%
	Less than 20 ALU's	x	46%
	20 to 100 ALU's	x	75%
Agriculture, Forestry, Fishing and Hunting	All sizes	x	44%
Mining (excluding Oil and Gas Extraction)	All sizes	x	44%
Construction	All sizes	69%	45%
Manufacturing	All sizes	69%	48%
Wholesale Trade	All sizes	88%	45%
Retail Trade	All sizes	77%	51%
Transportation and Warehousing	All sizes	56%	44%
Information and Cultural Industries	All sizes	x	39%
Real Estate and Rental and Leasing	All sizes	x	39%
Professional, Scientific, and Technical Services	All sizes	70%	45%
Management of Companies and Enterprises	All sizes	x	35%
Administrative and Support, Waste Management and Remediation Services	All sizes	81%	48%
Arts, Entertainment, and Recreation	All sizes	x	46%
Accommodation and Food Services	All sizes	76%	50%
Other Services	All sizes	80%	51%
Note: X refers to suppression due to confidentiality Source: CDER, Statistics Canada, 2015			

There is a significant increase in suppressed data for round five CF assisted firms as compared to round four (8 versus 1 respectively). In round four, CF assisted firms in Real Estate and Rental and Leasing, and Information and Cultural Industries had lower business survival rates than firms in the comparable group, unfortunately the suppressed data does not allow for an update on these statistics. Based on the data provided, CF loan clients in industries such as Wholesale Trade, Administrative and Support, Waste Management and Remediation Services and Other Services had significantly better long term survival rates than the comparable group of firms.

Financial Indicators

The financial performance of CF assisted firms relative to comparable non-assisted firms is evaluated in this section using growth in sales and labour productivity.

The graph below depicts the year over year sales growth rates for firms across all industries with less than 100 employees for both CF assisted firms and the comparable group.



Both CF assisted and comparable groups saw positive total sales growth at the start of 2008 but experienced significant declines between 2008 and 2009. CF assisted firms fared better during this downturn, declining at just under 2% while comparable firms saw their total sales shrink by nearly 9%. Following this period of decline, both groups began to regain growth in their sales, CF assisted firms peaked at around 21% and comparable firms at about 10% by the end of 2010. While sales figures for comparable firms grew at approximately the same rate as firms with CF assistance between 2009 and 2010, the assisted group universally outperforms comparable firms over the five year period. Furthermore, it appears that CF loan clients were able to withstand initial shocks to economic activity better than those firms without CF assistance.

The table below depicts the dollar value of sales for firms across all industries with less than 100 employees for both CF assisted firms and the comparable group.

Table 5: Compounded Annual Growth in Sales by Industry in Western Canada, 2007-2012

<i>Industry</i>	<i>Enterprise size (ALU)</i>	<i>CF Assisted Firms</i>	<i>Comparable Firms</i>
Total (All selected NAICS)	All sizes	10.23%	2.76%
	Less than 20 ALU's	10.68%	2.73%
	20 to 100 ALU's	9.18%	2.81%
Agriculture, Forestry, Fishing and Hunting	All sizes	11.29%	6.74%
Mining and Oil and Gas	All sizes	21.47%	5.48%
Construction	All sizes	3.17%	1.41%
Manufacturing	All sizes	11.41%	2.52%
Wholesale Trade	All sizes	10.85%	0.79%
Retail Trade	All sizes	11.35%	0.99%
Transportation and Warehousing	All sizes	9.40%	5.91%
Information and Cultural Industries	All sizes	6.47%	-0.64%
Real Estate and Rental and Leasing	All sizes	8.20%	1.78%
Professional, Scientific, and Technical Services	All sizes	11.75%	5.20%
Management of Companies and Enterprises	All sizes	11.85%	-1.02%
Administrative and Support, Waste Management and Remediation Services	All sizes	11.61%	5.69%
Arts, Entertainment, and Recreation	All sizes	0.73%	2.31%
Accommodation and Food Services	All sizes	11.04%	2.06%
Other Services	All sizes	14.75%	6.20%
Note: X refers to suppression due to confidentiality source: CDER, Statistics Canada, 2015			

Overall, all sizes of CF assisted firms outperformed the comparable group in terms of sales figures between 2007 and 2012.

- Sales by small-sized CFP-assisted firms increased by a compounded annual rate of 10.68% per year, almost 8 percentage points higher than firms in the comparable group.
- Medium-sized CF assisted firms increased their sales by a compounded annual rate of 9.18% per year, while sales by small firms in the comparable group rose by 2.81% per year.

In general, CF assisted firms across all industries outperformed the comparable group in terms of sales growth. The strongest performing sectors vary slightly from those noted in round four. Aside from Other Services, which was a top performer in both rounds, Mining and Oil and Gas, Management of Companies and

Enterprises, and Professional, Scientific, and Technical Services industries show the strongest sales growth figures for round five CF assisted firms. The largest overall sales growth seen in either group belongs to the Mining and Oil and Gas sector, outpacing firms in the comparable group by a compounded annual rate of 21.47% from 2007 to 2012, versus only 5.48% for firms in the comparable group. CF assisted firms in Manufacturing, Wholesale Trade and Retail Trade also recorded significantly stronger sales growth rates relative to the comparable group.

Labour productivity, which is estimated using sales per worker (ALU), is an additional measure to evaluate competitiveness of small and medium-sized businesses in the west. CF assisted firms exhibited further improvements in labour productivity between 2007 and 2012.

- Sales per worker increased at a compounded rate of 2% per year in CF assisted firms and 1.8% in comparable firms during the five year period.
- Both CF assisted and comparable firms saw their highest sales per worker figures in 2012. Even though both groups experienced growth, the gap between their dollars per ALU has remained consistent at around \$72,000.



Sales by western SMEs were impacted by the economic recession, but both CF assisted and non-assisted firms have endured recessionary impacts. Both groups experiences similar trends in labour productivity in recent years. While CF assisted firms’ labour productivity increased at a slightly higher compounded annual growth rate than the comparable group (2% vs. 1.8%), the reason as to why comparable firms continue to be more productive with their labour resources is not clear. It is possible that small CF assisted firms are more likely to be start-up businesses that have not reached economies of scale yet, whereas firms in the comparable group may be more established and therefore more experienced and efficient with their resources. However, the firm’s length of time in business is unavailable in the data provided, so this cannot be verified.

CONCLUSION

Using the data on firms in Western Canada retrieved by Statistics Canada, the performance of CF assisted firms is compared to a group of similar firms that did not receive assistance from 2007 to 2012. Indicators including industry concentration, employment dynamics, firm longevity, and sales performance are calculated and compared for both groups of firms. Though the sample size does not capture all CF clients, the results give insights as to how CF assisted firms perform relative to unassisted SMEs.

This round of data is different from previous rounds. The matching process was modified slightly, resulting in either improved or equivalent rates of matching across all six RDAs. There remains some data suppression for certain industries but overall instances of suppression decreased from rounds four to five in all but one category of analysis, allowing for the calculation of growth rates in industries such as Information and Cultural Industries, Mining and Oil and Gas, and Management of Companies and Enterprises. Unfortunately, an increase in suppression for business survival rates limits the ability to perform analysis in this category for some industries.

The data demonstrates Community Futures organizations' lending activity is making a difference. Although the comparable group continues to lend to a slightly more diversified clientele base, the CF organizations have made further strides in diversifying their clientele, according to the Herfindahl Index. CF assisted firms outperformed the comparable group in terms of job growth, firm longevity, and sales growth. The overall trend of labour productivity is both increasing and stable for CF-assisted firms allowing the group to see their highest sales per worker in 2012. CF loan clients may remain less productive than the comparable group but the gap between the two shrunk slightly in 2012, showing that CF assisted firms' productivity is growing at a marginally higher rate than that of the comparable firms'. The reason for the gap in productivity is unclear, but it is likely due to lower economies of scale in younger CF assisted firms.

It should be noted that CF loan clients rebounded from recessionary impacts following the financial crisis of 2008 better than similar firms that did not receive CF lending. While these firms did not experience significant growth in sales or sales per worker from 2008 to 2011, the decline in these financial indicators was less severe for CF loan clients than for firms in the comparable group. Further analysis should continue to evaluate how each group performs over time.

APPENDIX: ACRONYMS AND DEFINITIONS

ACRONYMS

ALU	Average Labour Unit
BN	Business Number
BR	Business Register
CF	Community Futures
CFP	Community Futures Program
GIFI	General Index of Financial Information
HI	Herfindahl Index
LEAP	Longitudinal Employment Analysis Program
NAICS	North American Industry Classification System
RDA	Regional Development Agency
SMEs	Small and Medium size Enterprises
WD	Department of Western Economic Diversification Canada

DEFINITIONS

Business Register (BR): The Business Register (BR) is the central repository of information on businesses in Canada. The BR is used as the principal frame for the economic statistics program of Statistics Canada. The Business Register's role is to provide Statistics Canada with a comprehensive quality frame in terms of coverage and a set of stratification variables such as industrial classification, revenue, number of employees and total assets.

Herfindahl Index (HI): indicates the extent to which a particular regional economy is dominated by a few industries. The HI ranges from 0 (highly diversified; indicating that the economy has a large number of industries, with small and equal shares) to 100 (highly concentrated; indicating that one industry accounts for all economic activity). A positive change in the HI indicates that industrial concentration has increased, while a negative change indicates an increase in industrial diversity.

Longitudinal Employment Analysis Program (LEAP): The Longitudinal Employment Analysis Program (LEAP) is a database that contains annual employment information for each employer business in Canada, starting with the 1991 reference year. The information in LEAP is generated from the annual statements of remuneration paid (T4 slips) that Canadian businesses are required to issue to their employees for tax purposes. LEAP covers incorporated and unincorporated businesses that issue at least one T4 slip in any given calendar year, but excludes self-employed individuals or partnerships where the participants do not draw salaries.