

Greater Montréal: Connected Globally for More Collective Wealth

Study • April 2018



The Chamber of Commerce
of Metropolitan Montreal



MONTREAL
INTERNATIONAL

Québec 

About the study

The **Chamber of Commerce of Metropolitan Montreal**, **Montréal International** and the **Government of Québec** partnered to conduct this study.

This study takes an in-depth look at the effect of flows of goods and services, data, people and finance and what they mean for Montréal as a metropolitan region. The results are based on a study conducted by McKinsey Global Institute (MGI) regarding the impact of the flow of goods, services, data, people and finance on the economies of 195 countries between 1990 and 2013. This analysis made use of a connectedness index to compare the degree of integration into the global economy (in respect to these flows) of the different countries and metropolitan areas considered in this report*. For these reasons, the results presented in this report first and foremost concern internationalization as an observable phenomenon on the global and national scale and then focus more specifically on the implications of this increased connectedness for Greater Montréal.

* A detailed description of the methodology can be found in the Appendix (see Appendix I).

Due to the size of its population, Quebec is a market with limited prospects for our businesses. To ensure their growth and find new customers, our businesses must therefore assess the potential of foreign markets and go international. This is why the Chamber of Commerce of Metropolitan Montreal has long been committed to supporting and guiding companies in their export endeavors while also carrying out several initiatives to encourage them to seize growth opportunities beyond our borders.

This study breaks new ground with the introduction of a new indicator, the Global Connectivity Index, which shows that the flow of goods, data, talent and capital is an important driver of wealth creation for countries and metropolitan areas. This index allowed us to compare the largest cities in North America, revealing a faster increase in prosperity for the most internationally connected cities. This is excellent news for Montréal, which is in the top tier of cities as a result of its above average performance.

Our analyses reveal that the internationalization of our economic fabric contributes to the productivity of our businesses and the creation of wealth and jobs, while also accelerating the growth of household income in Montréal. It is therefore our entire community that benefits from the city's strong connectivity to the global economy.

In light of these results, it is important to recognize the important contribution of international exchanges to our society and to continue our efforts to export Montréal's know-how internationally and attract foreign talent and investment.



Let's be proud of Montréal and continue to put in place the best conditions to further promote our city internationally!

Michel Leblanc

President and CEO

The Chamber of Commerce of Metropolitan Montreal

At a time when goods, services, communications and people travel across borders more than ever, the study's results underscore the impact of international exchanges on the economic growth of metropolitan areas.

Just in the last year, Montréal International lent support to foreign investment projects totalling over \$2 billion in Greater Montréal, which is equivalent to 15% of Quebec's economic growth. These investments have enabled the creation and maintenance of over 5,000 high-quality, direct jobs.

For that matter, an increasing number of specialized workers and international students choose to establish themselves in the city and contribute to enhancing our ecosystems and communities.

The increased presence of subsidiaries of foreign companies and of international talent demonstrates the clear increase of Greater Montréal's attractiveness on the international stage, injects energy into the economic fabric and strengthens the local talent pools.

In this environment, Montréal International joins others in the community in loudly proclaiming the essential role that these international exchanges play in our collective prosperity.



Hubert Bolduc
President and CEO
Montréal International

International interactions are key to the growth and prosperity of Montréal, a city that is a major economic driver for the entirety of Quebec. The findings of this study, conducted in partnership with the gouvernement du Québec, confirm that the attraction of direct foreign investments and talent is crucial for a connected and prosperous city. We should thus make the most of these opportunities to ensure our success in a globalized economy.

Over the last years, the gouvernement du Québec has created an environment that is attractive to foreign investments, international organizations and talent. Notably, we implemented meaningful measures to support key sectors of our economy and their innovative ecosystems, and also to promote the internationalization of companies. In this regard, we can cite Quebec's aerospace, life sciences and research and innovation strategies, as well as the Quebec Export Strategy and the very first Quebec Digital Strategy. What's more, as part of the government's Entrepreneurship Action Plan, launched last March, we will continue our considerable efforts to attract foreign talent and entrepreneurs.

This is not to mention our support of recent initiatives concerning emerging sectors, such as intelligent vehicles, electric vehicles and artificial intelligence. The city of Montréal, an international metropolis known for its innovation in several growth sectors, is now a benchmark for the rest of the world. The gouvernement du Québec will, in fact, invest \$100 million over five years to create an artificial intelligence cluster, which will serve to train, attract and retain top talent from all over the world.

We are grateful to the initiative of the Chamber of Commerce of Metropolitan Montreal and Montréal International, which are behind this extremely timely study on Montréal's internationalization.



Dominique Anglade

Deputy Premier
Minister of Economy,
Science and Innovation
Minister responsible
for the Digital Strategy
Gouvernement du Québec



Martin Coiteux

Minister of Municipal Affairs
and Land Occupancy
Minister of Public Security
Minister responsible
for the Montréal region
Gouvernement du Québec

Happy reading!

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Introduction

Global flows have always been intimately tied to the economic development of societies. From the commercial ties established between continents by the Hudson's Bay Company to the major migration waves that enabled Montréal to become what it is today, these flows have always been an integral part of the cities and regions' development. However, given the intensification and increasing complexity of international exchanges, between a greater number of economies, and the rapid growth of digital technology over the last twenty years, it is now more difficult to evaluate the real impacts of these flows.

A quick overview of the public discussions concerning the impact of this new connectedness reveals that the debates focus primarily on one or two of the phenomenon's specific aspects—generally tied to migration and finance flows—and that the methods used to measure this connectedness also have a limited ability to capture all of the flows.

In fact, connectedness as it appears in the current global economy includes much more than the flow of people, goods and finance. Technological advances and the resulting increased mobility allow us to reflect on the internationalization¹ of a country or metropolitan area based on four flows of exchange with foreign countries, namely:



The flow of goods and services, understood here as the sum of goods and services exported by a given country or city²;



The flow of data, which is either the volume of data sent over the internet and international calls originating from a territory, or the value of exports considered to be "digitally deliverable";



The flow of people or migration, which is the number of new permanent residents, temporary workers and foreign exchange students;



The flow of capital or finance, which is understood as transborder operations (loans, deposits, transactions, etc.) and foreign direct investment.

¹ In the context of this report, internationalization refers to the phenomenon of local exchanges (economic, political and cultural) opening up internationally, and to the resulting relationships. From an economic point of view, this openness allows companies to develop on an international scale—particularly through subsidiaries—in order to benefit from market diversity.

² For the connectedness analysis of metropolitan regions, the flow of services has been excluded given that they are partly captured by the data flow.

In addition to their contribution to the growth of the global economy, these flows also influence the local economy and contribute to the economic growth of the countries and cities that are most connected. This is what the in-depth analysis of internationalization's effects on the economies of the 25 largest North American metropolitan areas reveals. In short, the more connected a city or region is, the more prosperous it is.

Connectedness (connectedness index)

A measure of the capacity and technical means that a country, city or organization has to participate in the global economy. Connectedness, as it is measured here, makes it possible to compare cities' degree of integration into the global economy based on the flow of goods (35% of the index), people (20%), finance (15%) and data (30%). A high index is associated with a strong performance.

Internationalization

The phenomenon of local exchanges (economic, political and cultural) opening up internationally, and the resulting relationships. From an economic perspective, this phenomenon leads companies to develop on an international scale, especially through subsidiaries, in order to take advantage of market diversity.

Chapter 1

Internationalization and competitiveness: key facts

1.1 The impact of internationalization on the global economy

In 1990, the total value of global exchanges and flows rose to \$5 trillion, i.e. less than 25% of the global GDP. The internet was just starting out and only 435 million international tourists made it to our airports' tarmacs. Nearly 30 years later, the portrait of this global connectedness has changed immensely: tourists flock to airport customs by the billions, the internet has literally transformed our way of living and of doing business, and the total value of goods, services and finance that crossed one or more borders rose in 2014 to over \$30 trillion, which is the equivalent of 39% of the global GDP⁴.

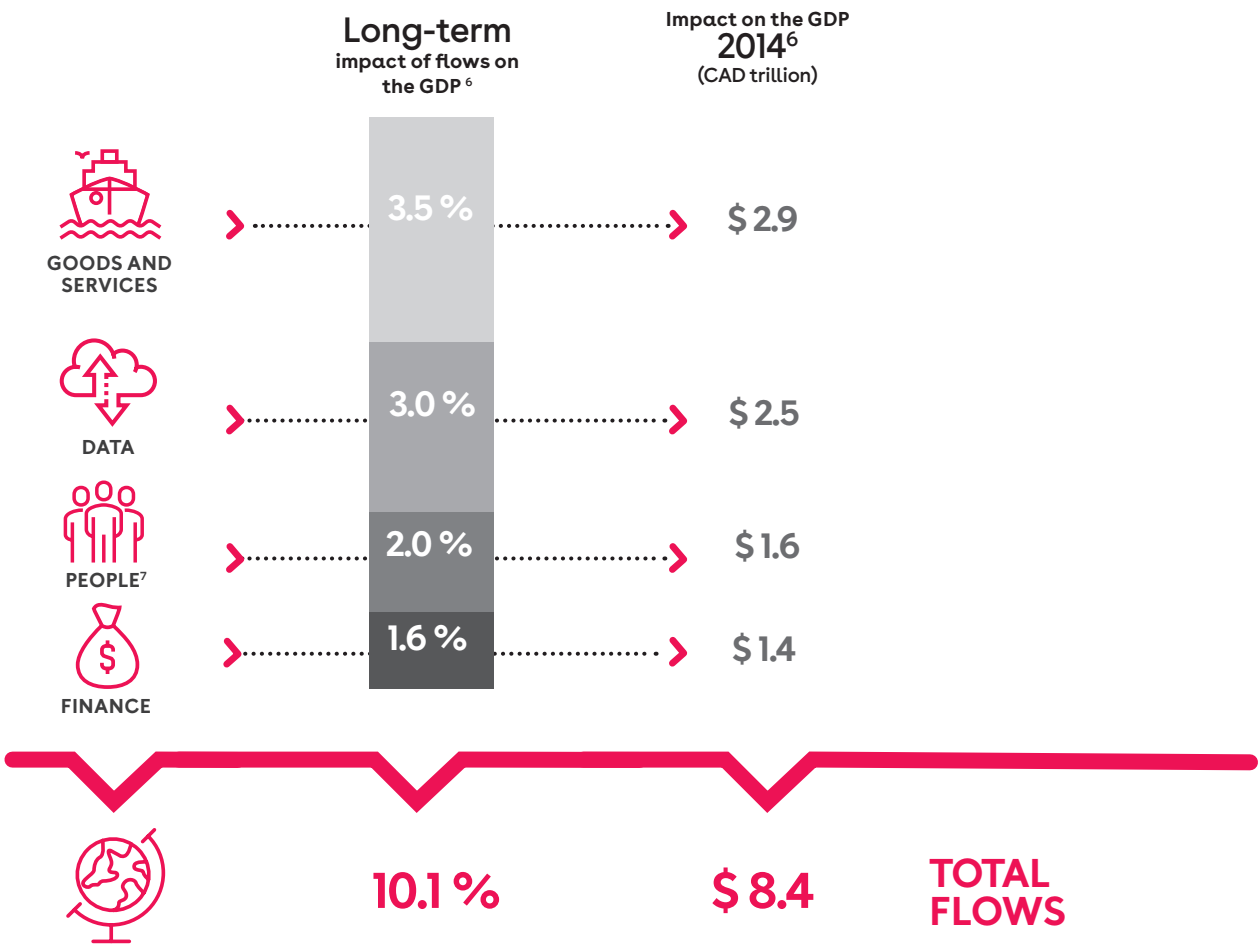
Now more than ever, countries and companies can no longer ignore the opportunities for growth beyond their borders. Recent research shows that global flows have increased the global GDP by over 10% compared to what it would have been in a world without such exchanges⁵. This represents a sum of CAD 8.4 trillion just for 2014, over a third of which is derived from flows of data generated globally—a type of exchange that did not exist fifteen years ago.

The value of this internationalization—and the much larger and more nuanced benefits that stem from it—is reflected in the volume of imports and exports of goods and services as well as in foreign direct investment. On a more human level, it also leads to more innovation, fuelled by the constant circulation of ideas, research, technology and talent imported from elsewhere, increasing the competitiveness of the best connected economies, which then benefit from the opportunities for growth that global markets provide.

⁴ McKinsey Global Institute, « Digital Globalization: The New Era of Global Flows », McKinsey & Compagnie, march 2016.

⁵ *Idem*.

Diagram 1 - Impact of international flows on the global GDP



SOURCE: McKinsey Global Institute analysis

International exchanges make up 10.1% of the world’s collective wealth. This is equivalent to CAD \$8.4 trillion just for 2014.

6 Includes all inflows and outflows for the 139 countries in the MGI Global Flows models.

7 The flow of people noticeably diminished from 2003 to 2013, resulting in a positive impact, despite a negative coefficient. The flow of people has a neutral—and even negative—impact on developing economies; however, it has a clearly positive impact on developed economies.

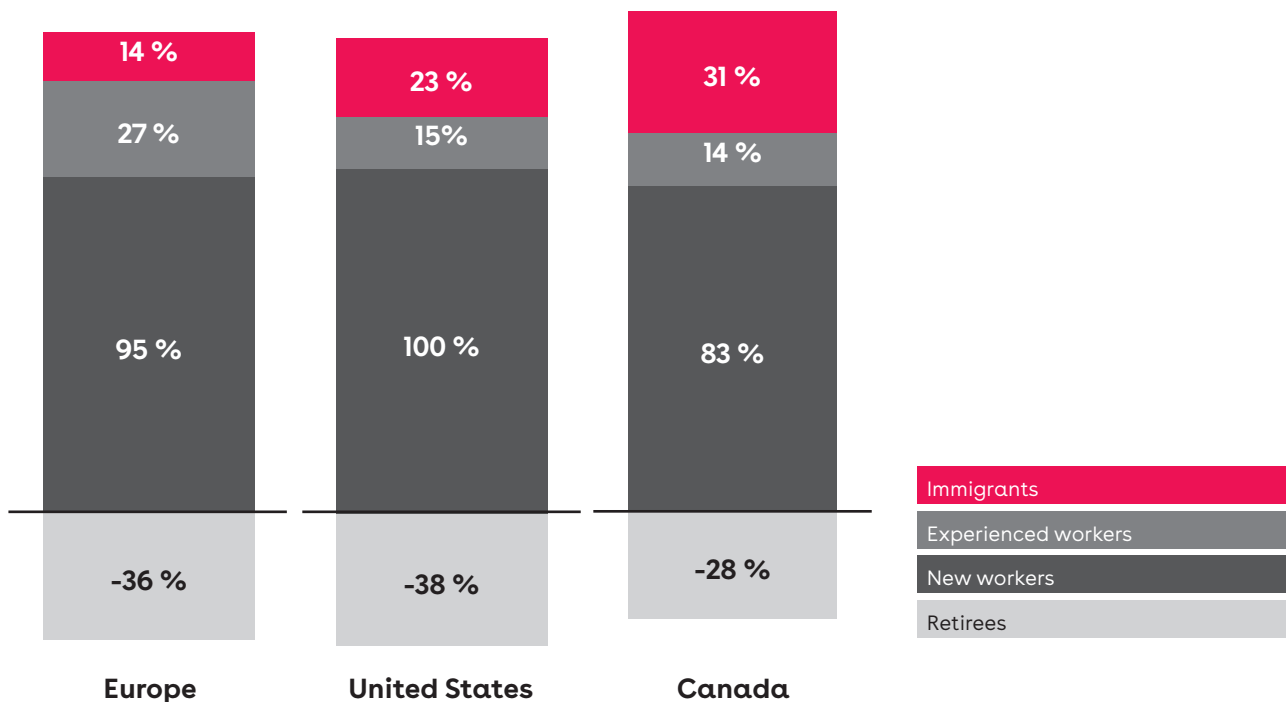
1.2 Immigration and labour mobility: a source of wealth



Several studies have demonstrated that immigration and labour mobility have a general positive impact on the economy and, more specifically, on individual income. For example, a study conducted by the OECD⁸ demonstrates that immigration in Canada contributes 31% of the skilled workforce replacement.

Diagram 2 - Contribution of immigrants to the skilled labour force replacement

Changes in the skilled labour force between 2000 and 2010 by type of worker

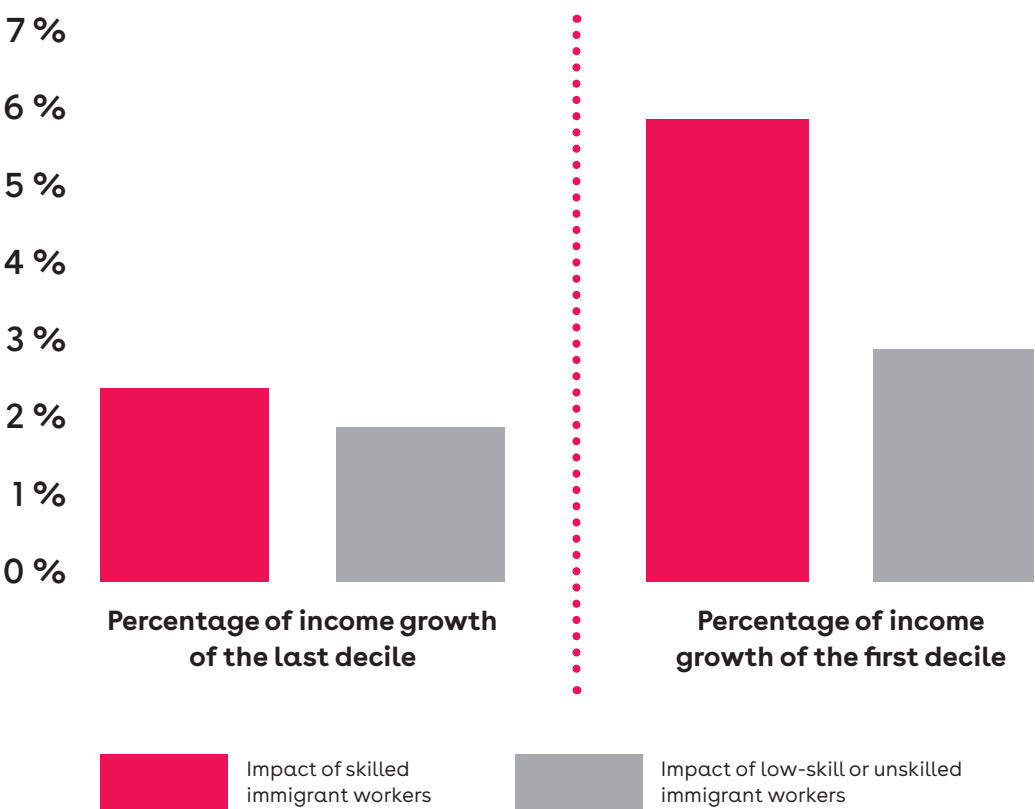


SOURCE: OECD, *Migration Policy Debates*, May 2014

New immigrants account for 31% of the skilled labour force replacement in Canada.

In a similar vein, an IMF study demonstrated that immigrant workers positively and significantly contribute to increasing the income of the general population of developed economies.

Diagram 3 - Contribution of the immigrant workforce to increasing per capita income in the general population

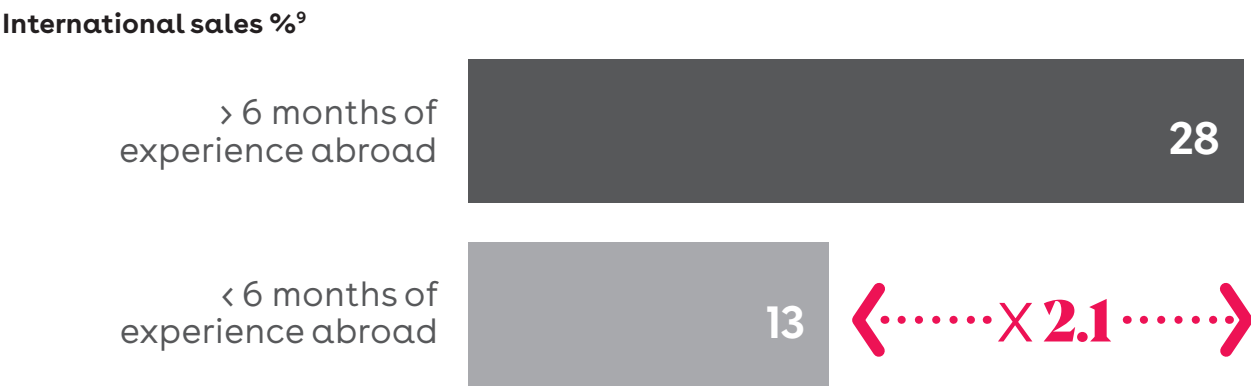


SOURCE: FMI, *Migrants Bring Economic Benefits for Advanced Economies*

Skilled and unskilled immigrant workers both have a positive impact on the income growth.

The benefits of worker mobility can also be seen at the business level, where the network effect plays a significant role in the success or failure of a company in new markets. For that matter, companies managed by entrepreneurs with over six months of experience abroad demonstrate international sales levels twice as high as those led by managers with no such experience.

Diagram 4 - The impact of business leaders’ international experience on commercialization



Source: BDC survey on the competitiveness of companies (2014)

Companies led by people who have international experience make twice as many international sales.



“In 2007, around 50% of Australian CEOs and 48% of Finnish CEOs who led companies ranked among the top 40 in each of these countries had held a position of authority abroad. **In Canada, less than 30% of CEOs had such experience¹⁰.**”

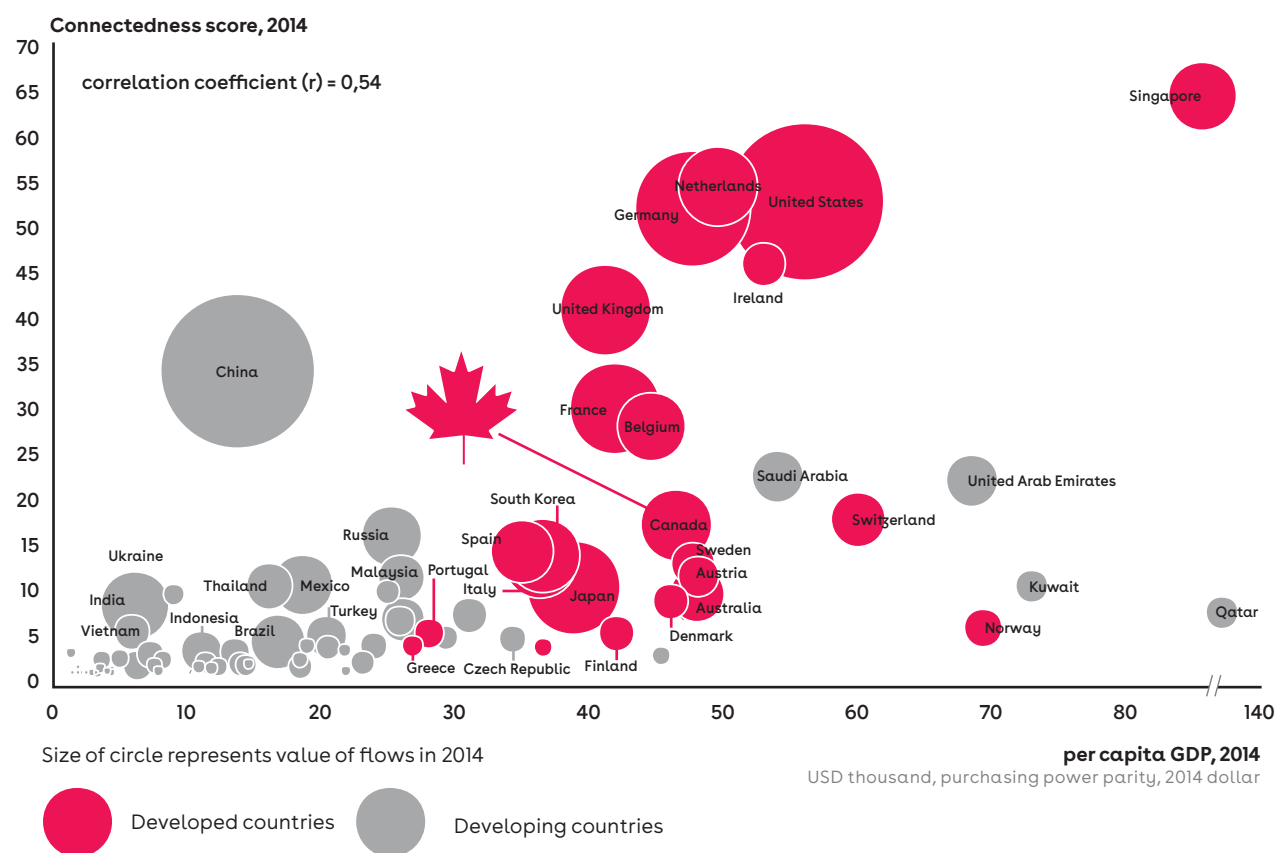
⁹ Based on all responses to the survey (n=866)

¹⁰ *Breaking away from the pack. Enhancing Canada’s global competitiveness, 2008*

1.3 Internationalization: a source of wealth for the most connected economies

Even though the majority of countries participate in today's global economy, the majority of flows remain concentrated and primarily profit the small group of highly internationalized countries. The connectedness index developed by the McKinsey Global Institute (MGI) reveals that so-called advanced economies are generally more connected than what we call developing countries, and it also reveals that the highest-performing countries enjoy the highest connectedness indices in the world. To themselves, the top fifteen countries in the ranking of the flow of goods collect 63% of the global revenue generated in this category. This percentage falls to 62% in the service category and reaches 79% in the finance flow category (see diagram 1).

Diagram 5 - Connectedness index by country (2014)

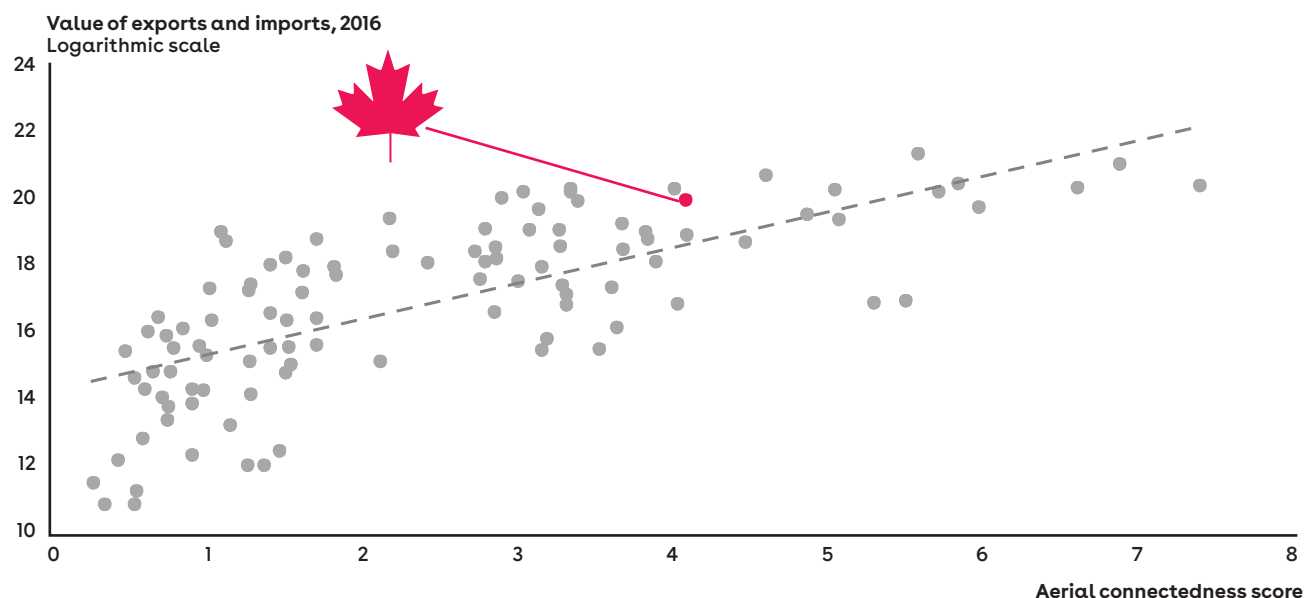


Source: IMF, McKinsey Global Institute analysis

Internationalization is strongly related to the size of the national economy.

It is also interesting to note that the different flows that make up the connectedness index are not independent, but instead reinforce one another. As an example, the aerial connectedness index used by ICAO has a strong correlation¹¹ to the total value of a country's exports, regardless of mode of transportation.

Diagram 6 - Impact of aerial connectedness on the value of exports and imports



SOURCE: IATA: Value of Air Cargo: Air Transport and Global Value Chains, 2016

The countries that are the most connected by air are also those that export and import the most.
A 1% increase in aerial connectedness is associated with a 6% increase in export.

In other words, countries with a higher density and quantity of air traffic conduct more international trade. Based on this cause and effect relationship between the ease of movement of people and goods by plane and the intensity of trade, it is possible to confirm that in Canada, a 1% increase in aerial connectedness would result in a 6.3% increase in the value of imports and exports, totalling a sum of approximately \$6 billion based on the most recent report of the country's imports and exports.

In short, internationalization feeds off itself, given that flows of goods, people, finance and data influence each other. This, in part, explains why countries that are involved in internationalization reap the highest profits.

¹¹ Coefficient of 0.50, significant at 1%


1.4 A portrait of internationalization in Canada



t first glance, Canada ranks relatively high in the list of the most connected countries. With regards to internationalization, all types of flows taken together, the country ranks 13th in the world, with inflows and outflows totalling around CAD \$1.4 trillion, i.e. 79% of its GDP.

Table 1 - Connectedness index by country relative to overall international flows (2014)

Rank of participation by flow as measured by flow intensity and share of world total

Rank	Country	Score	CONNECTEDNESS INDEX RANK					Flow value ¹²	Flow intensity ¹³
			Goods	Services	Finance	People	Data	USD billion	% of GDP
1	Singapore	64.2	1	2	2	12	6	1 392	452
2	Netherlands	54.3	3	3	6	21	1	1 834	211
3	United States	52.7	7	7	3	1	7	6 832	39
4	Germany	51.9	2	4	8	3	2	3 798	99
5	Ireland	45.9	32	1	1	28	9	559	227
6	United Kingdom	40.8	13	5	5	6	3	2 336	79
7	China	34.2	4	16	4	82	38	6 480	63
8	France	30.1	11	8	9	7	4	2 262	80
9	Belgium	28.0	5	6	33	33	8	1 313	246
10	Saudi Arabia	22.6	20	28	27	2	53	790	106
11	United Arab Emirates	22.2	6	23	17	4	46	789	196
12	Switzerland	18.0	12	11	10	17	13	848	115
 13	Canada	17.3	16	22	11	11	18	1 403	79
14	Russia	16.1	21	25	18	5	25	1 059	57
15	Spain	14.4	25	13	19	14	16	1 105	79
16	South Korea	14.0	8	12	28	50	44	1 510	107
17	Italy	13.4	17	18	24	16	19	1 587	74
18	Sweden	13.0	29	14	22	31	5	572	100
19	Austria	11.7	26	17	31	20	12	470	108
20	Malaysia	11.6	9	19	25	26	43	610	187
21	Mexico	10.7	14	63	34	18	41	1 022	80
22	Thailand	10.7	10	15	36	44	64	605	162
23	Kuwait	10.6	37	46	13	13	75	306	153
24	Japan	10.5	15	20	12	81	20	2 498	54
25	Kazakhstan	10.0	48	73	41	8	57	176	83
26	Ukraine	9.8	38	39	87	10	34	133	101

SOURCE: McKinsey Global Institute analysis

Canada ranks 13th globally when it comes to connectedness.

¹² Flow value represents total goods, services and financial inflows and outflows.

¹³ Flow intensity represents the total value of goods, services and financial flows as a share of the country's GDP.

A more careful analysis of each of these flows reveals that Canada's ranking varies from one flow to another, but it always falls between 11th place, for flows of finance and people, and 22nd place, for flows of services. In other words, the country is in the top 22, no matter the connectedness aspect in question.

However, a comparison with the better connected countries in the world reveals that Canada performs four times lower than Singapore, the most connected country, and three times lower than the Netherlands, the United States and Germany.

In fact, if we only consider the score without considering rank, Canada's connectedness is more comparable to countries like Thailand or Ukraine—which are respectively in 22nd and 26th place—than countries at the top of the list. This means that there is room for improvement.

Other studies have also shown that Canada faces several challenges in terms of internationalization and the attraction of foreign direct investment, particularly in regards to the regulatory environment. A 2017 survey of 61 Canadian business leaders for Innovation, Science and Economic Development Canada¹⁴ revealed that the regulatory environment was considered a major obstacle to investment. We also know that Canada was already behind in 2008 in terms of the percentage of business leaders with experience abroad (see pull-quote under Diagram 4).

In short, while Canada ranks among some of the most connected countries and benefits to a large extent from the effects of internationalization's virtuous circle, it is important to retain this advantage and above all, to remain competitive with regard to the countries at the head of the pack.

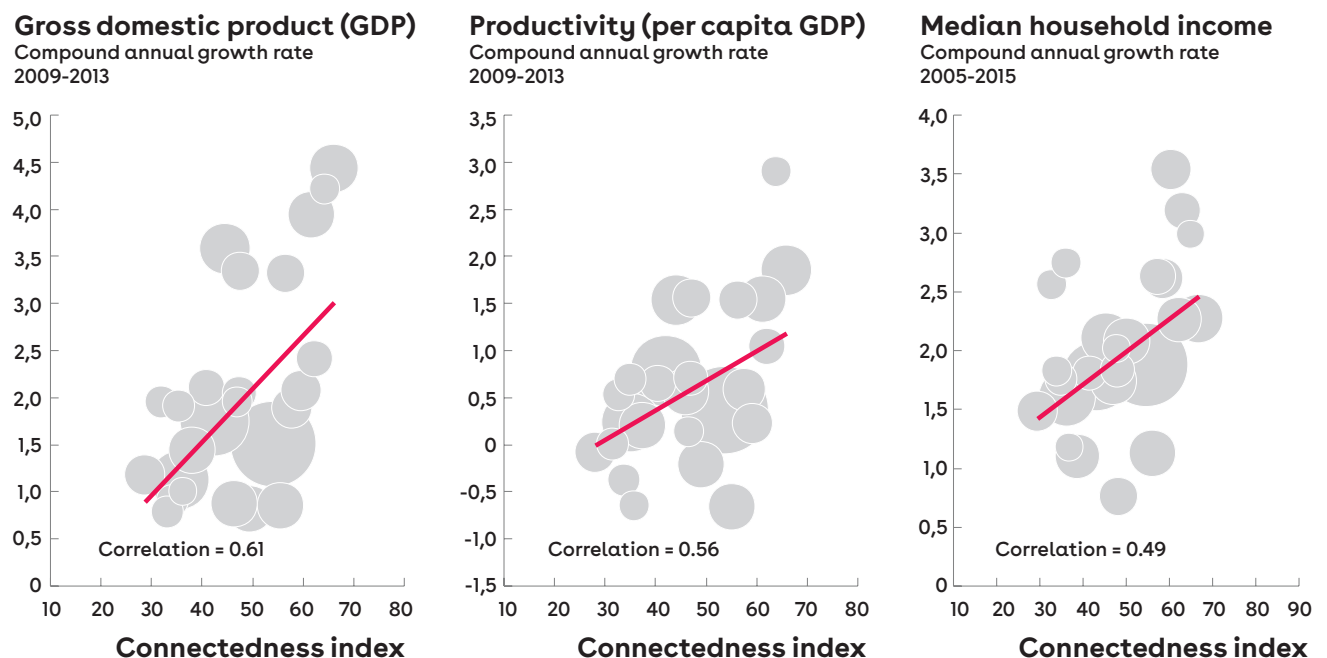
14 Survey of Canadian business leaders, Business Council of Canada, 2017; n=61

Chapter 2

The importance of internationalization in the growth of metropolitan areas

While participation in global networks is beneficial for the national economy, it is also a source of prosperity at the level of metropolitan areas. An analysis of the international flows¹⁷ of the 25 largest metropolitan areas in North America confirms the link between international exchanges and three economic performance indicators: growth in the median household income, productivity growth and GDP growth.

Diagram 7 - Relation between connectedness and economic return, according to an analysis of the 25 largest cities in North America



SOURCE: Analysis based on the McKinsey Global Institute's model

¹⁵ Four rather than five flows were considered in the analysis of cities' connectivity. Service flows were excluded because they are partly covered by data flows.

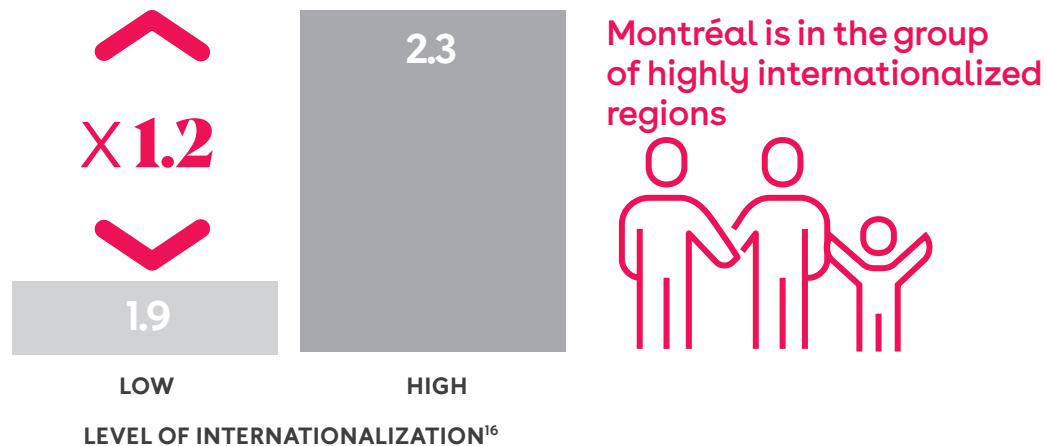


The analysis of these flows for the 25 largest North American metropolitan areas confirms the connection between internationalization and prosperity.

In concrete terms, the cities that have a higher level of internationalization generate an increase in household income around 1.2 times faster than less internationalized cities.

Diagram 8 - Average growth of median household income by level of internationalization

Compound annual growth rate



Source: Analysis based on the McKinsey Global Institute's model

Household income increases ~1.2 times faster in cities with a higher level of internationalization.

When cities are categorized according to their level of internationalization, we can see that the higher ranking cities (those belonging to the 1st quartile) have a household income growth that is 1.2 times faster than those found at the bottom of the list (in the 4th quartile). In other words, the concrete impact on a "typical" family living in a city that goes suddenly from the 4th to the 1st quartile—for illustrative purposes, although it is an unlikely scenario—would be CAD 700 in the first year¹⁷.

¹⁶ Low = 4th and 3rd quartile; High = 1st and 2nd quartile

¹⁷ A 20% increase in growth is equivalent to a 0.9% increase on a growth of 1.8%, i.e. a net impact of around CAD 700 over one year and CAD 4,200 over five years, if based on the median household income of Greater Montréal, which was around CAD 77,000 for the year 2015 according to Statistics Canada. On this subject, see "Characteristics of families, summary census family income table," Table 111-0009. Also note that the impact of connectedness on household income was not studied in the McKinsey Global Institute (MGI) study on "connectedness" and the economic performance of countries.

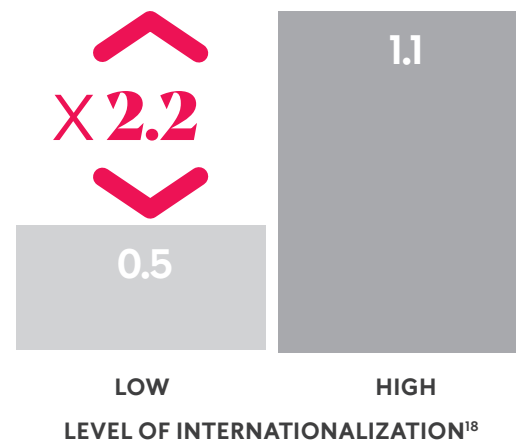
Diagram 9 - Average GDP and productivity growth by level of internationalization

Compound annual growth rate

Average GDP growth by level of internationalization



Economic growth according to level of internationalization



SOURCE: Analysis based on the McKinsey Global Institute's model

The most connected cities experience growth in their economy and in their productivity ≈ 1.6 to 2.2 times faster than that of other regions.

Based on the same logic, the most connected and the least connected cities were separated into two groups, and these groups were compared based on their average GDP growth and productivity growth. In both cases, the positive net impact of internationalization is clear: better connectedness leads to more than double the productivity growth and 1.6 times more in GDP growth. Since Montréal can be found in the leading group (1st quartile), its economic growth, productivity and median household income are highly strengthened by internationalization.

In concrete terms, this means that two cities that have the same productivity in year zero—for example a wealth generation of \$100,000 per worker—could be \$7,000 apart in the tenth year, if one goes from very low to very high connectedness and the other remains stagnant. After a 20-year period, that gap would increase to more than \$15,000.

As a result, there is no doubt that the connectedness of metropolitan regions has a strong impact on their economic development—not only for the creation of overall wealth but also for household income.

¹⁸ Low = 4th and 3rd quartile

Chapter 3

Montréal: the 7th leading North American city for its connectedness to the global economy

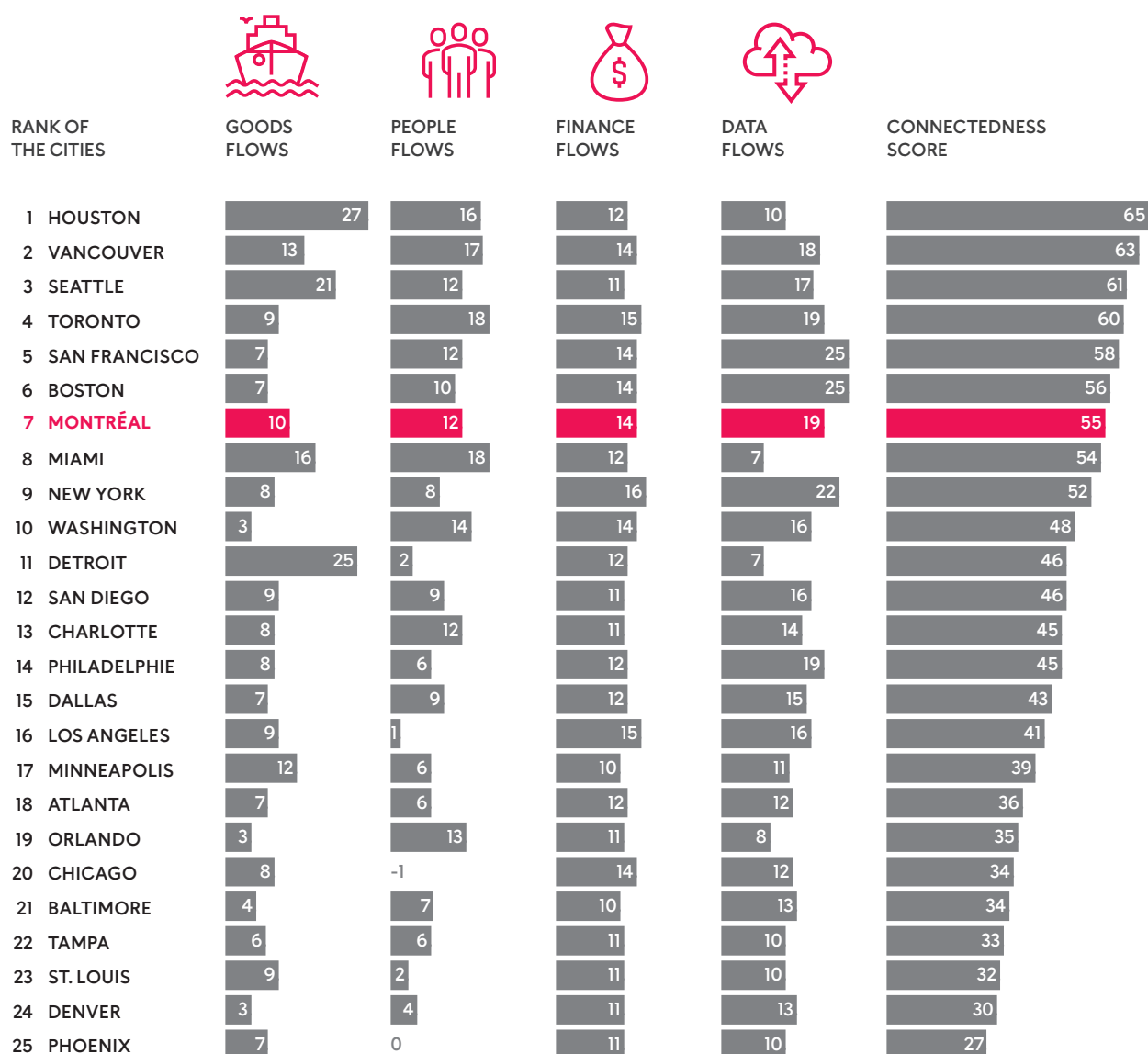
3.1 Montréal on the North American stage

When we compare each of the international flows of Greater Montréal to those of the 25 largest cities in North America—while taking into account the size of their population and economy—the city is ranked 7th in terms of global connectedness after Houston, Vancouver, Seattle, Toronto, San Francisco and Boston, but ahead of New York, Chicago and Los Angeles.

As illustrated in the following examples, Montréal's position at 7th place can be explained by its strong flows of finance and data—where it ranks 4th and 5th—in comparison to the flows of goods and people—where it ranks 7th and 8th (adjusted to the size of the population and economy).

Even if we consider the international flows in absolute rather than relative terms, Montréal is ranked in the two first quartiles (see the diagram below). We can see that Montréal is 4th for finance flows and 10th in terms of exports, the size of the immigrant population and data flows.

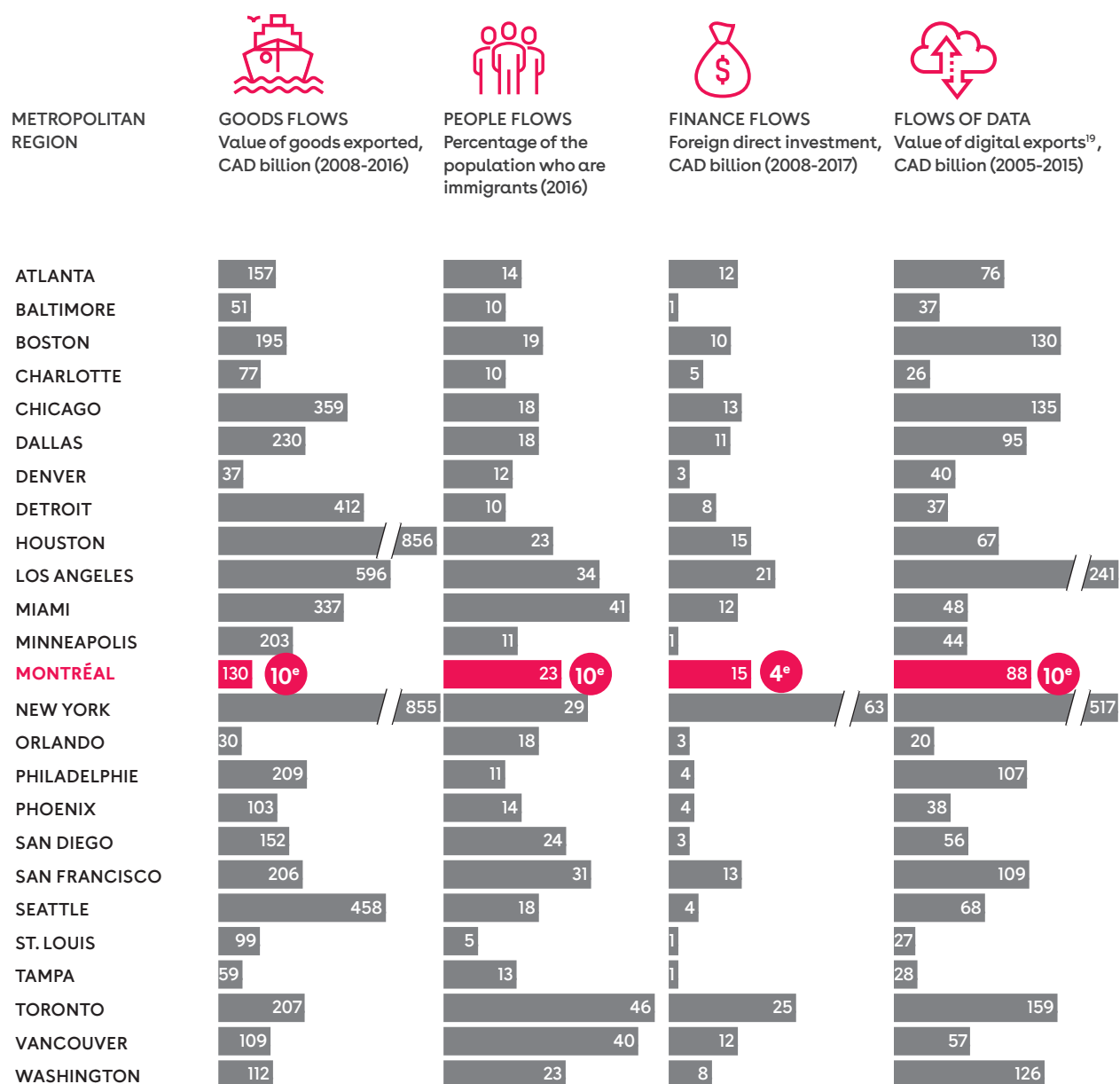
Diagram 10 - Ranking of the 25 largest cities in North America according to their connectedness



SOURCE: Analysis based on the McKinsey Global Institute's model

Montréal is ranked 7th in terms of connectedness compared to other big North American cities.

Diagram 11 - International flows of the 25 largest cities in North America in absolute value



SOURCE: Analysis based on the McKinsey Global Institute's model

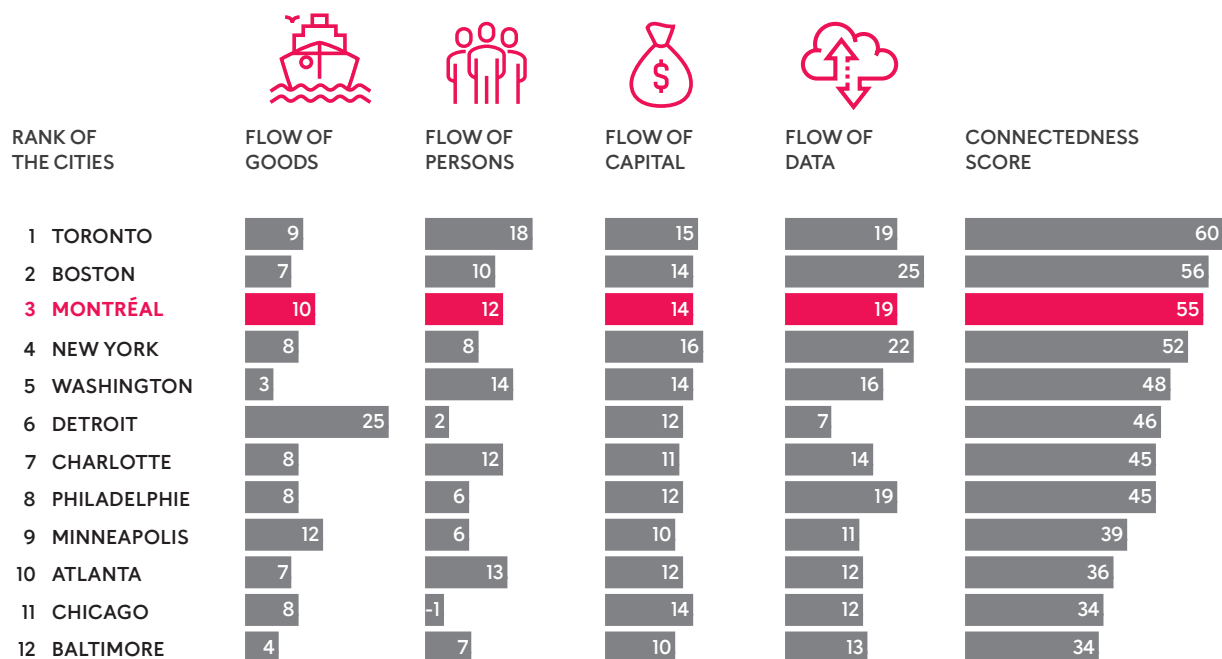
When the absolute value of the flows is taken into account, Montréal is generally in the middle of the pack.

¹⁹ Digital exports are exports of services considered "digitally deliverable."

Montréal: 3rd place among international cities in its economic area

If we take as a sample the twelve metropolitan areas that are part of Montréal's economic area, to the east of the continent—including the north of the American Midwest but excluding the south and the west coast—Quebec's metropolis remains in the middle of the pack for the flows of goods and people. However, it goes from 7th to 3rd place for the connectedness score—right behind Toronto and Boston.

Diagram 12 - Ranking of the 12 largest cities in eastern North America



SOURCE: Analysis based on the McKinsey Global Institute's model

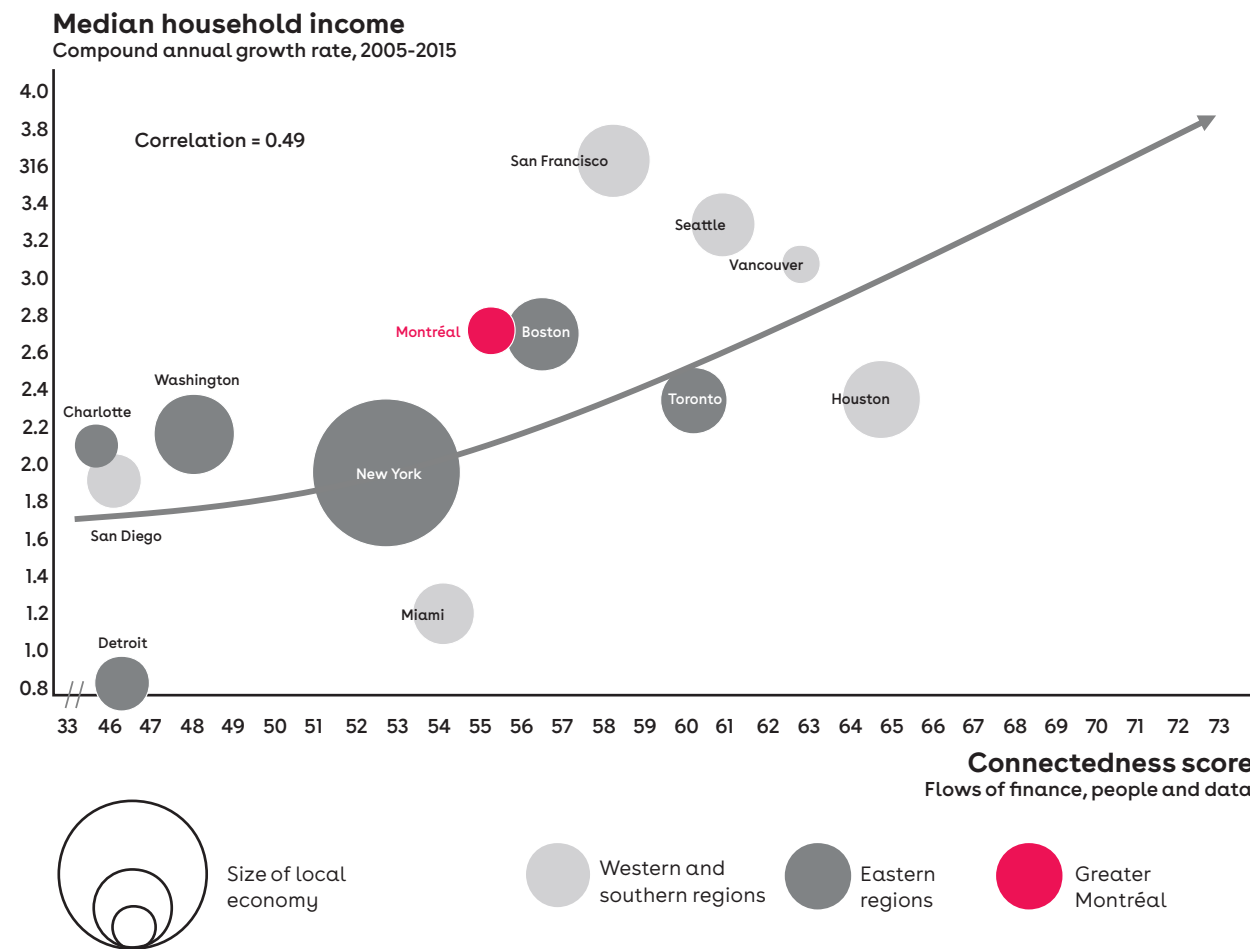
Within its economic area, Greater Montréal is ranked 3rd in terms of connectedness.

In addition, we can see that the relation between connectedness and prosperity is exponential. This means that every additional connectedness point is associated with a higher and higher growth rate. That said, the correlation between connectedness and growth of median household income remains steady and significant.

According to this logic, we estimate that if Greater Montréal were to increase its connectedness score by 10% (i.e. from 55 to 61), the growth in the median household income would be 7.2% faster—which is equivalent to approximately CAD \$900 more per household over five years or CAD \$2,000 over ten years (in constant dollars). The model also predicts that if Greater Montréal reached a connectedness score similar to that of Houston (65 instead of 55), “typical” households of Greater Montréal would receive about CAD \$3,600 over a period of ten years.

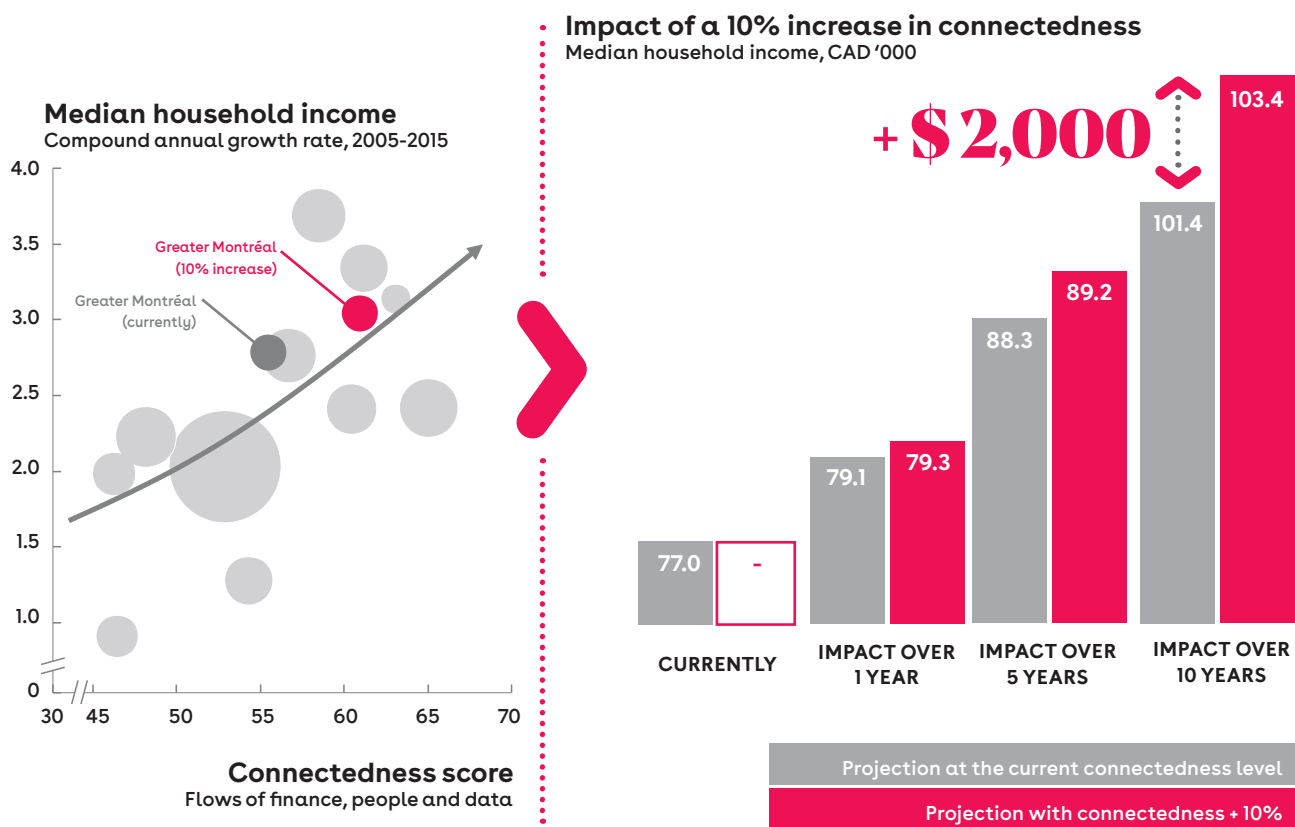
Looking at the flows, a 10% increase in digital exports from Greater Montréal (equivalent to around CAD \$465 million), accompanied by an 11% increase in the immigrant population (about 100,000 people) and a 20% increase in exports, would make Greater Montréal the most international city on the continent, surpassing Houston, Vancouver, Toronto, Seattle, Boston and San Francisco. The same situation would increase the median household income by around CAD \$5,000 over ten years.

Diagram 13 - Growth of the median household income according to connectedness



SOURCE: Analysis based on the McKinsey Global Institute's model

Diagram 14 - Estimated impact of an increase in Montréal's connectedness score on median household income



SOURCE: Statistics Canada, team analysis

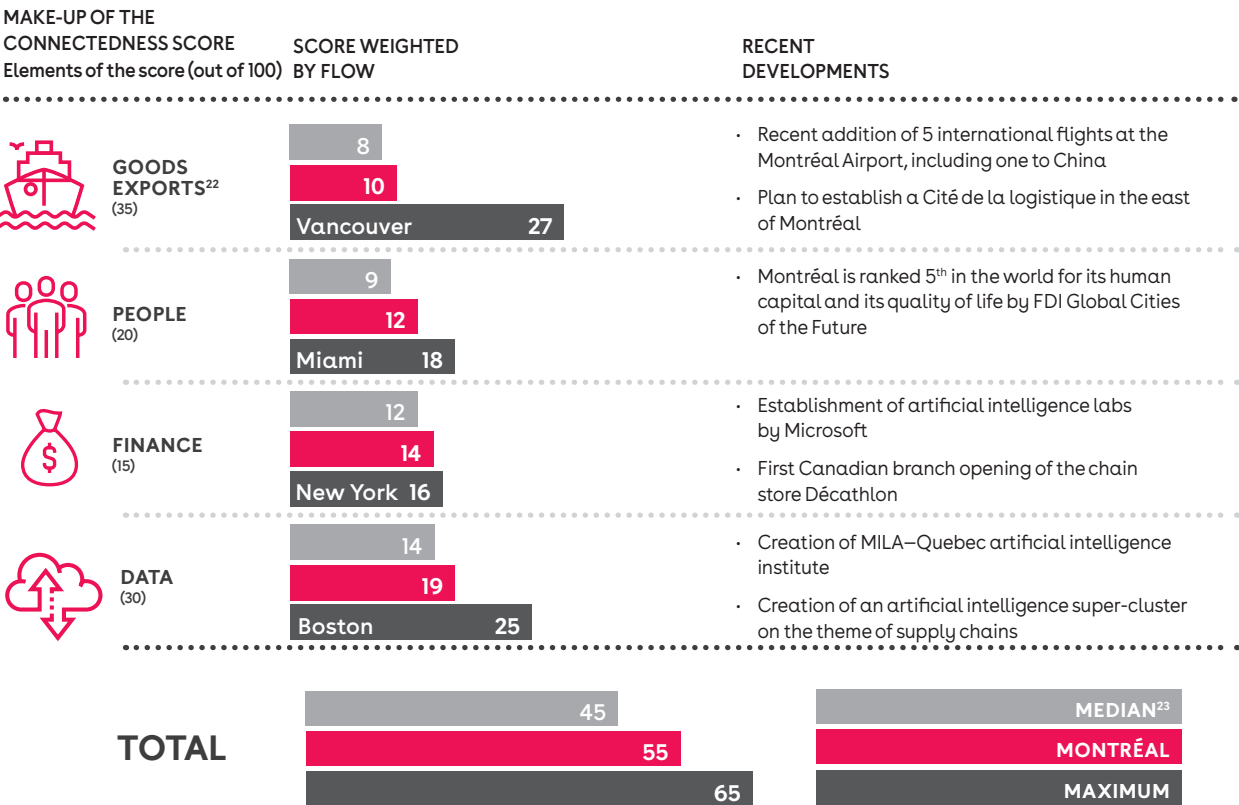
What stands out from the ranking of the largest North American cities is that the interpretation of the “rank” of a city needs to be qualified. The overall connectedness score is informative and useful, to the extent that it demonstrates an empirical relationship between connectedness and wealth.

21 In constant dollars

3.2 Greater Montréal's flows under the microscope

By studying the make-up of Greater Montréal's connectedness score, we can observe that the city's enviable position as a frontrunner is explained by the relative importance of not just one flow, but of all the flows taken together. As a metropolitan region, Greater Montréal is above the median in each of the four flows, including the **flow of goods** measured by the value of goods exports. Also, cities with a high connectedness in goods exports are not always the most internationalized metropolitan regions: Houston, Detroit and Minneapolis all surpass Montréal in exports.

Diagram 15 - Montréal's connectedness score by flow



SOURCE: Moody's

The strength of Montréal's connectedness does not depend on one or two flows in particular, but on all of them together.

²² Excludes service exports to avoid overlap with data flows, which are based on "digitally deliverable" service exports.

²³ Median of the 25 biggest cities in North America

Moreover, Greater Montréal may export less than Houston or Vancouver when it comes to value, but its port infrastructure is still growing. The Port of Montreal went from 14th to 12th leading port in North America for container traffic between 2012 and 2016, while Vancouver and Houston's ports each went down a rank.

Diagram 16 - Global ranking of ports - container traffic

2012

Rk	City	Province/State	Volume (TEUs) ²⁴
1	LOS ANGELES	California	8,077
2	LONG BEACH	California	6,045
3	NEW YORK	New York / NJ	5,230
4	SAVANNAH	Georgia	2,966
5	VANCOUVER	BC	2,713
6	OAKLAND	California	2,255
7	HAMPTON ROADS	Virginia	2,105
8	MANZANILLO	Colima (Mexico)	1,992
9	HOUSTON	Texas	1,922
10	SEATTLE	Washington	1,885
11	TACOMA	Washington	1,718
12	CHARLESTON	South Carolina	1,515
13	SAN JUAN	Puerto Rico	1,423
14	MONTREAL	Quebec	1,375

2016

Rk	City	Province/State	Volume (TEUs) ²⁴
1	LOS ANGELES	California	8,857
2	LONG BEACH	California	6,775
3	NEW YORK	New York / NJ	6,252
4	SAVANNAH	Georgia	3,645
5	SEATTLE/TACOMA	Washington	3,616
6	VANCOUVER	BC	2,930
7	HAMPTON ROADS	Virginia	2,656
8	MANZANILLO	Colima (Mexico)	2,579
9	OAKLAND	California	2,370
10	HOUSTON	Texas	2,183
11	CHARLESTON	South Carolina	1,996
12	MONTREAL	Quebec	1,448
13	SAN JUAN	Puerto Rico	1,231
14	HONOLULU	Hawaii	1,212

SOURCE: American Association of Port Authorities, Port Industry Statistics

Greater Montréal is well positioned with its logistics infrastructure and is gaining ground compared to North American ports.

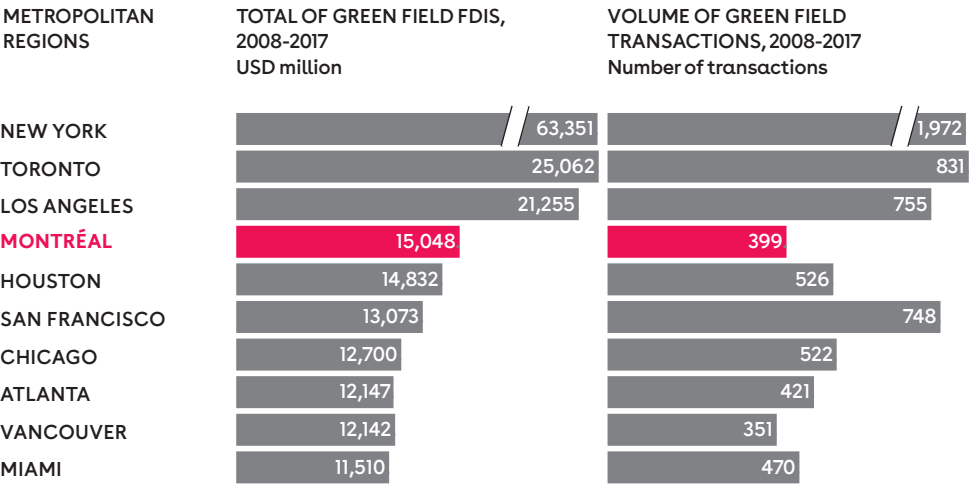


The Port of Montreal is a very important asset for the metropolitan area, facilitating the export of goods in the manufacturing sector.

²⁴ Thousand Twenty-Foot Equivalent Units

When it comes to **finance flows**, Greater Montréal is ranked 4th in the size of investments, which amounted to USD \$15 billion over the same period. Only New York, Toronto and Los Angeles surpass Montréal in this aspect. However, the city has fewer than 50 transactions a year, below the average for similar cities.

Diagram 17 - Volume of foreign direct investments and transactions in the top 10 cities (2008-2017)



SOURCE: Financial Times - FDI Markets

Greater Montréal is attracting a large quantity of green field investments compared to other cities, but a smaller number of transactions.

The analysis of **people and data flows** for Greater Montréal is particularly interesting when comparing the Montréal region with Seattle and Boston, two similarly sized cities with a strong economic vitality.

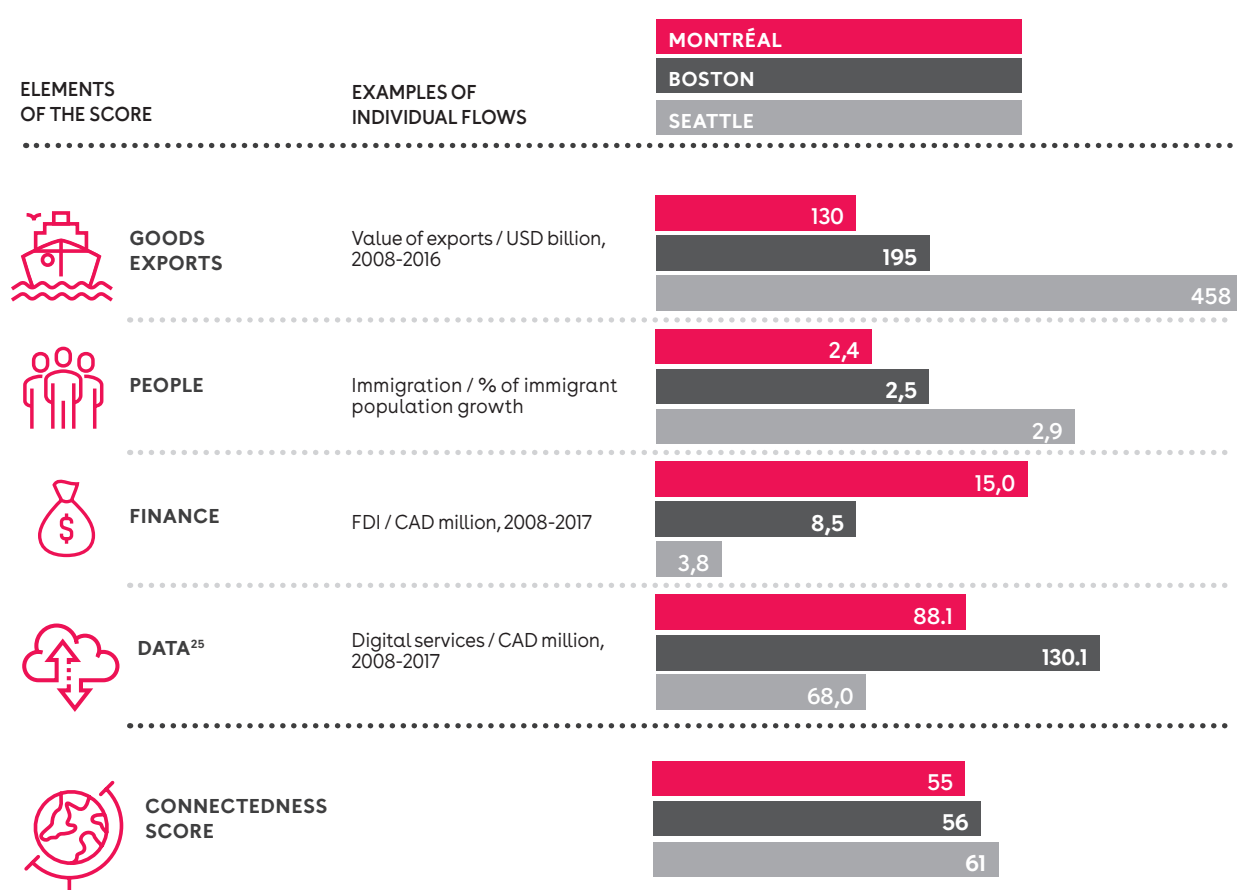
By comparing them, we see that each metropolis stands out for one flow in particular:

- Seattle exports three times more in terms of commercial value than Grand Montréal, and twice as much as Boston;
- Boston exports twice as many “digitally deliverable” services as Seattle and 1.5 times more than Grand Montréal;
- Montréal receives four times more “new” (green field) foreign investments than Seattle and twice as many as Boston.

However, the annual immigrant population growth—varying between 2.4% and 2.9% per year—varies less from one region to another than the other connectedness indicators. This is true when comparing Montréal to Seattle and Boston, and also when looking at the 22 regions with an increase in their immigrant population in the past ten years; the average compound annual growth of this group was 2.3% with a standard deviation of less than 1%.

From this rough comparison, it is possible to deduce that more than one formula will work: different “internationalized” regions in our sample opted for different strategies (see box 1), and these strategies are equal insofar as they do not rely on just one or two flows.

Diagram 18 - Comparison of the flows of Montréal, Boston and Seattle



SOURCE: Moody's

Compared to Boston and Seattle, Montréal mostly distinguishes itself through its green field investment flows.

²⁵ Data flows are estimated based on “digitally deliverable” services; this does not represent the volume of internet traffic, which is not measured on the metropolitan scale

In brief, Montréal's competitive advantage in internationalization primarily rests on the relative strength of its finance and data flows, two sectors which, combined with the talent of its entrepreneurs, researchers and academic institutions, can really fast track the metropolitan region to the head of the most connected and prosperous North American cities. Montréal is currently host to one of the largest critical masses of researchers in the field of cutting-edge technology, especially artificial intelligence, whose publications are recognized internationally. There is also a large number of startups, investors, potential users, grant-giving organizations and organizations specializing in technological transfer. These stakeholders make up a dynamic and complex ecosystem that extends well beyond university walls and that can become a powerful vehicle of connectedness and thus prosperity.

BOX 1

SEATTLE: A connected city on the West Coast

Over the years, thanks to the support of the municipal government, economic stakeholders in the Seattle region succeeded in establishing strong international relations, positioning the city as an export power on the West Coast of the United States. Its stable economic environment and the Seattle Trade Alliance's activities enabled Seattle to gradually develop into a "one-stop" model for exportation investors.

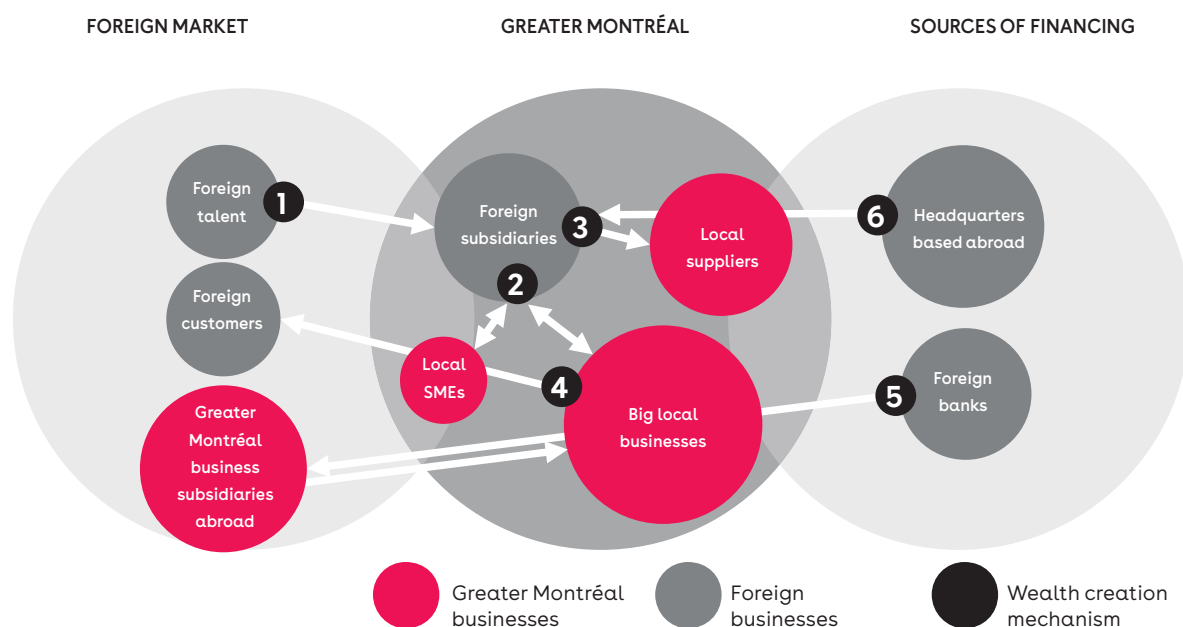
By implementing Seattle's Freight Master Plan, the municipal government defined its long-term vision for the city in terms of logistics at the international level. This strategy made Seattle the city with the quickest exportation growth of any similarly sized North American metropolis. Exports now represent nearly 20% of the region's GDP, which is two times that of Montréal or New York.

3.3 Internationalization, a concrete impact on Greater Montréal's business community

Though internationalization drives growth for the entire metropolitan economy, it has an especially important role for a considerable number of local SMEs and foreign subsidiaries based in Montréal. Interviews with important stakeholders in Montréal's business community revealed that growth mainly resulted from talent, resources, networks and international markets. The local businesses and foreign subsidiaries that took part in these interviews all acknowledged the benefit of contributing to a highly connected ecosystem. In total, six big wealth-creation mechanisms were identified, highlighting the importance of Greater Montréal's international positioning:

- 1 Foreign subsidiaries' power to attract and retain international talent;
- 2 Exchange of talent between foreign subsidiaries and local businesses thanks to expanded resource pools;
- 3 Contribution of foreign subsidiaries to industrial hubs through the supplier ecosystem;
- 4 Access for local businesses to foreign markets thanks to big businesses and foreign subsidiaries;
- 5 Foreign banks financing the international expansion of local champions;
- 6 Investment in the local development of foreign subsidiaries by their head office.

Diagram 19 - Six main wealth creation mechanisms related to internationalization in Greater Montréal



3.3.1 Foreign subsidiaries: the power to attract and retain talent

Talent is one of the main reasons why foreign subsidiaries decide to settle in Montréal, according to several of the people interviewed. Also, training, attracting and retaining the talent that the ecosystem needs is a key issue, both for businesses looking to grow and prosper and cities wanting to galvanize the local economy. As Alan Vesprini, Director of Morgan Stanley, mentions: “Living in Montréal is a net advantage for our employees. They come from all over the world and love the cosmopolitan side of the city.”

However, without the attraction power of these important global players, the city would not be as appealing for young graduates and other highly sought-after professionals. Francis Baillet, Vice-President of Corporate Affairs at Ubisoft, noted that, over the past few years, many of the world’s video game stars have chosen Montréal instead of New York, Singapore or San Francisco so that they could work in its Montréal studio, something Alan Vesprini of Morgan Stanley has also noticed.

MORGAN STANLEY: Choosing Montréal

Since its establishment in Montréal in 2008, Morgan Stanley’s Technology Centre has seen consistent growth. Today, it is home to 1,200 technologists and computer engineers. The multinational, with locations in 42 countries, chose to establish itself in the city because of the availability of talent, in particular.

Morgan Stanley recruits people from all over the world and targets students, a good number of whom must choose between positions in Montréal and those in other big cities like Boston and New York. By offering stimulating jobs, the business attracts the greatest minds in the global IT sector to the city.

“Living in Montréal is a net advantage for our employees. They come from all over the world and love the cosmopolitan side of the city.”

Alan Vesprini, Director, Morgan Stanley.

3.3.2 The rush for talent: setting up in Montréal to help develop a booming ecosystem

The attraction and retention of talent in Montréal does not happen in a vacuum. While large businesses attract and retain the best local and foreign talent in the metropolis, nothing is stopping that talent from quitting and contributing to Montréal's ecosystem in a different way, by working for a competitor or starting new businesses, for example. As the professional service firms that were interviewed indicated, Montréal-based companies can only benefit from attracting other foreign subsidiaries in their sector, including competitors, "because the more job prospects there are, the more talent there is."

The rush for talent is therefore not a zero-sum game; it can be beneficial in that it expands the pool that everyone has access to.

UBISOFT: Shining a light on local and foreign talent while attracting the biggest video game stars in the world to Montréal

Ubisoft has become the heart of a booming industry and is the largest video game development studio in the world.

"In all, thousands of Quebec businesses and young local and foreign talents have, for 20 years, benefitted from Ubisoft's presence in Quebec."

Many entrepreneurs started their careers at Ubisoft before going into business and creating their own studios. Others have taken advantage of this platform to launch themselves into new markets, as was the case for **Meduzarts** and **Digital Dimension**.

"We started with two people in 1997, and twenty years later we now employ 3,700 people in Quebec. Several of our former employees left our company to contribute to the unique ecosystem we see today."

Francis Baillet, Vice President, Corporate Affairs, Ubisoft.

3.3.3 The cluster effect: contributions from foreign subsidiaries to local supply chains

Foreign subsidiaries also help create industrial hubs by bringing prosperity to service firms and their other suppliers, which attracts other businesses that are drawn by the quality of the supply chain. In the words of Cynthia Garneau of Bell Helicopter Textron, “we came for talent, it’s true, but we stayed because there is now an ecosystem that feeds us and that we feed into. It’s a virtuous circle.”

BELL HELICOPTER TEXTRON: A partner of Montréal’s aeronautics sector for 30 years

Bell’s head office is located in Fort Worth, Texas. Its Mirabel subsidiary, with 1,000 employees today, was established in Quebec 30 years ago and is responsible for research and development, design, manufacturing and support for the majority of the business’s commercial helicopters.

“The success of the aeronautics industry in Montréal rests on its structured industrial strategy and its beneficial business environment. This ecosystem made it possible for a strong, world-class aeronautics supply chain to develop, with businesses like Pratt & Whitney, Bombardier and Héroux-Devtek.”

“The presence of foreign businesses and the ability to get mandates from their parent companies creates important local economic value, whether through investments, the expansion of the local pool of suppliers, or the training of a qualified workforce and the transfer of skills.”

Cynthia Garneau, President, Bell Helicopter Textron Canada Ltd.

3.3.4 The leveraging effect: promoting local SMEs in other markets

On top of their contribution to developing Greater Montréal's economy, foreign subsidiaries allow local businesses to demonstrate their expertise and knowledge, improving their portfolio and their image abroad. In the case of certain SMEs, like Meduzarts, this collaboration between Montréal-based businesses was the source of innovations that are now recognized in the industry. For others, this collaboration has a leveraging effect—the foreign subsidiary brings its local suppliers to new markets—which enables businesses from here to grow locally through new foreign contracts.

MEDUZARTS: The power of innovation

Meduzarts joined forces with Digital Dimension in 2011 in order to expand its horizons and offer a wider range of services. The business is in the middle of expansion, and its expertise in 3D animation and promotional image design has led it to work with the largest video game studios in the world, including **Ubisoft**.

"It's always good to have a local partner to help us propel ourselves onto the international level, and it's inspiring to see that we are contributing to its growing influence today."

"Our collaboration with Ubisoft started in 2008 with a first project creating promotional images. Over the years, our business relationship strengthened and allowed us to reinvent ourselves. It pushed us to innovate, rethink our work methods and develop a culture of excellence within our business."

Victor-Alexis Rainville, Executive Producer, Meduzarts.

3.3.5 Growth through access to foreign capital

When it comes to financing, the interviews revealed that foreign banks significantly contributed to the expansion of local and foreign companies. Claude Séguin, Senior Vice President of Corporate Development and Strategic Investments at CGI, acknowledged that, without the financing of foreign banks, CGI would not have been able to expand abroad “because we would have quickly reached the maximum capacity of Canadian institutions.” Others pointed out that the survival of their operations in Greater Montréal depended on their access to foreign capital.

CGI: Exporting its services thanks to the free movement of capital

As the Quebec jewel of business-to-business computer services, CGI has 75,000 employees and a turnover of \$11 billion, 16% of which comes from Canada.

“CGI tripled its size thanks to a series of strategic acquisitions all over the world. We would have quickly reached the maximum capacity of Canadian institutions if we couldn’t rely on American, European and Asian banks to get the funds required.”

“Serving local businesses elsewhere in the world can be an important growth factor. Because a large part of our clientele is made up of multinationals, we need to establish ourselves elsewhere and grow with them.”

Claude Séguin, Senior Vice President, Corporate Development and Strategic Investments, CGI.

3.3.6 Setting up to better invest in Greater Montréal's development

One last theme came up in the interviews with goods export businesses: investment in transportation and logistics infrastructure is a wealth-creation mechanism in itself. To quote Nadia Petrolito, Vice-President, General Counsel and Chief Communications Officer at L'Oréal Canada: "It is the transportation infrastructure that allows us to do business in Canada while offering a range of local brands, produced here or imported. Transportation infrastructure also allows us to export what we make here." By choosing Montréal, these companies are also choosing to invest in Montréal. Over the years, L'Oréal Canada, Bell Textron Helicopter, Ubisoft and other foreign subsidiaries have invested as much in local talent as in certain infrastructure projects that, each in their own way, have contributed to developing the economy of the greater metropolitan region.

L'ORÉAL CANADA: Investing locally

L'Oréal Canada, with its head office in Montréal, is the leader in the country's cosmetics industry. It has some 900 employees in the city and its factory exports 95% of its production.

L'Oréal's presence in Greater Montréal impacts many aspects of the economy: growth of local brands, acquisition of businesses with high potential, investments in artificial intelligence and even collaborations with local suppliers like advertisement companies.

"We hope L'Oréal's presence in Montréal will lead to other big businesses, French or otherwise, investing here."

Nadia Petrolito, Vice-President, General Counsel and Chief Communications Officer, L'Oréal Canada.

Chapter 4

Six approaches for strengthening the internationalization of Greater Montréal

In light of the observations above, we can conclude that Greater Montréal is among the “winning” regions for internationalization. Montréal is ranked seventh in North America in terms of connectedness and third in its economic area in the east of the continent. This is remarkable.

Greater Montréal’s performance is just as strong when analyzed according to the four individual flows. It comes fourth in attracting green-field-type foreign direct investments, surpassing Houston, San Francisco and Chicago. The Port of Montreal is gaining on its competitors, going from 14th to 12th in North America between 2012 and 2016. It ranks 10th in terms of the growth of its immigrant population over ten years, ahead of Toronto and Vancouver. Finally, it is one of the top 10 metropolitan regions for the growth of “digitally deliverable” exports.

However, Greater Montréal’s strong position in the rankings is not a given. The city is facing a severe demographic crunch that results in labour recruiting difficulties in several high added value sectors. Moreover, the metropolis could further benefit from the presence of foreign subsidiaries if they established themselves, when possible, as profit centres²⁶. Finally, it ranks 16th in terms of the value of its goods exports over the last decade, a position that remains below the potential of a city benefiting from trade agreements with every major market on the planet.

In order to support its long-term economic growth, Greater Montréal must reinforce its international trade and connectedness. The city needs to work to consolidate its attractiveness factors and its comparative advantages (talent pool, relatively low cost of living, competitive operating costs for businesses, and transportation infrastructure that facilitates exportation and mobility) all while increasing its international reputation and expertise in industries of the future like artificial intelligence. To reach this goal, the Chamber of Commerce of Metropolitan Montreal and Montréal International propose approaches that could increase the volume of the four flows that support the city’s connectedness and thus contribute to greater collective wealth.

26 INVESTISSEMENT QUÉBEC (2017), *L’impact économique des filiales de sociétés étrangères au Québec*.

Increasing the volume of exports

In terms of goods and services flows, this study demonstrates that the performance of businesses abroad has a decisive influence on economic growth. As such, it is important to ensure access to support and financing programs for businesses wanting to internationalize—as is done by the members of the network of regional export promotion organizations (ORPEX)—that serve all of Quebec and give businesses access to low-cost resources.

The governments of Quebec and Canada both provide access to subsidy programs for international market development, the Programme d'exportation PEX Entreprise (provincial) and CanExport (federal) respectively. They are effective levers for enabling businesses to explore new markets while decreasing the associated financial risks. Also, improvements to these programs were recently implemented, such as the option to submit your application online and a reduction in case processing times. But there are more improvements to bring to these programs, which remain misunderstood by several entrepreneurs. There are promotional efforts to carry out and some rather restrictive requirements could be loosened up. For example, for admissibility, CanExport requires no sales to be made to target markets in the last 24 months. This requirement should be revised, especially for the United States, where the states are distinct markets.

The amount of aid allocated should be adjusted and the admission period should be extended. The PEX program offers support for 12-month projects. However, in general, businesses need financial support over a longer period to develop a new market. Moreover, the reimbursement rate of the PEX program should be increased to the same level as CanExport's, and allowable expenses should be adjusted according to the digital economy's new demands.

As concerns the assistance offered by the government abroad, trade delegates within Quebec's delegations and foreign offices and Canada's embassies and consulates offer essential support to businesses. Nevertheless, resources are limited and could be increased to meet the growing volume of demands.



Approach #1

Increase the efficiency and reach of existing programs that support and finance exports:

- a) by loosening eligibility criteria for projects and their duration;
- b) by increasing allowable expenses;
- c) by increasing the number of trade delegates representing Quebec and Canada abroad.

Moreover, SMEs have everything to gain by collaborating with businesses that are in the middle of international expansion. They could benefit from closer partnerships with big multinationals established in the city, enabling them to access foreign markets and develop their network at the same time. Also, this collaboration would allow SMEs to benefit from access to public markets and international financial institutions to increase the amount of business they do abroad.



Approach #2

Reinforce partnerships between Canadian multinationals and SMEs to make it easier for them to access foreign markets.

Logistical hubs, transportation infrastructure and direct flights play a key role in Greater Montréal's internationalization. Since the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) recently came into effect and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) was signed, one can expect increased exchange of goods and services overseas in the near future. It is important to invest in maritime, port and airport development to consolidate the city's status as a North American hub.



Approach #3

Ensure the competitiveness of logistical hubs and strategic assets like ports, airports, railroads and road networks:

- a) by designating reserved areas in the immediate surroundings to facilitate their activities;
- b) by developing an international promotion strategy for business opportunities linked to these hubs.

Attracting and retaining international talent

When it comes to people flows, Greater Montréal's stakeholders need to rally together to attract and retain international talent. The near-full employment situation in the city is extremely positive. However, when combined with a demographic crunch, this creates difficulties in recruiting specialized labour in some sectors, which risks putting the brakes on the ability of businesses to grow. For example, technology and commercialization (development, sales, marketing, etc.) workers are in high demand. The city's businesses need to be able to count on an immigration system representative of the economic and demographic challenges they are faced with. Quebec's 2016-2021 immigration policy includes measures that aim to balance immigrant workers' skills with the market's needs. Since these measures are recent, it is still too early to really assess their effects. However, it is important to reinforce them and ensure they are as effective as possible.

Knowing that the ability to innovate and commercialize innovation is an important lever for wealth-creation, attracting international talent and students needs to remain a priority. Moreover, the local talent pool will benefit from greater internationalizing, especially concerning higher education. Only 2.3% of Canadian university students benefitted from an experience abroad during the 2014-2015 school year. Employees' work and school experience abroad is directly linked to concrete business advantages, such as an extended network and ease when working in a culturally diverse context. It also has a positive effect on workers' revenue, as those with experience abroad often have an average salary 18% higher than those without such experience.



Approach #4

Further internationalize the talent pool of Greater Montréal by investing in four fronts:

- a) ensuring that efforts to match immigrants' CVs with the job market's needs are carried out effectively, and assessing them at regular intervals;
- b) continuing the efforts to attract and retain international talent;
- c) increasing the attraction of international students in collaboration with learning and research establishments;
- d) systematically promoting the acquisition of international training or job experience in the talent pool.

27 Bureau canadien de l'éducation internationale, *Un monde à apprendre : Résultats et potentiel du Canada en matière d'éducation internationale 2016*, 2016.

28 University of Victoria, for *Global Affairs Canada*, *Outbound Mobility of Young Canadians: Benefits, Challenges and Recommendations*, 2017.

29 British Council, *Research and analysis on the benefits of international opportunities*, 2014.

Reinforcing the attraction of foreign direct investment and international entrepreneurs

This study demonstrates the importance of maintaining Greater Montréal's international promotion efforts, like the initiatives aiming to attract and retain international investments and entrepreneurs. It is clear that competition on the global stage is increasingly taking place between cities. The attraction of foreign direct investment should thus be done more strategically, by making the arrival of foreign businesses easier through competitive incentives and effective promotion.



Approach #5

Promote the city internationally with a strong, unifying and distinctive brand image, inspired by best practices.

Accelerating data exchanges

Finally, data flows can be strengthened by accelerating the integration of digital technology into all industries. We suggest prioritizing the local centre of excellence in artificial intelligence. This highly innovative digital sector, which is behind many disruptive technologies, offers high growth prospects over the next few years and presents a large export potential.

Digital infrastructure needs to meet businesses' current and future technological needs and thus be modernized. To this effect, 5G technology meets the growing need for fast internet speeds and benefits the expansion of the Internet of Things, cloud computing, 3-D design and big data management, among others.



Approach #6

Stimulate the digital exportation of services by developing digital infrastructure like the 5G network and using the businesses in our artificial intelligence hub.

In brief, if Greater Montréal wants to increase its connectedness score and its wealth creation, it needs to not only concentrate on attraction factors (talent, business environment, etc.), but also on its strategic strengths (transportation infrastructure, sectorial clusters, etc.). The metropolitan economy's internationalization is not a one-dimensional process, which means the response from economic stakeholders cannot be either.

Methodology

The metropolitan connectedness score used to rank cities corresponds to the sum of the international flows standardized and recalculated based on the maximum score of 110. More precisely, it corresponds to the flow of goods and services, finance, people and data. The score is weighted based on its long-term impact on the GDP.

The goods and services index reflects the value of exports delivered by water, land or sky from a particular region, standardized based on the metropolitan region's economic size.

$$\text{Value of the 2008-2016 exports} \div \text{real GDP}$$

The financial flow index represents the total foreign investments in fixed assets and jobs created between 2008 and 2017, standardized based on the metropolitan region's economic size, to which is added the total value of merger and acquisition transactions.

$$(\text{Sum of 2008-2017 fixed assets} \div \text{real GDP}) + (\text{sum of the jobs created between 2008-2017} \div \text{total jobs}) + \text{sum of the merger and acquisition transactions by foreigners in USD million in 2017}$$

The people flow index is based on the annualized growth rate of the foreign-born population (% of the total) between 2006 and 2016 compared to the immigration baseline.

$$\text{Portion of the population born abroad (\%)} 2006 \times \text{CAGR of the foreign-born population (\%)} 2006-2016$$

The data flow index is calculated based on the annualized growth rate of digitally deliverable service exports from 2005 to 2015, relative to the total of services delivered in the economy³⁰.

$$\text{CAGR of digital service exports (\%)} 2005-2015 \times \text{total real GDP of industrial goods-services exports} \div \text{total real GDP, for all industries}$$

30 Digitally delivered services include business, professional and technical services; royalties and licence fees; insurance services; financial services and the telecommunications industry.

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