



EDC ECONOMIC INSIGHTS

# SELLING YOUR SERVICES TO THE WORLD

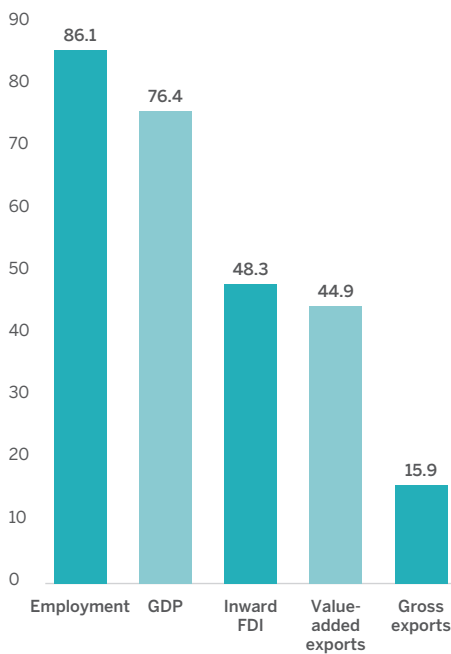
**The untapped potential to grow Canada's commercial service exports**

By Stephen Tapp and Beiling Yan

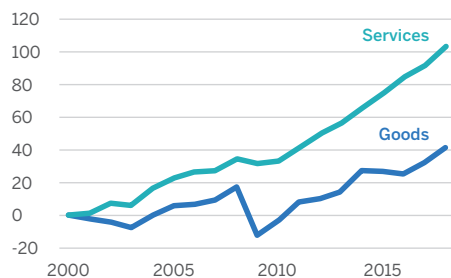
**Canada's service exporters are taking advantage of emerging global opportunities, reaching a record \$128 billion in international sales in 2018—larger than Canada's energy or auto exports. This EDC Economics' report outlines this impressive past performance, the vast future opportunities for this key sector, as well as the outstanding challenges to reaching its full potential.**

## KEY FINDINGS

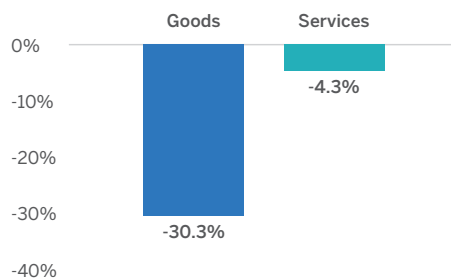
- With deindustrialization in advanced economies, services have gained considerable prominence, now accounting for more than three-quarters of Canada's production and employment.
- Despite the scale of these activities, many people view services as essentially non-tradable across borders; instead, when they think of international trade, they think of tangible goods.
- This outdated view is changing due to rapid technological progress, which allows instant trade across vast distances, and better measurement, which reveals that services contribute almost half of Canada's overall export value.
- Service exports are growing much faster than goods exports, and have been more resilient during tough economic times. As such, there are now more service exporters in Canada than goods exporters.
- Canadian companies are among the global service leaders in many areas, including: finance; professional management; consulting; computer, information-related and creative services; research and development; engineering and architecture; and tourism. This success has been enabled by a growing number of foreign affiliates that give companies a critical local presence abroad.
- Advanced economies, like the United States and Europe, are currently the largest buyers of Canada's service exports, however, sales to emerging markets, like China and India, have grown at an impressive double-digit pace over the past two decades, and their rising middle-class represents a major source of future growth opportunities for Canada.
- One of the largest challenges service-based businesses face is financing. These companies tend to be less capital-intensive, which limits their collateral available, and results in them being viewed as higher risk.
- Given the long-term economic fundamentals, and new analysis in this report using Statistics Canada's firm-level databases, EDC sees significant growth potential for Canada's services exports. We estimate there are roughly 3,000 commercial service companies in Canada that aren't currently exporting, but have similar characteristics to existing exporters. If these companies became exporters, the potential value of their untapped exports would be \$28 billion in annual cross-border sales.



**Figure 1: Percentage share of services in Canada's economic activities, 2015**  
Source: [Miroudot](#) (2016).



**Figure 2.1: Service exports growing faster than goods**  
Cumulative nominal percentage change, 2000-2018



**Figure 2.2: Service exports were more resilient in the Great Recession**  
Percentage change from 2008Q3 to 2009Q2

## CONTEXT

### 1. TRENDS FROM AGGREGATE DATA

Services play an important and growing role in Canada's economy, and now account for the vast majority of economic activity—more than 75% of Canada's GDP and employment (see figure 1). In fact, for every Canadian job lost in the goods sector since 2001, about 30 jobs have been created in service industries ([Poloz](#), 2016).

Thanks to improved statistical measurement of Canada's trade, it's now clear that services contribute much more to international trade than was previously realized (see box 1).

#### Box 1: Measuring the true contribution of services to global trade

According to traditional trade data collected at the border, services represent only 18% of Canada's "gross" exports. However, when measured using "value added," the number jumps dramatically to almost half (i.e., 49% in Statistics Canada's value added in exports database, and 45% in the OECD/WTO Trade in Value Added database). Put differently, **of every \$100 worth of Canadian exports, estimates suggest \$45-\$49, on average, comes from services.** The value-added share is much larger than the gross export share, because many services—such as transportation and financial intermediation—are embodied in exported goods.

Many Canadian service providers use their expertise to serve international customers and grow sales. Although services are often discussed as a single sector, there are many types of service exports, business models and ways to provide international services (see box 2).

#### Box 2: Illustrating the four types of international service exports\*

1. **A service is provided across an international border, with no movement of people** (such as providing a consulting report or online training).
2. **A foreigner consumes a service in Canada** (such as a tourist, student or health-care patient).
3. **A Canadian foreign affiliate operating abroad provides a service** (such as a bank branch or hotel).
4. **A Canadian travels abroad to provide a service** (such as a consultant, architect or entertainer).

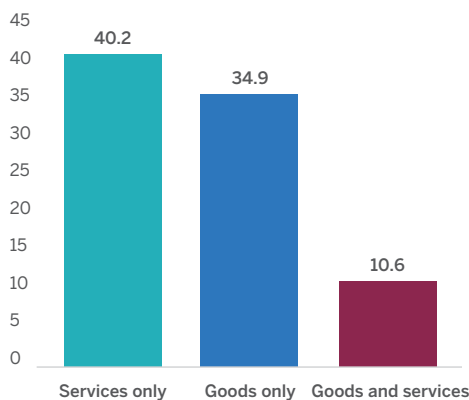
\*Based on the General Agreement on Trade in Services (GATS) modes of supply.

Canadian service exports reached \$128 billion in 2018—larger than both Canada's energy exports and automotive exports. From 2000 to 2018, Canadian service exports grew at an average annual rate of 4.3%, more than double the 1.7% growth for goods exports (see table 1). Services also performed much better than goods exports during the Great Recession (see figure 2.1 and figure 2.2). Moreover, Canada's service exports are more geographically diverse: in 2018, 45% of Canadian service exports went to non-U.S. markets versus only 25% for goods exports.

|          | EXPORTS, 2018<br>(\$ BILLIONS) | AVERAGE ANNUAL<br>GROWTH 2000-2018 (%) | SHARE OF CANADA'S<br>EXPORTS TO NON-U.S.<br>MARKETS, 2018 (%) |
|----------|--------------------------------|--|---|
| Services | \$128.2                        | 4.3%                                   | 45%   |
| Goods    | \$585.2                        | 1.7%                                   | 25%   |

**Table 1: Canada's services and good exports**

Source: EDC Economics, Statistics Canada (12-10-0011-01, 36-10-0007-01).



**Figure 3: Canadian SME exporters, by type of exports in 2017**

Thousands of companies

Source: ISED 2017 Survey of Financing and of Small and Medium Enterprises.

## Bundling goods and service exports

A small but growing number of manufacturing and natural resource companies are adding services to their traditional goods exports. As an example, rather than simply selling tires as a product, a company such as Goodyear could provide additional services, by remotely monitoring wear and performance, and proactively providing maintenance to keep business fleets running. By bundling services with their products, companies can differentiate themselves and create a competitive advantage by offering solutions to their customers rather than products.

A recent survey by Innovation, Science and Economic Development Canada (ISED) estimates that, among small- and medium-sized enterprises (SMEs), there are 40,200 services exporters in Canada (more than goods exporters), and one-in-eight SME exporters sells both goods and services abroad (see figure 3).

## Key service sectors

Commercial services are the biggest portion of Canada's service exports (58% of the total) and the fastest-growing (5% annually since 2000, see table 2). There are also potential growth opportunities for Canadian tourism, with receipts reaching an all-time high of \$34 billion in 2018.

| MARKET                        | EXPORTS, 2018 (\$ BILLIONS) | SHARE OF CANADIAN SERVICE EXPORTS, 2018 (%) | AVERAGE ANNUAL GROWTH 2000-2018 (%) |
|-------------------------------|-----------------------------|---|-------------------------------------|
| Commercial services           | 74.3                        | 58%   | 5.0%                                |
| Travel                        | 34.2                        | 27%   | 4.1%                                |
| Transportation and government | 19.7                        | 15%   | 2.5%                                |
| Total                         | 128.2                       | 100%  | 4.3%                                |

**Table 2: Canadian service exports, by main sectors**

Source: EDC Economics, Statistics Canada (36-10-0021-01)

The largest commercial services subcategories are: management; finances and insurance; technology-related (including computer and information, R&D, licencing intellectual property, audio-visual); and technical business services (such as architecture and engineering, see table 3).

| MARKET   | EXPORTS, 2018 (\$ BILLIONS) | SHARE OF CANADIAN COMMERCIAL SERVICE EXPORTS, 2018 (%) | AVERAGE ANNUAL GROWTH 2007-2018 (%) |
|--|-----------------------------|--|-------------------------------------|
| Management   | 14.9                        | 20.1%  | 4.9%                                |
| Financial and insurance                                  | 14.1                        | 19.0%  | 7.2%                                |
| Computer and information                                 | 9.5                         | 12.8%  | 5.5%                                |
| Charges for the use of intellectual property             | 7.1                         | 9.6%   | 5.2%                                |
| Research and development                                 | 7.0                         | 9.4%   | 6.4%                                |
| Architectural, engineering, and other technical services | 5.7                         | 7.7%   | 1.2%                                |
| Audio-visual   | 3.6                         | 4.9%   | 4.3%                                |
| All other categories                                     | 12.3                        | 16.6%  | 2.5%                                |
| Total  | 74.3                        | 100%   | 4.7%                                |

**Table 3: Canadian commercial service exports, by main sectors**

Source: EDC Economics, Statistics Canada (36-10-0006-01)

## Destinations

Some of the top markets for Canada's services exports include: The United States, Europe (particularly the U.K., France, Germany and Switzerland), China, India, Australia, Hong Kong and Mexico. Advanced economies, like the U.S. and the EU, are currently the largest buyers. However, Canada's exports of services to China and India have grown at an impressive double-digit pace since the year 2000. The growing middle class in emerging markets like these is increasing demand for a wide range of social services (such as health care, education and urban planning) and personal services (such as real estate, wealth management and insurance). Likewise, as emerging markets grow, they'll require more industrial and business services (such as engineering, architecture, construction, technology and financial services). Canadian companies are well-placed to tap into this growth. New trade agreements—particularly the Comprehensive Economic and Trade Agreement (CETA) with the EU and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) with the Asia Pacific—have opened further international markets for Canadian service providers.

| MARKET        | EXPORTS, 2018<br>(\$ BILLIONS) | SHARE OF CANADIAN<br>SERVICE EXPORTS, 2018 (%) | AVERAGE ANNUAL GROWTH<br>2000-2018 (%) |
|---------------|--------------------------------|--|--|
| United States | 70.3                           | 54.9%  | 3.7%                                   |
| Europe        | 24.2                           | 18.9%  | 4.4%                                   |
| China         | 7.4                            | 5.8%   | 13.2%                                  |
| India         | 2.1                            | 1.6%   | 12.2%                                  |
| Australia     | 1.9                            | 1.5%   | 6.4%                                   |
| Hong Kong     | 1.7                            | 1.3%   | 4.0%                                   |
| Mexico        | 1.5                            | 1.2%   | 6.9%                                   |
| Total         | 128.2                          | 100%   | 4.3%                                   |

**Table 4: Canadian service exports to top countries**

Source: EDC Economics, Statistics Canada (36-10-0007-01).

## Outward direct investment and foreign affiliate sales

### Outward investment

Service exports are complemented by a growing on-the-ground presence of Canadian companies in international markets. The cumulative value of Canadian direct investment abroad (CDIA) stock was \$1.3 trillion in 2018, with services accounting for 73% of this amount, up from 63% a decade ago. As with service exports, outward investment by Canadian service companies is quite diversified geographically, with just over half of investments (52%) located outside the U.S.

When looking at individual sectors, finance and insurance dominates, accounting for half of all services CDIA stock. Management of companies accounts for a sizable portion (18%), as do transportation and warehousing (9%), and real estate and leasing (8%).

### Foreign affiliates

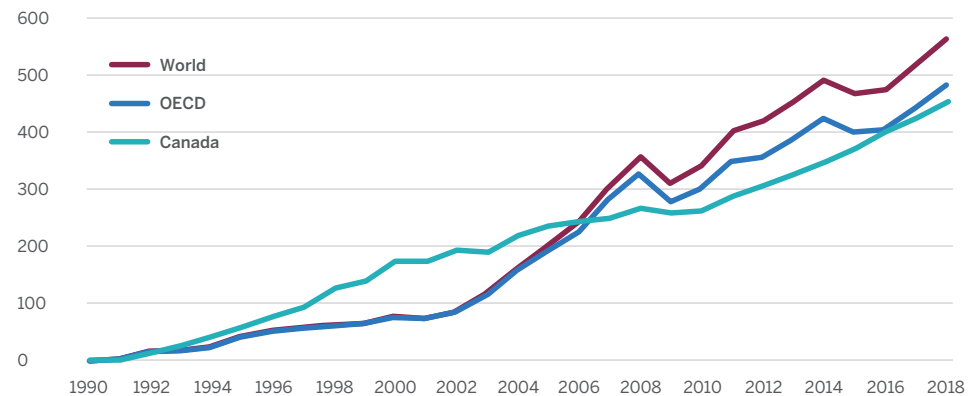
On-the-ground investments generate significant revenue for Canadian companies. In 2016, sales by majority-owned Canadian affiliates in international markets totalled \$658 billion, with services generating 52%.

Foreign affiliate sales of Canadian-owned manufacturing firms amounted to \$195 billion. Again, finance and insurance services are prominent, with foreign affiliate sales of \$118 billion. Foreign affiliates of Canadian mining and oil and gas companies generated sales of \$103 billion. The U.S. accounted for 55% of Canadian foreign affiliate sales in 2016.

Overall, the value of foreign affiliate sales is on par with Canadian exports. However, for services, sales by foreign affiliates are roughly triple that of direct exports from Canada. For many service companies, the best way to serve their international customers is through local operations. The presence of Canadian companies in international markets creates strong commercial networks, local business contacts and supply chains, all of which reinforce Canada's exports to these markets. Research shows exports often follow in the wake of investment flows, and the presence of Canadian service companies in international markets is a conduit for subsequent exports, both services and goods.

### Comparing Canada's performance with the OECD average

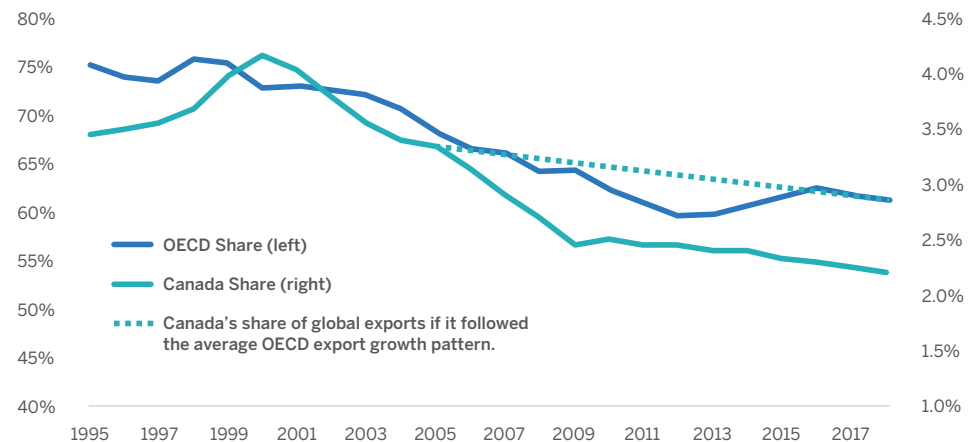
Canada's service exports have largely kept pace with the OECD average over the last three decades (see figure 4). Canada's lagging performance relative to its OECD peers over this period is almost entirely due to its weaker performance in goods exports (see figure 5).



**Figure 4: Growth in services exports, Canada, OECD and world, 1990-2018**

Cumulative percentage change since 1990

Source: EDC Economic Research and Analysis Department.



**Figure 5: Canada and OECD share of world exports of goods and services, 1995-2018**

Source: EDC Economic Research and Analysis Department.

## 2. NEW FIRM-LEVEL EDC RESEARCH

Given the importance of Canadian commercial service exports, this section estimates the potential to grow these activities. To do so, EDC's Economic Research and Analysis Department (RAD) leveraged its "Big Data Lab," which combines several Statistics Canada administrative databases, to study the universe of firms that filed corporate income taxes in Canada between 2010 and 2015. A key advantage of this unique big dataset is that we can analyze the characteristics of a wide variety of firms in Canada—both those that are already active in international markets, and those only operating in the domestic market.

We first investigate some systematic differences between goods and service exporters (based on regression results presented in table 5). Our main findings are:

- **Overall firm performance:** The best-performing group of companies in our dataset export both goods and commercial services. The second-best performing group is the service-only exporters, followed by goods-only exporters—all of which perform better than the group of non-exporters.
- **Size:** Firms that export both goods and services, firms that export only commercial services, and firms that export only goods are 54 times, 14 times and six times larger than non-exporters respectively in terms of gross output.
- **Other characteristics:** Firms that export both goods and services tend to be older, more productive, more capital-intensive, are more likely to employ immigrants, and have better financial characteristics. Consistent with the discussion in Section 1 above, service exporters are more likely to invest outside of Canada.
- Interestingly, firms that export services-only pay the highest wages, are younger companies, and are highly productive. Related research from EDC's market department suggests that, compared with goods-only exporters, services-only exporters tend to:
  - have fewer employees;
  - be higher-growth;
  - be concentrated in finance, professional management, consulting and high-tech;
  - focus more on business-to-business, rather than business-to-consumer activities;
  - have owners with more formal education, and more female owners; and
  - are more likely to sell beyond the U.S.

The main challenges that service-only exporters' report to EDC are finding customers, international competition, and recruiting and retaining skilled talent.



| DEPENDENT VARIABLES                                | INDEPENDENT VARIABLES          |                                |                                |
|--|--------------------------------|--------------------------------|--------------------------------|
|  | Export only goods              | Export only services           | Export goods and services      |
| Log (gross output)                                 | 1.81***                        | 2.64***                        | 3.99***                        |
| Log (value-added)                                  | 1.71***                        | 2.73***                        | 3.88***                        |
| Age of firm  | 2.86***                        | 2.32***                        | 4.62***                        |
| Log (sales per worker)                             | 0.62***                        | 0.72***                        | 0.92***                        |
| Log (value-added per worker)                       | 0.45***                        | 0.81***                        | 0.84***                        |
| Log (wage)   | 0.44***                        | 0.86***                        | 0.82***                        |
| Log (total tangible asset capital per worker)      | 0.35***                        | 0.34***                        | 0.83***                        |
| Log (total asset capital per worker)               | 0.61***                        | 0.97***                        | 1.37***                        |
| Log (debt-to-asset ratio)                          | -0.02***                       | -0.02**                        | -0.09***                       |
| Employ immigrant workers                           | 0.31***                        | 0.42***                        | 0.52***                        |
| Share of immigrant workers in the firm             | -0.14***                       | -0.24***                       | -0.22***                       |
| Foreign-controlled ownership                       | 0.04***                        | 0.21***                        | 0.34***                        |
| Importer   | 0.50***                        | 0.52***                        | 0.69***                        |
| Log (total import value)                           | 1.89***                        | 2.80***                        | 4.73***                        |
| Engage in Canadian Direct Investment Abroad (CDIA) | 0.01***                        | 0.03***                        | 0.13***                        |
| Log (Book value of CDIA)                           | 0.81***                        | 0.87***                        | 1.29***                        |
| Additional covariates—fixed effects                | Year<br>Industry<br>Employment | Year<br>Industry<br>Employment | Year<br>Industry<br>Employment |

**Table 5: Average differences across groups by type of exporters, 2010-2015**

Estimated coefficients from ordinary least squares pooled regressions

Source: EDC Economic Research and Analysis Department calculations.

Note: \*\*\*, \*\*, \* denote statistically-significant differences at the 1%; 5%; and 10%; confidence levels respectively. Regressions are run on a set of firm characteristics ( $Y_{it}$ ) for different types of exporters:  $Y_{it} = f(G_{it}, S_{it}, GS_{it})$ , where ( $G_{it}$ ,  $S_{it}$ ,  $GS_{it}$ ) are dummy variables for exporters of goods only, exporters of services only, and exporters of both goods and services. Using the estimated coefficients of logged variables, one can calculate the percentage differences using the following formula:  $e^{(\text{estimated coefficients on logged variables})} - 1$ .

## Currently active market of commercial services exporters in Canada

Table 6 summarizes the “currently active market” for commercial service exporters in Canada in our dataset. Our key findings are:

- On average, from 2010 to 2015, roughly 5,900 firms in Canada exported commercial services every year, with annual exports of \$37.7 billion.
- We confirm that commercial service exports grew faster than goods exports—both the number of exporters and the value of exports (of 7.2% and 7.6% respectively, compared with only 0.4% and 6.8% for goods exporters).

|   |                           | EXPORT CATEGORY                      |        |                     |
|---|---------------------------|--------------------------------------|--------|---------------------|
|   |                           | Canadian exports, goods and services | Goods  | Commercial services |
| Number of exporters                                     | Average (in units)        | 35,170                               | 31,788 | 5,904               |
|   | Average annual % change   | 0.7%                                 | 0.4%   | 7.2%                |
| Value of exports  | \$ billions               | 415.0                                | 377.3  | 37.7                |
|   | Average annual % change   | 6.9%                                 | 6.8%   | 7.6%                |
| Average exports per exporter                            | \$ millions               | 12                                   | 12     | 6                   |
|   | Average annual % change   | 6%                                   | 6%     | -5%                 |
| Export intensity (exports / total sales)                | Average                   | 26%                                  | 24%    | 4%                  |
|   | Average annual % change   | 2.7%                                 | 3.1%   | 0.7%                |
| Average contribution to Canada's economy in our dataset | Share of firms            | 5%                                   | 4%     | 1%                  |
|   | Share of total sales      | 61%                                  | 58%    | 32%                 |
|   | Share of total assets     | 76%                                  | 70%    | 64%                 |
|   | Share of total employment | 41%                                  | 38%    | 21%                 |

**Table 6: Canadian commercial service exports: Active market, 2010-2015**

Source: EDC Economic Research and Analysis Department calculations.

- **Service exporters make a significant and unusually large contribution to the Canadian economy.** They only account for 1% of all Canadian commercial businesses in our dataset, but 32% of total sales, 64% of total assets and 21% of total employment.
- **Service-only exporters are less export-dependent than goods-only exporters:** Services exporters had a lower export propensity (1% vs. 4%), lower export intensity (exports as a share of total sales were 4% vs. 24%), and lower average exports per exporter (\$6 million vs. \$12 million). In addition, both measures of average exports and export intensity grew faster for goods exporters than service exporters.

We can dig deeper into the data to learn more about the currently active market of commercial service exporters, based on their firm characteristics (see table B1 in the appendix). Within this market, the value of exports is highly concentrated in larger firms (either by revenue categories, or number of employees). This is consistent with research for goods exports across a wide variety of countries.

### Sub-sector results

From 2010 to 2015, commercial services' exporting activity was highly concentrated in a few key industries: 1) professional services; 2) information and cultural industries; 3) management of companies; and 4) wholesale trade. Collectively they accounted for 61% and 67% of all commercial service exporters, and exports, respectively (see table 7).

### Fastest growth areas

Both the number of exporters and the value of exports in the arts, entertainment and recreation sector has grown rapidly (increasing at 149% and 27% per year, compared with an average of 23% and 14% respectively across commercial service industries). Other fast-growing sectors were: finance, insurance, real estate and leasing; and management of companies.



| NORTH AMERICAN INDUSTRY<br>CLASSIFICATION SYSTEM (NAICS)<br>2-DIGIT INDUSTRIES  | NUMBER OF SERVICE<br>EXPORTERS  |                               | VALUE OF COMMERCIAL<br>SERVICES EXPORTS |                               | COMMERCIAL SERVICES<br>EXPORTS PER EXPORTER |                               |
|---|---------------------------------|-------------------------------|---|-------------------------------|---|-------------------------------|
|   | Average<br>share of<br>total, % | Average<br>annual %<br>change | Average<br>share of<br>total, %         | Average<br>annual %<br>change | Average<br>(\$ millions)                    | Average<br>annual %<br>change |
| 11: Agriculture, forestry, fishing<br>and hunting   | 0%                              | 15%                           | 0%                                      | 19%                           | 2   | 2%                            |
| 21: Mining, quarrying, and oil and gas<br>extraction  | 2%                              | 10%                           | 3%                                      | 26%                           | 8   | 10%                           |
| 23: Construction  | 2%                              | 12%                           | 1%                                      | 2%                            | 3   | -6%                           |
| 31: Food, beverage, tobacco,<br>textile, clothing and leather product<br>manufacturing  | 2%                              | 9%                            | 1%                                      | 33%                           | 4   | 17%                           |
| 32: Wood, paper, printing, petroleum,<br>chemical, plastic and non-metallic<br>mineral product manufacturing                                | 4%                              | 6%                            | 4%                                      | -5%                           | 6   | -8%                           |
| 33: Primary and fabricated metal,<br>machinery, computer and electronic,<br>electrical equipment, transportation<br>equipment and furniture | 11%                             | 29%                           | 7%                                      | 1%                            | 4   | -11%                          |
| 41: Wholesale trade   | 12%                             | 13%                           | 9%                                      | 17%                           | 5   | 2%                            |
| 44: Retail trade - vehicles, furniture,<br>electronics, food and beverages,<br>clothing, gas stations                                       | 1%                              | 18%                           | 1%                                      | 9%                            | 5   | -5%                           |
| 45: Retail - sporting, book and music,<br>general merchandise   | 0%                              | 16%                           | 0%                                      | 17%                           | 6   | 1%                            |
| 48: Transportation - air, rail, water, truck,<br>transit, pipeline  | 2%                              | 14%                           | 2%                                      | -6%                           | 7   | -12%                          |
| 49: Postal, couriers and warehousing<br>service   | 0%                              | 0%                            | 1%                                      | -13%                          | 9   | -13%                          |
| 51: Information and cultural<br>industries  | 10%                             | 6%                            | 15%                                     | 12%                           | 10  | 4%                            |
| 52: Finance and insurance   | 3%                              | 6%                            | 6%                                      | 29%                           | 12  | 18%                           |
| 53: Real estate and rental<br>and leasing   | 2%                              | 8%                            | 1%                                      | 24%                           | 4   | 11%                           |
| 54: Professional, scientific<br>and technical services  | 36%                             | -1%                           | 33%                                     | 2%                            | 6   | 3%                            |
| 55: Management of companies   | 4%                              | 11%                           | 10%                                     | 26%                           | 17  | 9%                            |
| 56: Administrative and waste<br>management  | 5%                              | 3%                            | 5%                                      | 7%                            | 7   | 3%                            |
| 71: Arts, entertainment and<br>recreation   | 2%                              | 149%                          | 1%                                      | 27%                           | 2   | -14%                          |
| 72: Accommodation<br>and food services  | 0%                              | -3%                           | 0%                                      | 6%                            | 5   | 10%                           |
| 81: Other services  | 1%                              | 84%                           | 0%                                      | 35%                           | 2   | -9%                           |

**Table 7: Active market for Canadian  
commercial service exports by industry,  
2010-2015**

Source: EDC Economic Research and Analysis  
Department calculations.

### Provincial considerations

Ontario leads the way accounting for 46% of commercial service exporters and 55% of exports, followed by Quebec (18% and 21%, respectively), British Columbia (16% and 11%) and Alberta (11% and 8%) (see table 8).

### Fastest-growing provinces

From 2010 to 2015, Saskatchewan and Manitoba saw a large increase in service export values, growing at an annual rate of 68% and 40%. Prince Edward Island also enjoyed strong growth in the number of exporters (growing an annual rate of 18% compared with 6% for the country) and the value of exports (36% compared with 15%).

| PROVINCES                 | NUMBER OF SERVICE EXPORTERS |                         | VALUE OF SERVICE EXPORTS  |                         | COMMERCIAL SERVICE EXPORTS PER EXPORTER |                         |
|---------------------------|-----------------------------|-------------------------|---------------------------|-------------------------|---|-------------------------|
|                           | Average share of total, %   | Average annual % change | Average share of total, % | Average annual % change | Average (\$ millions)                   | Average annual % change |
| British Columbia          | 16%                         | 6%                      | 11%                       | 6%                      | 4                                       | 0%                      |
| Alberta                   | 11%                         | 4%                      | 8%                        | 10%                     | 5                                       | 5%                      |
| Saskatchewan              | 1%                          | 5%                      | 1%                        | 68%                     | 7                                       | 50%                     |
| Manitoba                  | 2%                          | 4%                      | 1%                        | 40%                     | 3                                       | 29%                     |
| Ontario                   | 46%                         | 9%                      | 55%                       | 7%                      | 8                                       | -1%                     |
| Quebec                    | 18%                         | 8%                      | 21%                       | 7%                      | 7                                       | -1%                     |
| New Brunswick             | 2%                          | 8%                      | 1%                        | 12%                     | 4                                       | 3%                      |
| Nova Scotia               | 2%                          | 6%                      | 1%                        | 13%                     | 3                                       | 5%                      |
| Prince Edward Island      | 0%                          | 18%                     | 0%                        | 36%                     | 0                                       | 10%                     |
| Newfoundland and Labrador | 1%                          | 2%                      | 1%                        | -15%                    | 5                                       | -15%                    |

**Table 8: Active market for Canadian commercial service exports by province, 2010-2015**

Source: EDC Economic Research and Analysis  
Department calculations.

## Destination markets

The U.S. is Canada's main commercial service export destination: 82% of all Canadian service exporters exported to the U.S., accounting for 62% of total service export value in our dataset (see table 9). This was followed by the European market: around 25% of Canadian commercial service exporters exported to Europe, accounting for 19% of total Canadian exports.

From 2010 to 2015, a growing number of Canadian exports and export value went to South America and Asia.

| DESTINATIONS  | NUMBER OF SERVICE EXPORTERS |                         | VALUE OF SERVICE EXPORT |                         | COMMERCIAL SERVICES EXPORTS PER EXPORTER |                         |
|---------------|-----------------------------|-------------------------|-------------------------|-------------------------|--|-------------------------|
|               | Average share, %            | Average annual % change | Average share, %        | Average annual % change | Average (\$ millions)                    | Average annual % change |
| United States | 82%                         | 9%                      | 62%                     | 9%                      | 5  | 0%                      |
| Africa        | 4%                          | 17%                     | 1%                      | -10%                    | 2  | -14%                    |
| Asia          | 13%                         | 13%                     | 6%                      | 14%                     | 3  | 1%                      |
| Europe        | 25%                         | 12%                     | 19%                     | 8%                      | 5  | -2%                     |
| North America | 11%                         | 7%                      | 5%                      | 4%                      | 3  | -2%                     |
| South America | 5%                          | 18%                     | 1%                      | 31%                     | 2  | 7%                      |
| Oceania       | 7%                          | 13%                     | 1%                      | 8%                      | 1  | -3%                     |

**Table 9: Active market for Canadian commercial service exports by destination, 2010-2015**

Source: EDC Economic Research and Analysis Department calculations.

## GROWTH POTENTIAL FOR CANADA'S COMMERCIAL SERVICES EXPORTS

EDC estimates there are approximately 3,000 potential exporters among the companies in Canada that are currently providing commercial services only to the domestic market (see table 10 and see appendix A for the methodology). The average potential commercial service exporter could export around \$9 million annually. In total, this represents growth beyond the currently active market of 50% for exporters, and 75% for export values respectively.

| NUMBER OF POTENTIAL EXPORTERS | AVERAGE POTENTIAL EXPORTS PER EXPORTER (\$ MILLIONS) | VALUE OF POTENTIAL EXPORTS (\$ BILLIONS) |
|-------------------------------|--|--|
| 2,970                         | 9.4  | 28.3                                     |

**Table 10: Potential untapped market for Canadian commercial service exports**

Source: EDC Economic Research and Analysis Department calculations.

# APPENDIX A: ANALYTICAL FRAMEWORK AND METHODOLOGY

## CONCEPTUAL APPROACH TO SEGMENT THE TYPES OF ACTIVE FIRMS IN CANADA

Among the firms operating and paying taxes in Canada, we distinguish three market segments:

1. The currently active market (CAM) is comprised of the enterprises, which are currently exporting commercial services. The CAM is “observable” and is estimated directly using the linked micro-databases.
2. The potentially active market (PAM) includes enterprises, which aren’t exporting commercial services, but have firm-level characteristics that are similar to current exporters. This group is not directly observable and is inferred using statistical techniques described below.
3. Enterprises with limited international potential. This includes enterprises that are assumed not to be potential exporters, for various reasons, such as reporting no revenues for tax purposes or having no employees.

## ESTIMATING THE POTENTIALLY ACTIVE MARKET

The potentially active market is estimated using propensity score matching. This approach creates a control group from the “non-treated pool” (non-exporters) in which the distribution of observed firm characteristics is as similar as possible to the distribution of the “treated group” (currently active exporters). Two steps are involved.

First, we identify the key observable firm characteristics that are typically associated with firms’ exporting decisions. For every firm, in each year of the sample period, a probit model is used to estimate a propensity score (the probability that a given firm in Canada is an exporter), conditional on a detailed set of observable characteristics:

$$Prob(d) = \Phi(Z)$$

Where  $d$  equals 1 if the firm is an exporter, and 0 otherwise.  $Z$  is a set of observable firm characteristics.

In the second step, each “treated unit” (current exporter) is matched with one or more similar “control units” (non-exporters), whose propensity score and observable characteristics aren’t statistically significantly different. These matched control unit firms are the potentially active market (the potential pool of exporters that share the same observable characteristics, but haven’t yet become exporters).

## ESTIMATING THE VALUE OF THE POTENTIAL MARKET

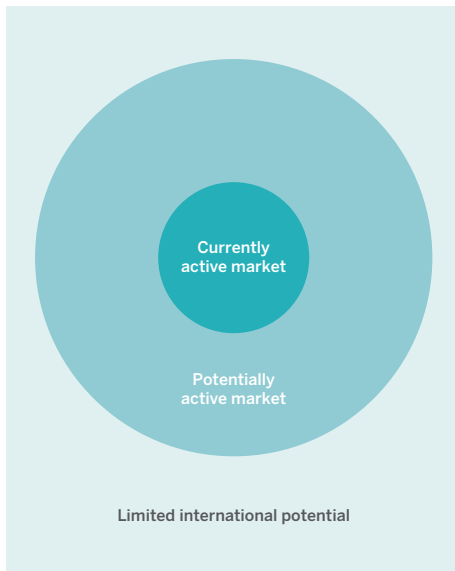
After identifying the pool of potentially active exporters, we estimate the latent value of their exports, by assuming it is proportional to their total sales ( $A_{it}$ ), with similar export intensities to current exporters. The estimated value of exports for the control unit  $i$  at time  $t$  ( $\hat{v}_{it}$ ) equals its total sales ( $A_{it}$ ) times the average intensity of its “neighbours” of the matched treated units

$$\left( \frac{\sum_{j \in \text{matched treated units}} (x/A)_{ijt}}{n} \right); \hat{v}_{it} = A_{it} * \frac{\sum_{j \in \text{matched treated units}} (v/A)_{ijt}}{n}$$

## DATA SOURCE AND MEASUREMENT DETAILS

EDC Economics Research and Analysis Department (RAD) has developed a unique dataset for EDC research purposes drawing on a variety of Statistics Canada’s firm-level databases.

The National Accounts Longitudinal Microdata File (NALMF) has information on firm characteristics including: productivity, capital intensity, size, age, financial leverage, industry and geographical location.



Universe of firms operating in Canada

Source: EDC Economics Research and Analysis Department.

We link NALMF at the enterprise level to the following micro databases from Statistics Canada to obtain additional information on firms' linkage to global markets: imports, exports, foreign-ownership, Canadian direct investment abroad (CDIA) and the proportion of immigrant workers. The trade and CDIA data are from the Trade by Exporter Characteristics (TEC), Trade by Import Characteristics (TIC), Canada's International Transactions in Commercial Services (TIS) and Canadian Direct Investment Abroad (CDIA) databases. Information on country of control is based on the ownership information from the Business Register, which represents direct and indirect foreign control (>50%) voting shares in a Canadian enterprise. Information on the number and payroll of immigrant workers for each firm is from the Canadian Employer-Employee Dynamics Database (CEEDD).

Firm characteristics such as productivity, capital intensity and liability-to-asset leverage ratio are classified within each NAICS 3-digit industry. "Frontier firms" are defined as those in the Top 10 percentiles of the labour productivity distribution in the industry; the remaining are classified as "non-frontier firms." Firms whose capital intensity and leverage ratio are greater than the median industry values are classified as "highly capital-intensive or highly leveraged firms" and those with below-median values are classified as low capital-intensive or low leveraged firms.

Other subgroups such as size and age are defined as follows. There are three groups by age: 0-10, 11-20 and 21+ years of operations. There are two size classifications: one is the common classification used by statistics bureaus that defines firms with fewer than 100 employees as "small firms," those with more than 100 but less than 500 as "medium-sized firms" and those with more than 500 employees as "large firms." We also use EDC's size classifications, such that mid-market (total revenue  $\geq$  \$300 million), large (\$50 m  $\leq$  total revenue  $<$  \$300 m), medium (\$10 m  $\leq$  total revenue  $<$  \$50 m), and small firms (\$2 m  $\leq$  total revenue  $<$  \$10 m) and micro (0  $<$  total revenue  $<$  \$2 m).

We focus on active Canadian commercial businesses. The commercial business sector here includes 21 NAICS 2-digit industries, but excludes sectors that are less engaged in international transactions: Utilities (NAICS 22), Insurance (NAICS 524), Education (NAICS 61), Health Care and Social Assistance (NAICS 62), Other Services such as Professional Services (NAICS 813) and Public Administration (NAICS 91). Business with no employment or revenue are excluded.

#### **Differences relative to Statistics Canada's publicly available estimates**

The total value of commercial service exports reported here is based on RAD's calculations. It isn't directly comparable to the official estimates from Statistics Canada. The main reasons why these total commercial service export values are lower than those estimates reported by Statistics Canada:

- (1) We focus on the active commercial business sector. The commercial business sector excludes sectors that are much less engaged in international transactions: education (NAICS 61), health care and social assistance (NAICS 62) and public administration (NAICS 91).
- (2) We link the Trade in Commercial Services data to the NALMF corporate tax data. This is the main reason for the difference, causing a large drop in firm counts (only 54% of surveyed commercial service exporters are linked to the tax data) and a big drop in the export value to \$42 billion on average over 2010-2015.
- (3) We also focus on active businesses. Therefore, business with no or missing or zero values of employment or revenue are excluded. This causes another fall in counts (only 46% are in the final dataset), and a drop-in value to \$38 billion in the final data used over 2010-2015.

## APPENDIX B: DETAILED FIRM-LEVEL RESULTS FOR CANADIAN COMMERCIAL SERVICES

| FIRM CHARACTERISTICS                     | NUMBER OF SERVICE EXPORTERS |                         | VALUE OF COMMERCIAL SERVICE EXPORTS |                         | COMMERCIAL SERVICE EXPORTS PER EXPORTER |                         |
|--|-----------------------------|-------------------------|-------------------------------------|-------------------------|---|-------------------------|
|  | Share of total, %           | Average annual % change | Share of total, %                   | Average annual % change | Average (\$ millions)                   | Average annual % change |
| <b>Productivity</b>                      |                             |                         |                                     |                         |   |                         |
| • Non-Frontier firms                     | 74%                         | 6.9%                    | 57%                                 | 14.3%                   | 5                                       | 5.5%                    |
| • Frontier firms                         | 26%                         | 8%                      | 43%                                 | 1.5%                    | 10                                      | -4.6%                   |
| <b>Size (revenue: EDC's definitions)</b> |                             |                         |                                     |                         |   |                         |
| • Mid-market                             | 7%                          | 6.3%                    | 44%                                 | 8.7%                    | 40                                      | 1.9%                    |
| • Large                                  | 16%                         | 8.2%                    | 29%                                 | 8.6%                    | 12                                      | .3%                     |
| • Medium                                 | 25%                         | 11.1%                   | 18%                                 | 6.1%                    | 5                                       | -3.2%                   |
| • Small                                  | 29%                         | 8.5%                    | 7%                                  | 1.5%                    | 2                                       | -4.9%                   |
| • Micro                                  | 23%                         | 1.6%                    | 2%                                  | 0.5%                    | 0                                       | -1%                     |
| <b>Size (employment)</b>                 |                             |                         |                                     |                         |   |                         |
| • Large                                  | 10%                         | 3.3%                    | 51%                                 | 6.4%                    | 33                                      | 2.7%                    |
| • Medium                                 | 19%                         | 8.2%                    | 27%                                 | 9.6%                    | 9                                       | 1%                      |
| • Small                                  | 71%                         | 7.6%                    | 22%                                 | 7.8%                    | 2                                       | .2%                     |
| <b>Age</b>                               |                             |                         |                                     |                         |   |                         |
| • 1: 0-10                                | 30%                         | 2.5%                    | 18%                                 | 3.9%                    | 4                                       | 1.4%                    |
| • 2: 11-20                               | 47%                         | 5.3%                    | 50%                                 | 7.4%                    | 7                                       | 1.6%                    |
| • 3: 21+                                 | 23%                         | 20.6%                   | 32%                                 | 10%                     | 9                                       | -5.2%                   |
| <b>Capital intensity</b>                 |                             |                         |                                     |                         |   |                         |
| • Low                                    | 21%                         | 6.5%                    | 10%                                 | 8.3%                    | 3                                       | 1.4%                    |
| • High                                   | 79%                         | 7.4%                    | 90%                                 | 7.5%                    | 7                                       | .1%                     |
| <b>Debt-asset ratio</b>                  |                             |                         |                                     |                         |   |                         |
| • Low                                    | 57%                         | 6.3%                    | 52%                                 | 5%                      | 6                                       | -1%                     |
| • High                                   | 43%                         | 8.5%                    | 48%                                 | 10.8%                   | 7                                       | 1.6%                    |
| <b>Importer status</b>                   |                             |                         |                                     |                         |   |                         |
| • Non-Importer                           | 23%                         | -.3%                    | 6%                                  | -1.9%                   | 2                                       | -1.6%                   |
| • Importer                               | 77%                         | 9.8%                    | 94%                                 | 8.2%                    | 8                                       | -1.1%                   |
| <b>CDIA investor status</b>              |                             |                         |                                     |                         |   |                         |
| • Non-CDIA investor                      | 88%                         | -2.5%                   | 62%                                 | 23.7%                   | 5                                       | 28.3%                   |
| • CDIA investor                          | 12%                         | -10%                    | 38%                                 | -4.5%                   | 21                                      | 7.9%                    |
| <b>Immigrant workforce status</b>        |                             |                         |                                     |                         |   |                         |
| • Without immigrant workers              | 15%                         | 3.1%                    | 2%                                  | 6.1%                    | 1                                       | 2.5%                    |
| • With immigrant workers                 | 85%                         | 7.9%                    | 98%                                 | 7.6%                    | 7                                       | -.3%                    |
| <b>Foreign-controlled</b>                |                             |                         |                                     |                         |   |                         |
| • Non-foreign controlled                 | 71%                         | 6.2%                    | 47%                                 | 3.9%                    | 4                                       | -1.8%                   |
| • U.S.-controlled                        | 16%                         | 9.2%                    | 33%                                 | 8.1%                    | 13                                      | -.7%                    |
| • Other foreign-controlled               | 13%                         | 10.4%                   | 20%                                 | 18.5%                   | 10                                      | 5.4%                    |

**Table B1: Detailed distributional analysis  
of the currently active market for Canadian  
commercial service exports, 2010-15**

Source: EDC Economic Research and Analysis  
Department calculations.



## About this report

*Economic Insights* is a publication series of concise reports written by EDC Economics staff on timely issues of relevance for Canadian international trade and investment. The views expressed in this report are those of the author and should not be attributed to Export Development Canada or its Board of Directors. This report was written by Stephen Tapp (EDC's Deputy Chief Economist) and Beiling Yan (Senior Research Economist). Section 1 incorporates important contributions from Todd Evans. We thank Mohammed Rajpar for excellent research assistance.

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