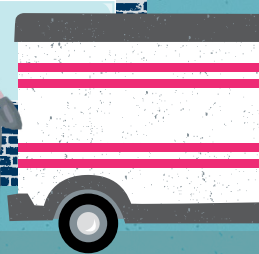


Scale-up Activity in Ontario

May 2019



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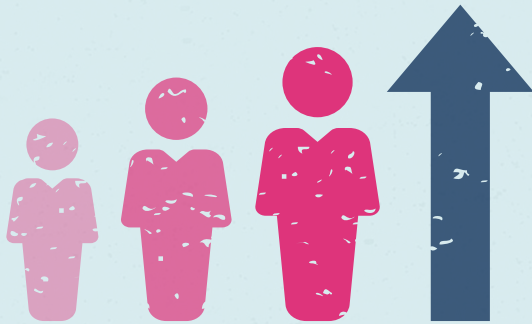
EXECUTIVE SUMMARY

Ontario is home to a vibrant entrepreneurial culture, a critical input to new economic activity. But some of the biggest benefits to our collective prosperity come from the select few companies that achieve the status of high growth, because these “scale-up” companies contribute disproportionately to job creation and economic growth.



There are two types of scale-ups:

Those that grow by
adding employees



Employment-based scale-ups

and

Those that grow by
rapidly increasing revenue

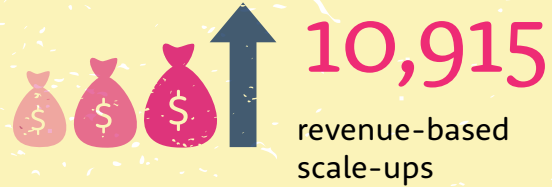


Revenue-based scale-ups

While some companies straddle these definitions, many are big revenue generators with a relatively small or slow-growing number of employees, and some may be big job creators with only minimal increases in revenue. We’ve looked at both definitions.

Despite their importance, we know very little about scale-ups. How many are there? What are their job creation impacts? How much do they contribute to province-wide revenue? Where are they? What industries do they belong to? Here’s what we found.

Scale-ups make up a tiny proportion of Ontario's companies, but they contribute enormously to jobs and growth. In 2015, the province had...



Employment-based scale-ups accounted for **0.66%** of young companies in Ontario



but employed almost **10%** of employees working for young companies.

On average, employment-based scale-ups employed **16 times more workers** than their non-scaling counterparts.



Revenue-based scale-ups accounted for **1.54%** of all companies in Ontario



but generated over **15%** of province-wide business revenue.

On average, revenue-based scale-ups made **12 times more revenue** than their non-scaling counterparts.

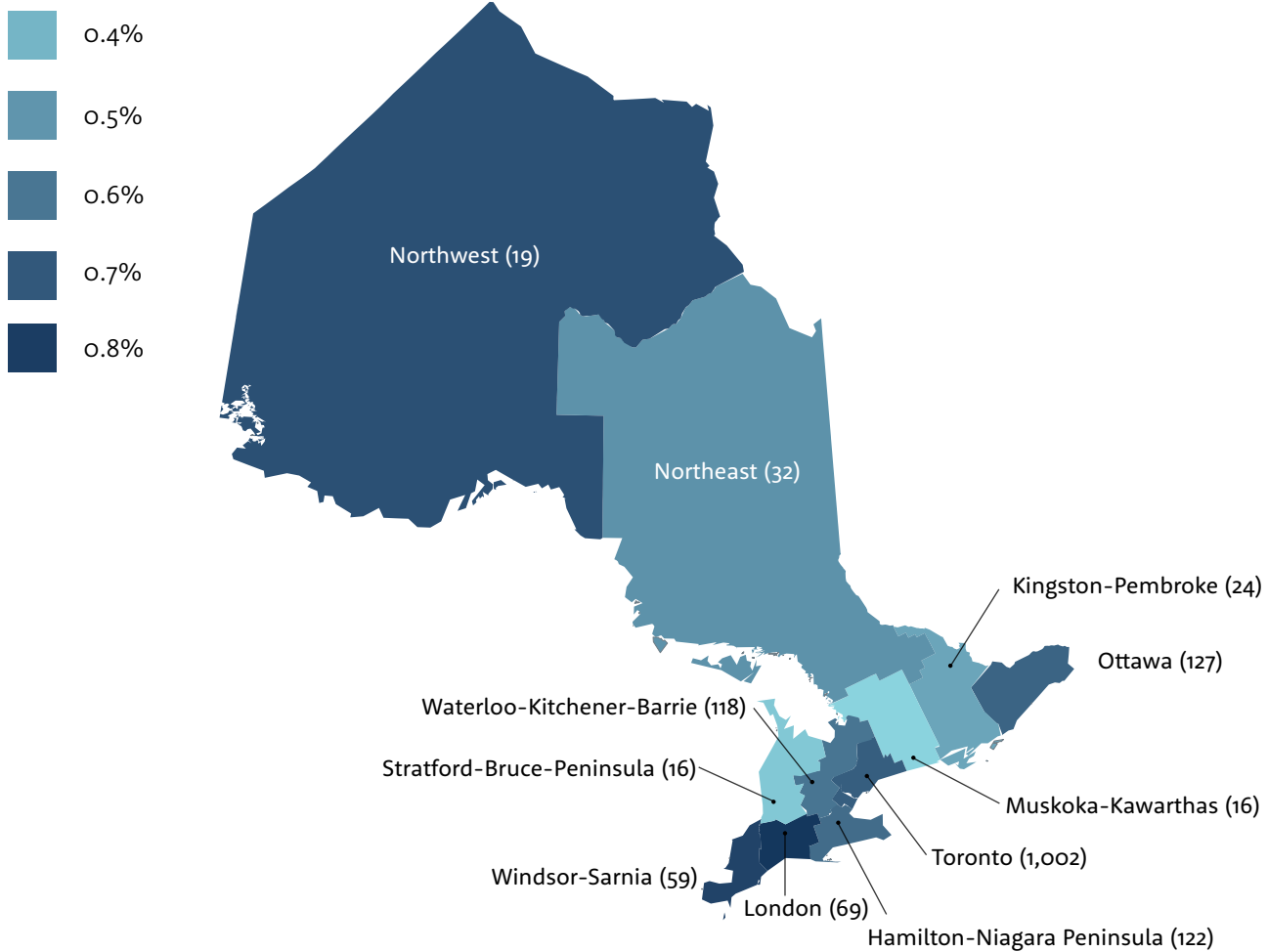


*Young companies are 10 years old or less.

While scale-ups are concentrated in urban centres, they are driving growth in all corners of the province.

Share of Employment Scale-ups in Ontario by Economic Region

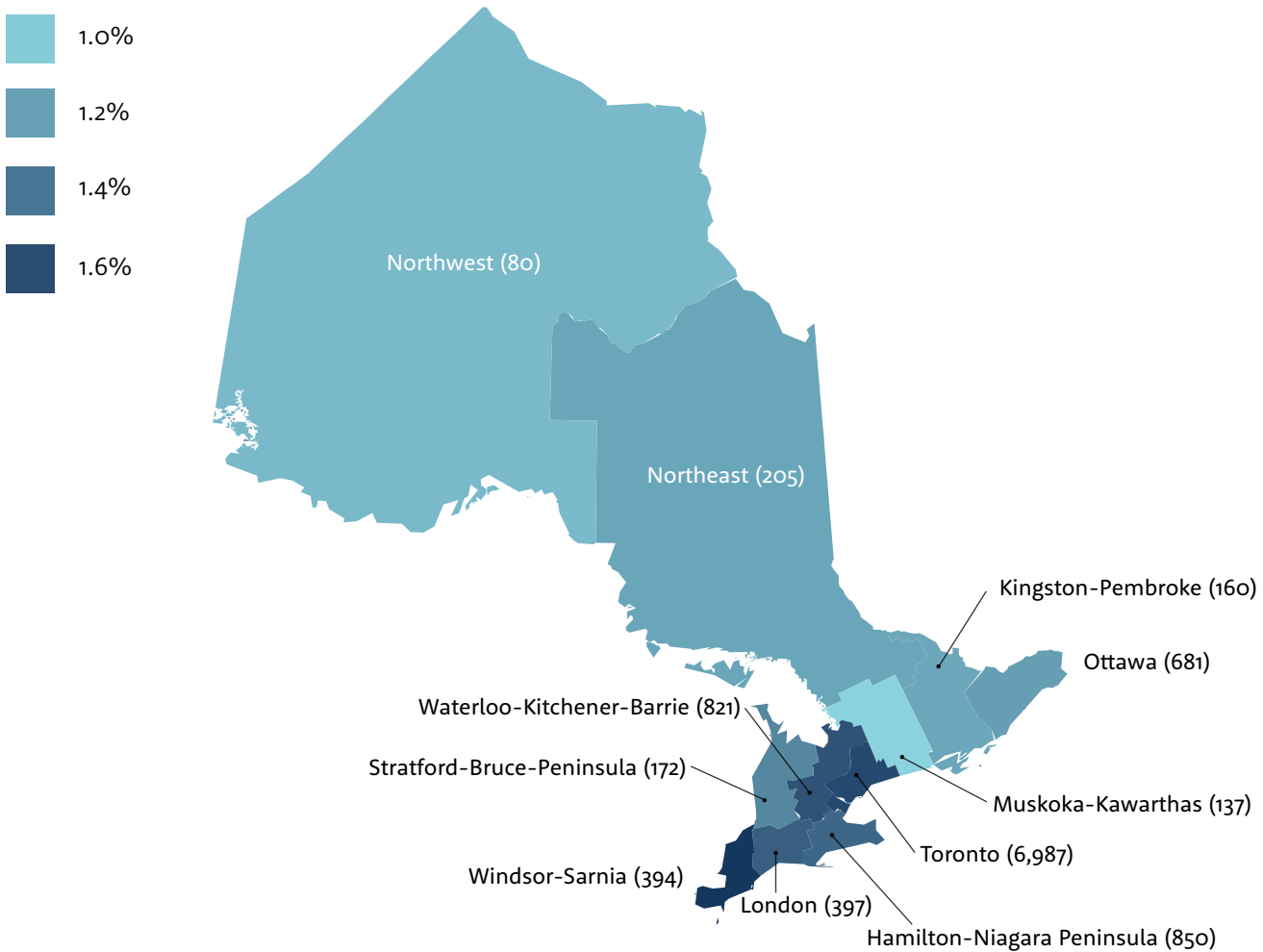
The number of employment-based scale-ups in each region is shown in brackets



London, Windsor-Sarnia, and the Northwest are home to the largest share of employment-based scale-ups.

Share of Revenue-based Scale-ups in Ontario by Economic Region

The number of revenue-based scale-ups in each region is shown in brackets.



Windsor-Sarnia, Toronto and Kitchener-Waterloo-Barrie are home to the largest share of revenue-based scale-ups.

These leading regions aren't too far ahead of the rest, however. The rate of scale-up creation is similar across all regions in Ontario. London, Toronto, and Thunder Bay, for example, are producing scale-ups at levels proportional to their size. Scale-ups are being created in almost equal proportions across Ontario.

Despite all regions' importance in supporting scale-ups, Toronto does stand out as a scale-up powerhouse. It has the highest number of scale-ups per 10,000 residents, and scale-ups based in Toronto tend to employ more people and record higher revenue.

The number of Ontario companies achieving scale is growing. Between 2011 and 2015, Ontario added 3,000 revenue scale-ups—an increase of over a third. In almost every region of Ontario, the share of revenue scale-ups has also grown. Some regions have experienced particularly strong growth—notably Muskoka-Kawartha, Kingston-Pembroke, Windsor-Sarnia, Kitchener-Waterloo-Barrie, and Hamilton-Niagara Peninsula.



Between 2011 and 2015, Ontario added

3,000

revenue-based scale-ups;
an increase of over a third.



Top 5 Economic Regions in Ontario by Rate of Increase in Share of Revenue-based Scale-ups

| | |
|----------------------------|-----|
| Muskoka-Kawarthas | 59% |
| Kingston-Pembroke | 54% |
| Windsor-Sarnia | 48% |
| Kitchener-Waterloo-Barrie | 43% |
| Hamilton-Niagara Peninsula | 43% |

Scale-ups are often perceived as high-tech companies. However, they are cropping up across Ontario's industries.



Employment-based Scale-ups

56% of these scale-ups come from:

- + Accommodation and Food Services
- + Retail Trade
- + Administrative Support
- + Professional, Scientific, and Technical Services



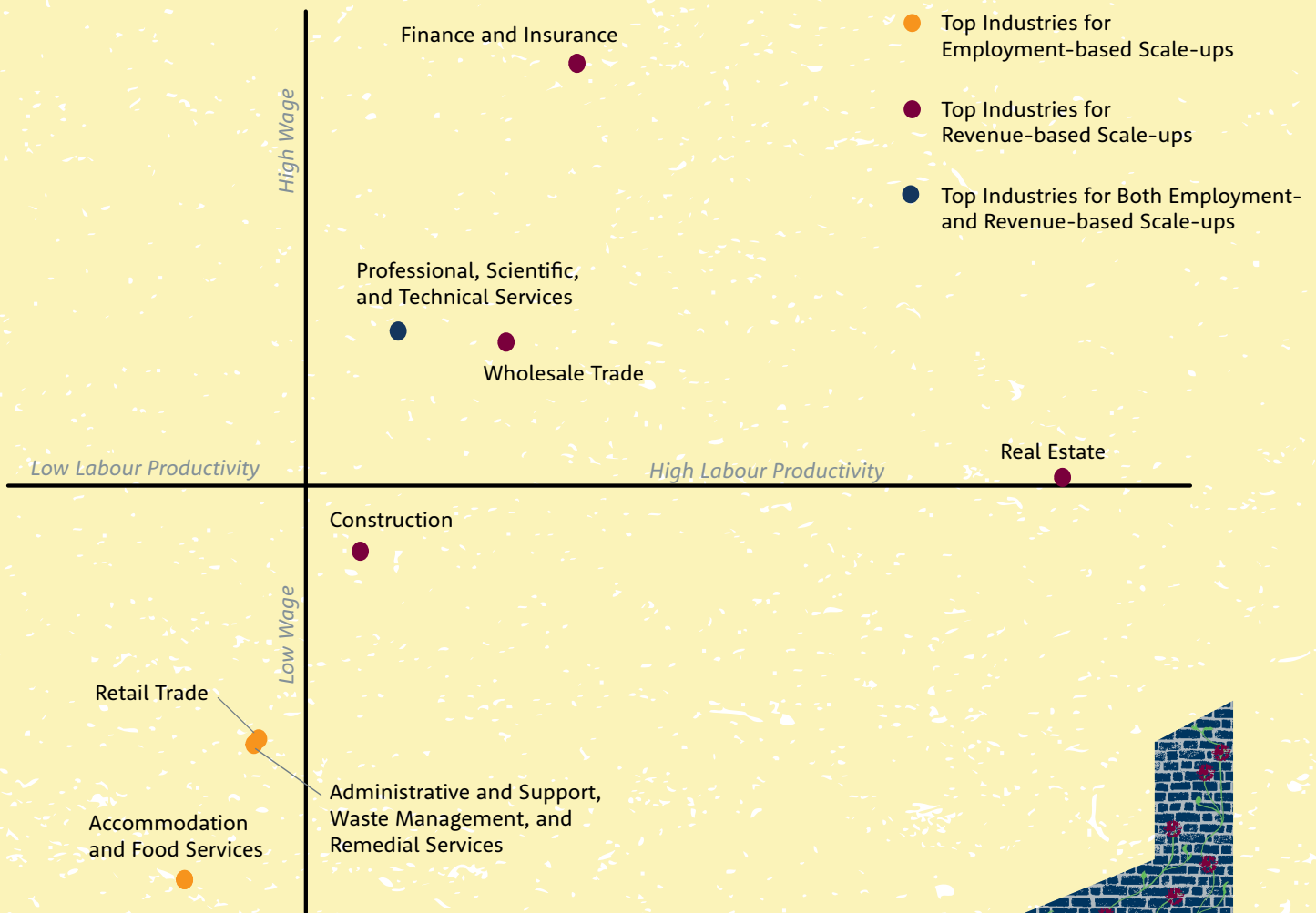
Revenue-based Scale-ups

63% of these scale-ups come from:

- + Finance, Insurance, and Real Estate
- + Construction
- + Wholesale Trade
- + Professional, Scientific, and Technical Services



Productivity and Pay by Industries Where Scale-ups are Concentrated



In some industries, companies tend to scale by adding employees; in others, they scale by growing revenue. Revenue scale-ups are more concentrated in industries that pay well and have higher levels of productivity, on average. For employment scale-ups, the reverse is true.

Professional, Scientific, and Technical Services, a high wage industry in which many tech companies are found, is home to a significant number of both employment and revenue scale-ups.

Scale-ups are diverse and important contributors to Ontario’s economy. Enabling more home-grown firms to achieve scale could have a significant impact on the province’s future. Continued economic growth, competitiveness, and prosperity will depend in part on building an environment in which the most promising firms not only survive, but also thrive and grow.



INTRODUCTION

Ontario, and Canada more widely, is home to a vibrant entrepreneurial culture. Across the country, nearly 10 percent of businesses are new firms one year old or younger, generating more than 250,000 jobs every year.¹ In 2016, approximately 16.9 percent of Canadians—and 14.8 percent of Ontarians—were involved in early entrepreneurship activity of some form.²

Over the past decade, policymakers have directed a great deal of attention towards encouraging and promoting entrepreneurship. Continuing to cultivate a strong and dynamic entrepreneurial ecosystem is important for the Canadian economy. However, a remaining challenge is to ensure that more of these companies become high-growth firms, or “scale-ups”.

The rationale for focusing on scale-ups is straightforward: while few firms achieve high growth, those that do contribute disproportionately to job creation and economic growth. According to a 2017 study, high-growth firms comprise only 1.24 percent of all businesses yet account for over 60 percent of new jobs in Canada.³

Despite their importance, we currently know very little about scale-ups in Ontario and Canada: where they are and what industries they belong to, their impacts, and how they compare to scale-ups in other jurisdictions. Drawing inspiration from recent efforts in measuring scale-up activity internationally—in particular, the [Kauffman Foundation’s Index of Growth Entrepreneurship](#)—this report aims to:

- + Benchmark and map scale-up activity in Ontario at the sub-provincial level focusing on two standards for identifying scale-ups: one based on employment growth and one based on revenue growth.
- + Highlight the industry characteristics of both employment- and revenue-based scale-up firms in Ontario; and
- + Compare scale-up activity in Ontario’s census metropolitan areas (CMAs) to metropolitan areas in the US.

This report finds that, consistent with general trends, Ontario’s scale-ups are relatively small in number but contribute disproportionately to the province’s economic activity. In 2015, revenue-based scale-ups (which are defined by rapid growth in revenue) made up only 1.54 percent of all firms in Ontario, but their share of the total revenue collected by all companies in the province was about 10 times greater (15.7 percent or \$288 billion). Employment-based scale-ups (defined by rapid growth in employee count) represented only 0.66 percent of young firms in Ontario yet employed almost one in 10 Ontarians working for young firms.

Scale-ups are contributing to local economies across the province. While the largest number of scale-ups are in Toronto, other regions in Ontario are home to a similar proportion of scale-up firms. They also exist across different industries, from finance and insurance to construction, retail, and technology. Their behaviour is not uniform, however. Important differences in number, type of growth (revenue or employment), and geographic concentration exist across geographies and industries. Moreover, despite their important contributions to Ontario’s economy, the province’s share of scale-ups appears to lag behind US jurisdictions.

This report suggests that scale-ups are diverse and important contributors to Ontario’s economy, but that the province can benefit even more by realizing the full growth potential of its firms. Continued economic growth, competitiveness, and prosperity will depend in part on building an environment in which the most promising firms not only survive, but also thrive and grow.

Future iterations of this scale-up index could help track the health of Ontario’s scale-up ecosystem over time.

A BRIEF HISTORY OF SCALE-UPS

Interest in studying firms with large job creation impacts emerged as early as the 1970s,⁴ with a body of research suggesting that these firms tended to be young and relatively small.⁵ Later research identified the employment impacts of scale-up firms of all sizes, including older and more established firms.^{6,7}

There have been a number of studies published in Canada identifying scale-up firms' disproportionate economic impacts. Between 2009 and 2012, just over one in 100 firms were scale-ups, and yet they were responsible for 63 percent of net jobs created in that period.⁸ Another study shows that between 1985 and 1999, firms with employee growth of over 50 percent in a four-year period (seven percent of all firms) were responsible for 56 percent of the 1.8 million net jobs created between 1985 and 1999.⁹ However, despite a large body of scale-up focused literature, recent granular statistics for Ontario and Canada are lacking.

Additionally, government and business leaders have suggested that Canada faces a scale-up challenge—while Canada has cultivated a healthy start-up ecosystem, it falls short in helping high-potential businesses scale. Existing research has pointed to a range of barriers to scaling up including an unfulfilled need for experienced business talent and advice, and insufficient access to capital beyond the seed stage.¹⁰

HOW SCALE-UPS HAVE BEEN DEFINED AND THEIR IMPACTS MEASURED

There is limited international consensus on how to define scale-ups. Existing definitions tend to focus on two dimensions: growth in employee count and growth in revenue, while some definitions include additional metrics such as firm age or initial size. In Canada, the most recent academic effort to measure scale-up activity (focusing on the period between 1985 and 1999) identifies any firm with at least 50 percent employee growth in a four-year period as a “strong growth firm.”¹¹

Net job growth implies a higher rate of job creation than job destruction. Start-ups have high job creation rates and high job destruction rates because many of them fail.¹² In contrast, many scale-ups have high job creation rates with very low job destruction rates.¹³

To ensure that the national statistics of member countries follow a consistent definition, the Organization for Economic Cooperation and Development (OECD) published the following definition in 2007:

“All enterprises with average annualized growth greater than 20 percent per annum, over a three-year period should be considered a high-growth enterprise. Growth can be measured by the number of employees or by turnover.”¹⁴

Specifically, the OECD definition emphasizes:

- + Dimensions of growth (employees or turnover);
- + The magnitude of growth (greater than 20 percent per annum on average); and
- + The consistency of growth over time (a three-year period).

A thorough sensitivity analysis validated the relevance of the OECD's scale-up definition across member countries, taking into account the importance of cross-country comparability and ease of data collection and calculation.¹⁵

Two other scale-up definitions that are widely used are those developed by the Kauffman Foundation.¹⁶ The Kauffman Foundation's first definition focuses on the absolute measure of employment growth. Specifically, it describes employment scale-up companies as:

- + Being 10 years or younger;
- + Having started with less than 50 employees; and
- + Having grown to have 50 or more employees by the year of measurement.

The second definition is a revenue-based definition to identify scale-up firms that:

- + Meet the OECD's threshold of 20 percent annualized revenue growth over three years; and

- + Have a minimum revenue threshold of \$2 million at the end of the growth period.¹⁷

Even if a consistent definition of scale-ups can be agreed to, measuring the impact of scale-up activities is far from straightforward. For instance, net jobs created may include both new jobs (organic growth) and jobs created through mergers and acquisitions. In addition, geographical factors are also important, as firms may register in one jurisdiction and generate growth in others.



OUR SCALE-UP DEFINITIONS

For this report, we closely followed definitions laid out in the Kauffman Foundation’s Index of Growth Entrepreneurship to allow for comparison with key US jurisdictions at the state and metropolitan levels. Specifically, we mirror its employment-based definition and revenue-based definition (*Table 1*) to measure and map absolute numbers, as well as the share of scale-ups across the province.¹⁸ The Kauffman Foundation chose these metrics to focus on a “holistic view of entrepreneurship from an industry-agnostic perspective”, specifically focusing on outputs of the growth process (revenue and employment growth) as opposed to inputs to the growth process, such as investments and patents.

However, our analysis draws on different data sources. In particular, for the scale-up definition based on revenue growth, the Kauffman Foundation used a self-reported database of the fastest growing publicly-traded firms in the US, while we use a more comprehensive administrative database that covers all firms in Canada.¹⁹

We calculate these metrics for CMAs and economic regions (ERs) in Ontario, and combine them to produce a scale-up index at the ER level. To better understand scale-up characteristics, we also report the industries with the highest number of scale-ups for each CMA and ER. Further details on these definitions, possible extensions, and the data source used can be found in Appendix C.

Table 1:
Scale-up definitions used in this report

| Definition | Details | Corresponding Kauffman Index Measure |
|------------------|--|--------------------------------------|
| Employment-based | For a given year and geographic area, the share of all firms 10 years or younger that started with 49 or fewer employees but grew to 50 or more employees by the year of measurement. | Scale-up density |
| Revenue-based | The share of all firms that achieved an average annual revenue growth of 20 percent for three years ending in the year of measurement, with revenue of at least \$2 million in the final year. | High-growth firm density |

It is important to note that while these definitions are not mutually exclusive, they do not necessarily go hand in hand. Firms that grow their revenue significantly do not necessarily grow their employment, and vice versa.

DATA SOURCE AND LIMITATIONS

We worked with Statistics Canada's Canadian Centre for Data Development and Economic Research (CDER) to obtain the data used in this report. This report relies on the National Accounts Longitudinal Microfiles (NALMF), which cover all registered Canadian businesses between 2003 and 2015.

The NALMF combines the Business Register with corporate, personnel, and sales tax databases for a comprehensive look at Canadian business dynamics. Each firm's postal code is used to identify the geography in which a firm is located.

Results emerging from the revenue-based scale-up definition are presented for the five-year period from 2011 to 2015.²⁰ Results emerging from the employment-based scale-up definition are presented for 2015. Data for earlier years could not be included due to the 10-year age restriction in the definition and the fact that the data source only goes back to 2003. This means that employment-based scale-ups can only be defined for 2014 and 2015. However, due to serial correlation (correlation of the measure across time) inherent in this definition, we only present data on employment-based scale-ups for 2015. More information on this is provided in Appendix C.

A few other data limitations are worth noting. The most challenging issue in measuring scale-ups at a sub-provincial level is determining how to treat companies that have locations in multiple geographies. For this analysis, we used the firm's legal address to link it to a city or region. However, a firm's legal address may not correspond with its centre of operations, or with where the majority of its employees work. Firms may choose their legal address strategically, for example for tax, regulatory, or political reasons. In subsequent analyses we will examine potential approaches to addressing this limitation.

Further, the NALMF does not yet have the capability to track mergers and acquisitions adequately, and thus it is not possible to differentiate between organic growth and growth due to a merger or acquisition. Statistics Canada is currently working to add this capability, which could benefit future research.

Finally, when extracting the measures for ERs and CMAs, we followed Statistics Canada's advice to redefine the Toronto ER to incorporate the overlapped area between the Toronto CMA and Kitchener-Waterloo-Barrie ER for revenue measures, to allow for the highest level of disclosure.

GEOGRAPHIC CONCEPTS

Economic region (ER): Defined by agreements between Statistics Canada and provincial governments to aid in analysis of regional economic activities. There are 11 ERs in Ontario covering the province's population exhaustively.

Census metropolitan area (CMA): Defined by Statistics Canada for Census purposes. CMAs are a collection of municipalities, loosely defining a local labour market in which most people live within a core, and the rest of the population occupies neighbouring municipalities. There are 15 CMAs in Ontario representing 81.4 percent of the province's population in 2017.

FIRM CONCEPTS

All firms: All registered business with a legal address in the referenced geographical area.

Young firms: All registered businesses 10 years old or younger with a legal address in the referenced geographical area.

SCALE-UP ACTIVITY IN ONTARIO

A PROVINCIAL PROFILE

Table 2:
Scale-up activities in Ontario

| Metrics | Numbers (2015) |
|--|----------------|
| Number of firms in Ontario | 714,575 |
| Number of young firms in Ontario | 244,721 |
| Revenue-based scale-ups in Ontario | 10,925 |
| Employment-based scale-ups in Ontario | 1,619 |
| Share of revenue-based scale-ups in Ontario | 1.53% |
| Share of employment-based scale-ups in Ontario | 0.66% |

In 2015, 1,619 employment-based scale-ups were headquartered in Ontario (0.66 percent of young firms) and employed almost 1 in 10 Ontarians working for young firms. An average employment-based scale-up employed 129.5 people, compared to other young firms, which employed 8 people on average.

There were almost seven times as many revenue-based scale-ups (10,925 or 1.53 percent of all firms) as employment-based scale-ups, despite looking at only three times as many firms. Together, these companies generated revenue of \$282 billion (or 15.7 percent of revenue generated by all firms in the province). An average revenue-based scale-up earned \$25 million in 2015, which was more than 10 times what the average non-scale-up firm earned, at \$2.1 million.

Both revenue- and employment-based scale-ups far exceeded the growth thresholds set out in our scale-up definitions (growth to at least 50 employees or at least \$2 million in revenue), demonstrating that when Ontario's firms have grown, they have grown significantly and created disproportionate employment and gross domestic product (GDP) impacts.

Subsequent sections analyze Ontario's scale-up activity by industry, by region, and in comparison to US cities and states.



CONCENTRATION OF REVENUE- AND EMPLOYMENT-BASED SCALE-UPS BY INDUSTRY

Depending on which dimension of growth is used to define scale-ups, companies from different industries are captured. Our analysis (Figure 1) found that employment-based scale-ups were primarily situated in the *Accommodation and Food Services* industry (274 firms), followed by the *Retail Trade* (249 firms), *Administrative Support and Waste Remedies* (200 firms) and *Professional, Scientific, and Technical Services* (181 firms) industries.

In contrast, revenue-based scale-ups (Figure 3) were concentrated in the *Finance, Insurance, and Real Estate* industry (2,855 firms), followed by the *Construction* (1,717 firms), *Wholesale Trade* (1,193 firms), and *Professional, Scientific, and Technical Services* (1,051 firms) industries.

Descriptions of industries included in this report

Finance, Insurance, and Real Estate comprises firms primarily engaged in financial transactions, renting, leasing assets, managing companies, holding assets of companies. Examples include companies such as BMO, Wealthsimple and SunLife Financial.

Wholesale Trade comprises establishments primarily engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Examples include companies such as Costco.

Retail Trade comprises establishments primarily engaged in retailing merchandise, without transformation, and rendering services incidental to the sale of merchandise. Examples include Indigo and Loblaws.

Professional, Scientific, and Technical Services comprises firms that primarily make employee knowledge and skills available. Firms in this industry are defined on the basis of the particular expertise and training of the service provider. Examples include Torys and Hootsuite.

Information and Cultural Industries include firms primarily engaged in producing and distributing information and cultural products. Examples include Rogers and Cineplex.

Administrative Support, Waste Management, and Remediation Services comprises those that support day-to-day operations of other organizations; and those engaged in waste management activities. Examples include Paragon Security and TerraCycle.

Accommodation and Food Services comprises establishments engaged in providing short-term lodging and services to travellers and others. Examples include Shang ri-la and A&W.

Construction comprises firms primarily engaged in constructing, repairing and renovating buildings and engineering works, and in subdividing and developing land.

Manufacturing comprises firms engaged in the transformation of materials into new products, and which are known by a variety of trade designations such as plants, factories or mills.

Agriculture, Fishing, Forestry, Hunting and Trapping includes firms primarily engaged in growing crops, raising animals, harvesting animals from their natural habitats, and related support activities.

Mining, Quarrying, and Oil Extraction includes firms primarily engaged in exploration of and extraction of naturally occurring minerals.

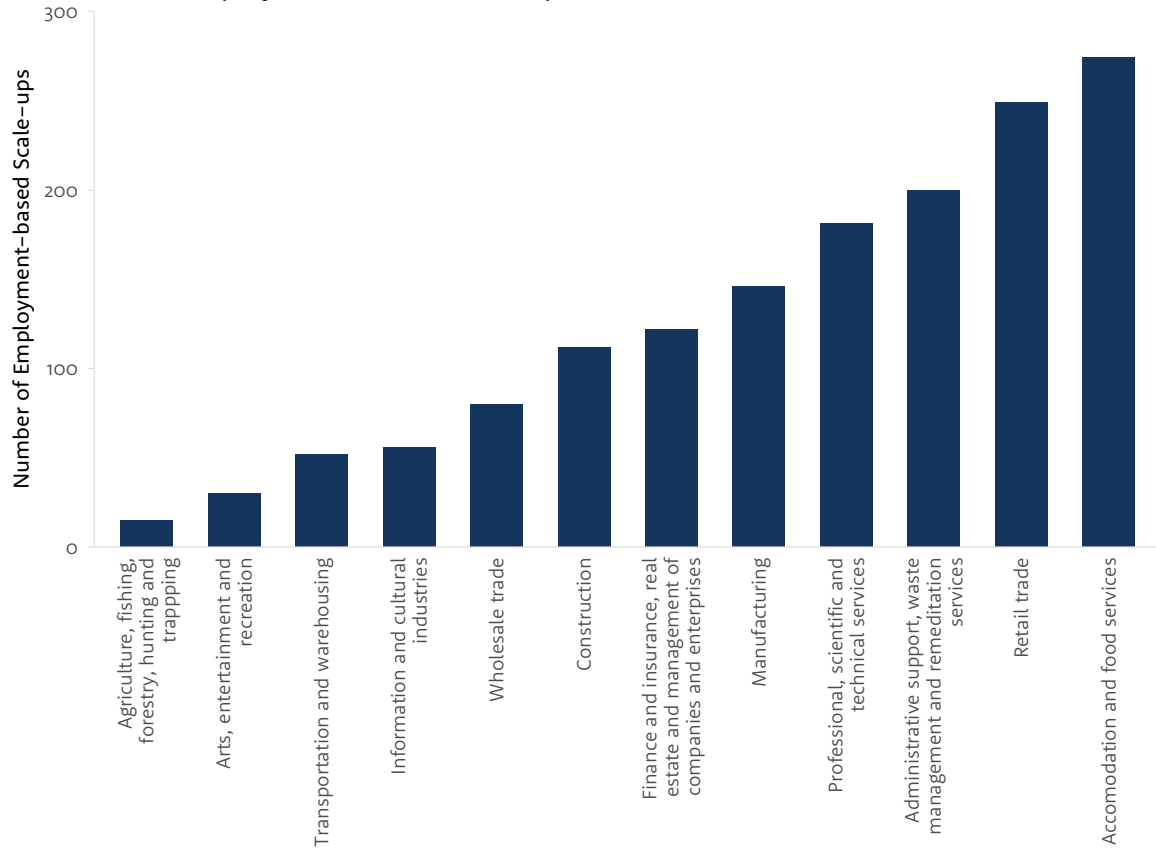
Utilities includes firms primarily engaged in operating electric, gas and water utilities.

Transportation and Warehousing includes firms primarily engaged in transporting passengers and goods, warehousing and storing goods, and providing services to these establishments.

These definitions are drawn from the North American Industry Classification System, adapted for brevity.

Figure 1:

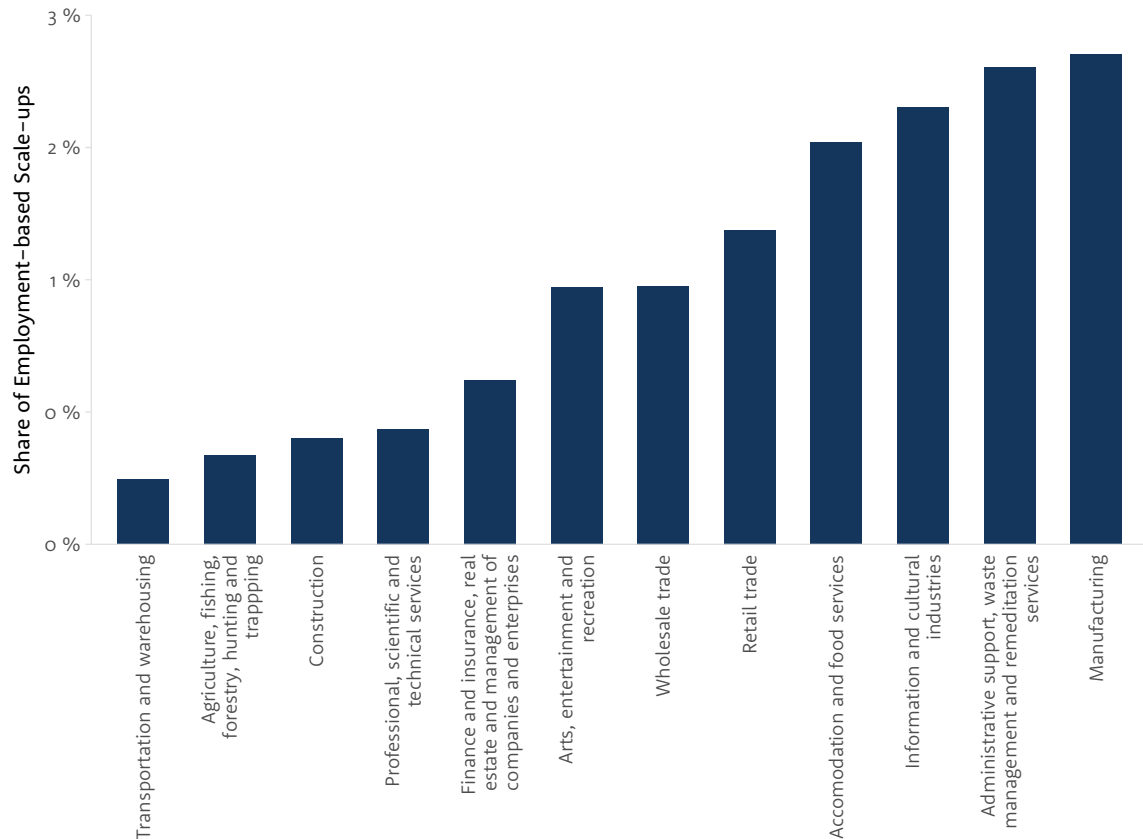
Number of employment-based scale-ups in Ontario's industries, 2015



Source: National Accounts Longitudinal Microfiles; BII+E analysis.

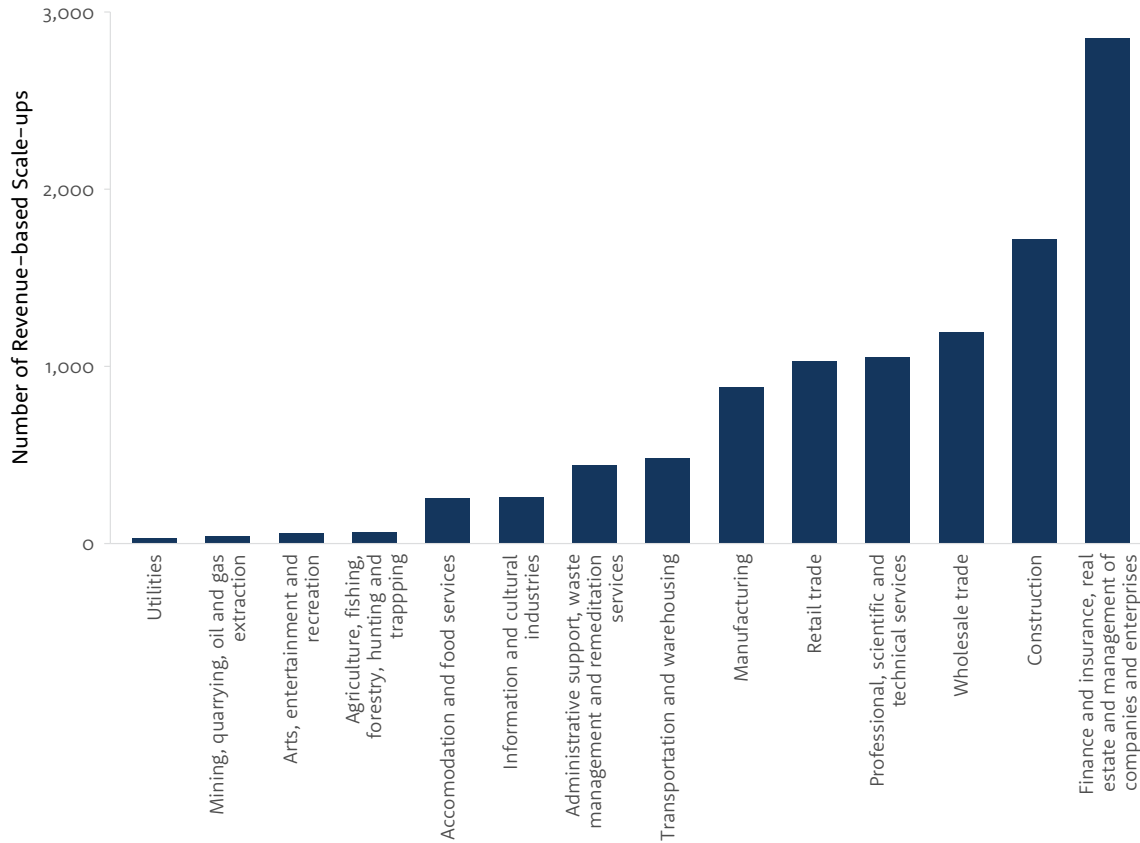
Figure 2:

Share of employment-based scale-ups in Ontario's industries, 2015



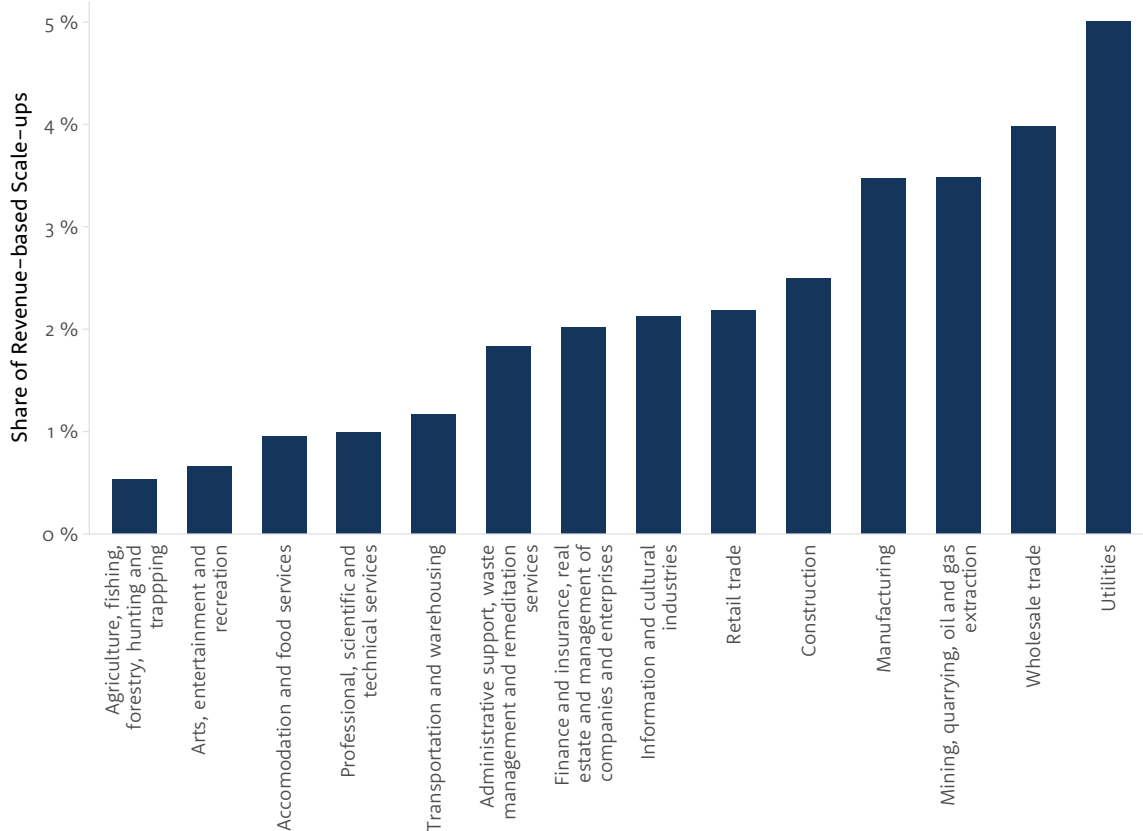
Source: National Accounts Longitudinal Microfiles; BII+E analysis.

Figure 3:
Number of revenue-based scale-ups in Ontario's industries, 2015



Source: National Accounts Longitudinal Microfiles; BII+E analysis.

Figure 4:
Share of revenue-based scale-ups in Ontario's industries, 2015



Source: National Accounts Longitudinal Microfiles; BII+E analysis.

When we examined the proportion of companies that scaled in each industry, we found that in 2015, *Utility* companies were most likely to scale their revenue (*Figure 4*), with five percent or 30 companies crossing the revenue-based scale-up threshold. The *Manufacturing* industry, on the other hand, had the highest proportion of employment-based scale-ups (*Figure 2*), at 1.85 percent or 146 firms.

While current conversations about scale-ups tend to focus on innovative, high-technology companies, industries such as *Accommodation and Food Services* and *Finance, Insurance, and Real Estate*—which are often considered to be traditional industries—make up the majority of scale-ups in Ontario. Other Canadian research (albeit using an employment-based definition that differs from ours) has pointed to similar trends, for instance finding that the largest number of scale-up firms was concentrated in the *Construction* and *Accommodation and Food Services* industries in 2012.²¹ The same research also showed that scale-up firms in these industries generated the highest employment contribution during the period from 2009 to 2012. It is important to note, however, that innovative and high-tech companies exist across different industries. For instance, food delivery services and apps are classified as part of the *Transportation and Warehousing* industries).

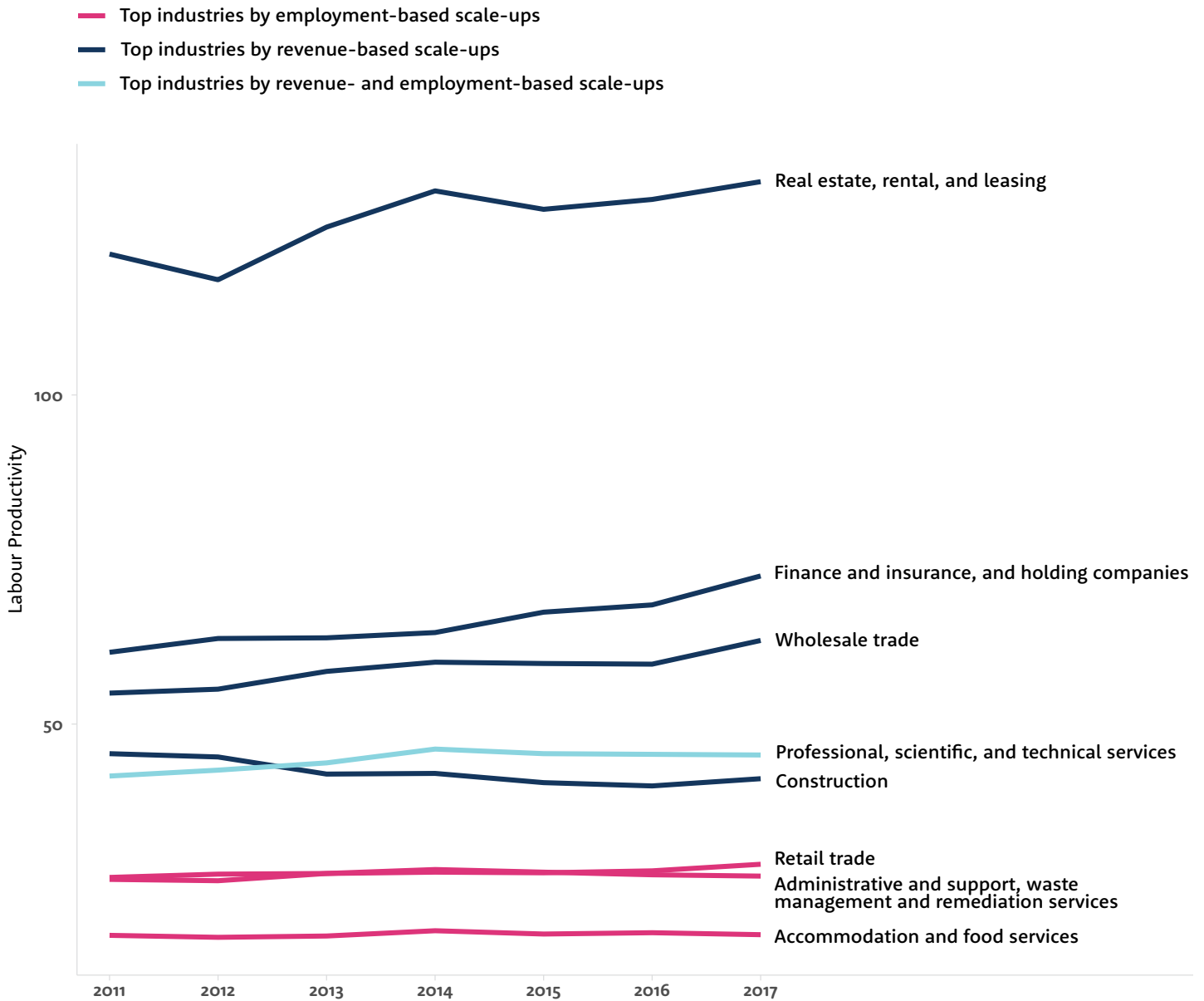
Moreover, a 2010 global meta-study that examined the measurement of scale-up firms concluded that “while high-growth firms exist in all industries, service industries are overrepresented.”²² The reason for this pattern is not fully established in existing literature; however some evidence suggests that competitiveness and available business opportunities in a local economic area may be more important drivers of scale than innovation (although innovation promotes competitiveness in many settings).^{23 24}

The different dimensions by which firms grow are also tied to differences in labour productivity between industries (*Figure 5*).²⁵ The majority of employment-based scale-ups are from industries with lower labour productivity, such as the *Accommodation and Food Services* and *Retail Trade* industries, and the majority of revenue-based scale-ups come from industries with higher labour productivity, such as the *Finance, Insurance, and Real Estate* industry. The *Professional, Scientific, and Technical Services* industry, which is a top industry for both revenue-based and employment-based scale-ups, falls roughly in the middle. This serves to underline that there are important differences in the characteristics of revenue and employment-based scale-ups.²⁶



Figure 5:

Labour productivity of industries in Canada by top four industries in each scale-up definition

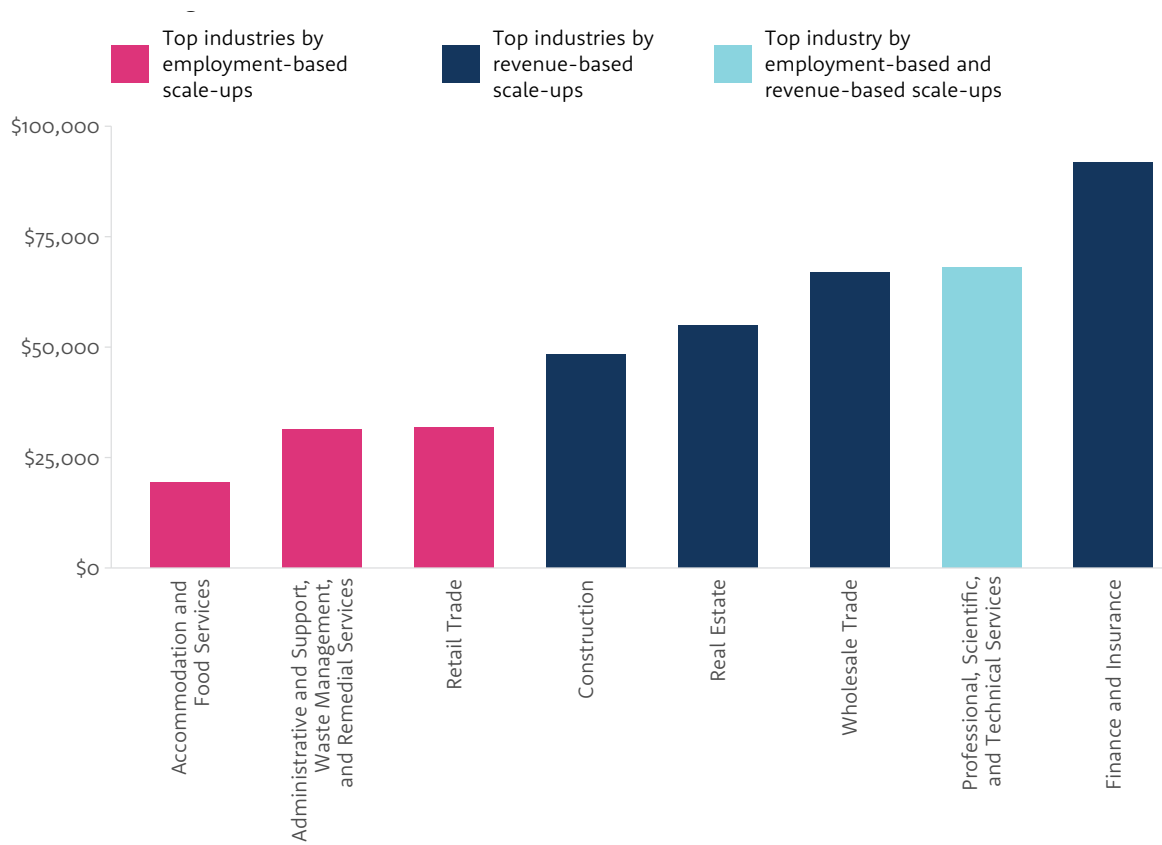


Source: Statistics Canada.

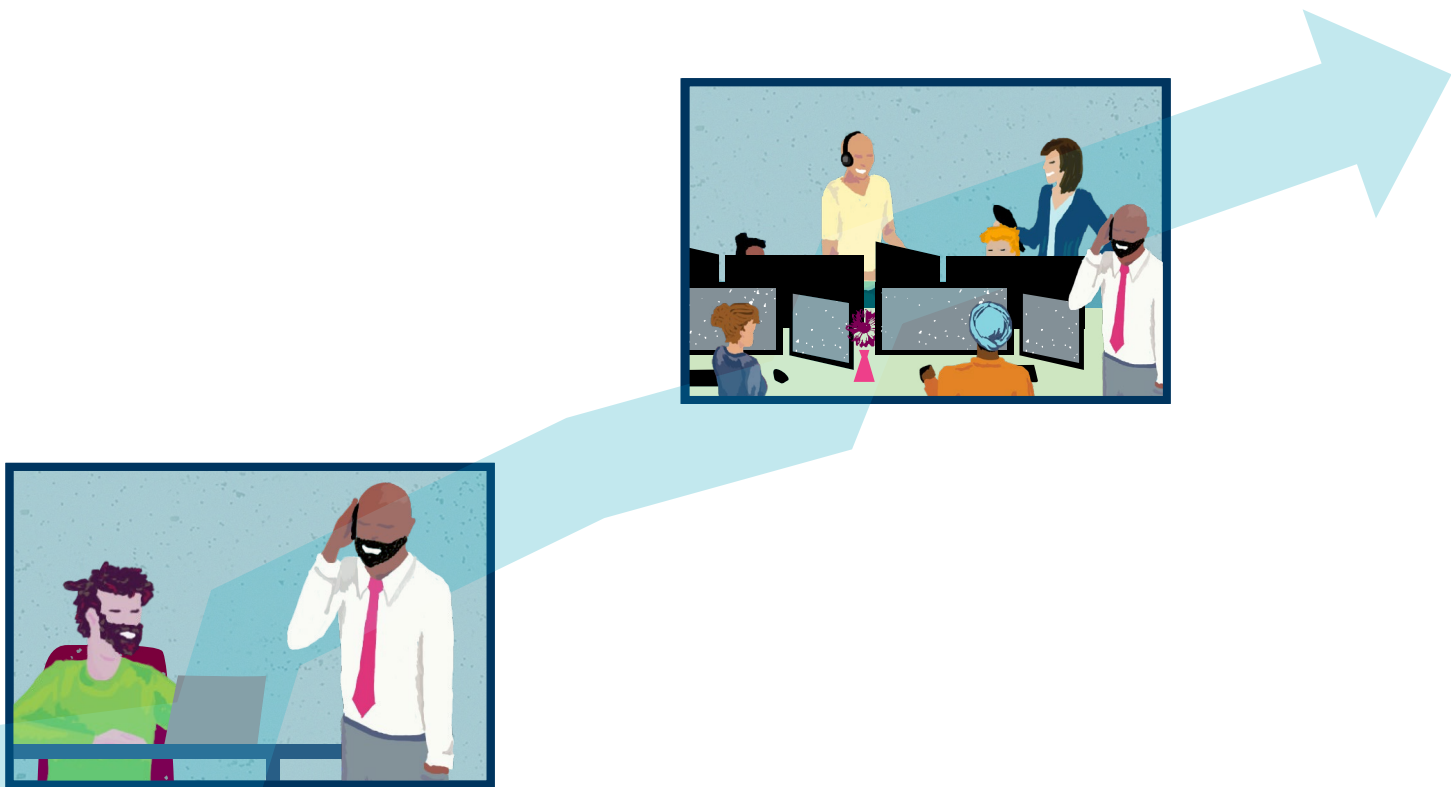
Overall, workers in industries where most revenue-based scale-ups are based had higher incomes than workers in the industries where most employment-based scale-ups are based (Figure 6). It is also interesting to note that in the *Professional, Scientific, and Technical Services* industry, which holds a high proportion of both revenue- and employment-based scale-ups, the average income is significantly higher than in other industries that hold a high proportion

of employment-based scale-ups. However, further research is needed to understand the attributes of jobs created by scale-ups in this industry.

Figure 6:
Average income in 2016, Ontario's industries



Source: 2016 Canadian Census.



DIVING DEEPER INTO SUB-PROVINCIAL AREAS

While scale-ups are concentrated in urban centres, they are driving growth in all corners of the province. An index based on the share of revenue and employment scale-ups by region shows Windsor-Sarnia, London, and Toronto in the lead.

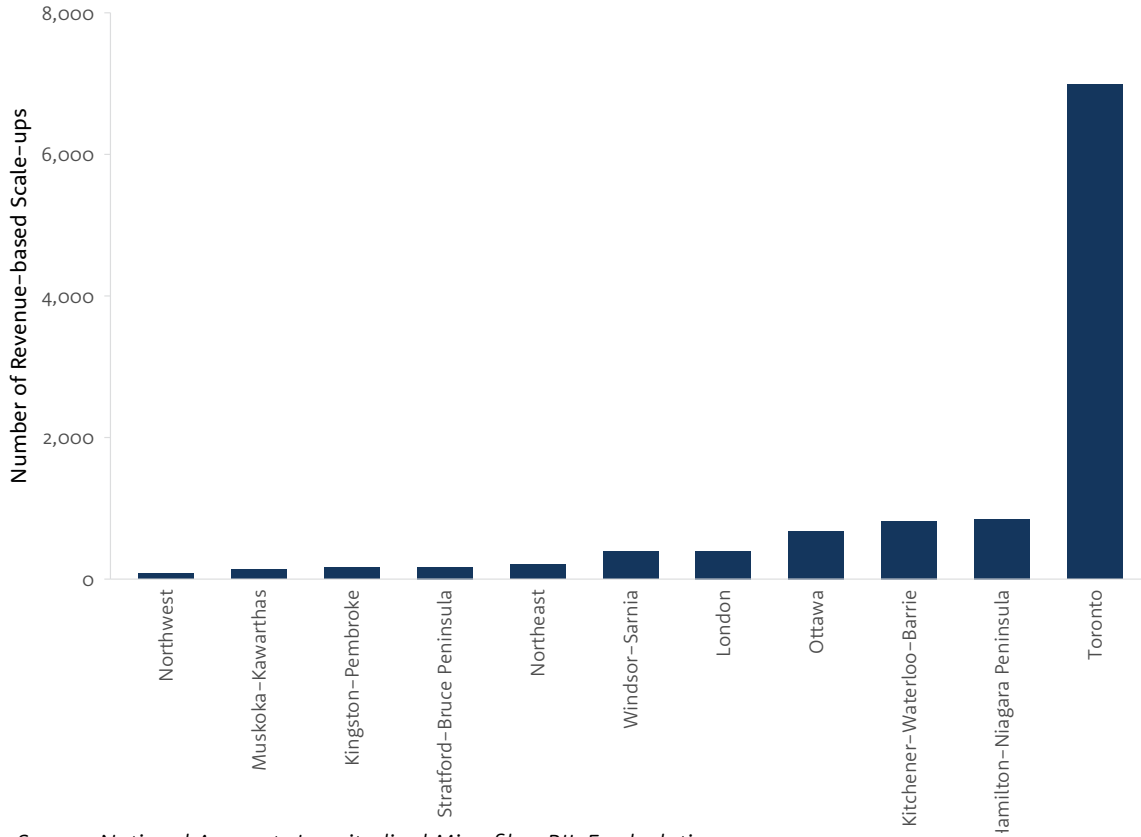
Although Windsor-Sarnia and London both ranked higher than Toronto in the scale-up index (*Table 3*), two out of three revenue-based scale-ups (64 percent - *Figure 7*) and three out of five employment-based scale-ups (61.8 percent - *Figure 8*) were headquartered in Toronto. This is not surprising, as Toronto housed 60.4 percent of all firms and 59.8 percent of young firms in Ontario.

Table 3:
Scale-up Index and Rankings, Ontario's ERs

| Rank | ER | Index | Share of Revenue Scale-ups | Share of Employment Scale-ups |
|------|----------------------------|-------|----------------------------|-------------------------------|
| 1 | Windsor-Sarnia | 96 | 1.72% | 0.78% |
| 2 | London | 86 | 1.51% | 0.82% |
| 3 | Toronto | 80 | 1.62% | 0.68% |
| 4 | Kitchener-Waterloo-Barrie | 70 | 1.57% | 0.61% |
| 5 | Hamilton-Niagara Peninsula | 66 | 1.47% | 0.64% |
| 6 | Ottawa | 50 | 1.2% | 0.66% |
| 7 | Northwest | 49 | 1.09% | 0.73% |
| 8 | Northeast | 34 | 1.17% | 0.51% |
| 9 | Kingston-Pembroke | 28 | 1.17% | 0.45% |
| 10 | Stratford-Bruce Peninsula | 27 | 1.32% | 0.34% |
| 11 | Muskoka-Kawartha | 0 | 0.97% | 0.3% |

Figure 7:

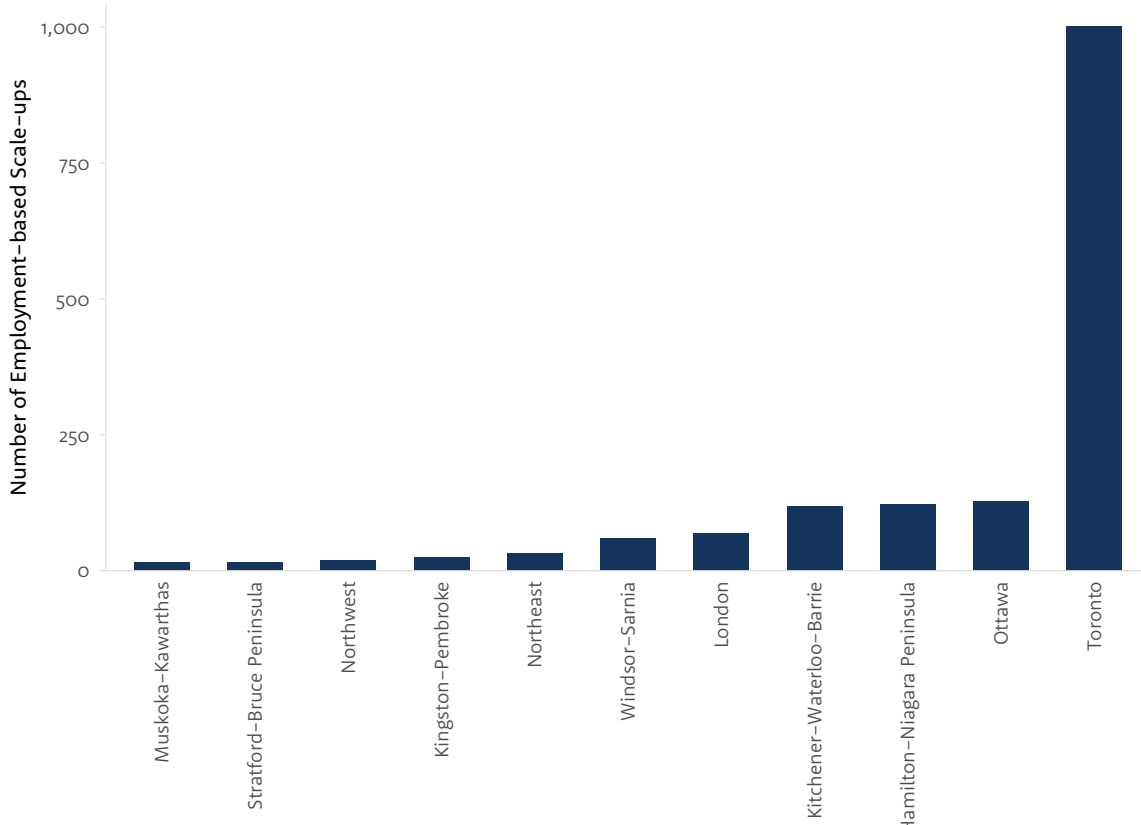
Number of revenue-based scale-ups in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E calculations.

Figure 8:

Number of employment-based scale-ups in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E calculations.

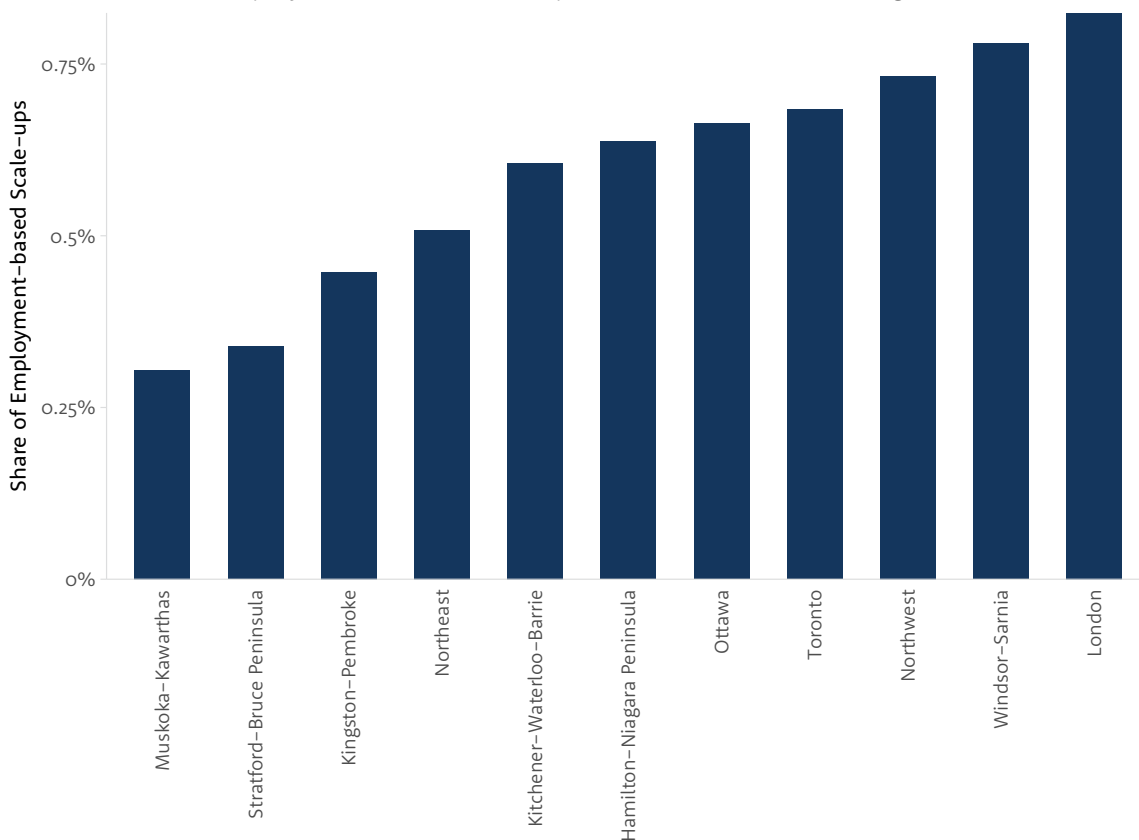
These leading regions aren't too far ahead, however. The rate of scale-up creation is similar across all regions in Ontario.

In fact, it is possible to predict almost exactly how scale-up firms are distributed across the province by examining how all firms are distributed across the province. The correlation is extremely high (>0.99) for both scale-up definitions and at both provincial and sub-provincial levels.²⁷ The differences that do exist in the share of scale-ups observed across geographic regions (Figure 9, 10, 11, and 12) are likely due to the disproportionate impact of having one additional scale-up in regions with lower numbers.

While there may be geographic differences in firm survival (an indicator that we currently lack the data to explore) scale-ups can and do grow in different cities and regions, and geographic areas that attract a higher number of businesses do not necessarily create scale-ups disproportionately. In fact, the share of revenue scale-ups has increased over time in most ERs in Ontario (Figure 13).

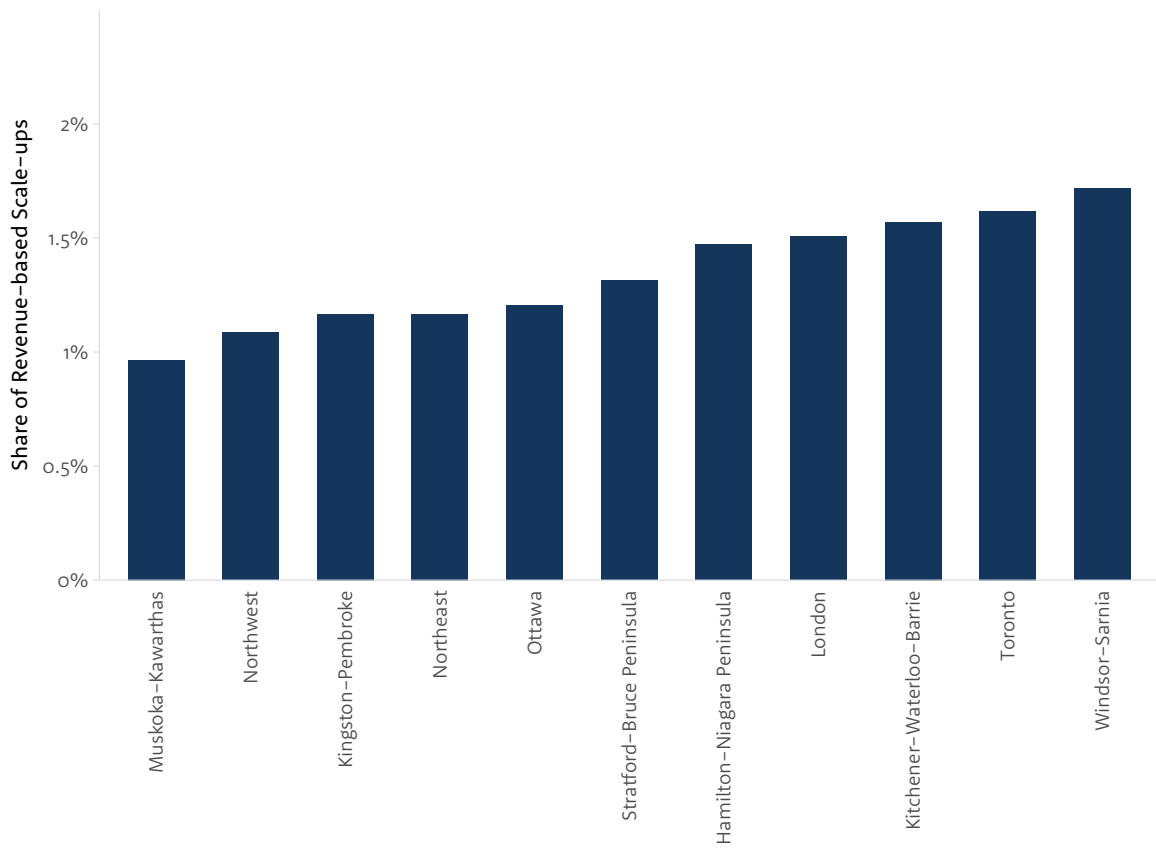
At the same time, revenue-based scale-ups in Toronto recorded higher revenue (\$32.7 million on average - Figure 14) and employment-based scale-ups in Toronto tended to employ more people (on average 147.4 employees - Figure 15) than other Ontario scale-ups, which recorded an average of \$25 million in revenue and 129.5 employees, respectively. Such trends point unsurprisingly towards Toronto, the economic capital of Ontario, as having more favourable conditions for scale-ups compared to other regions of the province.

Figure 9:
Share of employment-based scale-ups in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E calculations.

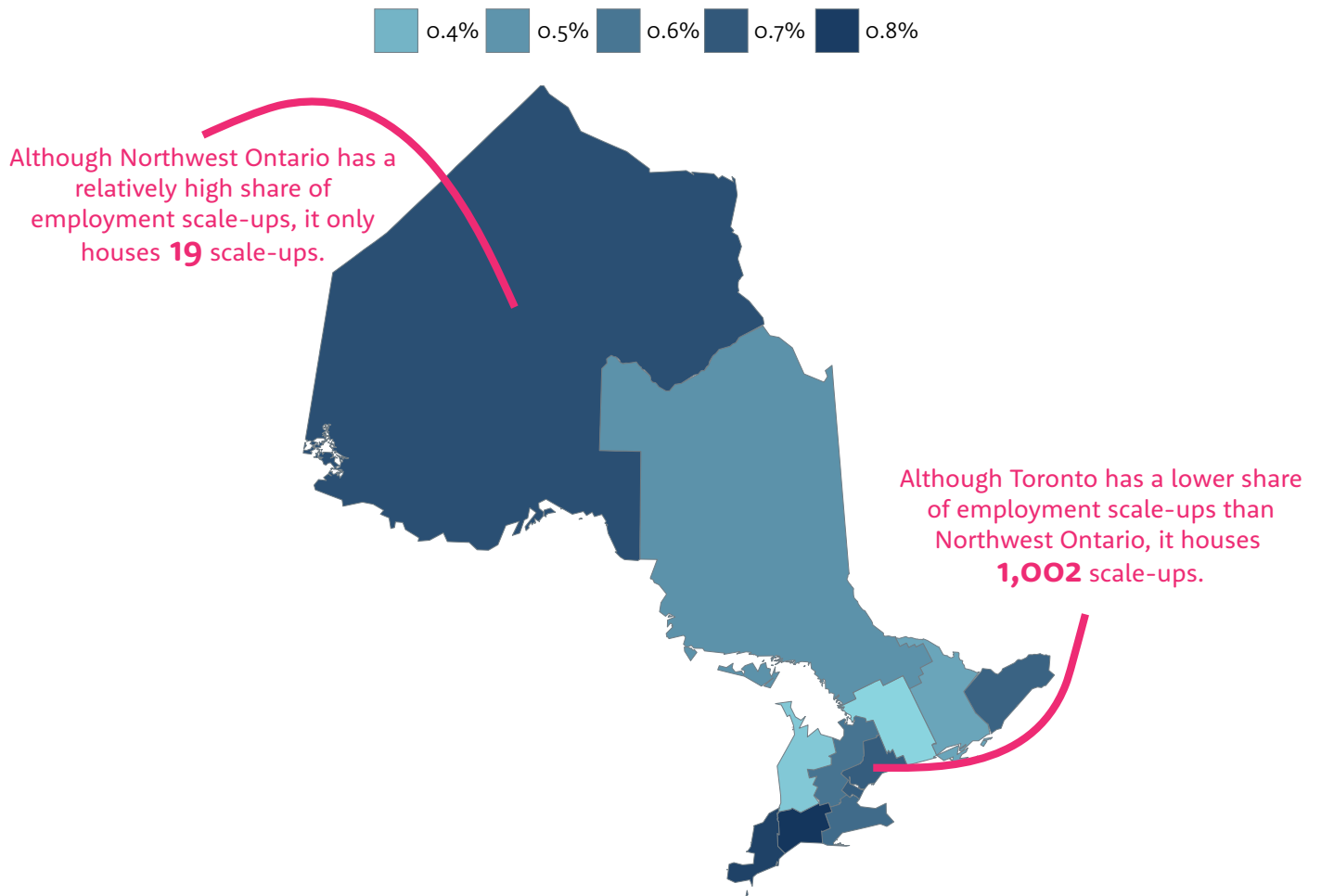
Figure 10:
Share of revenue-based scale-ups in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E calculations.



Figure 11:
Share of employment-based scale-ups in Ontario's ERs



Source: National Accounts Longitudinal Microfiles; BII+E calculations.

Figure 12:
Share of revenue-based scale-ups in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E calculations.

Figure 13:
Share of revenue-based scale-ups over time, Ontario's ERs

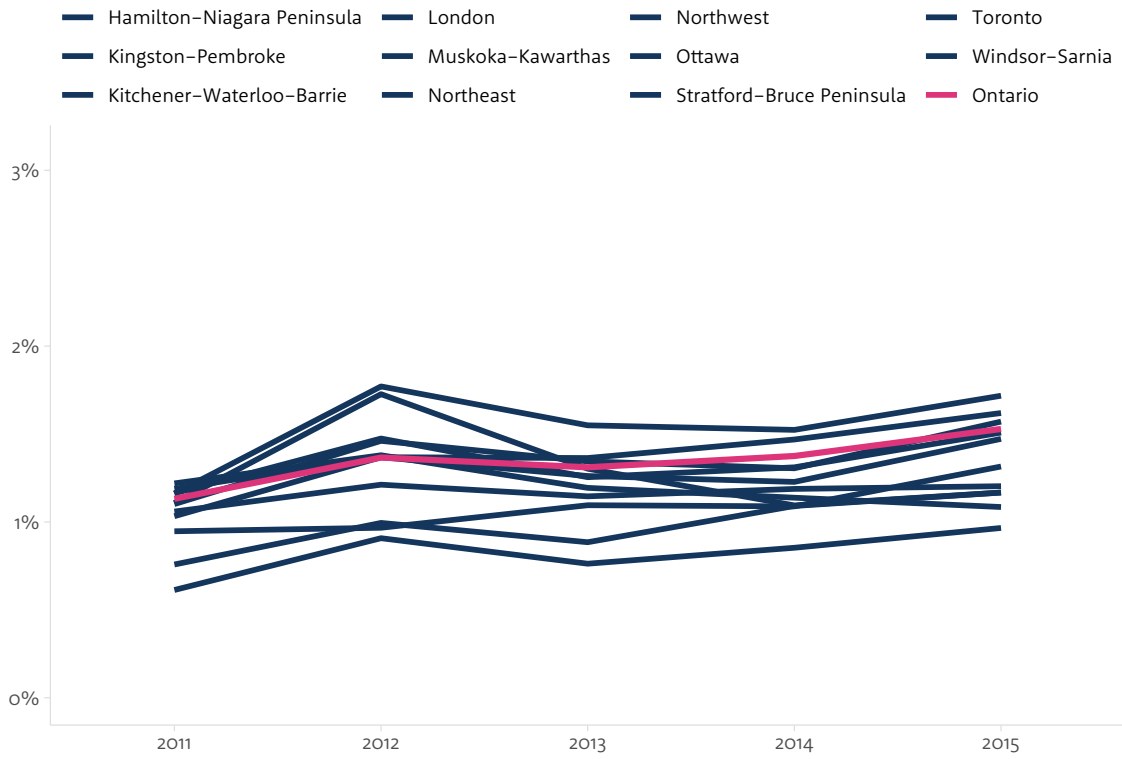
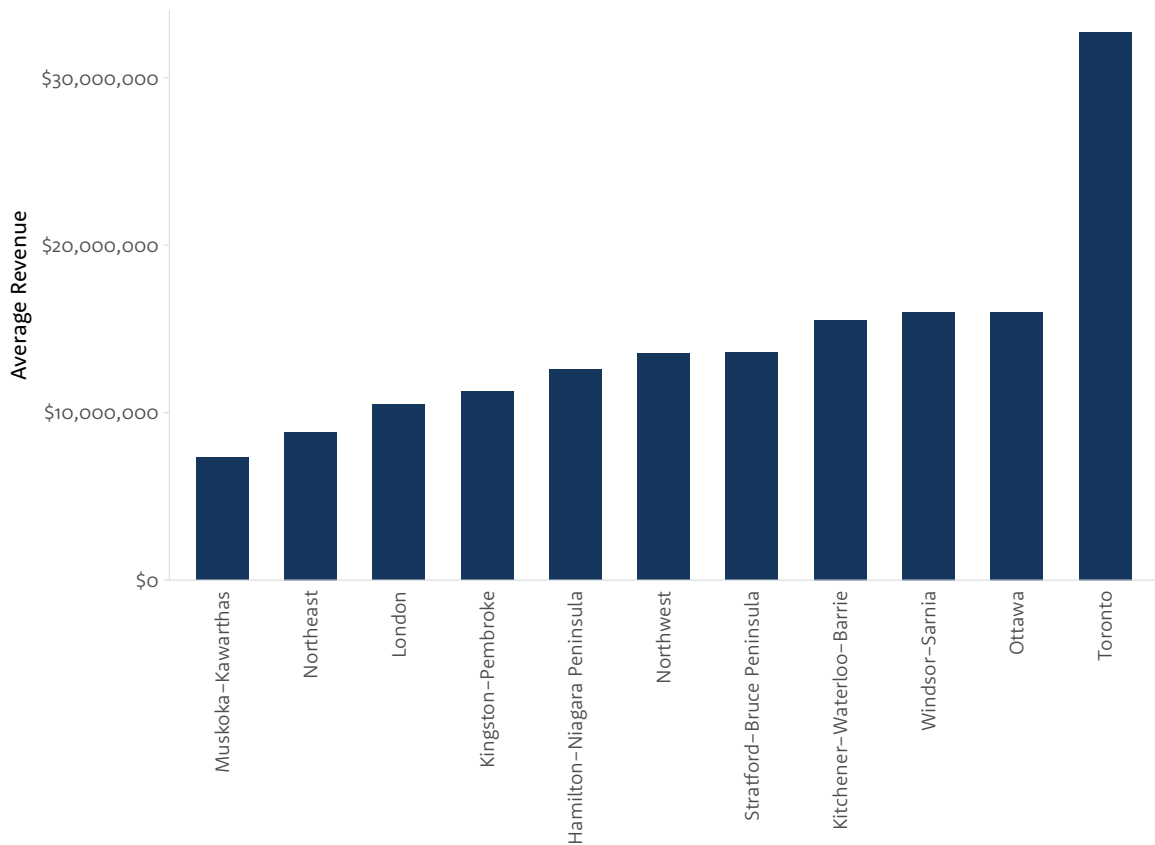
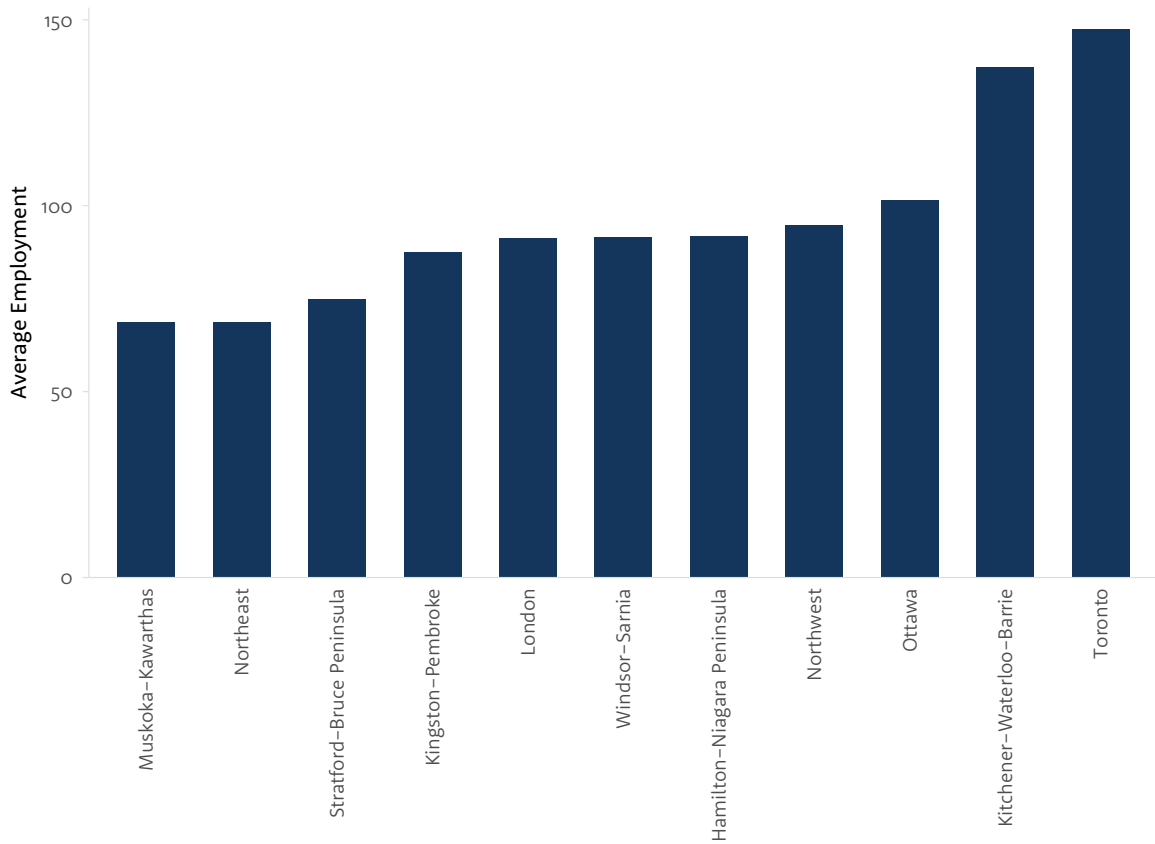


Figure 14:
Revenue-based scale-ups' average revenue in Ontario's ERs, 2015



Source: National Accounts Longitudinal Microfiles; BII+E analysis.

Figure 15:
Employment-based scale-ups' average employment in Ontario's ERs, 2015



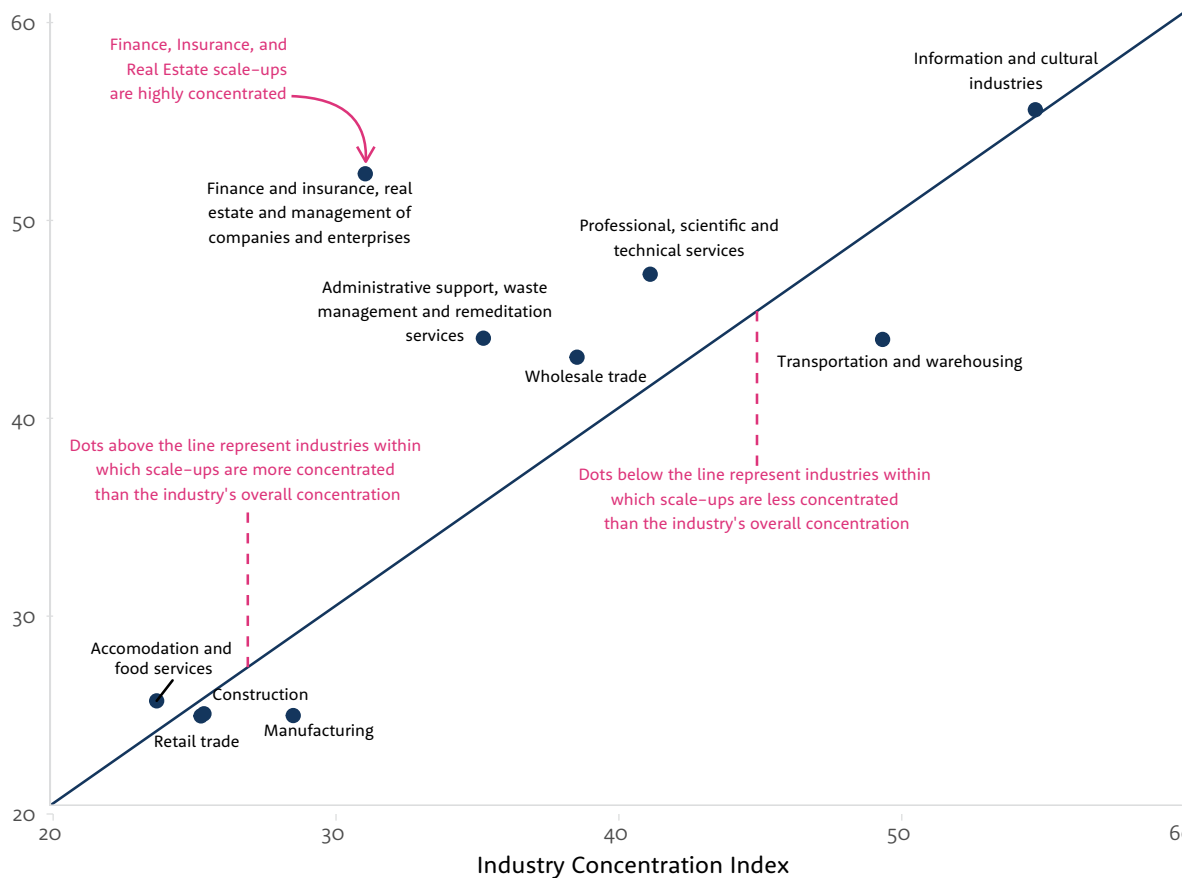
Source: National Accounts Longitudinal Microfiles; BII+E analysis.



As shown in Figure 16, while scale-up distribution closely mirrors overall firm distribution, the same cannot be said for revenue-based scale-ups within specific industries. For example, 74.1 percent of all revenue-based scale-ups in *Finance, Insurance, and Real Estate* were registered in Toronto, which was home to only 58.6 of all companies in that industry. In contrast, in the *Information and Cultural* industries, 75.8 percent of revenue-based scale-ups were located in Toronto, consistent with the percent of all firms from this industry in Toronto.

This suggests that industries with relatively higher revenue-based scale-up concentrations may be industries with important network effects for firms looking to scale, whereby physical proximity to other scale-ups or to markets and resources may positively impact a firm’s ability to scale. Additionally, as Toronto drove the majority of differences in industry concentration, these network effects may be particularly strong in Toronto.

Figure 16:
Revenue-based scale-up concentration by industries in Ontario, 2015



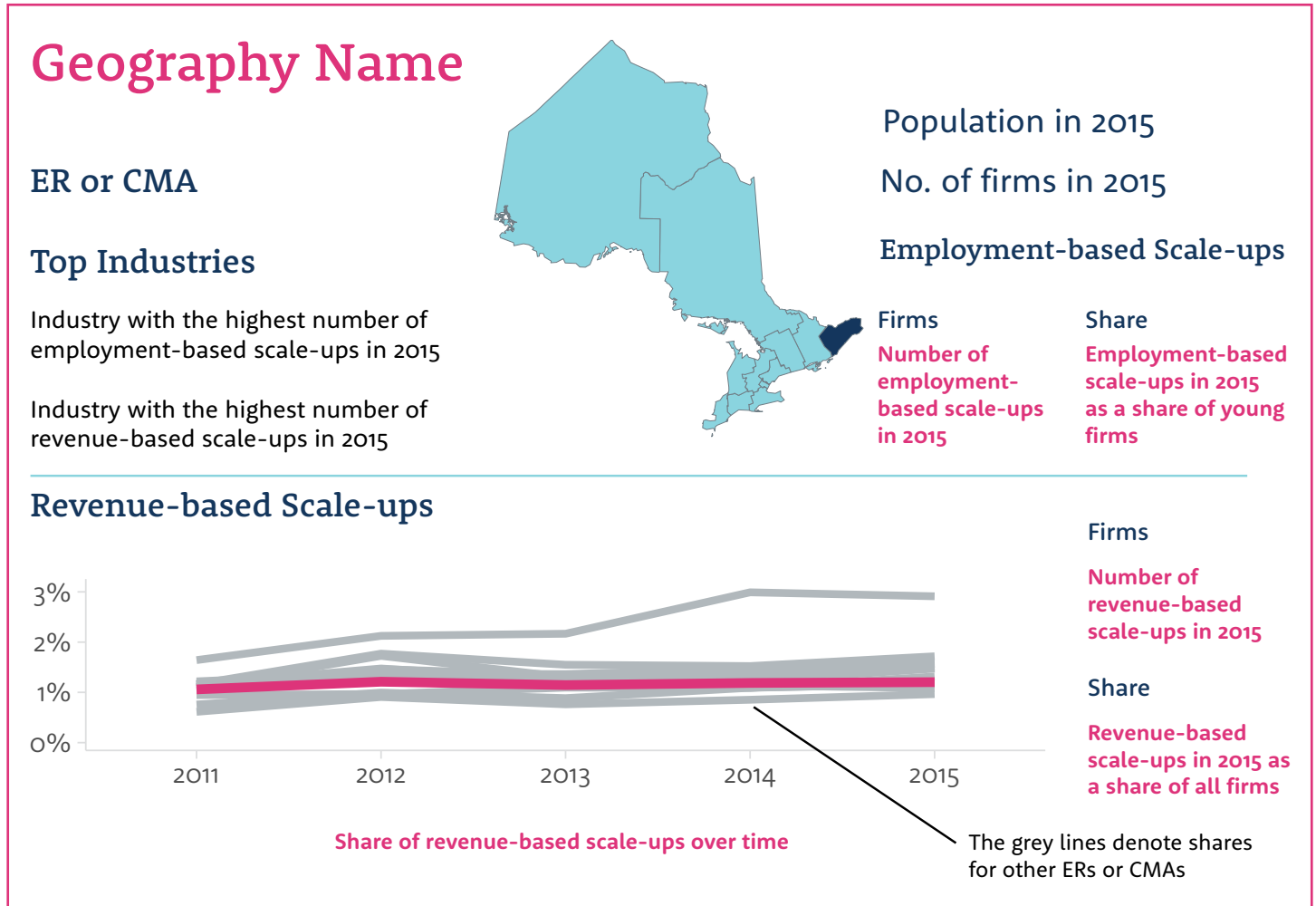
Source: National Accounts Longitudinal Microfiles; BII+E calculations.

Note: Each point represents an industry.

SCALE-UP ACTIVITY IN ONTARIO'S ECONOMIC REGIONS AND CENSUS METROPOLITAN AREAS

This section explores scale-up activity in Ontario's ERs and CMAs. Key statistics for each ER and CMA are presented through a series of infographics, or "geographic cards".

Reading the geographic cards



Ottawa

Economic Region

Top Industries

Employment scale-ups: Retail Trade
 Revenue scale-ups: Finance, Insurance, and Real Estate



Population: 1,306,250

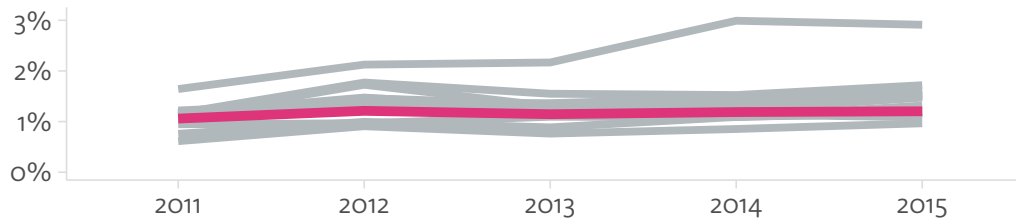
No. of firms: 56,590

Employment Scale-ups

| Firms | Share |
|------------|--------------|
| 127 | 0.66% |

Revenue Scale-ups

Share of Revenue Scale-ups



| Firms | Share |
|------------|-------------|
| 681 | 1.2% |

Kingston—Pembroke

Economic Region

Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: Retail Trade



Population: 456,935

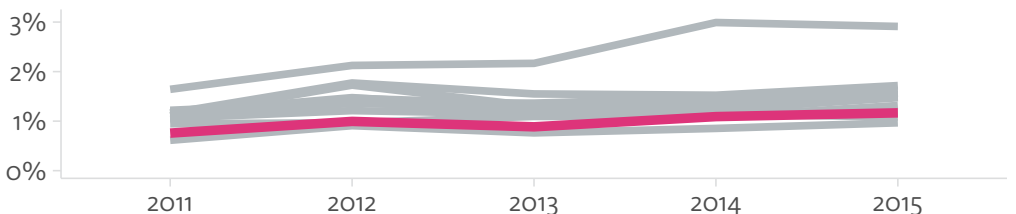
No. of firms: 13,709

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 24 | 0.45% |

Revenue Scale-ups

Share of Revenue Scale-ups



| Firms | Share |
|------------|--------------|
| 160 | 1.17% |

Muskoka— Kawartha

Economic Region

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Retail Trade



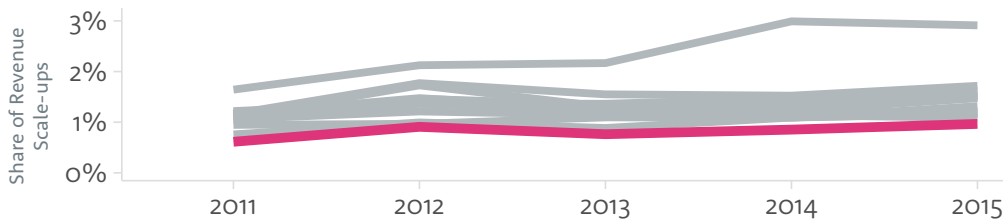
Population: 377,915

No. of firms: 14,184

Employment Scale-ups

| Firms | Share |
|-----------|-------------|
| 16 | 0.3% |

Revenue Scale-ups



Firms

137

Share

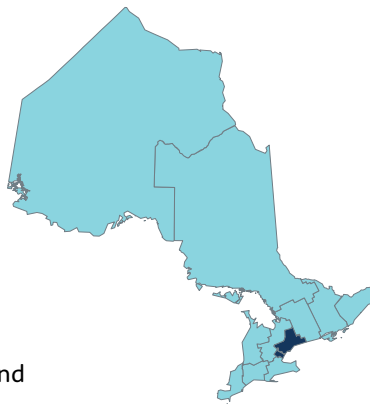
0.97%

Toronto

Economic Region

Top Industries

Employment scale-ups: Administrative Support and Waste Services
Revenue scale-ups: Finance, Insurance, and Real Estate



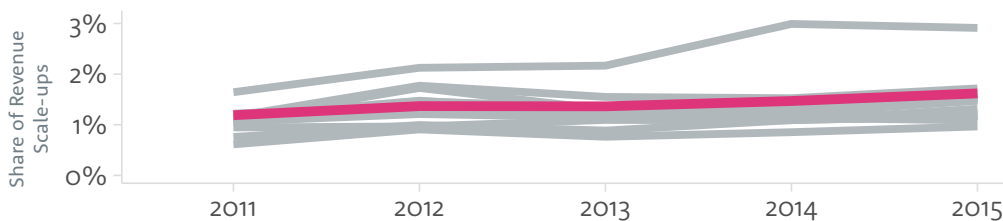
Population: 6,234,200

No. of firms: 431,427

Employment Scale-ups

| Firms | Share |
|-------------|--------------|
| 1002 | 0.68% |

Revenue Scale-ups



Firms

6987

Share

1.62%

Kitchener— Waterloo—Barrie

Economic Region

Top Industries

Employment scale-ups: Accommodation and Food Services
Revenue scale-ups: Finance, Insurance, and Real Estate



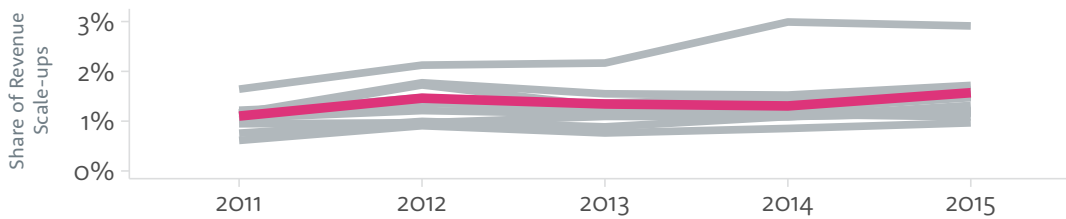
Population: 1,299,265

No. of firms: 52,271

Employment Scale-ups

| Firms | Share |
|------------|--------------|
| 118 | 0.61% |

Revenue Scale-ups



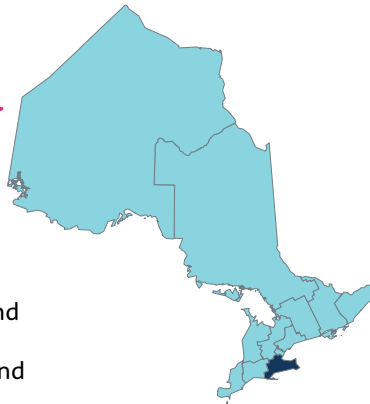
| Firms | Share |
|------------|--------------|
| 821 | 1.57% |

Hamilton— Niagara Peninsula

Economic Region

Top Industries

Employment scale-ups: Accommodation and Food Services
Revenue scale-ups: Finance, Insurance, and Real Estate



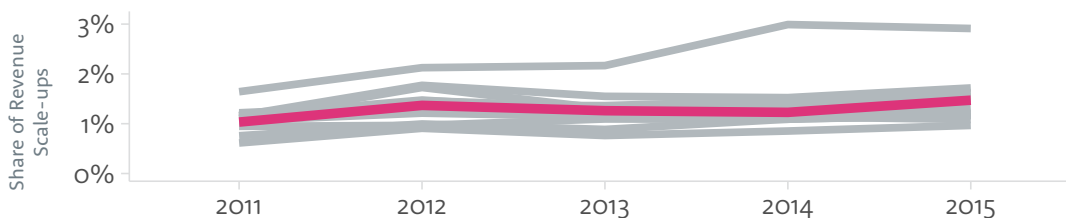
Population: 1,412,715

No. of firms: 57,722

Employment Scale-ups

| Firms | Share |
|------------|--------------|
| 122 | 0.64% |

Revenue Scale-ups



| Firms | Share |
|------------|--------------|
| 850 | 1.47% |

London

Economic Region

Top Industries

Employment scale-ups: Retail Trade
 Revenue scale-ups: Finance, Insurance, and Real Estate



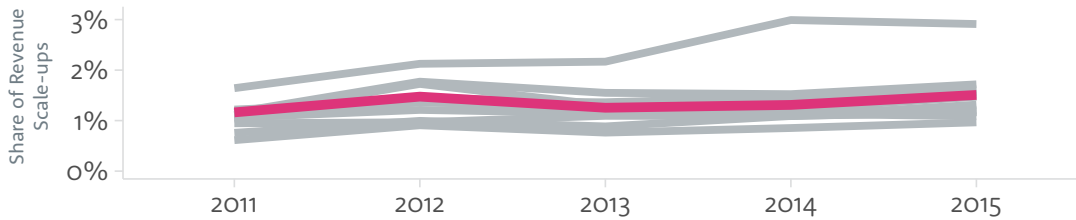
Population: 655,370

No. of firms: 26,319

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 69 | 0.82% |

Revenue Scale-ups



Firms

397

Share

1.51%

Windsor—Sarnia

Economic Region

Top Industries

Employment scale-ups: Manufacturing
 Revenue scale-ups: Finance, Insurance, and Real Estate



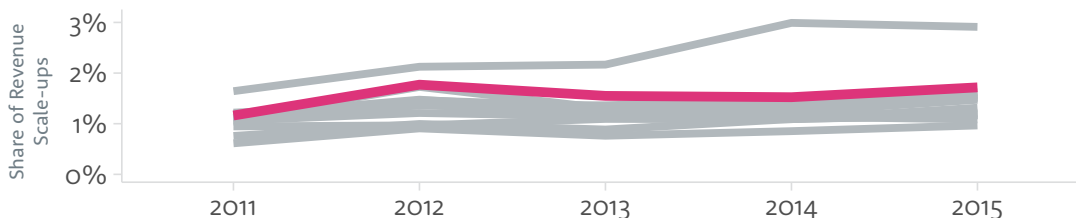
Population: 627,635

No. of firms: 22,936

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 59 | 0.78% |

Revenue Scale-ups



Firms

394

Share

1.72%

Stratford— Bruce Peninsula

Economic Region

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Manufacturing



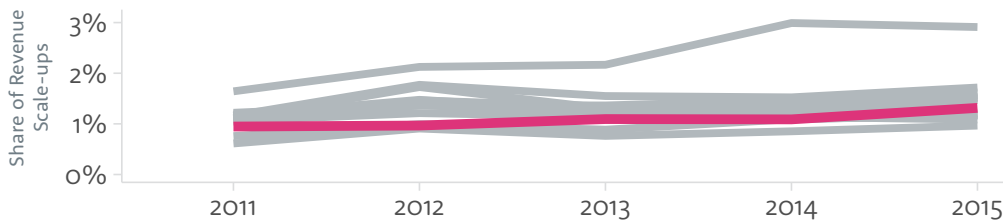
Population: 298,070

No. of firms: 13,076

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 16 | 0.34% |

Revenue Scale-ups



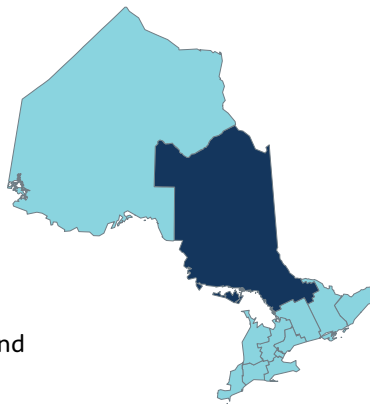
| Firms | Share |
|------------|--------------|
| 172 | 1.32% |

Northeast

Economic Region

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Finance, Insurance, and Real Estate



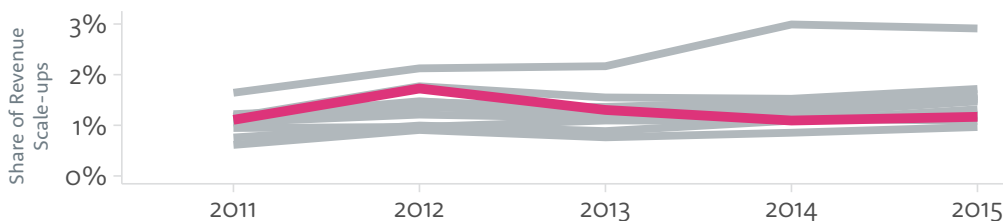
Population: 548,450

No. of firms: 17,560

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 32 | 0.51% |

Revenue Scale-ups



| Firms | Share |
|------------|--------------|
| 205 | 1.17% |

Northwest

Economic Region

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: N/A



Population: 231,690

No. of firms: 7,373

Employment Scale-ups

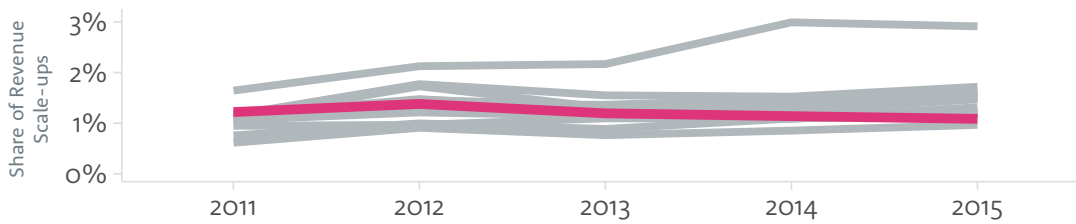
Firms

19

Share

0.73%

Revenue Scale-ups



Firms

80

Share

1.09%

Census Metropolitan Areas

Kingston

Census Metropolitan Area



Population: 161,175

No. of firms: 4,892

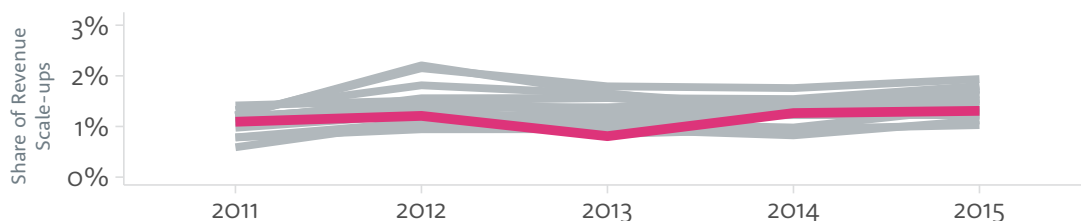
Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: Finance, Insurance, and Real Estate

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



| Firms | Share |
|-------|-------|
| 64 | 1.31% |

Belleville

Census Metropolitan Area



Population: 103,470

No. of firms: 2,646

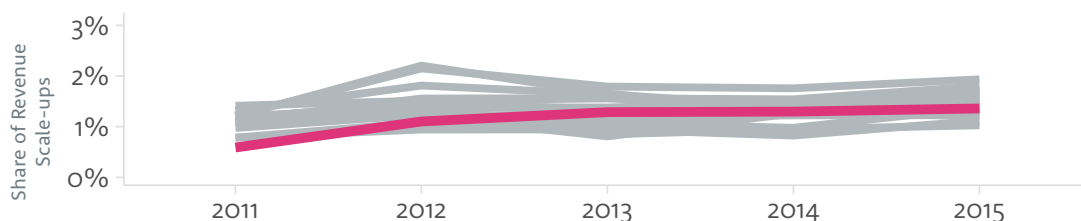
Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: N/A

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



| Firms | Share |
|-------|-------|
| 36 | 1.36% |

Peterborough

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: N/A



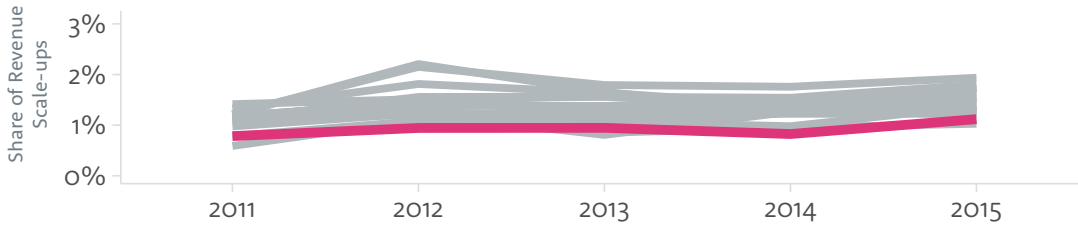
Population: 121,720

No. of firms: 4,113

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



Firms

46

Share

1.12%

Oshawa

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: N/A



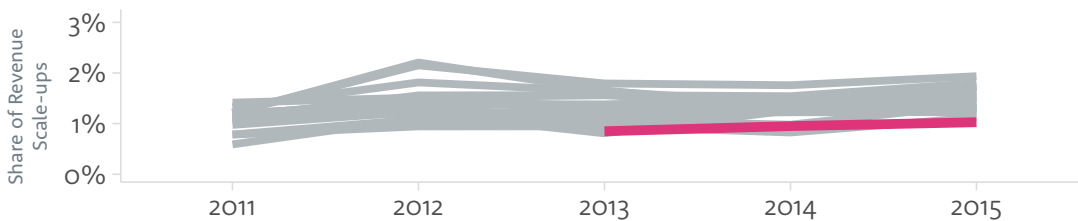
Population: 379,850

No. of firms: 10,903

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



Firms

112

Share

1.03%

Toronto

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: Finance, Insurance, and Real Estate



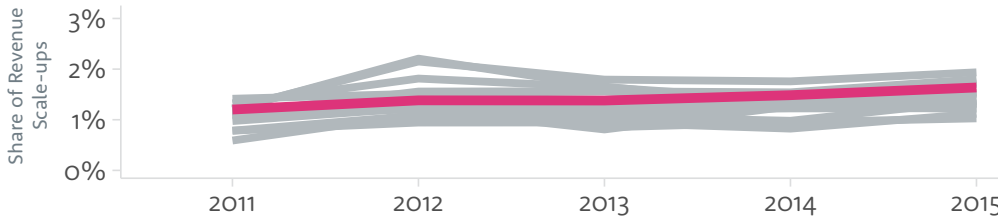
Population: 4,879,095

No. of firms: 418,912

Employment Scale-ups

| | |
|------------|--------------|
| Firms | Share |
| 990 | 0.69% |

Revenue Scale-ups



| |
|--------------|
| Firms |
| 6858 |
| Share |
| 1.64% |

Kitchener— Cambridge— Waterloo

Census Metropolitan Area

Top Industries

Employment scale-ups: Accommodation and Food Services
 Revenue scale-ups: Finance, Insurance, and Real Estate



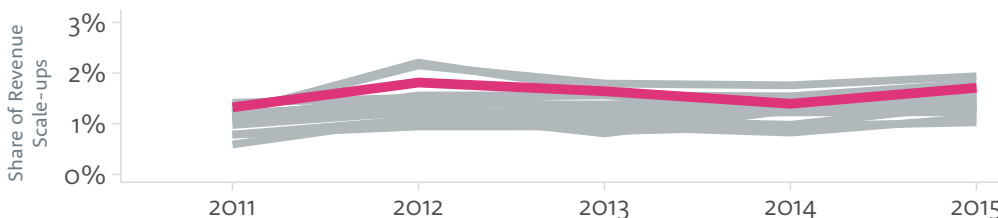
Population: 423,860

No. of firms: 22,639

Employment Scale-ups

| | |
|-----------|--------------|
| Firms | Share |
| 61 | 0.84% |

Revenue Scale-ups



| |
|--------------|
| Firms |
| 387 |
| Share |
| 1.71% |

Guelph

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: Finance, Insurance, and Real Estate



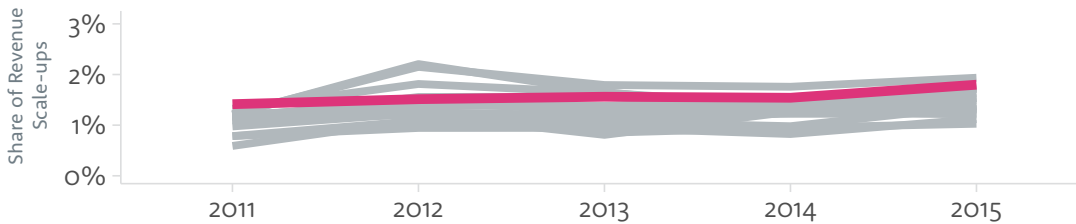
Population: 124,275

No. of firms: 7,562

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 16 | 0.68% |

Revenue Scale-ups



| Firms | Share |
|------------|--------------|
| 136 | 1.80% |

Barrie

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
 Revenue scale-ups: Wholesale Trade



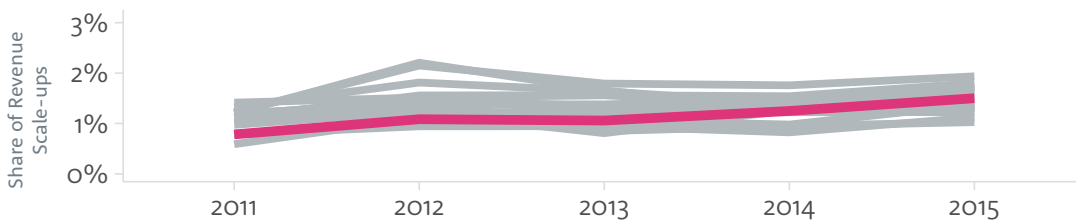
Population: 159,215

No. of firms: 7,724

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 19 | 0.63% |

Revenue Scale-ups



| Firms | Share |
|------------|--------------|
| 116 | 1.50% |

Hamilton

Census Metropolitan Area

Top Industries

Employment scale-ups: Accommodation and Food Services
 Revenue scale-ups: Finance, Insurance, and Real Estate



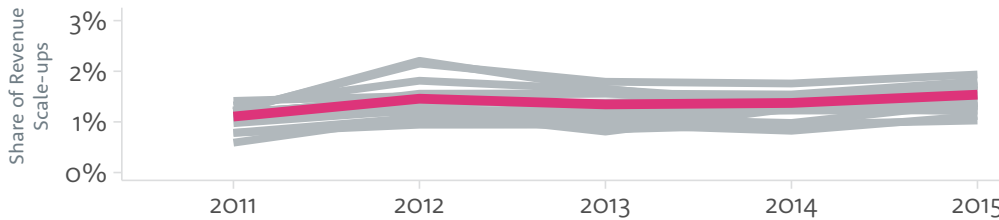
Population: 612,630

No. of firms: 33,037

Employment Scale-ups

| | |
|-----------|--------------|
| Firms | Share |
| 74 | 0.69% |

Revenue Scale-ups



| | |
|------------|--------------|
| Firms | Share |
| 508 | 1.54% |

St. Catharines—Niagara

Census Metropolitan Area

Top Industries

Employment scale-ups: Accommodation and Food Services
 Revenue scale-ups: Retail Trade



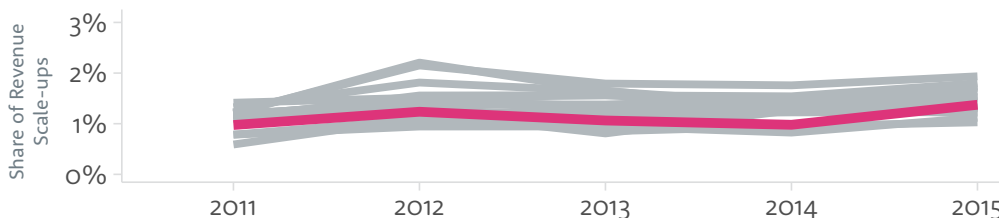
Population: 337,885

No. of firms: 14,773

Employment Scale-ups

| | |
|-----------|--------------|
| Firms | Share |
| 36 | 0.73% |

Revenue Scale-ups



| | |
|------------|--------------|
| Firms | Share |
| 203 | 1.37% |

Brantford

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: N/A



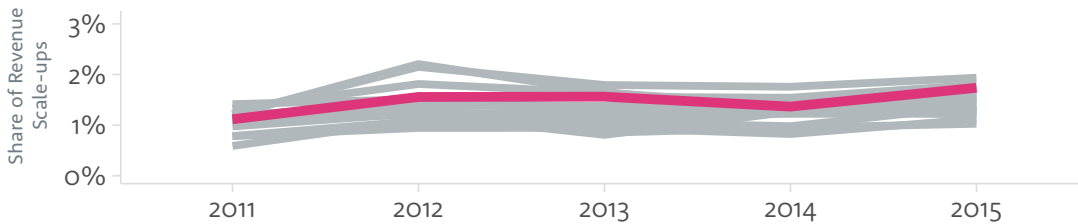
Population: 134,205

No. of firms: 5,178

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



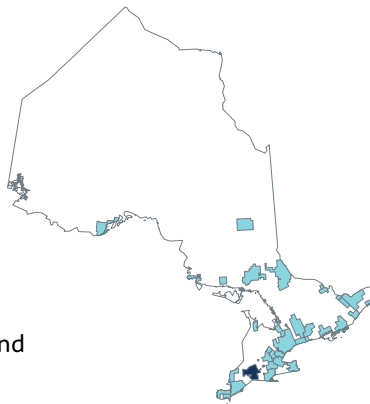
| Firms | Share |
|-------|-------|
| 90 | 1.74% |

London

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Finance, Insurance, and Real Estate



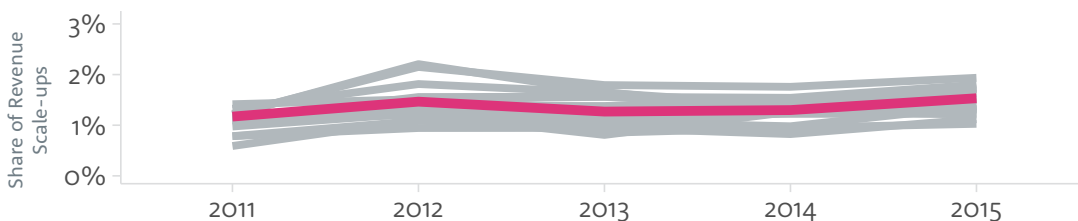
Population: 494,070

No. of firms: 19,377

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



| Firms | Share |
|-------|-------|
| 297 | 1.53% |

Windsor

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Finance, Insurance, and Real Estate



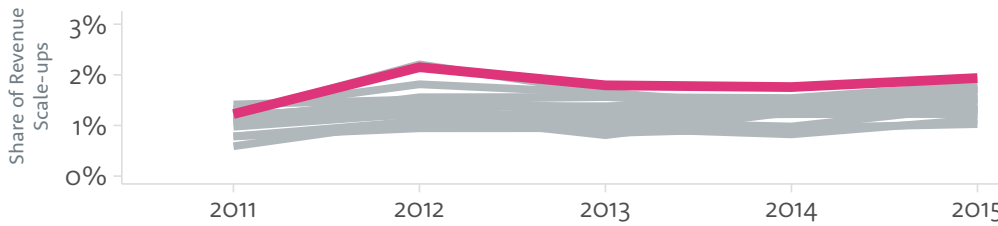
Population: 270,000

No. of firms: 11,778

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 37 | 0.91% |

Revenue Scale-ups



| Firms |
|--------------|
| 228 |
| Share |
| 1.94% |

Greater Sudbury

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: Finance, Insurance, and Real Estate



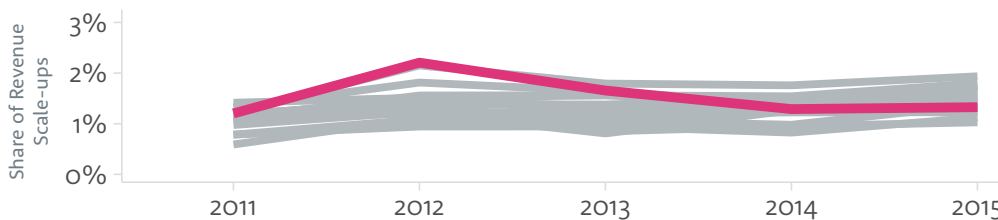
Population: 136,285

No. of firms: 5,730

Employment Scale-ups

| Firms | Share |
|-----------|--------------|
| 12 | 0.68% |

Revenue Scale-ups



| Firms |
|--------------|
| 76 |
| Share |
| 1.33% |

Thunder Bay

Census Metropolitan Area

Top Industries

Employment scale-ups: N/A
Revenue scale-ups: N/A



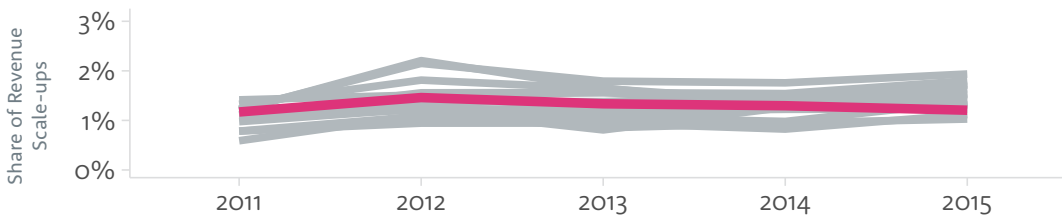
Population: 121,620

No. of firms: 4,312

Employment Scale-ups

| Firms | Share |
|-------|-------|
| N/A | N/A |

Revenue Scale-ups



Firms

52

Share

1.21%

Ottawa—Gatineau

Census Metropolitan Area

Top Industries

Employment scale-ups: Administrative Support and Waste Management
Revenue scale-ups: Finance, Insurance, and Real Estate



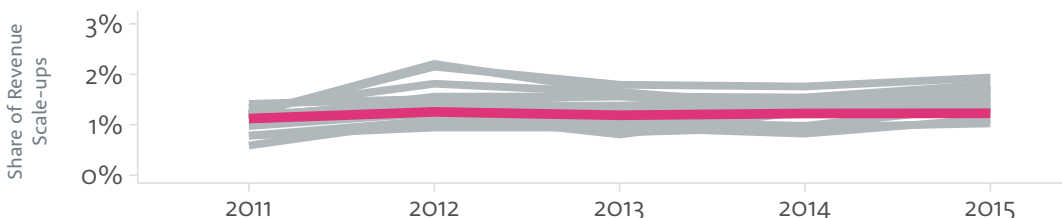
Population: 1,073,835

No. of firms: 45,463

Employment Scale-ups

| Firms | Share |
|------------|--------------|
| 107 | 0.72% |

Revenue Scale-ups



Firms

558

Share

1.23%

COMPARISON WITH US JURISDICTIONS

This section examines scale-up statistics for key jurisdictions in the US as comparators for scale-up statistics in Ontario at the provincial and sub-provincial levels, leveraging the Kauffman Foundation’s previous work in this area.

This analysis focuses on the share of employment-based scale-ups, given methodological and data source similarities for this metric between this report and the Kauffman Foundation’s 2016 Index of Growth Entrepreneurship.²⁸ On the other hand, due

to significant differences in the data sources used for the revenue-based scale-up measure, as mentioned previously, we do not include this measure in our comparisons.

Table 4 highlights 10 metropolitan areas in the US with the highest and lowest shares of employment-based scale-ups as comparator cities for Ontario CMAs. Comparator cities were chosen to represent the range of scale-up activity in the US. Similarly, *Table 5* highlights six states in the US with the highest and lowest shares of employment-based scale-up firms.

Table 4:
Share of employment-based scale-ups in comparator US cities

| City | Share of Employment-based Scale-ups |
|--|-------------------------------------|
| US cities with the highest share of employment-based scale-ups | |
| Columbus, OH | 2.68% |
| San Antonio, TX | 2.67% |
| Washington DC | 2.34% |
| Indianapolis, IN | 2.26% |
| Austin, TX | 2.25% |
| US cities with the lowest share of employment-based scale-ups | |
| Tampa, FL | 1.16% |
| New York, NY | 1.04% |
| Orlando, FL | 1.03% |
| Windsor, ON | 0.91% |
| Kitchener-Waterloo-Cambridge, ON | 0.84% |
| Miami, FL | 0.81% |
| Detroit, MI | 0.79% |
| All other Ontarian CMAs | <0.79% |

Table 5:

Share of employment-based scale-ups in comparator US states

| State | Share of Employment-based Scale-ups |
|--|-------------------------------------|
| US states with the highest share of employment-based scale-ups | |
| Louisiana | 2.18% |
| Oklahoma | 1.85% |
| Maryland | 1.83% |
| US states with the lowest share of employment-based scale-ups | |
| Montana | 0.87% |
| Florida | 0.83% |
| Michigan | 0.83% |
| Ontario | 0.66% |

It is important to note that the share of scale-ups does not necessarily reflect either the number of scale-ups in a particular geography, or how conducive that geography is to enabling firms to scale. The specific contexts of each city and state should be taken into account in evaluating the extent of their scale-up activity. For example, a thriving start-up community in a city or state could reduce the share of employment scale-ups by inflating the overall number of firms in any given year, even if the number of scale-ups is the same or greater than in other geographies. As noted previously, different scale-up definitions tend to capture different firms, and lower performance according to one definition does not necessarily mean that a geography lags based on another definition.

Finally, available data does not tell us about the impact of employment scale-ups in US cities and states. Even taking these factors into account, however, *Tables 4 and 5* suggest that Ontario's scale-up activity lags behind the US significantly at both provincial and sub-provincial levels. There is potential for further research to investigate the extent of, and reasons for, this lag. Future research could, for example, examine firm employment dynamics in the US and Canada and explore further measures by which US and Canadian firms could be directly compared.

This comparison highlights that despite playing a significant role in the province's economy, employment-based scale-ups, at least, are still a relatively rare phenomenon in Ontario.

CONCLUSION

Scale-ups are important drivers of job creation and GDP growth in Ontario; however, it is likely that Ontario has significant scope to grow their number and impact. This presents an opportunity for the Government of Ontario to explore policy changes or targeted investments that could unlock further growth potential among the province's firms.

Efforts to seize this opportunity should reflect the diversity of scale-ups that exist in Ontario. Notably, this report has shown that Ontario's regions are home to a similar share of scale-ups; however, the number of scale-ups and magnitude of their impacts are higher in Toronto. Scale-ups are also more concentrated in some industries than others, and in some industries, they are more geographically concentrated. Any policies designed to support scale-ups in Ontario should therefore take into account which scale-up definitions best align with core policy goals, the geographies and industries in which these scale-ups appear, and their concentrations within them.

This report provides an initial benchmark and map of scale-up activity in Ontario against which future growth can be measured.



APPENDIX A: TABLES

Table A.1:
Employment-based scale-ups by Economic Region (ER), 2015

| ER | # of scale-ups | Total employment by scale-ups | Average employment per scale-up | Share of scale-ups |
|----------------------------|----------------|-------------------------------|---------------------------------|--------------------|
| Ottawa | 127 | 12,900 | 101.6 | 0.66% |
| Kingston-Pembroke | 24 | 2,100 | 87.5 | 0.45% |
| Muskoka-Kawarthas | 16 | 1,100 | 68.8 | 0.3% |
| Toronto | 1,002 | 147,700 | 147.4 | 0.68% |
| Kitchener-Waterloo-Barrie | 118 | 16,200 | 137.3 | 0.61% |
| Hamilton-Niagara Peninsula | 122 | 11,200 | 91.8 | 0.64% |
| London | 69 | 6,300 | 91.3 | 0.82% |
| Windsor-Sarnia | 59 | 5,400 | 91.5 | 0.78% |
| Stratford-Bruce Peninsula | 16 | 1,200 | 75 | 0.34% |
| Northeast | 32 | 2,200 | 68.8 | 0.51% |
| Northwest | 19 | 1,800 | 94.7 | 0.73% |
| Unclassified | 15 | 1,500 | 100 | 5.1% |

Table A.2:

Share of revenue-based scale-ups by Economic Region (ER), 2011-2015

| ER | 2015 | 2014 | 2013 | 2012 | 2011 |
|----------------------------|--------|--------|--------|--------|--------|
| Ottawa | 1.20 % | 1.19 % | 1.15 % | 1.21 % | 1.06 % |
| Kingston-Pembroke | 1.17 % | 1.09 % | 0.88 % | 0.99 % | 0.76 % |
| Muskoka-Kawarthas | 0.97 % | 0.85 % | 0.76 % | 0.91 % | 0.61 % |
| Toronto | 1.62 % | 1.47 % | 1.36 % | 1.37 % | 1.19 % |
| Kitchener-Waterloo-Barrie | 1.57 % | 1.31 % | 1.34 % | 1.46 % | 1.10 % |
| Hamilton-Niagara Peninsula | 1.47 % | 1.23 % | 1.26 % | 1.37 % | 1.03 % |
| London | 1.51 % | 1.31 % | 1.25 % | 1.47 % | 1.16 % |
| Windsor-Sarnia | 1.72 % | 1.52 % | 1.55 % | 1.77 % | 1.16 % |
| Stratford-Bruce Peninsula | 1.32 % | 1.09 % | 1.10 % | 0.97 % | 0.95 % |
| Northeast | 1.17 % | 1.09 % | 1.30 % | 1.73 % | 1.11 % |
| Northwest | 1.09 % | 1.14 % | 1.19 % | 1.38 % | 1.22 % |

Table A.3:

Top Industries for employment-based scale-ups by Economic Region (ER), 2015

| ER | Industry | Total employment by scale-ups | # of scale-ups |
|--------|---|-------------------------------|----------------|
| Ottawa | Construction | 1,000 | 13 |
| | Retail trade | 4,500 | 26 |
| | Finance and insurance, real estate, and management of companies and enterprises | 800 | 11 |
| | Professional, scientific, and technical services | 2,200 | 18 |
| | Administrative support, waste management and remediation services | 800 | 10 |
| | Accommodation and food services | 1,500 | 21 |

Table A.3 (cont.)

Top Industries for employment-based scale-ups by Economic Region (ER), 2015

| ER | Industry | Total employment by scale-ups | # of scale-ups |
|---|---|-------------------------------|----------------|
| Toronto | Unclassified | 2,400 | 27 |
| | Construction | 6,600 | 69 |
| | Manufacturing | 11,000 | 69 |
| | Wholesale trade | 6,700 | 63 |
| | Retail trade | 22,800 | 127 |
| | Transportation and warehousing | 7,000 | 28 |
| | Information and cultural industries | 4,700 | 39 |
| | Finance and insurance, real estate, and management of companies and enterprises | 25,800 | 91 |
| | Professional, scientific and technical services | 12,900 | 128 |
| | Administrative support, waste management and remediation services | 19,200 | 151 |
| | Arts, entertainment and recreation | 2,600 | 17 |
| | Accommodation and food services | 13,900 | 150 |
| Other services, excluding public administration | 2,500 | 29 | |
| Kitchener-Waterloo-Barrie | Manufacturing | 2,800 | 19 |
| | Retail trade | 3,300 | 21 |
| | Accommodation and food services | 1,800 | 26 |
| Hamilton-Niagara Peninsula | Manufacturing | 1,800 | 16 |
| | Retail trade | 1,600 | 22 |
| | Administrative support, waste management and remediation services | 900 | 10 |
| | Accommodation and food services | 2,100 | 25 |

Table A.3 (cont.):

Top Industries for employment-based scale-ups by Economic Region (ER), 2015

| ER | Industry | Total employment by scale-ups | # of scale-ups |
|---|---|-------------------------------|----------------|
| London | Manufacturing | 1,800 | 11 |
| | Retail trade | 1,100 | 14 |
| | Accommodation and food services | 900 | 13 |
| Windsor-Sarnia | Manufacturing | 1,300 | 13 |
| All ERs | Unclassified | 3,300 | 42 |
| | Agriculture, fishing, forestry, hunting and trapping | 1,200 | 15 |
| | Construction | 10,100 | 112 |
| | Manufacturing | 20,300 | 146 |
| | Wholesale trade | 8,000 | 80 |
| | Retail trade | 36,000 | 249 |
| | Transportation and warehousing | 9,500 | 52 |
| | Information and cultural industries | 6,000 | 56 |
| | Finance and insurance, real estate, and management of companies and enterprises | 32,500 | 122 |
| | Professional, scientific and technical services | 18,600 | 181 |
| | Administrative support, waste management and remediation services | 23,600 | 200 |
| | Arts, entertainment and recreation | 3,700 | 30 |
| | Accommodation and food services | 23,400 | 274 |
| Other services, excluding public administration | 3,800 | 44 | |

Table A.4:

Top Industries for revenue-based scale-ups by Economic Region (ER), 2015

| ER | Industry | # of scale-ups |
|-------------------|---|----------------|
| Ottawa | Construction | 127 |
| | Manufacturing | 39 |
| | Wholesale trade | 47 |
| | Retail trade | 86 |
| | Transportation and warehousing | 16 |
| | Information and cultural industries | 16 |
| | Finance and insurance, real estate, and management of companies and enterprises | 123 |
| | Professional, scientific and technical services | 111 |
| | Administrative support, waste management and remediation services | 36 |
| | Accommodation and food services | 26 |
| | Other services, excluding public administration | 36 |
| Kingston-Pembroke | Construction | 36 |
| | Manufacturing | 14 |
| | Wholesale trade | 11 |
| | Retail trade | 35 |
| | Finance and insurance, real estate, and management of companies and enterprises | 27 |
| | Construction | 40 |
| Muskoka-Kawarthas | Retail trade | 33 |
| Toronto | Unclassified | 181 |
| | Mining, quarrying, oil and gas extraction | 24 |
| | Construction | 903 |

Table A.4 (cont.):

Top Industries for revenue-based scale-ups by Economic Region (ER), 2015

| ER | Industry | # of scale-ups |
|-------------------------------|---|----------------|
| Toronto (cont.) | Manufacturing | 458 |
| | Wholesale trade | 806 |
| | Retail trade | 544 |
| | Transportation and warehousing | 331 |
| | Information and cultural industries | 198 |
| | Finance and insurance, real estate, and management of companies and enterprises | 2,115 |
| | Professional, scientific and technical services | 739 |
| | Administrative support, waste management and remediation services | 303 |
| | Arts, entertainment and recreation | 42 |
| | Accommodation and food services | 133 |
| | Other services, excluding public administration | 183 |
| Kitchener-Waterloo- Barrie | Construction | 181 |
| | Manufacturing | 113 |
| | Wholesale trade | 94 |
| | Retail trade | 79 |
| | Transportation and warehousing | 21 |
| | Information and cultural industries | 20 |
| | Finance and insurance, real estate, and management of companies and enterprises | 158 |
| | Professional, scientific and technical services | 65 |
| | Administrative support, waste management and remediation services | 26 |
| | Accommodation and food services | 14 |
| | Other services, excluding public administration | 25 |

Table A.4 (cont.):

Top Industries for revenue-based scale-ups by Economic Region (ER), 2015

| ER | Industry | # of scale-ups |
|----------------------------|---|----------------|
| Hamilton-Niagara Peninsula | Unclassified | 24 |
| | Construction | 168 |
| | Manufacturing | 90 |
| | Wholesale trade | 100 |
| | Retail trade | 105 |
| | Transportation and warehousing | 42 |
| | Information and cultural industries | 12 |
| | Finance and insurance, real estate, and management of companies and enterprises | 175 |
| | Professional, scientific and technical services | 41 |
| | Administrative support, waste management and remediation services | 28 |
| | Accommodation and food services | 30 |
| | Other services, excluding public administration | 16 |
| London | Construction | 76 |
| | Manufacturing | 55 |
| | Wholesale trade | 44 |
| | Retail trade | 36 |
| | Transportation and warehousing | 18 |
| | Finance and insurance, real estate, and management of companies and enterprises | 89 |
| | Professional, scientific and technical services | 31 |
| | Administrative support, waste management and remediation services | 12 |
| | Other services, excluding public administration | 12 |

Table A.4 (cont.):

Top Industries for revenue-based scale-ups by Economic Region (ER), 2015

| ER | Industry | # of scale-ups |
|---------------------------|---|----------------|
| Windsor-Sarnia | Construction | 83 |
| | Manufacturing | 59 |
| | Wholesale trade | 43 |
| | Retail trade | 41 |
| | Transportation and warehousing | 21 |
| | Finance and insurance, real estate, and management of companies and enterprises | 68 |
| | Professional, scientific and technical services | 26 |
| | Administrative support, waste management and remediation services | 14 |
| | Accommodation and food services | 13 |
| | Other services, excluding public administration | 11 |
| Stratford-Bruce Peninsula | Construction | 30 |
| | Manufacturing | 29 |
| | Wholesale trade | 19 |
| | Retail trade | 27 |
| | Finance and insurance, real estate, and management of companies and enterprises | 27 |
| Northeast | Construction | 48 |
| | Manufacturing | 11 |
| | Wholesale trade | 13 |
| | Retail trade | 30 |
| | Finance and insurance, real estate, and management of companies and enterprises | 41 |
| | Professional, scientific and technical services | 10 |
| | Other services, excluding public administration | 11 |

Table A.5:

Employment-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | # of scale-ups | Total employment by scale-ups | Average employment per scale-up | Share of scale-ups |
|------------------------------|----------------|-------------------------------|---------------------------------|--------------------|
| Ottawa-Gatineau | 107 | 11,400 | 106.5 | 0.72% |
| Toronto | 990 | 146,400 | 147.9 | 0.69% |
| Hamilton | 74 | 6,400 | 86.5 | 0.69% |
| Kitchener-Cambridge-Waterloo | 61 | 7,400 | 121.3 | 0.84% |
| London | NA | NA | NA | NA |
| St. Catharines-Niagara | 36 | 3,200 | 88.9 | 0.73% |
| Oshawa | NA | NA | NA | NA |
| Windsor | 37 | 3,700 | 100 | 0.91% |
| Barrie | 19 | 1,300 | 68.4 | 0.63% |
| Greater Sudbury | 12 | 900 | 75 | 0.68% |
| Kingston | NA | NA | NA | NA |
| Guelph | 16 | 5,700 | 356 | 0.68% |
| Brantford | NA | NA | NA | NA |
| Peterborough | NA | NA | NA | NA |
| Thunder Bay | NA | NA | NA | NA |
| Belleville | NA | NA | NA | NA |

Table A.6:

Share of revenue-based scale-ups by Census Metropolitan Area (CMA), 2011-2015

| CMA | 2015 | 2014 | 2013 | 2012 | 2011 |
|------------------------------|-------|-------|-------|-------|-------|
| Ottawa-Gatineau | 1.23% | 1.22% | 1.19% | 1.26% | 1.12% |
| Kingston | 1.31% | 1.26% | 0.81% | 1.21% | 1.09% |
| Belleville | 1.36% | 1.30% | 1.29% | 1.10% | 0.59% |
| Peterborough | 1.12% | 0.82% | 0.95% | 0.94% | 0.78% |
| Oshawa | 1.03% | 0.95% | 0.85% | NA | NA |
| Toronto | 1.64% | 1.49% | 1.38% | 1.38% | 1.20% |
| Kitchener-Cambridge-Waterloo | 1.71% | 1.39% | 1.64% | 1.81% | 1.32% |
| Guelph | 1.80% | 1.54% | 1.56% | 1.51% | 1.42% |
| Barrie | 1.50% | 1.25% | 1.06% | 1.09% | 0.78% |
| Hamilton | 1.54% | 1.37% | 1.35% | 1.46% | 1.11% |
| St. Catharines-Niagara | 1.37% | 0.98% | 1.06% | 1.24% | 0.97% |
| Brantford | 1.74% | 1.37% | 1.56% | 1.56% | 1.12% |
| London | 1.53% | 1.30% | 1.27% | 1.47% | 1.17% |
| Windsor | 1.94% | 1.76% | 1.79% | 2.15% | 1.23% |
| Greater Sudbury | 1.33% | 1.29% | 1.65% | 2.21% | 1.20% |
| Thunder Bay | 1.21% | 1.30% | 1.34% | 1.46% | 1.17% |

Table A.7:

Top Industries for employment-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | Industry | # of scale-ups |
|------------------------------|--|----------------|
| Ottawa-Gatineau | Administrative Support, Waste Management, and Remediation Services | 10 |
| Hamilton | Accommodation and Food Services | 15 |
| | Retail Trade | 12 |
| Kitchener-Waterloo-Cambridge | Accommodation and Food Services | 10 |
| St. Catharines-Niagara | Accommodation and Food Services | 10 |

Table A.8:

Top Industries for revenue-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | Industry | # of scale-ups |
|-----------------|---|----------------|
| Ottawa-Gatineau | Construction | 101 |
| | Manufacturing | 29 |
| | Wholesale trade | 36 |
| | Retail trade | 64 |
| | Information and cultural industries | 16 |
| | Finance and insurance, real estate, and management of companies and enterprises | 106 |
| Kingston | Construction | 13 |
| | Finance and insurance, real estate, and management of companies and enterprises | 13 |
| Belleville | Construction | 12 |
| Peterborough | Construction | 12 |
| Toronto | Mining, quarrying, oil and gas extraction | 24 |
| | Construction | 867 |

Table A.8 (cont.):

Top Industries for revenue-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | Industry | # of scale-ups |
|------------------------------|---|----------------|
| Toronto (cont.) | Wholesale trade | 795 |
| | Retail trade | 525 |
| | Information and cultural industries | 198 |
| | Finance and insurance, real estate, and management of companies and enterprises | 2,092 |
| Kitchener-Cambridge-Waterloo | Construction | 71 |
| | Manufacturing | 64 |
| | Wholesale trade | 38 |
| | Retail trade | 32 |
| | Finance and insurance, real estate, and management of companies and enterprises | 78 |
| | Professional, scientific and technical services | 42 |
| | Administrative support, waste management and remediation services | 14 |
| | Other services, excluding public administration | 11 |
| Guelph | Construction | 33 |
| | Manufacturing | 13 |
| | Wholesale trade | 15 |
| | Retail trade | 14 |
| | Finance and insurance, real estate, and management of companies and enterprises | 27 |
| | Professional, scientific and technical services | 10 |
| Barrie | Construction | 32 |
| | Manufacturing | 13 |
| | Wholesale trade | 19 |

Table A.8 (cont.):

Top Industries for revenue-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | Industry | # of scale-ups |
|------------------------|---|----------------|
| Barrie (cont.) | Retail trade | 11 |
| | Finance and insurance, real estate, and management of companies and enterprises | 17 |
| Hamilton | Unclassified | 14 |
| | Construction | 103 |
| | Manufacturing | 44 |
| | Wholesale trade | 53 |
| | Retail trade | 53 |
| | Transportation and warehousing | 31 |
| | Finance and insurance, real estate, and management of companies and enterprises | 123 |
| | Administrative support, waste management and remediation services | 18 |
| | Accommodation and food services | 14 |
| St. Catharines-Niagara | Construction | 36 |
| | Manufacturing | 24 |
| | Wholesale trade | 24 |
| | Retail trade | 34 |
| | Finance and insurance, real estate, and management of companies and enterprises | 31 |
| Brantford | Construction | 19 |
| London | Construction | 51 |
| | Manufacturing | 38 |
| | Wholesale trade | 28 |
| | Finance and insurance, real estate, and management of companies and enterprises | 77 |

Table A.8 (cont.):

Top Industries for revenue-based scale-ups by Census Metropolitan Area (CMA), 2015

| CMA | Industry | # of scale-ups |
|-----------------|---|----------------|
| Windsor | Construction | 51 |
| | Manufacturing | 38 |
| | Wholesale trade | 18 |
| | Retail trade | 13 |
| | Finance and insurance, real estate, and management of companies and enterprises | 45 |
| | Professional, scientific and technical services | 16 |
| Greater Sudbury | Construction | 21 |
| | Finance and insurance, real estate, and management of companies and enterprises | 19 |

APPENDIX B: DATA SOURCE EXPLANATION

Based on the feasibility report from Statistics Canada, the Brookfield Institute, in discussion with Statistics Canada, made the following decisions while taking data limitations, project goals, and timelines into account:

- + We decided to focus on economic regions (ERs) and census metropolitan areas (CMAs) instead of CMAs and census agglomerations (CAs). Firm population in some CAs was judged to be too small, and therefore at a much higher risk of suppression.
- + We instructed Statistics Canada to include top industries for each geographic area. For smaller CMAs, disclosure was a potential issue for industries with only a small number of scale-ups present. A decision was therefore made to only include industries with a significant number of scale-ups for each geographic area.

- In order to ensure that scale-up counts could be broken down by the top industries, which may vary by geography, the Brookfield Institute suggested that the top industries in which scale-ups are concentrated be included for each CMA and ER in descending order, until a majority of scale-ups are covered. A cutoff threshold of 70 percent of employment or revenue was ultimately decided upon.
- + For employment-based scale-ups, the definition was chosen to align more closely with the Kauffman Foundation’s definition, as well as to ensure that a sufficient number of scale-ups would be identified to avoid suppression issues.

DATA SPECIFICATIONS

Statistics Canada
September 25, 2018

BRIEF DESCRIPTION OF THE PROJECT

Brookfield Institute in combination with the Ontario Ministry for Economic Growth and Development wish to examine scale up activity at the sub-provincial level. The tabulations described below provide information about scale up activity in the economic regions of Ontario as well as for census metropolitan areas in Ontario.

The data are geared toward answering two main questions:

1. Where are scale-ups located in Ontario?
2. What is the extent and rate of change of revenue and job growth for these scale-ups?

Calculations are based on the National Accounts Longitudinal Micro File (NALMF) information at a sub-provincial level. This is an enterprise level file, and the location of the enterprise is based on its address. Because one enterprise may have multiple locations, it is possible that employment associated with the enterprise does not geographically coincide with the unit associated with the enterprise identifier.

The longitudinal structure employed for scale-up calculations is based on the persistence of enterprise identifiers from the Business Register maintained by Statistics Canada. In cases where simple changes in identifiers are present, for example from simple restructuring, the predecessor and successor identifiers are linked. Scale-ups should be interpreted as illustrating a form of organic growth rather than growth through merger and acquisition activity.

Scaleups are defined in two ways:

- + **Definition 1:** Firms crossing the 49/50 firm threshold – Scaleups are defined as firms active in 2015 that are 10 years of age or younger, and that started with 49 or fewer employees but have grown to have 50 or more employees by 2015.

- + **Definition 2:** Twenty percent compound growth over 3 years – Scaleups are defined as firms that experience average annualized growth greater than 20% per annum, over 3 years. This definition will be applied to revenue, and it will include only firms with annual revenue greater than \$2 million in the final year.

Geography is defined based on the [Standard Geographic Classification](#). The [Statistical Area Classification by Province and Territory - Variant of SGC 2016](#) is used to define CMAs and the [Economic Regions - Variant of SGC 2016](#) is used to define ERs.

To produce industry information, industries will be reported separately based on the largest industries in each geography. Industries will be selected by starting with the largest and then recursively including additional industries in descending order until 70 percent of revenue or 70 percent of employment is reached. Measures of scaleup activity are based on Business Sector firms. Industry information will be aggregated based on the [2017 North American Industry Classification System \(NAICS2017\)](#).

DATA REQUIREMENT:

NALMF

Consistent with the Statistics Act, all output will be vetted by Statistics Canada. Only non-confidential output will be released.

APPENDIX C: METHODOLOGICAL CONSIDERATIONS

MEASURING SCALE-UPS: CORE INDICATORS EXPLAINED

In this section, we discuss two measures used in this report in detail:

1. Employment Growth

Share of Scale-up

“Share of scale-up” measures the share of all firms ten years or younger that started with less than 50 employees and grew to have 50 or more employees by the measurement year:

$$S_i = \frac{1}{N} \sum_{i=1}^N S_i$$

This is a simple measure to capture scale-up activity in a given year. Across-time comparisons are challenging due to non-monotonicity and serial correlations. To demonstrate this, consider the following example: if it takes three years for a company to scale up in Toronto and two years ago a higher than average number of companies were created, the share of scale-ups decreased for that year as there are more young firms even though scale-up conditions (three years to scale up) have not changed.

2. Revenue Growth

The second measure is revenue-based. It looks at the share of all firms in a region with an average revenue growth rate of 20 percent or more over three years, ending with at least \$2 million. This measure looks at both young and old firms. This definition is a modification of the OECD’s definition where the Kauffman Foundation added a revenue threshold to account for small growth bias:

$$H_t = \frac{1}{N} \sum_{i=1}^N h_i$$

Where N is the number of all employer businesses, and h_i is the indicator for whether the firm is a scale-up.

COMPOSITE INDEX

To calculate the overall scale-up index, we transformed both the employment-based scale-up share, and revenue-based scale-up share for each ER to a score between 0-100 and found the arithmetic mean of the scores.

MEASURING OF INDUSTRY CONCENTRATIONS

For geography i , we define X_i to be the share of a specific type of firm (e.g. scale-ups in industry j) in that geography. For n geographies, the shares are such that:

$$\sum_{i=1}^n X_i = 1$$

We note that the variance of X has well-defined bounds:

$$0 \leq \text{var}(X) \leq \frac{n-1}{n^2}$$

Intuitively, the variance is zero if all X_i are the same (equally distributed), and the variance is maximized if one $X_i=1$ (all firms are in one area). In other words, this variance captures how concentrated firms are geographically. In practice, we have 12 ERs (including “Unclassified”). The bounds are therefore:

$$0 \leq \text{var}(X) \leq \frac{11}{144} \approx 0.0764$$

As a result, we calculate this variance for scale-ups in each industry and compare it to the variance for all firms in the same industry. There is a challenge in computing these variances: we observe X for some geographies but not others (due to non-disclosure). To overcome this, we note that given $a < n$ known X_i s, the variance is bounded according to:

$$\frac{1}{n} \left[\sum_{i=1}^a X_i^2 + \frac{(1-\partial)^2}{(n-a)} \right] - \frac{1}{n^2} \leq \text{var}(X) \leq \frac{1}{n} \left[\sum_{i=1}^a X_i^2 + (1-\partial)^2 \right] - \frac{1}{n^2}$$

$$\partial = \sum_{i=1}^a X_i$$

Intuitively, the upper bound is reached when all remaining scale-ups are in one ER and the lower bound is reached when the remaining scale-ups are equally distributed amongst the suppressed ERs.

Table D.1:

Bound for variance of shares by industry in Ontario

| Industry | Unaccounted share | Missing ERs ²⁹ | Lower bound | Upper bound |
|---|-------------------|---------------------------|-------------|-------------|
| Mining | 42.9% | 11 | 0.02166 | 0.03557 |
| Construction | 1.45% | 2 | 0.01882 | 0.01883 |
| Manufacturing | 1.58% | 3 | 0.01875 | 0.01877 |
| Wholesale Trade | 1.34% | 3 | 0.03259 | 0.03260 |
| Retail Trade | 1.45% | 2 | 0.01874 | 0.01875 |
| Transportation and warehousing | 7.42% | 6 | 0.03309 | 0.03347 |
| Information and cultural industries | 5.75% | 8 | 0.04203 | 0.04227 |
| Finance and insurance, real estate, and management | 0.74% | 2 | 0.03968 | 0.03968 |
| Professional, Scientific, and Technical services | 2.67% | 5 | 0.03577 | 0.03582 |
| Administrative support, waste remediation, and management | 5.63% | 6 | 0.03322 | 0.03344 |
| Arts, Entertainment | 31.1% | 11 | 0.03330 | 0.04065 |
| Accommodation and Food Services | 15.29% | 7 | 0.01849 | 0.02016 |

The procedure established a fairly tight bound for most industries. We chose not to use the bounds established for *Arts and Entertainment*, as well as *Mining* due to imprecise bounds. Although the suppression rate for *Accommodation and Food Services* is high, the bound is narrow enough to be useful.

Finally, we normalize the variances by dividing them by the maximum variance as defined previously (0.0764).

ENDNOTES

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17. This was introduced to control for growth bias inherent in growing when the company’s revenue base is small.

18. We have focused on metrics that pertain directly to scale-ups, and have not included the Kauffman Foundation's measure of the rate of start-up growth.
19. The Kauffman Foundation is currently pausing its index series to develop a new strategy, given data availability issues and a new research direction. A redesigned Index is expected in 2019.
20. Data from earlier years is not included due to definitional changes that would complicate year-to-year comparisons.
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25. Labour productivity measures real output (GDP) generated per hour worked
26. This does not necessarily mean that scale-ups in industries with high labour productivity employ fewer people than those with low labour productivity. While data on the employment numbers of revenue-based scale-ups was not available for this report, it is interesting to note that employment-based scale-ups in the Finance, Insurance, and Real Estate industry, for example, employ many more people (266.4 on average) than employment-based scale-up firms in the Accommodation and Food Services industry (which employ 85.4 people on average).
27. For ERs, 0.9992 for revenue scale-ups pooled across 5 years and 0.9994 for employment scale-ups; for CMAs 0.9994 for revenue scale-ups and 0.9904 for employment scale-ups
28. As the Kauffman Foundation's Growth Entrepreneurship Index only included the share of scale-ups in metropolitan areas and states and did not publish the number of scale-ups or the industries these scale-ups belong to, we only compare the share measure here.
29. The lower bound for the number of unaccounted ER is 2 due to residual disclosure.