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Analysis in Brief

Analysis on Federal Business Innovation and Growth Support to Canadian Exporters, 2021

by Megan Carta

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Abstract

This analysis examines Canadian goods exporters that were funded by the federal government through business innovation and growth support (BIGS) programs. More specifically, the following analysis covers Canadian exporters at the enterprise level and examines exporters that were engaged in international merchandise trade only. In 2021, 12.2% of all Canadian exporting enterprises received BIGS, and the total value of exports from these beneficiaries was \$363.2 billion (63.2% of total exports from Canada). Canadian exporters that were funded through BIGS programs received \$274,000 of support, on average. In comparison, BIGS beneficiaries that did not export goods received \$105,000 of support, on average.

Highlights

BIGS beneficiary exporters were more likely to have 20 to 99 employees, be established for over 20 years and be operating in the manufacturing industry. The majority of BIGS beneficiaries exported from Ontario and Quebec, and the top countries of destination were the United States, China, the United Kingdom, Australia and Germany.

- Compared with all Canadian exporters, BIGS exporters experienced larger fluctuations in the total value of exports.
- The total value of exports from the manufacturing industry increased by 10.9% from 2020 to 2021.
- Manitoba experienced the largest percentage increase from 2020 to 2021 in the number of BIGS beneficiary exporters (+15.4%) and the total value of exports (+89.1%).
- The United States was an export destination for 87.3% of BIGS beneficiary exporters and accounted for 68.9% of the total value of exports from BIGS beneficiaries.
- Compared with BIGS non-exporters, BIGS exporters were 3.1 times more likely to be high-growth enterprises.

Introduction

The Business Innovation and Growth Support (BIGS)¹ statistical program collects and produces information on financial and service-based support provided to businesses by the Government of Canada. The support is provided to businesses through programs that promote activities such as funding, consulting services to enterprises, industry-facing research and development (R&D), support provided directly or in partnership, and support for technology development. In 2021, the BIGS database covered support provided to ultimate recipients by 134 federal programs from 17 government departments.

Another important aspect of the economy that is supported by the growth and innovation-related programs included in the BIGS database is exports. Because of the focus on growth, many BIGS programs provide support relating to this aspect. This analysis provides insights on businesses supported by BIGS programs that are exporters compared with BIGS beneficiaries that do not export. This analysis uses the Business Linkable File Environment^{2,3} to link BIGS data to Statistics Canada's Business Register, the Trade by Exporter Characteristics – Goods (TEC-Goods) program and various other sources. By linking BIGS data to TEC-Goods microdata, an indicator was created to identify businesses that export goods. The statistical unit of measurement in this analysis

^{1.} Statistics Canada. (2023). Survey and statistical programs: Business Innovation and Growth Support (BIGS). Retrieved from Statistics Canada: https://www23.statcan.gc.ca/imdb/p2SV.pl?Fun ction=getSurvey&SDDS=5304

Statistics Canada. (2023). <u>Survey and statistical programs: Business - Linkable File Environment (B-LFE)</u>. Retrieved from Statistics Canada: https://www23.statcan.gc.ca/imdb/p2SV. pl?Function=getSurvey&SDDS=6000

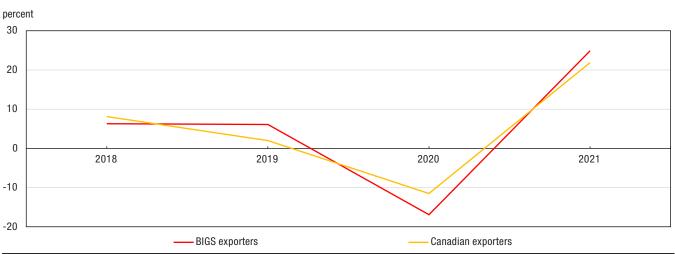
^{3.} The main data sources for the Business Linkable File Environment used in this analysis are the Business Register, the Trade by Exporter Characteristics – Goods program, the Corporation Income Tax Return file (T2), the General Index of Financial Information, the Canada Revenue Agency's Statement of Account for Current Source Deductions (PD7), and the T1 Enhanced Database, including variables from the 2021 Census.

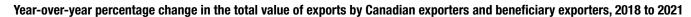
is the enterprise. Therefore, for the purpose of this analysis, the term "business" is used interchangeably with the term "enterprise." The economic and social characteristics of these businesses are explored, and the results of this analysis can help to inform policy and programs targeting Canadian exporters by showing their current profiles, industry composition and predominant export markets.

The role of business innovation and growth support programs in supporting Canadian exporters

The number of Canadian goods exporters reached a high of 47,701 enterprises in 2021, with 12.2% of these Canadian exporters having received BIGS (5,830 exporting enterprises). The year 2021 had the highest level of exporters recorded since 2007, up 9.3% from 43,630 exporters in 2020 (12.8% received BIGS), after a decline of 4.3% from 45,533 exporters in 2019 (13.3% received BIGS) because of the economic impact of the COVID-19 pandemic during 2020.⁴

The total value of goods exported from Canada in 2021 was \$575.2 billion, with 63.2% of these exports coming from BIGS beneficiaries (\$363.2 billion). Chart 1 below shows that exports generally increased year over year, with the exception of 2020, when exports decreased because of the effects of the pandemic, and exports from BIGS beneficiaries seemed to experience slightly greater growth and declines. For Canadian exporters, the total value of exports increased by 8.1% in 2018 (6.3% for BIGS exporters), rose by 2.0% in 2019 (6.1% for BIGS exporters), decreased by 11.5% in 2020 (16.9% for BIGS exporters) and was up by 21.9% in 2021 (24.9% for BIGS exporters).⁵





Notes: BIGS refers to business innovation and growth support.

Sources: Statistics Canada, Table 12-10-0091-01, Trade by Exporter Characteristics – Goods, Business Innovation and Growth Support database, and Business Linkable File Environment.

There were 33,446 BIGS beneficiaries in 2021, and 17.4% of all beneficiaries were exporters. On average, these exporters received \$274,000 of support from BIGS programs. In comparison, BIGS non-exporters received \$105,000 of support, on average. The number of BIGS beneficiaries that export and the amount of support received by BIGS exporters have remained relatively consistent since 2017, as shown in Table 1. However, the number of BIGS beneficiaries in 2021, and the total value of support provided to these non-exporters rose from \$0.9 billion in 2017 to \$2,9 billion in 2021. The big jump is largely attributable to the increase of 39.9% in beneficiaries and 78.8% in support from 2019 to 2020 because of the pandemic, when there was an increase in programs and support provided for small and medium-sized enterprises (SMEs).

Chart 1

Statistics Canada. (2022). <u>Trade by exporter and importer characteristics: Goods, 2021</u>. *The Daily*, Wednesday, May 18, 2022. Catalogue no. 11-001-X. Ottawa: Statistics Canada. https:// www150.statcan.gc.ca/n1/daily-quotidien/220518/dq220518b-eng.htm

^{5.} Statistics Canada. Table 12-10-0091-01 Trade in goods by exporter characteristics, by enterprise employment size and number of partner countries

Table 1	
Number of beneficiaries and total value of support, by exporter status, 2017 to 2021	

	,				
	2017	2018	2019	2020	2021
Number of BIGS beneficiary exporters	6,090	5,920	6,040	5,600	5,830
Total value of support to exporters (billions of dollars)	1.2	1.4	1.7	1.8	1.6
Number of BIGS beneficiary non-exporters	16,470	15,280	16,010	22,400	27,620
Total value of support to non-exporters (billions of dollars)	0.9	1.0	1.4	2.5	2.9

Notes: BIGS refers to business innovation and growth support. Numbers of beneficiaries are rounded to the nearest 10.

Sources: Statistics Canada, Table 33-10-0219-01, Business Innovation and Growth Support database, and Business Linkable File Environment.

Table 2 below lists the top BIGS program streams that supported Canadian exporters in 2021. The program stream that provided the highest value of support to exporters was the Strategic Innovation Fund program, funded by Innovation, Science and Economic Development Canada. In 2021, a high proportion of Strategic Innovation Fund beneficiaries were exporters (60%), with \$386.8 million of support provided to these exporters. Meanwhile, the program stream with the highest value of exports from beneficiaries was the Collaborative Research and Development Grants⁶ program, funded by the Natural Sciences and Engineering Research Council of Canada. The total value of exports from beneficiaries of this program was \$165.9 billion.

Table 2

Top five business innovation and growth support programs supporting exporters, 2021

	Total value of support to exporters	Total value of support to non-exporters	Percentage of exporters among beneficiaries	
BIGS program	million	ns of dollars	percent	billions of dollars
Strategic Innovation Fund	386.8	106.5	60	13.2
Regional Economic Growth Through Innovation –				
Business Scale-up and Productivity ¹	191.6	148.9	39	25.8
Industrial Research Assistance Program	141.5	309.1	23	17.9
Mitacs	84.9	17.3	21	152
Collaborative Research and Development Grants	50.0	7.4	54	165.9

1. In 2021, the following regional development agencies supported businesses through this program: the Atlantic Canada Opportunities Agency, Canada Economic Development for Quebec Regions, the Canadian Northern Economic Development Agency, the Federal Economic Development Agency for Southern Ontario, the Federal Economic Development Agency for Northern Ontario

and Western Economic Diversification Canada. Note: BIGS refers to business innovation and growth support.

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Business innovation and growth support beneficiary exporter profiles

Chart 2 shows that nearly 40% of businesses receiving BIGS had 20 to 99 employees. However, compared with BIGS beneficiary non-exporters, beneficiary exporters were 5.3 times more likely to be large businesses, with at least 500 employees. This is because the distribution of beneficiary exporters was skewed to the right, with 10.8% of them being large enterprises. Meanwhile, 2.0% of beneficiary non-exporters were large enterprises. On average, large BIGS beneficiary exporters received 3.5 times more support (\$1,179,000 per enterprise) than their non-exporter counterparts (\$339,000 per enterprise). Conversely, the distribution of beneficiary non-exporters was skewed to the left, with the vast majority being small businesses. In 2021, 75.9% of beneficiary non-exporters had 0 to 19 employees, compared with 32.5% of beneficiary exporters.

As mentioned previously, the number of businesses that export greatly increased from 2020 to 2021. For all Canadian exporters over this period, the "year-over-year rise in the number of SME exporters (+9.5%), higher than that of large exporters (+4.5%), was primarily responsible for [the] upswing in the number of exporters."⁷ By contrast, the increase in large BIGS beneficiary exporters (+12.3%) was higher than the rise in beneficiary exporters that are SMEs (+3.2%) over this period.

^{6.} The Collaborative Research and Development Grants program stream primarily comprises collaborative R&D projects between universities and many private and public sector businesses where only the university receives financial funding (a grant). A large number of these private and public sector businesses that do not receive financial funding are also operating in the manufacturing industry. As a result, the total value of exports from this program stream is high relative to the total value of support received. The goal of the Collaborative Research and Development Grants program is to create links between Canadian universities and public sector businesses and expand the scope of research undertaken at Canadian universities.

Statistics Canada. (2022). <u>Trade by exporter and importer characteristics: Goods, 2021</u>. *The Daily*, Wednesday, May 18, 2022. Catalogue no. 11-001-X. Ottawa: Statistics Canada. https:// www150.statcan.gc.ca/n1/daily-quotidien/220518/dq220518b-eng.htm

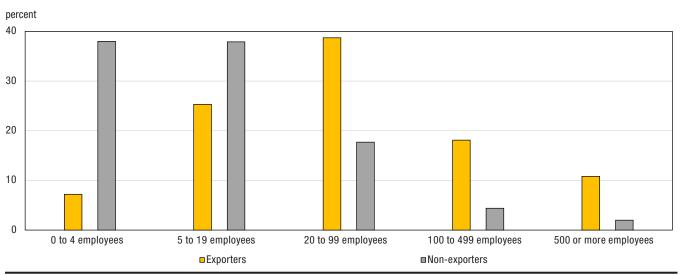
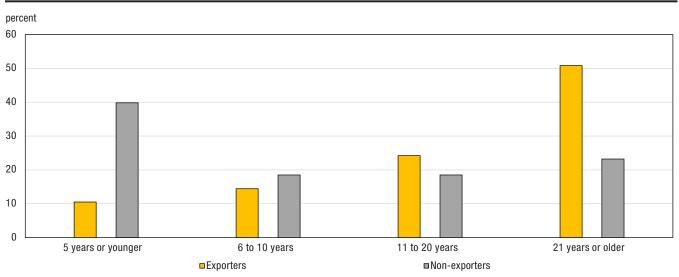


Chart 2 Percentage of beneficiaries, by employment size, 2021

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Chart 3 shows that the share of BIGS beneficiaries that export increases as the age class of businesses increases. An extensive literature attests to this trend, as researchers say that a firm is more likely to export if it has a lot of resources, and, "since organisations generally acquire resources over time, it implies that, as firms grow older, they will acquire more resources and as such, be better prepared to become engaged in international business operations" (Williams, D. A., 2011).⁸ About 10% of BIGS recipients that were 5 years old or younger were exporters. This share increases steadily with the age of the business to reach 50% of BIGS recipients that have been in operation for over 20 years. On average, supported exporters that have been operating for 5 years or less received \$194,000 per enterprise, and supported exporters that have been operating for over 20 years received \$338,000 per enterprise.

Chart 3 Percentage of beneficiaries, by business age, 2021

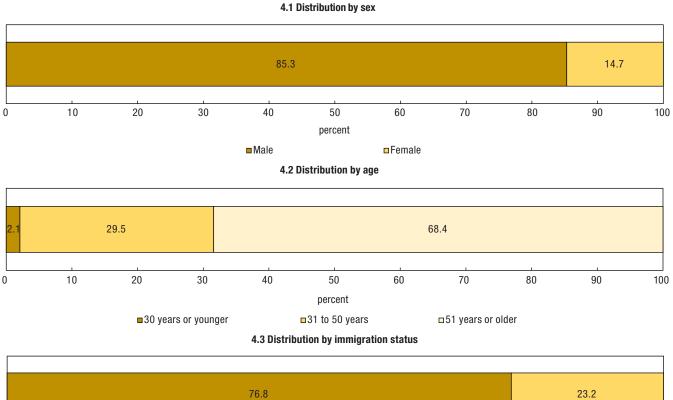


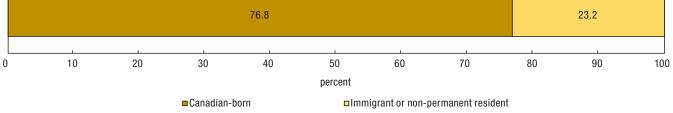
Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Williams, D. A. (2011). Impact of firm size and age on the export behaviour of small locally owned firms: Fresh insights. Journal of International Entrepreneurship. 9(2), 152-174. https://doi.org/10.1007/s10843-011-0073-2

In terms of the ownership demographics of BIGS beneficiary exporters, the owners of these businesses were predominantly men (85.3% of supported exporters), older than 50 years (68.4% of supported exporters) and born in Canada (76.8% of supported exporters). Chart 4 shows the distribution of beneficiary exporters by ownership demographic. Among the supported businesses owned by women, younger entrepreneurs and immigrants, the proportion that export is an even smaller minority. Specifically, beneficiary exporters made up 12.2% of all women-owned beneficiary businesses, 5.5% of all beneficiary businesses owned by people aged 30 or younger and 16.7% of all immigrant-owned beneficiary businesses. Meanwhile, approximately 25.7% of beneficiary non-exporters were owned by women, 8.6% were owned by someone aged 30 or younger and 27.8% were owned by immigrants or non-permanent residents.

Chart 4 Distribution of beneficiary exporters, by ownership demographic, 2021





Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

An industry look at business innovation and growth support beneficiary exporters

By sector,⁹ Canadian exporters receiving BIGS were more likely to be operating in the goods-producing sector,¹⁰ as shown in Chart 5. The goods-producing sector accounted for 57.6% of all beneficiary exporters and 70.8% of the total value of all exports from beneficiaries, yet received 35.2% of the support given to exporters. By contrast, beneficiary non-exporters had a larger presence in the services-producing sector. This sector accounted for 77.5% of supported non-exporters and 82.7% of the total value of support received by beneficiary non-exporters. On average, supported exporters received \$167,000 per enterprise in the goods-producing sector (\$80,952 per enterprise for non-exporters) and \$418,000 per enterprise in the services-producing sector (\$112,000 per enterprise for non-exporters).

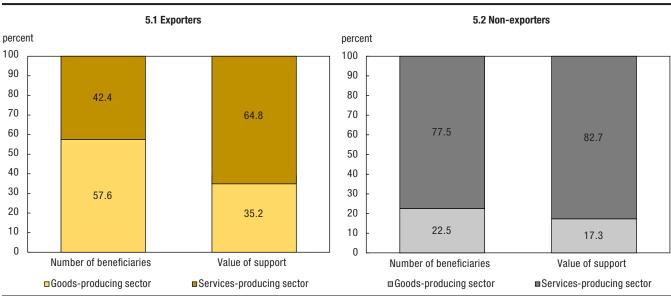


Chart 5 Distribution of beneficiaries and value of support, by sector, 2021

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

In the goods-producing sector, the industry that had the highest proportion of BIGS beneficiary exporters and the highest total value of exports was manufacturing (51.1% and 53.7%, respectively). As well, the manufacturing industry received 31.8% of the total value of support for exporters. Over time, the total value of exports from the manufacturing industry has fluctuated. Exports from the manufacturing industry decreased by 2.1% in 2018, rose by 4.9% in 2019, declined by 13.9% in 2020 and increased by 10.9% in 2021. In the services-producing sector, the industry that had the highest proportion of beneficiary exporters was wholesale trade (14.8%), and the industry that had the highest total value of exports was management of companies and enterprises (17.5%). The services-producing industry that received the most support for exporters was educational services (25.6%). From 2020 to 2021, the total value of exports grew by 205.1% in the educational services industry, 26.9% in the management of companies and enterprises industry, and 15.7% in the wholesale trade industry.

^{9.} The goods-producing sector includes agriculture, forestry, fishing and hunting; mining, quarrying, and oil and gas extraction; utilities; construction; and manufacturing (North American Industry Classification System [NAICS] codes 11, 21, 22, 23 and 31 to 33). The services-producing sector includes wholesale trade; retail trade; transportation and warehousing; information and cultural industries; finance and insurance; real estate and rental and leasing; professional, scientific and technical services; management of companies and enterprises; administrative and support, waste management and remediation services; educational services; health care and social assistance; arts, entertainment and recreation; accommodation and food services; other services (except public administration); and public administration (NAICS codes 41, 44 to 45, 48 to 49, 51, 52, 53, 54, 55, 56, 61, 62, 71, 72, 81 and 91).

^{10.} Since this analysis is at the enterprise level, caution must be taken when interpreting the results in this section because businesses may be represented by the head office. As a result, the distribution of businesses in certain industries (such as management of companies and enterprises) may be overstated compared with the distribution of these businesses at the establishment level.

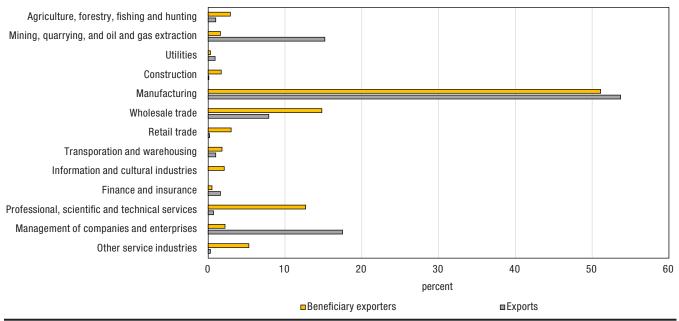


Chart 6 Percentage of beneficiary exporters and exports, by industry, 2021

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Another positive effect of BIGS is helping to reinforce and accelerate Canada's future trade competitiveness by providing support to exporters in both emerging areas and prominent sectors. One prominent sector in Canada is the agri-food sector,¹¹ which includes industries such as primary agriculture, aquaculture, and food and beverage processing. The agri-food sector accounted for 10.3% of all BIGS beneficiary exporters, produced 9.9% of the total value of exports from beneficiaries and received 3.9% of the support given to exporters. One emerging area in Canada is clean technology activities,¹² which include industries that focus on processes, products or services that reduce negative environmental impacts through renewable energy use, energy efficiency, sustainable use of resources and environmental protection activities. Clean technology activities accounted for 5.4% of all beneficiary exporters, produced 7.2% of the total value of exports from beneficiaries and received 5.1% of the support given to exporters.

A geographic look at business innovation and growth support beneficiary exporters

More than half of BIGS beneficiary exporters in 2021 were in Ontario and Quebec,¹³ as shown in Chart 7 (32.4% and 29.2%, respectively), and support was provided mostly to exporters in those provinces as well (34.5% and 28.2%, respectively). However, while the highest total value of exports came from Ontario (33.5%), Chart 7 shows that the second-highest total value of exports came from Alberta (22.9%).

^{11.} In this analysis, the agri-food sector includes cattle ranching and farming (North American Industry Classification System code 1121); hog and pig farming (1122); poultry and egg production (1123); sheep and goat farming (1124); aquaculture (1125); other animal production (1129); oilseed and grain farming (1111); vegetable and melon farming (1112); fruit and tree nut farming (1113); greenhouse, nursery and floriculture production (1114); other corp farming (1119); animal food manufacturing (3111); grain and oilseed milling (3112); sugar and confectionery product manufacturing (3113); fruit and vegetable preserving and specialty food manufacturing (3114); dairy product manufacturing (3115); meat product manufacturing (3116); seafood product preparation and packaging (3117); bakeries and tortilla manufacturing (3118); other food manufacturing (3119); and beverage manufacturing (312). Source: Statistics Canada. Table 32-10-0218-01 Temporary foreign workers in the agriculture and agri-food sectors, by industry

^{12.} In this analysis, clean technology activities are calculated using the BIGS programs that report focusing on providing support for clean technology initiatives. Of the 134 BIGS programs in 2021, 17 exclusively supported clean technology projects and enterprises.

^{13.} Since this analysis is at the enterprise level, caution must be taken when interpreting these results because businesses may be represented by the head office. As a result, the distribution of businesses in certain provinces or territories may be overstated compared with the distribution of these businesses at the establishment level.

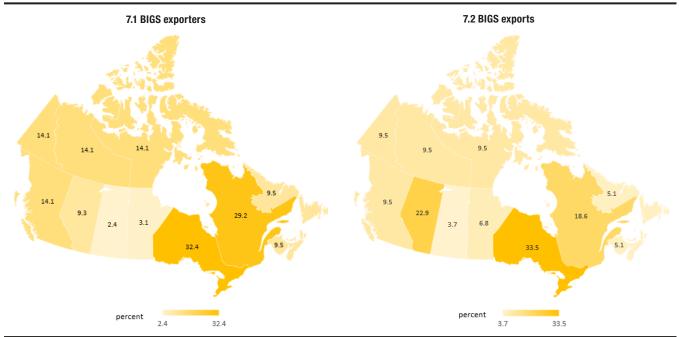


Chart 7 Percentage of beneficiary exporters and exports, by region, 2021

Notes: BIGS refers to business innovation and growth support. For this analysis, British Columbia and the territories (Yukon, Northwest Territories, Nunavut) have been grouped together, and the Atlantic provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick) have been grouped together. Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Although the number of exporting establishments rose in all Canadian provinces and territories for all Canadian exporters in 2021,¹⁴ a year-over-year increase in BIGS beneficiary exporters occurred only in Manitoba (+15.4%), Quebec (+14.5%) and the Atlantic provinces (+4.3%). Along with Manitoba's highest exporter growth, the province's total value of exports rose by 89.1%. This growth was largely driven by an increase in exports from the manufacturing industry; the value of exports from this industry rose by approximately \$7.9 billion. While the number of beneficiary exporters in British Columbia and the territories remained the same from 2020 to 2021 (824 enterprises), the total value of exports from those enterprises grew by 48.3%. Similarly, the total value of exports from those enterprises grew by 48.3%. Similarly, the total value of exports from Alberta and Saskatchewan grew by 47.2% and 13.4%, respectively, despite the number of BIGS beneficiary exporters declining slightly by 3.0% for Alberta and 4.9% for Saskatchewan. These trends were driven by a \$29.3 billion increase in the value of exports from the mining, quarrying, and oil and gas extraction industry in Alberta and a \$793.1 million gain in the value of exports from the wholesale trade industry in Saskatchewan. (See Appendix Table A.1 for the number of beneficiary exporters and total value of exports by province or territory from 2017 to 2021.)

In terms of the rest of the world, the United States was an export destination for 87.3% of BIGS beneficiary exporters and accounted for 68.9% of the total value of exports from beneficiaries. Table 3 shows that the other main countries of destination for beneficiary exporters were China, the United Kingdom, Australia and Germany. The countries of destination that received the highest total value of exports from beneficiaries were the United States, China, the United Kingdom, Japan and Mexico. China and the United Kingdom were each an export destination for 20.1% of beneficiary exporters, and they received 5.9% and 4.0%, respectively, of the total value of exports from beneficiaries. China was an export destination for 7.9% of all Canadian exporting enterprises, and the United Kingdom was an export destination for 7.6%.¹⁵ This may suggest that BIGS programs could be beneficial in helping to diversify export markets for Canada overall. Nearly half of beneficiary exporters (45.7%) were exporting to only one partner country, while 12.7% were exporting to two partner countries and 41.6% were exporting to more than two.

^{14.} Statistics Canada. (2022). Trade by exporter and importer characteristics: Goods, 2021. The Daily, Wednesday, May 18, 2022. Catalogue no. 11-001-X. Ottawa: Statistics Canada. https://www150.statcan.gc.ca/n1/daily-quotidien/220518/dq220518b-eng.htm

^{15.} Statistics Canada. Table 12-10-0095-01 Trade in goods by exporter characteristics, by enterprise employment size and country of destination

Table 3	
Top countries of destination for business innovation and growth support beneficiar	y exporters, 2021
	Total value of exports

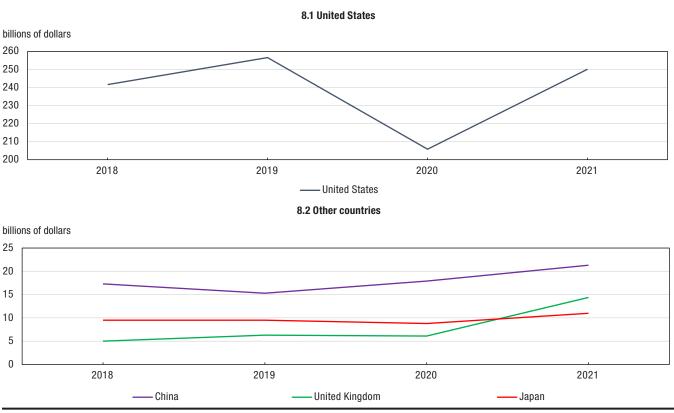
	Total value of exports	BIGS beneficiary exporters
	billions of dollars	number
United States	250.1	5,090
China	21.3	1,170
United Kingdom	14.4	1,170
Australia	1.2	1,000
Germany	5.0	980
France	3.1	960
Japan	11.0	900
South Korea	4.0	790
Netherlands	3.1	680
Mexico	5.7	640

Note: BIGS refers to business innovation and growth support.

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

From 2018 to 2020, the three countries with the highest number of BIGS beneficiaries exporting to them were consistently the United States, China and the United Kingdom. However, the three countries receiving the highest total value of exports from beneficiaries over the same period were the United States, China and Japan. Chart 8 below displays the change in the total value of exports over time for these four countries.





Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Performance of business innovation and growth support beneficiary exporters

In terms of the business performance of BIGS beneficiary exporters, supported exporters were 3.1 times more likely to be high-growth¹⁶ enterprises compared with beneficiary non-exporters, with 12.0% of beneficiary exporters and 3.8% of beneficiary non-exporters being high-growth enterprises. Supported exporters generated \$71.1 million in business profit, on average, while supported non-exporters generated \$3.3 million, on average.

While there "appears to be [a] lack of agreement on how to conceptualize and operationalize export performance," this performance has frequently been described through objective measures such as sales, profits or market share, and subjective measures such as perceived success, fulfilment of expectations or customer satisfaction.¹⁷ This analysis will look at export performance using the export-to-revenue ratio (calculated as the share of total revenue from export sales). Year over year, from 2017 to 2021, around two-thirds of BIGS beneficiary exporters consistently had a higher export-to-revenue ratio than the previous year. In 2018, 67.2% of beneficiary exporters had a higher percentage of total revenue generated from exports compared with 2017; in 2019, 67.8% had a higher export-to-revenue ratio compared with 2018; in 2020, 64.1% had a higher ratio compared with 2019; and in 2021, 67.3% had a higher percentage of total revenue generated from exports compared with 2020. This indicates an upwards trend for beneficiary exporters that have been expanding their international business development efforts. In 2021, the median export-to-revenue ratio for beneficiary exporters was 0.15, and 22.5% of beneficiary exporters had exports make up more than half of their revenue.

Conclusion

Overall, BIGS programs play a notable role in providing support to Canadian exporters, with 1/10 of Canadian exporters receiving BIGS and more than half of the total value of Canadian exports coming from BIGS beneficiaries. The support provided to exporters through these programs has been consistent over the years, with a little over \$1 billion of support going every year to beneficiaries that export. Since the literature has indicated that a lack of resources is one of the main barriers to exporting, acquiring support through BIGS programs could be a way to overcome this challenge.

^{16.} For this analysis, a high-growth-by-revenue enterprise is an enterprise with average annualized revenue growth greater than 20% per annum over a three-year period. That is, for an enterprise to have high growth in 2021, the total growth from 2018 to 2021 must be greater than 72.8%. High-growth enterprises are required to have at least 10 employees at the start of the three-year period and are also required to be at least 4 years old.

^{17.} Sousa, C. (2004). Export performance measurement: An evaluation of the empirical research in the literature. Academy of Marketing Science Review. 4. http://www.amsreview.org/articles/ sousa09-2004.pdf

Appendix

Table A.1

Total value of exports and number of business innovation and growth support beneficiary exporters, by province or territory, 2017 to 2021

Estimates	Province or territory	2017	2018	2019	2020	2021
			millions of dollars			
Total value of exports	Atlantic provinces	15,487	14,086	14,685	12,821	18,365
	Quebec	49,764	54,063	54,887	52,565	67,664
	Ontario	143,970	131,315	143,244	120,762	121,536
	Manitoba	17,255	17,092	13,205	13,068	24,706
	Saskatchewan	5,589	12,774	11,712	11,897	13,486
	Alberta	51,728	71,278	85,948	56,409	83,006
	British Columbia and territories	26,618	29,271	26,067	23,244	34,475
				number		
Number of BIGS beneficiary exporters	Atlantic provinces	471	483	524	533	556
	Quebec	1,650	1,549	1,604	1,485	1,700
	Ontario	2,202	2,098	2,141	1,897	1,888
	Manitoba	182	174	190	156	180
	Saskatchewan	141	159	156	144	137
	Alberta	593	581	572	560	543
	British Columbia and territories	851	871	854	824	824

Note: BIGS refers to business innovation and growth support.

Sources: Statistics Canada, Business Innovation and Growth Support database, and Business Linkable File Environment.

Methodology

From October 3, 2022, to August 16, 2023, federal departments and agencies provided administrative data on program stream information for the 2021/2022 fiscal year, with the reference period of April 1, 2021, to March 31, 2022. Similar collection and reference dates were used for previous years. The data were acquired using a template filled in by the agencies and departments, with records of transactions for all innovation and growth support program streams. The data received by Statistics Canada were then treated. The transactions were edited in collaboration with the administrators of the program streams and Treasury Board Secretariat subject-matter specialists, and then they were linked to the Business Linkable File Environment at the enterprise level. Data of interest from the Business Linkable File Environment were extracted for each matched enterprise to create a linked microdata set that was used to produce tabular estimates for this analysis.