







sponsored by: JPMORGAN Chase & Co.



2 FOREWORD

Jan De Silva, President & CEO, Toronto Region Board of Trade & Leigh Smout, Executive Director, World Trade Centre Toronto

THE CONTEXT FOR ACTION

- 4 The Toronto region needs a World Trade Centre
- 6 The big picture–where World Trade Centre Toronto fits in
- 8 Priority industries for the Toronto region

PRIORITY EXPORT MARKETS

10 Methodology & Observations

12 The Top 16 Export Markets Established Industries

14 Aerospace

- 16 Automotive
- 18 Food & Beverages Human Health & 20

Sciences

Emerging Industries

22 Cleantech

- 24 Citytech
- 26 Fintech

28 APPENDIX & EXTERNAL LINKS

Destinations (Regions & Cities) by Industry Representation

28 Aerospace

29 Automotive

- 29 Food & Beverages
- 30 Human Health
- & Sciences
- 30 Cleantech
- 31 Citytech
- 32 Fintech

33 ACKNOWLEDGEMENTS 34 REFERENCES & NOTES

SPONSORED BY:

JPMORGAN CHASE & CO. **TORONTO**



FOREWORD

We're the fastest growing city region in North America, recognized for being open, inclusive and one of the world's most diverse populations. Right now, there is an unprecedented opportunity for us to accelerate this appeal and position Toronto as Canada's global champion. Trade and the diversification of our growth markets is more critical than ever to the success of our businesses, our city region and our country—it's the key to our prosperity. According to the Conference Board of Canada, every \$100 million

In order to expand Toronto companies' export capacity, the Toronto Region Board of Trade officially launched World Trade Centre Toronto (WTC-T) as our trade services arm. As a member of the World Trade Centre Association, WTC-T creates unparalleled global access for the Toronto region's business community with its connection to 317 branded properties and trade services associations in 88 countries. WTC-T provides targeted international trade advisory services and expertise through comprehensive research, trade education, strategy building workshops, inbound and outbound trade missions and valuable connections to

Over the course of developing WTC-T's programming, it became clear more data on priority sectors was needed to determine the best markets to export or

Supported by JPMorgan Chase and our WTC-T partner, the City of Toronto, this first report for World Trade Centre Toronto (WTC-T) identifies priority export markets for Toronto region industries and clarifies WTC-T's trade role in the context

It represents the foundation for our Market Activation Program (MAP), a strategic blueprint guiding outbound missions for the region's business community and inbound mission support services for partner agencies, including other WTCs. Through this critical research, we are equipping our region's SMEs with the

Leigh Smout Executive Director World Trade Centre Toronto

THE TORONTO REGION NEEDS AWORLD TRADE CENTRE

SMEs & Trade

of businesses in Canada are SMEs

of SMEs in Canada export

of goods exporters in Canada are SMEs

of goods exports is generated by SMEs Statistics Canada & Innovation Science and Economic Development Canada

ies are at the centre of global economic growth. 750 cities worldwide generate 57% of global GDP today, and will generate 61% of global GDP by 2030.1 Cities are the backbone of the Canadian economy as well. A mere seven cities generate half of Canada's GDP.² To ensure that Canadian cities are competitive and sought-after business regions, policymakers have proactively established metropolitan-focused economic development organizations (EDOs) to improve coordination and service delivery, maximize the impact of scarce resources, and address shared challenges that cross arbitrary municipal boundaries. In the Toronto region, Metrolinx oversees the coordination of all modes of transportation, Toronto Global secures foreign direct investment, and Tourism Toronto markets the region to tourists. Yet, despite the strategic significance of international trade to the economy, with 1 in 5 Canadian jobs being linked, there is no regional entity leading the promotion of international trade, or the integration of international trade services.³ This gap is where World Trade Centre Toronto (WTC-T) fits in.

Businesses in the Toronto region are extremely fortunate to have a wide range of international trade services available to them. In fact, the most common

challenges businesses face when going global can be resolved by one of the many providers of international trade services operating in the Toronto region. Despite its variety, the region's supply of international trade services is highly fragmented, and lacks a central point of integration. Hundreds of local businesses inform us that this fragmentation is confusing, and discourages them from exporting. WTC-T is the business community's solution to this problem. Its programing was developed by the Toronto Region Board of Trade to meet the specific needs of Canadian businesses that are struggling to export.

Toronto's business community agrees that Canada needs more exporters. 76% of Canada's goods exports are generated by a mere 500 businesses,⁴ and only 4 in 100 Canadian businesses are exporting now.⁵ Equally important, is getting existing exporters to diversify their markets. 77% of Canadian export activity is with one international market - the United States.⁶ Getting more businesses exporting, and existing exporters to diversify their international sales, would create jobs and enhance Canada's economic competitiveness. Every \$100 million in new export activity creates 1,000 jobs,7 and businesses that sell internationally are 30% more productive, and 25% more innovative, than businesses that do not ⁸

Our economy specifically needs more small and medium-sized exporters. Small and medium-sized enterprises (SMEs), in Canada, are less likely to export than large enterprises with more than 500 employees. Last year in Canada, 4 in 100 SMEs exported, compared to 23 in 100 large firms.9 Looking around the globe, there are several countries that have a larger share of SMEs exporting than Canada does. If Canada increased its share of SMEs exporting to the same level as its large firms, 23%, it would mean an extra 219,000 businesses generating an estimated \$225 billion in new export activity.10

While such challenges are not exclusive to Canada, other jurisdictions are moving faster to resolve them. By the end of this year, 28 cities in the United States (U.S.) will have developed a trade strategy to position themselves as global economic leaders.¹¹ In some instances, U.S. cities have set an ambitious target of doubling their exports within five years. The Board believes the Toronto region has no excuse for being less ambitious. The most important distinction is that U.S. cities have metropolitan focused EDOs responsible for promoting international trade, and integrating international trade services. The Board argues a World Trade Centre can fill this missing and vital piece for the Toronto region.

Canada

"IF CANADA INCREASED **ITS SHARE OF SMEs** EXPORTING TO THE SAME LEVEL AS LARGE FIRMS, IT WOULD MEAN AN EXTRA 219,000 **BUSINESSES GENERATING AN ESTIMATED \$225 BILLION IN NEW** EXPORT ACTIVITY."

28%

070/

					5%
(5%
(0		
(
(14%	0		
(24%	21%	

Who Does Exporting Better? % OF SMEs EXPORTING FOR G7 MEMBERS Statistics Canada & UPS¹

THE CONTEXT FOR ACTION



THE BIG PICTURE Where World Trade Centre Toronto fits in

Catalyze Trade Activity:

World Trade Centre Toronto is the trade-enabling services arm of the Toronto Region Board of Trade. Under its WTC-T franchise, the Board is spearheading efforts in the Toronto region to grow the number of SMEs developing business internationally. To date, WTC-T has helped hundreds of Canadian SMEs explore, and prepare for, new international business opportunities. Offering four core services, WTC-T was structured to help Canadian SMEs overcome the most common export challenges.

Help Trade Service Providers Innovate & Activate: Canadian SMEs also stand to benefit from the Board's effort to reduce fragmentation among the region's providers of international trade services. WTC-T offers service providers in the Toronto region a platform to collaborate, innovate and mentor Canadian SMEs to a whole new level. Collaborations to date are already producing exciting results. Signs of higher utilization of existing trade services are being witnessed through the Board's Trade Accelerator Program (TAP). The degree of cooperation among service providers, public and private sector, is extraordinary and growing. TAP is being deployed to cities across Canada. The City of Toronto has also

Connect Industry Associations to International Trade Services:

WTC-T is designed to connect industry associations to international trade services. Just as Toronto Global intends to collaborate with industry groups on their needs, WTC-T seeks to help similar organizations take their members global. Research undertaken by the Board this year revealed many industry associations feel ill-equipped to assist their members with developing business internationally. Partnering with WTC-T will allow industry associations in the Toronto region to focus on their core competencies and missions, at the same time as delivering value-added trade services to their business members.

WTC-T SERVICES:



An education program introducing new and emerging companies to the opportunities associated with international trade while building resource connections to support trade growth.

A dynamic, hance program for small

A dynamic, hands-on six-week program for small to medium-sized enterprises, providing essential knowledge, resources and coaching to strategically scale-up, develop and execute an export plan.



allattility in attility will detile detalling

THE BIG PICTURE

I want to access new markets via trade missions

An experiential program offering outbound trade missions for Toronto Region businesses seeking international market access, and inbound trade mission services to international business delegates seeking Toronto market access.

PRIORITY **INDUSTRIES** FOR THE TORONTO REGION

ities have two sorts of businesses. On one hand, cities have businesses that are tied to the local economy. On the other, cities have businesses whose goods or services can be offered anywhere in the world. The latter group, which fall into the category of traded industries, have vastly larger customer bases than the first and, by extension, opportunities to grow and succeed.

Cities that are fortunate to have large concentrations of businesses or industries with a proclivity for trade, are more prosperous. The Toronto region is extremely fortunate to have the second highest concentration of traded industries in North America.¹⁴ Nationwide, the Toronto region is a leader in 26 of 41 traded industries (goods and services).15 Yet evidence shows that our region's concentration of traded industries is underperforming on the global stage.¹⁶ This is troublesome.

The Board agrees with the federal Advisory Council on Economic Growth that immediate action is needed to unleash the significant potential of Canada's traded industries.¹⁷ The Canadian economy is advanced, but small in absolute terms. Achieving global scale and competitiveness requires removing barriers and galvanizing action for our most promising industries.

The Advisory Council encouraged the federal government to focus on six to eight industries - the Board thinks this is an appropriate number as well.¹⁸

Seven industries specifically stand out in the Toronto region. They are remarkable for their economic performance over the past decade, for their commanding share of the region's economy, and for their alignment with existing government priorities. They also stood out to a variety of expert panels, think tanks and consultancies who sought to identify the source of the next big Canadian company. These industries are: aerospace, automotive & parts, food & beverages, human health & sciences, cleantech, citytech, and fintech; film and tourism also stood out, but were not studied (see page 9 for more).

These seven sectors fit one of two categories established industries and emerging industries. The default approach for identifying international market opportunities in the past has been to study established industries, and the goods they produce. The reason for this is simple. Existing trade data does an ineffective job of measuring services and emerging industrial activity. If Canada continues to prioritize things that are easy to study, then it will never lead in a global 21st century economy.



EMERGING INDUSTRIES

Over the past year, the Board conducted a series of interviews market opportunities abroad. Beginning with its Toward a Toronto Region with organizations that represent these industries. The Board's Economic Strategy, created with the Institute for Competitiveness & objective was to: confirm the availability of industry specific trade Prosperity and KPMG, the Board identified the region's top 20 industries data; validate its research and methodological approach; discover by employment size. The Board then considered the productivity, GDP the international trade services offered by these organizations; and and employment growth of these industries using various estimates. to gauge interest in cooperating on the shared goal of scaling-up The Board then examined which of these industries aligned with stated Canadian SMEs. These interviews confirmed the Board was on the government priorities (at all levels). The Board then reviewed literature right track, and that WTC-T was deploying net new trade services from expert panels, think tanks, and academic institutions to identify in the Toronto region. Moving forward, WTC-T looks forward to the Province's greatest industrial opportunities moving forward. Finally, formalizing a relationship with these organizations, and facilitating the Board considered two important factors. Based on what WTC-T will global trade opportunities for their industry members. do (i.e. its programming) can it meaningfully assist a particular industry? Identifying priority industries for the Toronto region was an important Moreover, does an industry want help from WTC-T? This is the process and multistage exercise that enabled the Board to locate specific that led the Board to its conclusion.

METHODOLOGY & OBSERVATIONS

"WE CAN MEASURE THE DWINDLING **EXPORTS OF** CANADIAN TOBACCO. **BUT NOT EXPORTS** OF LIFESAVING MEDICAL SOFTWARE. IF CANADA AIMS TO FOSTER GLOBALLY COMPETITIVE **BUSINESSES, THIS** MUST CHANGE."

valuating international trade opportunities is an art, not a science. The limited definitions used to measure trade in Canada means that businesses and policymakers alike have a difficult time assessing the export activity for all segments of the Canadian economy. The data that is available is chiefly useful for examining the flow of goods, and assessing the activity of established industries. The absence of reliable data on Canadian services and emerging industries, such as fintech or cleantech, is a major disadvantage to businesses and policymakers. It means we can measure dwindling exports of Canadian tobacco, but not exports of lifesaving medical software. If Canada aims to foster globally competitive businesses, this must change.

Identifying international trade opportunities should be simpler. SMEs conduct market research to focus finite resources on generating sales, and to mitigate exposure to risk when exporting. Making international trade opportunities easier to identify may positively result in more businesses willing to export. Like the other services available to them, SMEs appear to have difficulty navigating and deciphering the trade data they can access. Knowing that SMEs often lack the capacity or knowledge to conduct their own market research, Canadian trade data should be made less complex and fulsome. SMEs also indicate that research which highlights specific destination cities, is more useful than research which highlights destination countries.

There are no perfect solutions to fill these gaps, but the Board believes a better effort must be made to gauge trade and industry activity. The approaches the Board employed to identify international market opportunities for Toronto region businesses fit into two categories.

ESTABLISHED INDUSTRIES

2. Automotive (NAICS 3361, 3362 & 3363) **3. Food & Beverages** (NAICS 311 & 3121) 4. Human Heath & Sciences (NAICS 3254 & 3391)

The export activity of some established industries, particularly manufacturing, can be analyzed using the North American Industry Classification System (NAICS). This system was chosen over others, including the Harmonized System (HS), because it aligns better with the Board's cluster definitions and other economic statistics, such as employment and GDP.

A standard approach for identifying potential export markets, is to quantify the value, and growth, of industry specific trade for a range of international markets. Doing so offers companies from these industries insight on where product and service consumption is growing in the world, and where domestic competitors are conducting business.

Not all established industries have their exports tracked. This information gap can be overcome by using the trade data of other industries as a proxy. Industries do not operate in isolation. Instead, complimentary industries frequently operate as clusters – selling products and services among them. This means industries that do not have their exports tracked, can identify potential business opportunities by examining the trade activity of their cluster counterparts.

Export markets are prioritized using a composite ranking system that averages the rank of three indicators: 1) total 2016 exports; 2) change in total exports over 6-years; and 3) the compound annual growth rate (CAGR) of exports over 6-years. A final rank is then assigned for each market using the averaged scores.

Ontario-based exports are contrasted with worldwide imports for each established industry. This is done to provide insight into domestic trade activities, such as missing markets and trade performance in relation to other jurisdictions.

The Board's approach was informed by Brookings' market prioritization methodology for the Global Cities Initiative, a joint of Brookings and JPMorgan Chase.

EMERGING INDUSTRIES

- **5. Cleantech** (Undefined by NAICS)
- **6. Fintech** (Undefined by NAICS)
- **7. Citytech** (Undefined by NAICS)

Emerging industries grow from established industries. Many hope Canada's next billion-dollar company will come from one of these burgeoning segments.

There is substantially less economic data on emerging Canadian industries than established. Most emerging industries are not even classified by NAICS. This means traditional methods of measuring trade activity will not work for them.

This problem can partially be overcome using a few techniques. For instance, patent data can serve as an indicator of international market activity and a proxy for international technological transfer.¹⁹ The notion of using patent data to identify international market opportunities arises from the fact that exporters, investors and licensors are incented to protect their intellectual property when doing business abroad.²⁰ Another technique to identify international market opportunities for emerging industries, is to identify large or active concentrations of their customer base. For example, nearly half of fintech companies focus on business-to-business sales. Fintech firms are therefore most likely to seek out nurturing global financial centres for business development opportunities. The same approach also applies to citytech solutions. There are many private and public indices that can facilitate this exercise.

APPENDIX – LINKS TO EXTERNAL RESOURCES

To assist SMEs in further exploring the international markets identified through this report, most markets are linked to a detailed country commercial guide from the U.S. Department of Commerce. These guides are prepared annually by U.S. embassies and present a comprehensive look at the commercial environments of 125 international markets. To aid SMEs in identifying specific in-market regions and cities to explore, potential destinations are identified using a combination of sources including location of industry and cluster organizations. The potential destinations identified are likely to have a higher concentration of industry entities and innovators. The first point of contact for SMEs entering a new international market should always be the Canadian Trade Commissioners' Service, which operates in 161 international cities. The Canadian Trade Commissioners' Service helps SMEs navigate the complexities of international markets and identify potential international customers. After contacting the Canadian Trade Commissioners' Service, SMEs next call is often to a local industry or cluster organization for contacts and insights. Moreover, these organizations have a greater propensity to locate themselves in close proximity to industry entities and innovators. To save SMEs time and energy, most markets are linked to an industry or cluster entity.

THE TOP 16 EXPORT MARKETS



"THE NEED TO DIVERSIFY ONTARIO EXPORTS IS GREAT. THE OPPORTUNITY AND EASE TO DIVERSIFY ONTARIO **EXPORTS IS GREATER."**

his study analyzed over 150 export markets. The top 15 Comprehensive Economic and Trade Agreement with Canada (CETA) is export markets were identified for each of the seven on the verge of implementation, Toronto-based businesses should be industries being studied.³² Different countries were actively exploring business opportunities in Europe, and working with identified as priority export markets across the seven international trade service providers, like WTC-T, to build export plans. industries. The accompanying table lists the 16 most frequently Asia offers the second largest number of opportunities, and some identified priority markets. The one market that stands above all of the fastest growing, for Toronto region businesses. While Canada others is the United States. Most of Ontario-based exports are has few free trade agreements in force in Asia, the federal government destined for the United States. By way of comparison, any business is activity pursuing deals with Asian countries. Moreover, Toronto that derives 75% or more of its revenue from a single customer, businesses are fortunate that Asia is one of the most visited regions puts itself at risk of going under. The need to diversify Ontario for trade missions, and has a large presence of Canadian trade offices. exports is great. The opportunity and ease to diversify Ontario World Trade Centre Toronto will proactively work with its many partners, including the City of Toronto, to catalyze trade activity in 32 exports is greater.

Europe presents the most opportunities for Toronto region businesses seeking to export. Considering the European Union's

						(Better than the average global indexed score)							
	Markets	GDP 2015 (\$US)	Trad with (2010	e Agreement Canada 6)	Canadian Trade Office	Ease o a Busin (Averag Score 8	f Starting ness ge Global 32.27)	Ease o Across (Avera; Score 6	f Trading Borders ge Global 67.65)	Ease o Contra (Globa Score S	f Enforcing acts Average 55.48)	Percei Corrug (Averag Score 4	ved otion ge Global 13)
1	United States (7 times*)	\$18 trillion	\checkmark	In force (NAFTA)	\checkmark	\checkmark	(91.23)	\checkmark	(92.01)	\checkmark	(72.61)	\checkmark	(76)
2	United Kingdom (7 times*)	\$2.8 trillion	×	Signed (CETA)	\checkmark	\checkmark	(94.58)	\checkmark	(93.76)	\checkmark	(69.36)	\checkmark	(81)
3	Japan (7 times*)	\$4.1 trillion	×	Signed (TPP)	\checkmark	\checkmark	(86.09)	\checkmark	(86.43)	\checkmark	(65.26)	\checkmark	(75)
4	Germany (6 times*)	\$3.3 trillion	×	Signed (CETA)	\checkmark	\checkmark	(83.42)	\checkmark	(91.77)	\checkmark	(73.17)	\checkmark	(81)
5	China (6 times*)	\$11 trillion	×	Discussions (CCFTA)	\checkmark	×	(81.02)	\checkmark	(69.13)	\checkmark	(77.98)	×	(37)
6	France (6 times*)	\$2.4 trillion	×	Signed (CETA)	\checkmark	\checkmark	(93.27)	\checkmark	(100)	\checkmark	(73.04)	\checkmark	(70)
7	Australia (6 times [*])	\$1.3 trillion	×	Signed (TPP)	\checkmark	\checkmark	(96.47)	\checkmark	(70.65)	\checkmark	(79.72)	\checkmark	(79)
8	South Korea (5 times*)	\$1.3 trillion	\checkmark	In force (CKFTA)	\checkmark	✓	(95.83)	\checkmark	(92.52)	\checkmark	(84.15)	\checkmark	(56)
9	Mexico (5 times*)	\$1.1 trillion	\checkmark	In force (NAFTA)	\checkmark	\checkmark	(85.74)	\checkmark	(82.09)	\checkmark	(67.01)	×	(35)
10	Spain (4 times*)	\$1.1 trillion	×	Signed (CETA)	\checkmark	\checkmark	(86.61)	\checkmark	(100)	\checkmark	(69.48)	\checkmark	(58)
11	Singapore (4 times [*])	\$292 billion	×	Signed (TPP)	\checkmark	\checkmark	(96.49)	\checkmark	(89.30)	\checkmark	(83.61)	\checkmark	(85)
12	Netherlands (4 times*)	\$750 billion	×	Signed (CETA)	\checkmark	✓	(94.15)	\checkmark	(100)	\checkmark	(59.94)	\checkmark	(87)
13	Israel (3 times*)	\$299 billion	\checkmark	In force (CIFTA)	\checkmark	\checkmark	(92.28)	\checkmark	(82.85)	\checkmark	(57.93)	\checkmark	(61)
14	Ireland (3 times*)	\$283 billion	×	Signed (CETA)	\checkmark	\checkmark	(95.91)	\checkmark	(87.25)	\checkmark	(57.88)	\checkmark	(75)
15	Hong Kong (3 times*)	\$309 billion	×	No Discussions	\checkmark	\checkmark	(98.20)	\checkmark	(88.94)	\checkmark	(72.57)	\checkmark	(75)
16	India (3 times*)	\$2.1trillion	×	Discussions (CIFTA)	\checkmark	×	(74.31)	×	(57.61)	×	(35.19)	×	(35)

*The number of times the market was identified as a top 15 destination for the Board's priority industries Sources: The World Bank, Global Affairs Canada & Transparency International²⁰

different countries identified as priority export markets for the region's seven priority industries.



					-14				
N1	TARIO-BASED TR		r				GLOBAL TRADE	ACTIVITY	
MOLLAND MALE	Top Export Markets for Ontario-based Aerospace Manufacturers in 2016 (NAICS 3364)	Value of Ontario- based Aerospace Exports in 2016 in \$CDN	% of Total Ontario- based Aerospace Exports in 2016	Change in Value of Ontario- based Aerospace Exports 2010-2016 in \$CDN	Annualized Growth Rate 2010- 2016	Market Prioritization Ranking [A composite ranking of: a) 2016 Export Value, b) 2010-2016 Change in Value, c) 2010-2016 CAGR]	Top Import Markets for Aircraft & Associated Products Worldwide in 2016 in \$US	Value of Worldwide Aircraft & Associated Products Imports in 2016 in \$US	Annualized Growth Rate 2010- 2016
	France	\$2.7 billion	66.90%	\$1.03 billion	6.90%	2	France	\$33.7 billion	5.5%
2	United States	\$224 million	5.40%	\$84 million	7.00%	5	United States	\$30.9 billion	8.6%
3	China	\$182 million	4.40%	\$112 million	14.70%	3	China	\$29.2 billion	15.4%
Ŀ	Germany	\$122 million	2.90%	\$113 million	45.20%	1	Germany	\$19.7 billion	-4.5%
5	Ireland	\$118 million	2.80%	(\$22 million)	-2.40%	11	Ireland	\$13.6 billion	26.6%
6	United Arab Emirates	\$115 million	2.80%	(\$260 million)	-15.50%	13	United Arab Emirates	\$9.6 billion	11.0%
Z	Netherlands	\$61 million	1.50%	\$60 million	101.70%	3	Netherlands	\$8.1 billion	41.4%
3	Japan	\$48 million	1.20%	\$22 million	9.20%	9	Japan	\$6.7 billion	7.8%
)	Singapore	\$41 million	1.00%	\$37 million	38.50%	7	Singapore	\$6.6 billion	3.1%
0	Turkey	\$28 million	0.70%	\$22 million	26.50%	8	Turkey	\$4.3 billion	5.3%
1	Spain	\$27 million	0.70%	\$27 million	107.70%	6	Spain	\$4.2 billion	7.5%
2	South Korea	\$24 million	0.60%	\$15 million	15.80%	11	South Korea	\$4.0 billion	6.3%
3	Switzerland	\$24 million	0.60%	(\$27 million)	-10.20%	14	Switzerland	\$3.9 billion	8.4%
4	Thailand	\$21 million	0.50%	\$19 million	39.00%	10	Thailand	\$3.6 billion	48.0%
5	India	\$17 million	0.40%	(\$3 million)	-3.00%	14	India	\$2.7 billion	0.2%

Sources: Innovation, Science and Economic Development Canada -Trade Data Online; UNCTAD Stat – International trade in goods

Note: Canada, Russia, the United Kingdom were removed from the list of top import markets.

X



anada has a well developed aerospace industry. 70% of the industry is manufacturing based, and 30% pertains to the maintenance, repair, or overhaul (MRO) of aircraft.²³ Next to Greater Montreal, the Toronto region is the second

largest centre of aerospace manufacturing and MRO in Canada. Aerospace manufacturers based in the Toronto region generate \$1.08 billion in GDP, and employ nearly 9,000 workers.²⁴ The region is also home to a world-leading aerospace integration centre, located at Downsview.

International demand for aircraft is robust. Over the next 20 years, world-wide passenger and cargo traffic is anticipated to grow 5% annually.²⁵ This activity, which is being spurred by developing economies, translates into 35,000 new aircraft or a \$4.8 trillion market. 26 Other trends fueling this forecast relate to the demand for smaller or more efficient aircraft. ²⁷ Countries with aerospace manufacturing centers, including Canada, are aggressively positioning themselves to capture as much new market share possible.

Canadian aerospace manufacturers are active exporters. 85% of Canadian aerospace products are exported already.²⁸ 60% of aerospace exports are supplychain related.²⁹ Yet, the bulk of Canada's aerospace supply chain is too small to handle the volume that large manufacturers, like Boeing or Airbus, require. Analysts suggest Canadian firms should instead target the tierone suppliers of large manufacturers instead.³⁰ Since the bulk of Canada's aerospace supply chain is comprised of SMEs the greatest business opportunities remain in North America. Analysts also indicated Canadian companies can be competitive in the MRO space.³¹

METHODOLOGY

As an established industry, it is possible to measure the trade activity of Ontario-based aerospace manufacturers in over 150 international markets. The accompanying table identifies the 15 largest international markets for these manufacturers, by value of exports, in 2016. The table then quantifies the level of growth within each market, over a six-year period, to identify favourable business environments. This information is then compared to worldwide aerospace imports to identify areas of alignment or potential gaps. Further background on industry activity is available through the Commercial Guides supplied in the Appendix.

AUTOMOTIVE (NAICS 3361, 3362 & 3363)



Estimated # of People

2015, CMA

of Ontario Labour Directly Employed, Force, 2015





InfoCanada & City of Toronto³



IN 2016, ONTARIO **RECLAIMED ITS POSITION AS** THE LEADING SUBNATIONAL JURISDICTION IN NORTH AMERICA FOR AUTOMOTIVE PRODUCTION.



he global automotive industry continues to grow following its near collapse during the global recession. Global sales hit a new high in 2016 with 88 million cars sold, an increase of 4.8% over 2015, and the seventh straight year of growth.³³ This growth is being led by China, the world's largest car market, and by renewed strength in North American sales.³⁴ The entire industry is preparing for the inevitable disruption that will be caused by emerging technologies, such as electric, autonomous, and connected vehicles.

Ontario's automotive industry has continually confronted competitive challenges over the past three decades. Yet no threat has been greater than the global recession and the near-bankruptcy of General Motors and Chrysler. Between 2007 and 2009, 43,500 jobs were lost in Canada's automotive industry, 80% of which were in Ontario.³⁵ Despite important partnerships announced recently with the federal and provincial governments, industry investment is down from historical highs, with lower cost jurisdictions, such as Mexico, gaining.³⁶

Despite these challenges, Ontario's automotive industry remains an economic driver. More than 125,000 people are directly employed by automotive and parts manufacturers in Ontario, with 35% of those employed working in the Toronto region.³⁷ Most industry workers, approximately 63%, are employed by parts manufacturers. In 2016, Ontario surpassed Michigan to reclaim its position as the leading subnational jurisdiction in North America for automotive production.³⁸ Most importantly, Ontario continues to host vehicle assemblies for five global brands (Chrysler, Ford, GM, Honda, and Toyota).³⁹

	ONTARIO-BASED	TRADE ACTI	/ΙΤΥ			GLOBAL TRADE ACTIVITY				
MAP LOCATION	Top Export Markets for Ontario-based Automotive & Parts Manufacturers in 2016 (NAICS 3361, 3362 & 3363)	Value of Ontario- based Automotive & Parts Exports in 2016 in \$CDN	% of Total Ontario- based Automotive & Parts Exports in 2016	Change in Value of Ontario- based Automotive & Parts Exports 2010-2016 in \$CDN	Annualized Growth Rate 2010- 2016	Market Prioritization Ranking [A composite ranking of: a) 2016 Export Value, b) 2010-2016 Change in Value, c) 2010- 2016 CAGR]	Top Import Markets for Automotive Products Worldwide in 2015 in \$US	Value of Worldwide Automotive Products Imports in 2015 in \$US	Annualized Growth Rate 2010- 2015	
1	United States	\$75.9 billion	96.10%	\$28 billion	6.80%	4	United States	\$292 billion	7.5%	
2	Mexico	\$1.6 billion	2.10%	\$1 billion	14.20%	3	Germany	\$102 billion	3.2%	
3	China	\$611 million	0.80%	\$573 million	49.00%	1	United Kingdom	\$76 billion	6.5%	
4	Saudi Arabia	\$99 million	0.10%	\$83 million	30.70%	2	China	\$72 billion	5.5%	
5	United Arab Emirates	\$90 million	0.10%	\$67 million	21.80%	5	France	\$52 billion	-0.8%	
6	Germany	\$67 million	0.10%	\$42 million	15.10%	6	Mexico	\$44 billion	7.3%	
7	United Kingdom	\$62 million	0.10%	\$24 million	7.50%	10	Belgium	\$43 billion	1.1%	
8	France	\$33 million	0.00%	\$26 million	25.10%	6	Spain	\$40 billion	4.4%	
9	South Korea	\$26 million	0.00%	\$17 million	16.20%	8	Italy	\$35 billion	-2.1%	
10	Australia	\$24 million	0.00%	\$6 million	4.40%	14	Saudi Arabia	\$24 billion	7.9%	
11	Kuwait	\$22 million	0.00%	\$12 million	11.70%	13	Australia	\$23 billion	0.6%	
12	Japan	\$21 million	0.00%	(\$17 million)	-8.30%	15	United Arab Emirates	\$21 billion	12.1%	
13	Singapore	\$18 million	0.00%	\$15 million	29.80%	10	Netherlands	\$20 billion	0.8%	
14	Spain	\$16 million	0.00%	\$13 million	26.20%	12	Turkey	\$19 billion	4.0%	
15	Israel	\$ 15 million	0.00%	\$15 million	73.90%	8	Japan	\$19 billion	5.4%	

Innovation, Science and Economic Development Canada – Trade Data Online; World Trade Organization – Statistical Time Series Note: Canada was removed from list of the top import markets.





METHODOLOGY

As an established industry, it is possible to measure the trade activity of Ontariobased automotive & part manufacturers in over 150 international markets. The accompanying table identifies the 15 largest international markets for these manufacturers, by value of exports, in 2016. The table then quantifies the level of growth within each market, over a six-year period, to identify favourable business environments. This information is then compared to worldwide automotive imports to identify areas of alignment or potential gaps. Further background on industry activity is available through the Commercial Guides supplied in the Appendix.

FOOD & BEVERAGES

F III

1,098 Businesses. CMA

Estimated # of People

0.9%

Directly Employed, 2015, CMA

of Ontario Labour Force, 2015

· % GDP Estimate. of Ontario GDP 2015, CMA 2015

Sources: InfoCanada & City of Toronto – GDP and Employment Estimates

anadian food and beverage manufacturers have greatly benefited rom growing global trade in agricultural products and increased awareness of the high quality of Canadian food. As the fifth largest agricultural exporter in the world, Canadian food and beverages have an outstanding reputation and global presence. If the industry can continue boosting its productivity, navigate shifting trade relationships with the US and the EU, and confront a growing level of regulation and international competitors, Canadian food and beverage manufacturers are poised to capitalize on future global growth.⁴⁰

Advanced logistics and information technology now allow Canadian manufacturers to meet customer demand almost anywhere in the world. ⁴¹ Food and beverage processing, is the second largest manufacturing industry in Ontario, by sales. The Toronto For instance, 7% of Canadian food and beverage exports region, plays key role in this important provincial industry. Some 1,100 food and beverage manufacturers

employ roughly 64,000 workers in the Toronto region.42 Over 90% of Ontario's food and beverage processors are estimated to have fewer than 100 employees, which means they are prime potential exporters.43

In comparison to other Ontario based manufacturing industries, food and beverage processors weathered the global recession well. Ontario is exporting \$3.3 billion more in processed food and beverages today than in 2010.44 Although Ontario food and beverage manufacturers exported to over 150 countries in 2016, 96% of the industry's exports were destined for just seven markets: the US, Japan, China, Mexico, Australia, the UK, and Hong Kong.⁴⁵ The US alone accounted for 90% of Ontario's food and beverage exports in 2016. For China, Japan, Mexico, South Korea, Hong Kong, and Taiwan, Ontario's market share of industry trade was below the national average in 2016. were shipped to China in 2016, compared to only 1% of food and beverage exports from Ontario.

	ONTARIO-BASE	D TRADE ACTI	VITY		GLOBAL TRADE ACTIVITY				
MAP LOCATION	Top Export Markets for Ontario- based Food & Beverage Manufacturers in 2016 (NAICS 311 & 3121)	Value of Ontario- based Food & Beverage Exports in 2016 in \$CDN	% of Total Ontario- based Food & Beverage Exports in 2016	Change in Value of Ontario- based Food & Beverage Exports 2010- 2016 in \$CDN	Annualized Growth Rate 2010- 2016	Market Prioritization Ranking [A composite ranking of: a) 2016 Export Value, b) 2010-2016 Change in Value, c) 2010- 2016 CAGR]	Top Import Markets for Food & Beverage Industry Worldwide in 2015	Value of Worldwide Food & Beverage Imports in 2015 in \$US	Annualized Growth Rate 2010- 2015
1	United States	\$9.1 billion	90.10%	\$3.1 billion	6.30%	2	United States	\$134.8 billion	5.6%
2	Japan	\$119 million	1.20%	\$31 million	4.50%	4	China	\$102.7 billion	9.5%
3	China	\$117 million	1.20%	\$81 million	18.40%	1	Germany	\$87.5 billion	1.4%
4	Mexico	\$101 million	1.00%	\$4 million	0.70%	10	Japan	\$62.2 billion	-0.5%
5	Australia	\$67 million	0.70%	\$24 million	6.70%	5	United Kingdom	\$61.7 billion	2.2%
6	United Kingdom	\$59 million	0.60%	\$34 million	13.10%	3	Netherlands	\$57.1 billion	1.8%
Z	Hong Kong	\$51 million	0.50%	(\$9 million)	-2.30%	12	France	\$53.9 billion	0.7%
8	Saudi Arabia	\$49 million	0.50%	\$16 million	6.00%	8	Italy	\$44.0 billion	-0.3%
9	South Korea	\$37 million	0.40%	\$15 million	7.80%	7	Belgium	\$34.8 billion	1.2%
10	New Zealand	\$30 million	0.30%	\$21 million	19.40%	6	Spain	\$34.6 billion	0.3%
11	Philippines	\$27 million	0.30%	\$3 million	2.20%	12	South Korea	\$25.9 billion	5.2%
12	Netherlands	\$21 million	0.20%	\$11 million	11.30%	9	Hong Kong	\$25.2 billion	5.8%
13	Taiwan	\$18 million	0.20%	(\$9 million)	-5.60%	15	Mexico	\$23.5 billion	3.2%
14	Ireland	\$17 million	0.20%	\$4 million	4.00%	11	Saudi Arabia	\$22.4 billion	5.0%
15	Denmark	\$15 million	0.10%	\$2 million	2.90%	14	India	\$20.4 billion	8.9%

Sources: Innovation, Science and Economic Development Canada – Trade Data Online; World Trade Organization – Statistical Time Series Note: Canada and Russia were removed from list of the top import markets.



BY SALES, FOOD AND BEVERAGE PROCESSING IS THE SECOND LARGEST MANUFACTURING INDUSTRY IN ONTARIO.

METHODOLOGY

As an established industry, it is possible to measure the trade activity of Ontario-based food & beverage manufacturers in over 150 international markets. The accompanying table identifies the 15 largest international markets for these manufacturers, by value of exports, in 2016. The table then quantifies the level of growth within each market, over a six-year period, to identify favourable business environments. This information is then compared to worldwide food & beverage imports to identify areas of alignment or potential gaps. Further background on industry activity is available through the Commercial Guides supplied in the Appendix.



HUMAN HEALTH & SCIENCES (NAICS3254&3391)

F" III 653

Businesses, CMA

18k Estimated # of People Directly Employed, 2015. CMA

of Ontario Labour Force, 2015

0.3%

\$2.06B GDP Estimate, of Ontario GDP 2015, CMA 2015

0.3%

he Toronto region is home to an incredible concentration of human health & science (HHS) assets. In addition to holding Canada's largest concentration of research institutions and healthcare services providers, the Toronto region is also home to over 50 multinational healthcare companies and 1,000 healthcare start-ups. The region's human health & sciences industry is perceived to be one of Canada's high potential superclusters. The sector, which employs 17,000 workers in the region, encompasses all science and technology based products and services applied to improving human health. Its major industry segments include: pharmaceuticals, biologics, medical devices, research, and medical information technology.

Change is the new normal for the global healthcare sector. This change is being fueled by: aging and growing populations, the proliferation of chronic diseases, evolving financial and quality regulations, a heightened focus on care quality and value, informed and empowered patients, and innovative treatments and technologies. While healthcare spending varies greatly among countries, global health care spending is projected to increase by an average of 4.3% annually for the next two years.⁴⁶

Ontario's human health & science industry is exporting \$5.1 billion more in manufactured goods today than in 2010.47 The industry's exports are better diversified than other Ontario based industries – nearly 30% of health and human science exports are destined for non-US markets.

	ONTARIO-BASE	D TRADE ACTI	/ΙΤΥ				GLOBAL TRADE A	DE ACTIVITY					
MAP LOCATION	Top Export Markets for Ontario- based HHS Manufacturers in 2016 (NAICS 3254 & 3391)	Value of Ontario- based HHS Exports in 2016 in \$CDN	% of Total Ontario- based HHS Exports in 2016	Change in Value of Ontario-based HHS Exports 2010-2016 in \$CDN	Annualized Growth Rate 2010- 2016	Market Prioritization Ranking [A composite ranking of: a) 2016 Export Value, b) 2010-2016 Change in Value, c) 2010- 2016 CAGR]	Top Import Markets for Pharmaceuticals Worldwide in 2015 in \$US	Value of Worldwide Pharmaceuticals Imports in 2015 in \$US	A 0 2				
1	United States	\$6.9 billion	70.70%	\$3.2 billion	9.50%	4	United States	\$90 billion					
2	Japan	\$532 million	5.40%	\$465 million	34.60%	1	Germany	\$47 billion					
3	Italy	\$474 million	4.80%	\$455 million	58.30%	2	Belgium	\$39 billion					
4	Brazil	\$374 million	3.80%	\$361 million	62.10%	3	United Kingdom	\$33 billion					
5	Ireland	\$209 million	2.10%	\$128 million	14.40%	6	France	\$25 billion					
6	Belgium	\$196 million	2.00%	\$136 million	18.60%	5	Italy	\$23 billion					
7	France	\$117 million	1.20%	(\$23 million)	-2.50%	12	Japan	\$23 billion					
8	Netherlands	\$88 million	0.90%	\$12 million	2.30%	11	Switzerland	\$23 billion					
9	Taiwan	\$78 million	0.80%	\$59 million	23.10%	7	Netherlands	\$20 billion					
10	Switzerland	\$70 million	0.70%	(\$64 million)	-8.80%	15	China	\$20 billion					
11	Chile	\$62 million	0.60%	\$60 million	64.00%	8	Spain	\$15 billion					
12	Germany	\$59 million	0.60%	\$21 million	6.70%	10	Austria	\$8 billion					
13	United Kingdom	\$55 million	0.60%	\$10 million	2.90%	14	Australia	\$7 billion					
14	Mexico	\$50 million	0.50%	\$39 million	23.90%	9	Brazil	\$7 billion					
15	Australia	\$48 million	0.50%	\$16 million	6.00%	13	Ireland	\$6 billion					

Sources: Innovation, Science and Economic Development Canada – Trade Data Online; World Trade Organization - Statistical Time Series Note: Canada and Russia were removed from list of the top import markets.

ŦĨ

THE TORONTO **REGION IS HOME TO** CANADA'S LARGEST CONCENTRATION OF **RESEARCH INSTITUTIONS** AND HEALTH CARE SERVICE PROVIDERS.

Annualized Growth Rate 2010-2015

5.4%
-0.2%
-1.1%
6.0%
-1.8%
1.4%
5.0%
3.5%
6.6%
16.7%
-0.1%
3.3%
-1.7%
0.9%
5.5%

METHODOLOGY

Toronto's human health & sciences industry is comprised of several major segments. The narrow and limited definitions used to measure trade in Canada, means it is impossible to assess the export activity of all segments. What is achievable, is quantifying the export activity for Ontario-based manufacturers of pharmaceuticals and medical devices. Even though the bandwidth of this export activity is narrow, Toronto's human health & science companies can leverage this data to identify new international markets, as research illustrates the segments of this industry conduct business near one another. As such, this report examined the export activity for Ontario-based manufacturers of pharmaceuticals and medical devices in over 150 international markets. The accompanying table identifies the 15 largest international markets for these manufacturers, by value of exports, in 2016. The table then quantifies the level of growth within each market, over a six-year period, to identify favourable business environments. This information is then compared to worldwide pharmaceutical and medical device imports to identify areas of alignment or potential gaps. Further background on industry activity is available through the Commercial Guides supplied in the Appendix.

(UndefinedbyNAICS)



HIGHER ENERGY PRICES, GROWING ENVIRONMENTAL REGULATION AND PRESSURE TO INCREASE BUSINESS EFFICIENCIES ARE FUELING CLEANTECH COMMERCIALIZATION.

MAP LOCATION	Top Markets for Cleantech Patent Applications in 2015	Cleantech of Patent Applications in 2015	Change in Patent Applications Between 2011 and 2015	Cleantech Industry Representatives	Location of Industry Representatives
1	United States	57,121	17%	LACI	Los Angeles
2	Japan	44,053	13%	WERI	Tokyo
3	China	29,837	82%	Tsing Capital	Beijing
4	Germany	18,003	- 4%	CleanTechNRW & DCTI	Leverkusen & Bonn
5	South Korea	14,564	39%	KEPCO & KAIST	Seoul
6	France	8,421	13%	French Cleantech	Lyon
7	United Kingdom	5,290	9%	Centre for Cleantech Innovation	London
8	Netherlands	4,334	24%	Energy Valley & kiemt	Groningen & Arnhem
9	Switzerland	4,265	6%	Switzerland Global Enterprise	Zurich
10	Sweden	3,842	11%	cleantech inn	Gothenburg
11	Italy	3,072	14%	ENERMHY	Vercelli
12	Australia	1,741	0%	Australian CleanTech	Goodwood
13	Israel	1,685	16%	Israel Newtech	Jerusalem
14	Spain	1,530	- 11%	CEEC & aclima	Barcelona & Bilbao
15	India	1,412	6%	Zone Startups	Mumbai

Sources: Analytica Advisors, MaRS & Toronto Region Board of Trade⁵⁹



lobal cleantech adoption is accelerating. Higher energy prices, scarcity of resources, growing environmental regulation, concern with global warming, and pressure to increase business

efficiencies have helped fuel cleantech commercialization world-wide.⁴⁸ The sector's global market size is estimated to be \$5.8 trillion, and growing at an annualized rate of 3%.⁴⁹ Analysts predict the 2016 Paris Agreement will catalyze further investment in the coming years.⁵⁰

Canadian cleantech companies are accomplished exporters. Most cleantech firms in Canada are export focused. Due to the size of the Canadian market, and its unsatisfactory procurement opportunities, Canadian cleantech firms have traditionally relied on exports and international supply chain integration for growth.⁵¹ It is estimated that 87% of Canadian firms are exporting their cleantech products and services already.⁵² Even with 57% of industry revenue attributed to exports, there remains substantial room for international growth, and diversification.⁵³ With 78% of industry revenue coming from the U.S. market, Canadian cleantech firms have an opportunity to shift their business development strategies to other jurisdictions.⁵⁴

Toronto is a cleantech leader. The city is home to 1,700 cleantech firms, employing 36,000 people.⁵⁵ The 110 cleantech firms listed on the Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSXV) boast a market capitalization of \$29 billion – one of the largest concentrations of cleantech capital in the world.⁵⁶ Toronto also provides access to world-class tech talent and innovation hubs, including the Advance Energy Centre at MaRS.

METHODOLOGY

Patent activity is often used as a proxy for international technological transfer.⁵⁷ The notion of using patent data to identify international market opportunities arises from the fact that exporters, investors, and licensors are incented to protect their intellectual property when doing business abroad.58 Given the lack of suitable data to measure trade, licensing, and foreign-direct investment for cleantech products and services, patent data is a suitable indicator for international market activity. To assist Toronto firms with focusing their international business development activity, this report identifies the 15 most active markets for cleantech patent applications in 2015. The report then identifies cities within these markets, which cleantech cluster organizations are based. This approach is pragmatic since research informs us that cluster organizations locate themselves in close proximately to industry entities and innovators.

PRIORITY EXPORT MARKETS





WORLDWIDE, OVER 170 CITIES ARE UNDERTAKING SMART CITY PROJECTS TODAY.

he need for smarter cities is growing. Complexities involving rapid population growth, changing demographics, aging city infrastructure and constrained public budgets are pressuring cities globally to adopt technologies to remain prosperous, resilient, and inclusive. Cities worldwide are growing at a rate of 1.5 million people per week.⁶⁰ By 2030, 4.7 billion people are projected to be living in a city somewhere.61 Cities presently use 80% of the world's energy, 60% of the world's drinking water, and generate 70% of the world's carbon dioxide emissions.⁶² Even though cities generate most of global GDP, 37% of the world's impoverished live in them.⁶³

Cities around the globe are becoming more technology enabled. Over 170 cities worldwide are

presently undertaking at least one smart city project.⁶⁴ With this level of activity, there is little wonder that the global marketplace for smart city solutions is estimated to become \$1.8 trillion by 2020.65

The City of Toronto is one of the many cities worldwide aspiring to be smarter. The city is engaged in several transformative projects intended to improve service delivery, realize savings, and obtain new revenue. The City is also collaborating with the business community, via the Toronto Region Board of Trade, to build a smart city framework, and capitalize on a national Smart Cities Challenge. This activity will help local businesses develop new solutions and services, which can then be exported globally.





METHODOLOGY

Cities, and their affiliate bodies, are the primary customers of citytech firms. The lack of trade data on this emerging industry means the easiest way to identify priority markets for citytech firms, is to locate cities deploying large-scale smart city projects. Fortunately, smart city projects are easy to search for online, and are tracked by various indices. To assist Toronto firms with focusing their international business development activity, this study undertook a jurisdictional scan to identify smart city projects around the world. The scale of these projects was then validated by comparing them to available smart city indices. To further denote the level of citytech activity in these markets, the report also identifies the number of smart city patent applications filed in these markets in 2015.

MAP LOCATION	Markets with Large-Scale Smart City Projects	Cities with Large-Scale Smart City Projects	Smart City Patent Applications in 2015
1	Argentina	Buenos Aires	-
2	Chile	Santiago	-
3	China	Shanghai	210
4	Denmark	Copenhagen	-
5	France	Paris	-
6	Germany	Berlin	2
Z	Hong Kong	Hong Kong	-
8	India	Mumbai & New Delhi	-
9	Japan	Tokyo	7
10	Netherlands	Amsterdam	-
11	Singapore	Singapore	1
12	South Korea	Seoul	59
13	Spain	Barcelona	4
14	United Kingdom	London	23
15	United States	Chicago, Los Angeles, New York, San Diego & Washington	1,240

Toronto Region Board of Trade, Navigant Research, IHS Technology & World Intellectual Property Organization

PRIORITY EXPORT MARKETS





Source: University of Toronto & Toronto Financial Services Alliance 66

NEARLY HALF OF FINTECH COMPANIES FOCUS ON BUSINESS-TO-BUSINESS SALES.

digital revolution is underway in the financial services industry. Digital disruption is simultaneously challenging the relevance of today's largest financial institutions, while affording the same institutions the means to enhance their services and profitability. Research indicates Canada's fintech industry is well positioned to capitalize on global fintech activity.⁶⁷ Driven by deals in continental Europe and Asia, global fintech investment exceeded \$22 billion U.S. in 2015.⁶⁸ Indications of larger deal sizes, IPOs and the elimination of weaker players via acquisitions suggest the global fintech market is reaching the next level of maturity.

The global fintech marketplace is dominated by five centres: London, Singapore, New York, San Francisco, and Hong Kong. Decades of activity have enabled these centres to achieve the agglomeration of institutions, talent, capital, and innovation agents needed to develop leading fintech companies and products. However, the global fintech market is evolving quickly. There is no assurance the dominance of these centres will continue indefinitely. Other markets, among which Toronto is positioned, have demonstrated the ability to mature in a relatively short timeframe. Global rankings are therefore fluid, and susceptible to rapid industry changes.

Toronto is the hub of Canada's financial services industry. It is the second largest financial centre in North America, and consistently ranks as a Top 10 global financial centres.⁶⁹ The Toronto region has more financial institutions with a market cap of over \$50 billion than New York or London.⁷⁰ More than 230,000 people are employed in the region's financial services industry, which generates \$41.3 billion in GDP.⁷¹

			100
MAP LOCATION	Global Fintech Markets Ranked by Deloitte for Competitiveness & Innovation Culture	Fintech Patent Applications in 2014	Fintech Industry Hubs
1	United Kingdom	1,087	Innovate Finance
2	Singapore	225	-
3	United States	45,410	Partnership Fund for New York City & Y Combinator
4	Hong Kong	-	FinTech HK
5	South Korea	9,902	Seoul Space
6	Switzerland	-	Swiss Finance + Technology Association
z	Germany	1,516	Frankfurt Main Finance
8	Australia	4,491	Stone & Chalk
9	China	8,178	Association of Shanghai Internet Finance Industry
10	Netherlands	-	Holland FinTech
11	Ireland	-	Fintech Innovation Lab
12	France	463	Paris Fintech Forum
13	Israel	80	Startup Nation Central
14	Mexico	589	Fintech Mexico
15	Japan	16,978	Fintech Association of Japan

Sources: Deloitte, Relecura & World Intellectual Property Organization



Location of Industry Hubs

London

Singapore

New York & San Francisco
 Hong Kong
 Seoul
 Zurich
 Frankfurt
 Sydney
 Shanghai
 Amsterdam
 Dublin
 Paris
 Tel-Aviv
 Mexico City
 Tokyo

METHODOLOGY

Nearly half of fintech companies focus on business-to-business sales.⁷² Fintech firms are therefore likely to seek out nurturing global financial centres for business development opportunities. Fortunately, the competitiveness of global financial centres has, for years, been studied by various indices. To assist Toronto firms with focusing their international business development activity, this report leverages a compilation of indices, synthesized by Deloitte, to identify and rank the world's top 15 financial centres for fostering fintech. To denote the level of fintech activity in these markets, the report also identifies the number of fintech patent applications filed in these markets in 2014.

APPENDIX Links to External Resources

To help SMEs and WTC-T further explore the market opportunities identified in this report, the following section was constructed to curate links to:

- Industry and market specific Commercial Guides developed by the U.S. Department of Commerce;
- Investment guides, industry reports or industry organizations that help identify potential regions and cities to visit in a market; and
- Organizations that represent a priority industry in a market.

AEROSPACE



Commercial Guides	Destinations (Regions & Cities)	Industry Representation
France	Toulouse Lyon	Aerospace Valley Aerospace Cluster
China	Beijing Shanghai Zhuhai Harbin Xi'an	AVIC COMAC
Germany	Hamburg Bermen Munich	Hamburg Aviation Niedersachesen Aviation bavAIRia
Ireland	Dublin Belfast	FAEI Invest NI
United Arab Emirates	Dubai	-
Netherlands	Amsterdam Brabant Masstricht	NLR NAG
Japan	Tokyo	Society of Japanese Aerospace Companies
Singapore	Singapore	Association of Aerospace Industries EDB
Turkey	Eskisehir Izmir	ESAC ACA
Spain	Madrid Sevilla Zamudio	Madrid Cluster Aerospacial Hélice HEGAN
South Korea	Sacheon Yeongcheon	Korea Aerospace Industries Association
Switzerland	St. Gallen	Swiss Aerospace Cluster
Thailand	Bangkok	-
India	-	Society of Indian Aerospace Technologies & Industries

AUTOMOTIVE

Commercial Guides	Destinations (Regions & Cities)	Industry Representation
Mexico	Estado de México Guanajuato Coahuila San Luis Potosi	AMIA
China	Jilin Shanghai Chongqing Shandon Jiangsu	CAAM
Saudi Arabia	Dammam Jeddah Yanbu	NICDP
United Arab Emirates	Mussafah	-
Germany	Baden-Württemberg Bavaria North Rhine-Westphalia	VDA
United Kingdom	Birmingham Manchester London	SMMT
France	Centre-Val de Loire Normandy Hauts-de-France	CCFA
South Korea	Seoul Incheon Busan	KAICA
Australia	Melbourne Adelaide	FCAI
Kuwait	Kuwait City	-
Japan	Aichi Shizuoka Kanagawa Saitama Fukuoka	JAMA
Singapore	Singapore	-
Spain	Barcelona Valencia Zaragoza	ANFAC
Israel	Tel Aviv Haifa	MAI



FOOD & BEVERAGES





Commercial Guides	Destinations (Regions & Cities)	Industry Representation
Japan (Medtech & Pharma)	-	JPMA KBIC
Italy (Biotech & Med Eq.)	Milan Rome Bologna	IAB
Brazil (Pharma & Healthcare & Med Eq.)	Sao Paulo Rio de Janeiro	Biominas Brazil
Ireland (Pharma & Med Eq.)	Dublin Galway Cork Limerick	Life Sciences Ireland
Belgium (Healthcare & Med Devices)	Flanders	essenscia flanders.bio
France (Med Eq.)	Paris Lyon	France Biotech
Netherlands	Amsterdam The Hague Utrecht Nijmegen	Health Holland
Taiwan (Healthcare & Med Devices)	Taipei Taichung Tainan	ТМВІА
Switzerland	Basel Zurich Bern Lucerne	Swiss Biotech
Chile	-	-
Germany (Biotech & Medtech)	Munich Berlin Frankfurt Hamburg Stuttgart Dusseldorf	VBIO
United Kingdom (Healthcare & Med Eq.)	London Cardiff Manchester	United Life Sciences
Mexico	-	-
Australia (Healthcare & Med Eq.)	Melbourne Sydney	AusBiotech

X

Commercial Guides	Destinations (Regions & Cities)	Industry Representation
Japan (Renewable Energy & Smart Grid)	Токуо	LACI
China (Green Construction, Environmental Tech- nology)	Beijing	WERI
Germany (Pollution Control & Renewable Energy)	Leverkusen & Bonn	Tsing Capital
South Korea (Air Pollution Control & Renewable Energy)	Seoul	CleanTechNRW DCTI
France	Lyon	KEPCO KAIST
United Kingdom (Biomass, Sustain- able Construction & Smart Grids)	London	French Cleantech
Netherlands (Energy)	Groningen & Arnhem	Centre for Cleantech Innovation
Switzerland	Zurich	Energy Valley kiemt
Sweden (Power Generation & Smart Built Environ- ment Technologies)	Gothenburg	Switzerland Global Enterprise
Italy (Energy Efficiency Technolo- gies, Smart Grids & Renewable Energy)	Vercelli	cleantech inn
Australia (Smart Grid & Building & Construction)	Goodwood	ENERMHY
Israel (Energy)	Jerusalem	Australian CleanTech
Spain (Green Technology)	Barcelona & Bilbao	Israel Newtech
India (Energy, Environmental Technology)	Mumbai	CEEC aclima





Commercial Guides	Destinations (Regions & Cities)	Industry Representation
Argentina	Buenos Aires	-
Chile	Santiago	-
China	Shanghai	-
Denmark	Copenhagen	-
France	Paris	-
Germany	Berlin	-
Hong Kong	Hong Kong	-
India	Mumbai & New Delhi	-
Japan	Токуо	-
Netherlands	Amsterdam	-
Singapore	Singapore	-
South Korea	Seoul	-
Spain	Barcelona	-
United Kingdom	London	-

FINTECH



Commercial Guides	Destinations (Regions & Cities)	Industry Representation	
United Kingdom	London	Innovate Finance	
Singapore	Singapore	-	
United States	New York & San Francisco	Partnership Fund for New York City & Y Combinator	
Hong Kong	Hong Kong	FinTech HK	
South Korea	Seoul	Seoul Space	
Switzerland	Zurich	Swiss Finance + Tech- nology Association	
Germany	Frankfurt	Frankfurt Main Finance	
Australia	Sydney	Stone & Chalk	
China	Shanghai	Association of Shang- hai Internet Finance Industry	
Netherlands	Amsterdam	Holland FinTech	
Ireland	Dublin	Fintech Innovation Lab	
France	Paris	Paris Fintech Forum	
Israel	Tel-Aviv	Startup Nation Central	
Mexico	Mexico City	Fintech Mexico	
Japan	Tokyo	Fintech Association of Japan	

ACKNOWLEDGEMENTS

ACKNOWLEDGEMENTS

This report was authored by Patrick Gill, Senior Manager Policy, Toronto Region Board of Trade, and edited by Jeff Parker, Manager of Policy, Toronto Region Board of Trade. It was designed by Lisa Davison Design.

The Board acknowledges the important input provided by Export Development Canada, the Ontario Ministry of International Trade, the Brookings Institution, Statistics Canada and the City of Toronto on the Board's research.

The Board greatly appreciates the generous contribution of JPMorgan Chase and the City of Toronto, which made this important endeavour possible.

1 O ford 5

REFERENCES & NOTES

- 1 Oxford Economics. (2017). Global Cities 2030. Retrieve from: https://www oxfordeconomics.com/Media/Default/landing-pages/cities/OE-cities-su mary.pdf
- 2 Statistics Canada. (2014). Metropolitan Gross Domestic Product Experimental Estimates. Retrieve from: http://www.statcan.gc.ca/pub/11-626x/11-626-x2014042-eng.htm
- 3 Global Affairs Canada. (2013). Value of Exports for Job Creation & Econom Growth. Retrieved from: http://www.international.gc.ca/strategy-strateg export_fs-fd_exportation.aspx?lang=eng
- 4 Statistics Canada. (2017). CANSIM Table 228-0072. Trade by Exporter Characteristics. Retrieved from: http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=2280072&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid
- 5 Represents the total number of exporting enterprises divided by the total number of enterprises Canada in 2016.
 Statistics Canada. (2017) CANSIM Table 228-0070. Trade by Exporter Characteristics. Retrieved from http://www5.statcan.gc.ca/cansim/a26
 Innovation, Science & Economic Development Canada (ISEDC). (2016). I Small Business Statistics. Retrieved from http://www.ic.gc.ca/eic/site/0 nsf/eng/h_03018.html
- 6 Statistics Canada. (2017). CANSIM Table 228-0079. Trade by Exporter Characteristics. Retrieved from: http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=2280079&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid
- 7 Ontario Government. (2014). Ontario's Long-Term Report on the Econom Retrieved from: http://www.fin.gov.on.ca/en/economy/ltr/2014/ch5.htm
- 8 Export Development Canada. (2017). Main website. Retrieved from https: edc.trade/
- Represents the total number of exporting enterprises (by employment siz divided by the total number of enterprises (by employment size) in Canad in 2016. SMEs are defined as having between 0-499 employees, and large enterprises are defined as having 500+ employees.
 Statistics Canada. (2017) CANSIM Table 228-0070. Trade by Exporter
- Characteristics. - Innovation, Science & Economic Development Canada. (2016). Key Sma Business Statistics.
- 10 Estimate is based the proportional value of trade activity for exporting SN in 2013.
 Statistics Canada. (2015) The Daily. Export revenues, by enterprise emplorement size class and export revenue level, 2013. Retrieved from
- http://www.statcan.gc.ca/daily-quotidien/150626/t001b-eng.htm
 Brookings Institution. (2017).
 Global Cities Initiative: The Exchange. Retrieved from
 https://www.brookings.edu/global-cities-initiative-the-exchange/
- Analysis is drawn from the following sources:
 Statistics Canada. (2017) CANSIM Table 228-0070. Trade by Exporter Characteristics.
 - Innovation, Science & Economic Development Canada. (2016). Key Small Business Statistics.
 - Statistics Canada. (2015) The Daily. Export revenues, by enterprise employment size class and export revenue level, 2013
- 13 UPS. (2017). 2016 European SME Exporting Insights Study. Retrieved from https://faster.ups.com/gb/pdf/European_SME_Exporting_Insights_ Study_2017_GB.pdf
- 14 Toronto Region Board of Trade. (2014). Toward a Toronto Region Econom Strategy. Retrieved from http://goo.gl/sKdyWE
- 15 Ibid.

v.	16	Ibid.
um-	17	Advisory Council on Economic Growth. (2017). Unleashing the Growth Po- tential of Key Sectors Retrieved from http://www.budget.gc.ca/aceg-ccce/ pdf/key/sectors.sectors.sectors.cde.eng.pdf
	18	Ibid
nic gie/	19	Dechezleprêtre, A. Glachant, M. Haščič, I. Johnstone, N. & Ménière, Y. (N.D.) Invention and Transfer of Climate Change Mitigation Technologies: A Global Analysis. Retrieved from http://personal.lse.ac.uk/dechezle/Innovation_ diffusion_REEP.pdf
	20	Waston, F. Johnston, N. & Haščič, I. (2009). Using Patent data as an indicator of international technology transfer. OECD Environment Directorate. Retrieved from https://www.oecd.org/env/consumption- innovation/44384969.pdf
5 Key 061.	21	Analysis conducted by the Toronto Region Board of Trade based on the following sources: - The World Bank. (N.D.) Doing Business 2017. Retrieved from http://www. doingbusiness.org/data/distance-to-frontier - Global Affairs Canada. (N.D.). Trade Investment Agreements. Retrieved from https://www.international.gc.ca/trade-commerce/trade-agreements-ac- cords-commerciaux/agr-acc/index.aspx?lang=eng - Transparency International. (N.D). Corruption Perceptions Index 2015. Retrieved from https://www.transparency.org/cpi2015/
	22	Based on InfoCanada data and "GDP/Employment Estimates" supplied by the City of Toronto's Economic Development and Culture Division.
ıy. nl ://	23	Export Development Canada. (2016). Tapping into Canada's aerospace sec- tor. Retrieved from http://exportwise.ca/canada-aerospace-robert-caou- ette-adviser/
ze)	24	Based on InfoCanada data and "GDP/Employment Estimates" supplied by the City of Toronto's Economic Development and Culture Division.
da e	25	Boeing. (2013). Boeing Forecasts Demand for More Than 35,00 New Air- planes. Retrieved from http://boeing.mediaroom.com/2013-06-11-Boeing- Forecasts-Demand-for-More-Than-35-000-New-Airplanes
	26	Ibid.
all	27	Ibid.
ЛEs	28	Export Development Canada. (2016). Tapping into Canada's aerospace sector.
loy-	29	Ibid.
	30	Ibid.
	31	lbid.
	32	Based on InfoCanada data and "GDP & Employment Estimates" supplied by the City's Economic Development and Culture Division.
	33	PWC. (N.D.) 2017 Automotive Trends. Retrieved from https://www.strateg- yand.pwc.com/trend/2017-automotive-industry-trends
	34	HIS Markit. (2017). News Release: Global Auto Sales Set to Reach 93.5 Mil- lion. Retrieved from http://news.ihsmarkit.com/press-release/global-auto- sales-set-reach-935-million-2017-risk-greater-ever-ihs-markit-says
ioy-	35	Statistics Canada. (2013). Recent Trends in Canadian Automotive Industries. Retrieved from http://www.statcan.gc.ca/pub/11-626-x/11-626-x2013026- eng.htm
	36	See January 2017 Honda deal and March 2017 agreement with Ford for examples of recent partnerships.
nic	37	Based on "GDP & Employment Estimates" supplied by the City's Economic Development and Culture Division.

- 38 Invest Ontario. (2017). Automotive. Retrieved from https://www.investinontario.com/automotive#top5
- 39 Unifor. (2015). What the Auto Industry Mean to Ontario. Retrieved from https://www.unifor.org/en/what-auto-industry-means-ontario
- 40 Farm Credit Canada. (2016). Canadian Agriculture's Productivity and Trade. Retrieved from https://www.fcc-fac.ca/fcc/agKnowledge/ag-economist/ images/Reports/capt-report-2016.pdf
- 41 Grant Thornton. (2013). Hunger for growth: Food and beverage looks to the future. Retrieved from http://www.rcgt.com/wp-content/blogs.dir/2/ files/2013/12/Hunger_growth_2013.pdf
- 42 Based on "GDP & Employment Estimates" supplied by the City's Economic Development and Culture Division.
- 43 City of Toronto. (2010). 2010 Toronto Food Sector Update. Retrieved from https://www1.toronto.ca/City%20Of%20Toronto/wp/business-economy/industry-sector-support/Food%20&%20Beverage/2010_Toronto_Food_Sector.pdf
- 44 Innovation, Science & Economic Development Canada. (2017). Trade Data Online.
- 45 Ibid.
- 46 Deloitte. (2016). 2016 Global health care outlook: Battling costs while improve care. Retrieved from https://www2.deloitte.com/content/dam/ Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-2016health-care-outlook.pdf
- 47 Innovation, Science & Economic Development Canada. (2017). Trade Data Online.
- 48 Element Partners. (2008). Clean Technology Market Overview. Retrieved from https://web.stanford.edu/group/ree/archives/archive08/usa/presentations/Element_Partners.pdf
- 49 Working Group on Clean Technology, Innovation and Jobs. (2016). Final Report. Retrieved from http://www.climatechange.gc.ca/Content/6/4/7 /64778DD5-E2D9-4930-BE59-D6DB7DB5CBC0/Working%20Group%20 on%20Clean%20Technology,%20Innovation%20and%20Jobs%20 Final%20Report%20Engl...pdf
- 50 World Economic Forum. (2017). Paris Agreement is a \$23 trillion investment opportunity. Retrieved from https://www.weforum.org/ agenda/2017/01/unlocking-23-trillion-of-climate-investment-opportunities-is-mission-possible/
- 51 Analytica Advisors. Synopsis: (2015, 2016 & 2017) Canadian Clean Technology Industry Report. Retrieved from

http://www.analytica-advisors.com/assets/file/2015%20Report%20Synopsis%20Final_wcovers.pdf

http://www.analytica-advisors.com/news/press-materials-2016-canadian-clean-technology-industry-report

- http://analytica-advisors.com/sites/default/files/2017%20Canadian%20 Clean%20Technology%20Industry%20Report%20Synopsis%20FINAL.pdf
- 52 Ibid.
- 53 Ibid.
- 54 Ibid.
- 55 City of Toronto. (N.D.) Green: Industry Sector Support. Retrieved from http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=09ff54ae91cda510VgnVCM10000071d60f89RCRD
- 56 Toronto Financial Services Alliance. (N.D.). Financing the drivers of industry growth. Retrieved from http://www.tfsa.ca/financial-services/mining/

- 57 Dechezleprêtre, A. Glachant, M. Haščič, I. Johnstone, N. & Ménière, Y. (N.D.) Invention and Transfer of Climate Change Mitigation Technologies: A Global Analysis. Retrieved from http://personal.lse.ac.uk/dechezle/Innovation_diffusion_REEP.pdf
- 58 Waston, F. Johnston, N. & Haščič, I. (2009). Using Patent data as an indicator of international technology transfer. OECD Environment Directorate. Retrieved from

https://www.oecd.org/env/consumption-innovation/44384969.pdf

59 Analysis conducted by the Toronto Region Board of Trade based on the following sources:

- Analytica Advisors. Synopsis: (2015, 2016 & 2017) Canadian Clean Technology Industry Report.

 MaRS. (N.D.) Clean Energy Institutes Around the World. Retrieved from https://www.marsdd.com/wp-content/uploads/2012/08/Clean-Energy-Institutes-Around-the-World.pdf

- 60 Siemens. (2017). Cities of the future: Creating Smart Cities in Canada. Retrieved from https://www.siemens.com/press/pool/de/events/2017/ mobility/2017-05-uitp/brochure-cities-future-canada-e.pdf
- 61 Ibid.
- 62 Ibid.
- 63 Khan, M. (2001). Rural Poverty in Developing Countries. International Monetary Fund. Retrieved from http://www.imf.org/external/pubs/ft/issues/ issues26/
- 64 Navigant Research. (2017). News Release. More than 250 Smart City Projects Exist in 178 Cities Worldwide. Retrieved from https://www.navigantresearch.com/newsroom/more-than-250-smart-city-projects-existin-178-cities-worldwide
- 65 Toronto Region Board of Trade. (2017). Smart Cities 2017 Report. Retrieved from https://www.bot.com/Advocacy/Reports/SmartCities-2017Report.aspx
- 66 Analysis conducted by the Toronto Region Board of Trade based on the following sources:

- University of Toronto. (N.D.) Fintech Cluster. Retrieved from http://www. research.utoronto.ca/wp-content/uploads/documents/2017/05/Fintech-UofT.pdf

- Toronto Financial Services Alliance. (N.D.) A Dynamic Fintech Ecosystem. Retrieved from http://www.tfsa.ca/financial-services/fintech/

- 67 Deloitte. (2016). Connecting Global FinTech: Hub Review 2016. Retrieved from http://thegfhf.org/wp-content/uploads/2016/10/Connecting-Global-FinTech-Hub-Review-2016-.pdf https://www2.deloitte.com/uk/en/pages/financial-services/articles/theconnecting-global-fintech-hub-review-2016.html
- 68 Accenture. (2016). FinTech and the evolving landscape: landing points for the industry. Retrieved from http://www.fintechinnovationlablondon. co.uk/pdf/Fintech_Evolving_Landscape_2016.pdf
- 69 Toronto Financial Services Alliance. (N.D.) Toronto Advantage. Retrieved from http://www.tfsa.ca/toronto-advantage/rankings/
- 70 Globe and Mail. (April 2016). Could Toronto become a leading global fintech hub? Retrieved from https://www.theglobeandmail.com/report-on-business/rob-commentary/could-toronto-becoming-a-leadingglobal-fintech-hub/article29787414/
- 71 Based on "GDP & Employment Estimates" supplied by the City's Economic Development and Culture Division.
- 72 http://www.research.utoronto.ca/wp-content/uploads/documents/2017/05/Fintech-UofT.pdf



Argentina Australia Belgium Brazil Chile China Denmark France Germany Hong Kong India Ireland Israel Italy Japan Kuwait Mexico Netherlands New Zealand Philippines Saudi Arabia Singapore South Korea Spain Sweden Switzerland Taiwan Thailand Turkey **United Arab Emirates United Kingdom United States**

The World Trade Centre Toronto (WTC-T)

is the trade services arm for the Toronto Region Board of Trade. As a member of the World Trade Centre Association, WTC-T creates unparalleled global access for the Toronto region's business community with its connection to 317 branded properties and trade services associations in 88 countries. WTC-T provides targeted international trade advisory services and expertise through comprehensive research, trade education, strategy building workshops, inbound and outbound trade missions and valuable connections to experts and networks. WTC-T has created three programs to provide end-to-end knowledge and support for businesses interested in expanding their global reach: International Trade 101, Canada's Trade Accelerator Program (TAP) and a Market Activation Program (MAP). To learn more about World Trade Centre Toronto, visit wtctoronto.com or email wtc@bot.com.



