



BUSINESS COSTS IN THE GREAT LAKES- ST. LAWRENCE REGION

THE CONFERENCE BOARD OF CANADA – 2018





PREFACE

This report assesses the relative attractiveness of the province of Ontario in relation to fourteen other provinces/states in the Great Lakes- St. Lawrence region on key factors that influence the location decisions of businesses. Overall, the report seeks to highlight the factors that underpin Ontario's competitiveness to businesses, while also pointing to areas for improvement.

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Acknowledgements

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Table of Contents

Executive Summary.....	i
1 Introduction	1
2 Overall Benchmarking Results: U.S. States Dominate the Leader Board	4
2.1 The Top Five	5
3 Focus on Ontario—Middle-of-the-Pack with a “C”	6
4 Conclusion.....	10
5 References	12
Appendix 1: Detailed Results	i
Appendix 2: Benchmarking Methodology	1
State/province Selection Process	1
Indicator Selection Process.....	1
Ranking Method.....	2



EXECUTIVE SUMMARY

This report assesses the relative attractiveness of the province of Ontario in relation to nine other provinces/states in the Great Lakes-St. Lawrence region and five in the Southern United States on key factors that influence the location decisions of businesses. Overall, the report seeks to highlight the factors that underpin Ontario's competitiveness to businesses, while also pointing to areas for improvement. The study identified 18 indicators that businesses look at when making location decisions. Firms typically evaluate locations based on three factors: labour force talent availability and skill level, labour costs, and location competitiveness.

The Great Lakes-St. Lawrence region is comprised of eight U.S. states— Minnesota, Wisconsin, Illinois, Indiana, Michigan, New York, Ohio, and Pennsylvania—and two Canadian provinces—Ontario and Quebec. The region is home to 107 million people, 51 million workers, and generated \$US6-trillion in GDP in 2015, accounting for 30% of economic activity in Canada and the United States¹. If the Great Lakes-St. Lawrence region was its own country, it would be the third largest in terms of GDP after the U.S. and China². While the region is internationally renowned as North America's manufacturing capital, the manufacturing sector accounted for only 11% of total employment in 2016. Education and health, retail and wholesale trade, professional services, and government all employed a larger number of people³.

Comparator regions were selected in consultation with the Toronto Region Board of Trade. In the end, 14 comparator regions were chosen. Nine of 14 are the other jurisdictions that make up the Great Lakes-St. Lawrence region, while the five remaining are in the Southern United States (Kentucky, Georgia, North Carolina, Texas, and South Carolina). The latter five are included in the ranking because the Great Lakes-St. Lawrence region, including Ontario, is engaged in a growing competition with southern U.S. states for investment. This is best illustrated in the manufacturing sector, where several firms have shifted production from Canada to Mexico and the southern United States. Indeed, like Ontario, all five southern states have well established automotive manufacturing industries, and house some of the largest U.S. car assembly plants.

The results reveal that Ontario is a middle-of-the-pack performer, finishing in ninth place with a "C" grade, showing both strengths and weaknesses. (See Table E1.) The region earns five "A" grades, four "B" grades, one "C" grade, and eight "D" grades. In other words, a "D" is Ontario's most common assessed grade.

Ontario's demographics offer a mixed picture. While the province registered the third highest population growth among the fifteen comparator regions considered in this study, Ontario's population is aging, as evidenced by a high median age. This might make it difficult for businesses to find the top-flight talent they need to thrive, given that retirement rates are likely to be higher. Ontario's poor housing affordability also makes it harder for the province to attract young, mobile, skilled workers. House prices in the Golden Horseshoe region have increased considerably over the past few years, with single family homes becoming unaffordable for many individuals. On a positive note, the region's high proportion of bachelor degree holders suggests that the province boasts a relatively high-skilled workforce.

¹ Robert Kavcic, BMO Capital Markets, *Great Lakes-St. Lawrence Region Driving North American Growth and Trade*.

² Ibid.

³ Ibid.

**Table E1: Overall Rankings and Grades**

<i>Ranking</i>	<i>Region</i>	<i>Value</i>	<i>Grade</i>
1	Minnesota	0.60	A
2	Texas	0.56	A
3	Wisconsin	0.51	B
4	Indiana	0.49	B
5	North Carolina	0.47	C
6	Quebec	0.46	C
7	Georgia	0.46	C
8	Michigan	0.45	C
9	Ontario	0.45	C
10	South Carolina	0.42	D
11	Illinois	0.42	D
12	New York	0.41	D
13	Ohio	0.41	D
14	Kentucky	0.38	D
15	Pennsylvania	0.38	D

A few of Ontario's labour market indicators pull down its overall score. Between 2012 and 2016, the region saw moderate employment growth of 1% per year, a "D" grade assessment in this benchmarking comparison survey, a strike against the province's objective to attract both skilled workers and businesses. At the same time, Ontario has high unemployment and youth unemployment rates, also scoring "D"s on both indicators. This suggests that individuals looking for employment might have difficulty integrating into the labour force. On the other hand, the province boasts high participation rates and high female participation rates, with the latter indicator likely getting a boost from Canada's relatively generous maternity leave policies.

Ontario's economic performance is mixed. Ontario's real GDP per capita, a generally accepted measure for standard of living, is relatively low. Indeed, it averaged about \$45,300 in 2016, 60% below that of frontrunner New York's. Still, Ontario does better than Quebec, generating about \$7,000 of goods and services more per person every year. Fortunately, when real GDP per capita is measured in growth terms, Ontario fairs better, coming in third place and earning a "B" grade. Moreover, the province's export performance has been relatively strong and is worthy of an "A" grade. But this is offset by a "D" grade for business R&D expenditures as a share of GDP, raising an additional red flag for the Ontario economy. Also, Ontario exporters would be harmed if current negotiations over NAFTA are unsuccessful and the 24-year old trade agreement is scrapped, although we believe the most likely outcome is that a deal will ultimately be reached.

The province's labour costs also tell opposing stories. While Ontario has one of the survey's lower average hourly wages, placing fifth and earning it an "A" grade on this indicator, it also has the ranking's highest minimum wage, garnering it a "D" grade here.



Even though Ontario's tax environment is favorable to businesses, the province's elevated position in this area is in doubt. True, the region earns an "A" grade on KPMG's total tax index, which measures the total taxes paid by similar corporations in each location and industry, calculated as a percentage of total taxes paid by similar corporations across the United States. But recent U.S. tax cuts suggest that Ontario's relative position in this index, along with Quebec, will suffer unless federal and provincial governments respond with their own tax reform packages. Finally, Ontario's electricity rates put it in eighth place and leave the province with a "C" grade on this indicator.

What is the bottom line? Ontario's middle-of-the-pack performance in this benchmarking analysis, along with the risk of a NAFTA collapse and U.S. corporate tax changes, means the Ontario government will need to take action to improve the province's competitiveness.



1 INTRODUCTION

This report assesses the relative attractiveness of the province of Ontario in relation to nine other provinces/states in the Great Lakes-St. Lawrence region and five in the Southern United States on key factors that influence the location decisions of businesses. Overall, the report seeks to highlight the factors that underpin Ontario's competitiveness to businesses, while also pointing to areas for improvement.

The Great Lakes-St. Lawrence region is comprised of eight U.S. states—Minnesota, Wisconsin, Illinois, Indiana, Michigan, New York, Ohio, and Pennsylvania—and two Canadian provinces—Ontario and Quebec. The region is home to 107 million people, 51 million workers, and generated \$US6-trillion in GDP in 2015, accounting for 30% of economic activity in Canada and the United States⁴. If the Great Lakes-St. Lawrence region was its own country, it would be the third largest in terms of GDP after the U.S. and China⁵. While the region is internationally renowned as North America's manufacturing capital, the manufacturing sector accounted for only 11% of total employment in 2016. Education and health, trade, professional services, and government all employed a larger number of people⁶.

The Great Lakes-St. Lawrence region also plays a significant part in the U.S.-Canada trade relationship, as \$278 billion in goods are exchanged between Ontario and Quebec and the U.S. side of the region annually relative to \$477 billion in overall trade⁷. However, rising protectionism in the U.S. is a dark cloud hanging over the relationship. Exporters in the U.S. and Canada would be severely harmed if current negotiations over NAFTA are unsuccessful and the 24-year old trade agreement is scrapped, although we believe the most likely outcome is that a deal will ultimately be reached.

At the same time, the economies of the region's eight U.S. states are likely to receive a boost in 2018 and possibly 2019 from the tax reforms passed by the U.S. Congress and signed by President Trump at the end of end of 2017. The law reduces the corporate tax rate from 35% to 21% and cuts individual tax rates for all income groups, which should spur both businesses and individuals to spend and invest their tax breaks. Ontario and Quebec could be put at a competitive disadvantage if Canada does not pass its own set of tax reforms. The tax data used in this study have yet to be updated to reflect the U.S. tax reform measures, so the benchmarking results presented in the next chapter do not take into account the deterioration in Ontario and Quebec's competitiveness. In addition, the results also do not take into account the impact of the possible termination of NAFTA.

The study identified 18 indicators that businesses look at when making location decisions. Firms typically screen locations based on three factors: labour force talent availability and skill level, labour costs, and location competitiveness. Seven indicators attempt to gauge a region's labour force availability and skill level, including the proportion of the population with at least a bachelor's degree, the proportion of the population that is foreign-born, population growth, the median age of the population, the labour force participation rate, the female labour force participation rate, and housing affordability.

⁴ Robert Kavcic, BMO Capital Markets, *Great Lakes-St. Lawrence Region Driving North American Growth and Trade*.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.



Ontario's competitiveness is assessed with the help of indicators that gauge the region's economic conditions, including real GDP per capita, real GDP per capita growth, employment growth, unemployment rate, youth unemployment rate, R&D spending by the business sector, goods export growth, and indicators designed to evaluate the cost of doing business, including KPMG's total tax index and industrial electricity rates. Finally, labour costs are evaluated with the help of two indicators: average hourly wages and the minimum wage.

Data for most indicators are drawn from the year 2016, although for some indicators data dates as far back as 2014. We made sure that the data we collected on both Canadian and U.S. jurisdictions was directly comparable. All data are presented in Canadian dollars.

Comparator regions were selected in consultation with the Toronto Region Board of Trade. In the end, 14 comparator regions were chosen. Nine of 14 are the other jurisdictions that make up the Great-Lakes-St. Lawrence region, while the five remaining are in the Southern United States (Kentucky, Georgia, North Carolina, Texas, and South Carolina). The latter five are included in the ranking because the Great Lakes-St. Lawrence region, including Ontario, is engaged in a growing competition with southern U.S. states for investment. This is best illustrated in the manufacturing sector, where several firms have shifted production from Canada to Mexico and the southern United States. Like Ontario, all five southern states have well established automotive manufacturing industries, and house some of the largest U.S. car assembly plants⁸. In 2016, motor vehicles and parts were Ontario's top international merchandise export, accounting for 36.6% of the total⁹.

The report is organized as follows. Chapter 2 presents the overall benchmarking results, with an emphasis on the top five jurisdictions and the factors that account for their success. Chapter 3 reports the detailed results for Ontario, the focus of this report, while Chapter 4 provides concluding remarks. For interested readers, Appendix 1 presents detailed results for all indicators and Appendix 2 explains the report's benchmarking methodology.

⁸ BMW operates an assembly plant in Spartanburg, South Carolina, while Arlington, Texas and West Point, Georgia are home to General Motors and Kia Motors plants, respectively. Kentucky houses four major assembly plants. A 2016 report by the Economic Development Partnership of North Carolina states that 290 automotive establishments are in North Carolina.

⁹ Ontario Ministry of Finance, *Ontario Fact Sheet January 2018*.



A Brief Word on Our Benchmarking Methodology

The Great Lakes-St. Lawrence region scorecard is based on 18 indicators that seek to measure the business and labour costs in the Great Lakes-St. Lawrence region.

INDICATORS

- Real gross domestic product (GDP) per capita
- Real GDP per capita growth
- Employment growth
- Unemployment rate
- Youth unemployment rate
- Participation rate
- Female participation rate
- Average hourly wage
- Total tax index
- Housing affordability
- Median Age
- Population growth
- Proportion of the population with at least a bachelor's degree
- Proportion of the population that is foreign-born
- Industrial electricity rates
- Minimum wage
- Goods export growth
- R&D expenditures performed by the business sector (as a share of GDP)

This study uses a report card–style ranking of A–B–C–D to assess the performance of state/provinces for each indicator. We assigned a letter grade using the following method: for each indicator, we calculated the difference between the top and bottom performer and divided this figure by four. A state/province received a scorecard ranking of “A” on a given indicator if its score was in the top quartile, a “B” if its score was in the second quartile, a “C” if its score was in the third quartile, and a “D” if its score was in the bottom quartile. A state/province was assigned an “n.a.” if the data were unavailable for that indicator.

The overall category rankings are formulated as an average of the individual indicators. No attempt was made to give explicit weights to indicators according to importance: we are implicitly giving equal weight to each indicator. For a more detailed description of the benchmarking methodology, see Appendix 2.



2 OVERALL BENCHMARKING RESULTS: U.S. STATES DOMINATE THE LEADER BOARD

The goal of this benchmarking study is to evaluate the attractiveness of 13 U.S. states and two Canadian provinces (Ontario and Quebec) to businesses. This attractiveness is measured on three fronts. One set of indicators seeks to evaluate a region’s labour costs, and includes the minimum wage, and average hourly wages. The second set of indicators contributes to our understanding of businesses’ ability to hire the skilled workers they need to thrive. Such yardsticks include the proportion of the population that possesses at least a bachelor’s degree, the foreign-born population, and population growth. In addition, the presence of a skilled labour force is closely linked to demographics. A growing, young population is key to sustaining a skilled labour force. That is the reason we have included indicators such as population growth and median age of the population in this study. Our last set of indicators attempts to gauge a region’s competitiveness, and includes economic indicators such as real GDP per capita, real GDP per capita growth, employment growth, goods export growth, unemployment rate, youth unemployment rate, and two indicators on the cost of doing business—KPMG’s total tax index and industrial electricity rates. It should be emphasized that while these indicators are important measures of Ontario’s economic competitiveness, looking solely at one indicator would not represent a full snapshot of Ontario’s economic performance. For example, the percentage of the population that holds at least a bachelor degree is one of many factors affecting Ontario’s labour availability, and could not be considered in and of itself to make a statement on Ontario’s skilled labour pool.

Table 1: Overall Rankings & Grades

<i>Ranking</i>	<i>Region</i>	<i>Value</i>	<i>Grade</i>
1	Minnesota	0.60	A
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11	Illinois	0.42	D
12	New York	0.41	D
13	Ohio	0.41	D
14	Kentucky	0.39	D
15	Pennsylvania	0.38	D

When we group all indicators together and calculate an overall score, U.S. states come out on top, taking the first five spots. (See Table 1.) The rankings are led by Minnesota and Texas, the lone two regions to earn an overall “A” grade. Wisconsin and Indiana come next, receiving the only two “B” grades. North Carolina appears in fifth place, and is one of five regions to be awarded with an overall “C” grade. Ontario, the focus of this study, appears well down in the overall rankings in ninth place, making it the last “C” graded region. Six regions are awarded a “D” grade, the study’s lowest ranking. Pennsylvania is our survey’s bottom ranking region, despite finishing last on no indicator.



2.1 THE TOP FIVE

MINNESOTA is our top ranked jurisdiction, and one of only two “A” graded areas. The state finishes in first place on two indicators: labour force participation rates and female labour force participation rates. Minnesota’s ranking is also buoyed by “A” grades on the minimum wage, proportion of the population with at least a bachelor’s degree, housing affordability, and unemployment rate and youth unemployment rate. On the other hand, Minnesota received six “C” grades and two “D” grades, including for having high industrial electricity costs and a low proportion of immigrants. The land of 10,000 lakes earned “B” grades for its real GDP per capita and the median age of its population. The region also received a “B” grade for its business R&D expenditures (BERD), despite ranking second.

TEXAS is our second “A”-graded area, receiving an overall score of 0.56. The Lone Star state is top-ranked in employment growth and in two demographic indicators—the median age of the population and population growth. The state’s strong demographic fundamentals are not surprising, given that it is home to rapidly growing Hispanic population. Texas was also awarded “A” grades for its relatively affordable housing and low minimum wage. But the area also got three “D” grades for weak goods export growth, low business R&D activity, and high business taxes.

WISCONSIN ranks third and is our first “B”-graded area. The state is ranked first overall for a low unemployment rate and youth unemployment rate, where it enjoys a 1.4 percentage point lead over second place finisher Minnesota. The Badger state received two other “A” grades for a high female participation rate, and a low minimum wage. On the other hand, Wisconsin performed more poorly in some other indicators. It got “D”s for weak employment growth, low population growth, small proportion of immigrants, weak goods export growth, and high industrial electricity rates, the later of which are almost double those in Quebec.

INDIANA, another Great Lakes state, is our second and last “B”-rated jurisdiction. The area is ranked second in three categories, receiving “A” grades in all of them—unemployment rate, housing affordability, and minimum wage. It also received an “A” grade for its low average hourly wage. However, these were offset by “D” grades for a low proportion of bachelor degree holders, a small number of immigrants, and high industrial electricity rates.

NORTH CAROLINA, a state on the U.S. east coast, finishes in fifth place and is our first “C”-graded region. The area received two “A” grades for minimum wage and housing affordability. North Carolina also earned seven “B” grades for goods exports growth, BERD, median age, population growth, bachelor degree holders, average hourly wages, and employment growth. But the Tar Heel state fared poorly when it comes to real GDP per capita growth, youth unemployment rate, female participation rates, and foreign-born population, scoring “D” grades in all. The remaining five indicators yielded North Carolina “C” grades.



3 FOCUS ON ONTARIO—MIDDLE-OF-THE-PACK WITH A “C”

Ontario’s ninth place finish in the rankings and “C” grade highlights several areas of improvement, especially in terms of location competitiveness. The area does poorly on several economic and wealth indicators, including real GDP per capita, employment growth, unemployment rate and youth unemployment rate, and BERD. (See Table 2.) Aggregating the eighteen indicators gives Ontario a numeric score of 0.45 on the scale to 0 to 1 by which we rank regions in this study. Ontario is the last-ranked “C” region and trails Indiana—the lowest-rated “B” region—by 0.04 points. As a result, Ontario still has a long way to go to get a “B” rating.

Table 2: Ontario’s Performance

<i>Indicator</i>	<i>Grade</i>	<i>Ranking (Out of 15)</i>
Labour force availability & skill level		
Proportion of the population that is foreign-born	A	1
Proportion of the pop. with at least a bachelor’s degree	A	4
Population growth	B	3
Female participation rate	B	3
Participation rate	B	4
Median age	D	14
Housing affordability	D	14*
Location competitiveness		
KPMG’s total tax index	A	1
Goods export growth	A	4
Real GDP per capita growth	B	3
Electricity rates	C	8
Real GDP per capita	D	12
Youth unemployment rate	D	12
Unemployment rate	D	13
R&D expenditures performed by the business sector	D	12
Employment growth	D	14
Labour costs		
Average hourly wage	A	5
Minimum wage	D	15

*Ranking is out of 14.

Despite its “C” rating, the province boasts several strengths for businesses looking to maximize their profits. Its average hourly wages are low compared to most U.S. jurisdictions. At \$25.95 an hour, wages in Ontario are below those of ten U.S jurisdictions and beat New York’s—the U.S. state with the highest hourly remuneration—by close to \$10. Ontario has a favorable tax environment, ranking first in KPMG’s total tax index, though this calculation was made before the U.S. government passed a significant tax reform bill. Moreover, the province’s goods export growth has been relatively strong, suggesting that businesses have an easy time getting their products to market. Ontario businesses are also in a favorable position when it comes to hiring the diverse and skilled workers that they need to function. The province earns an “A” on the proportion of its population that possesses at least a bachelor’s degree, boasts both a high participation rate and high female participation rate, and is the top-ranked jurisdiction on the share of foreign-born individuals.



However, the region also has some important drawbacks that need to be addressed. It has the highest minimum wage among the 15 regions benchmarked in this study, low R&D spending by the business sector, a high unemployment rate and a high youth unemployment rate, an aging population, and high housing costs. Real output per person is also relatively low, which offsets the benefits of low wages.

We now take a closer look at Ontario's performance in each of the 18 indicators.

I. Labour force availability & skill level indicators

PARTICIPATION RATE: At 64.9%, Ontario's labour force participation rate is the fourth highest among the 15 regions studied in this report, good enough for a "B" grade. Minnesota's rate (69.5%) is by far the highest and is rewarded with the indicator's lone "A" grade. Ontario, along with Wisconsin, Illinois, Quebec, and Texas make up a second tier. Moving into third or second spot should not be hard for Ontario. The province trails Illinois and Wisconsin's participation rates by only 0.3 and 0.6 percentage points, respectively.

FEMALE PARTICIPATION RATE: Canadian provinces do well on this indicator; with a 60.7% female participation rate, Ontario and Quebec are tied in third place and get "B" grades. Canada's generous parental leave policies partly underpin Ontario's and Quebec's high rankings. Minnesota, Wisconsin, and Illinois are the only other three jurisdictions in this report whose female participation rate exceeds 60%. At 66.1%, Minnesota's rate is the highest, beating second place Wisconsin by 2.8 percentage points.

HOUSING AFFORDABILITY: Ontario fares poorly in this category, receiving the lone "D" and ranking in last place, based on home prices and incomes in the Toronto region. Toronto's median price to median household income ratio stands at 7.9. A ratio equal to or greater than 5.1 is considered "severely unaffordable." New York is the only other jurisdiction in this report that exceeds this threshold. Toronto's homes are so unaffordable that 10 U.S. states earn "A" grades since their ratios are so much lower. Excluding New York, the median price to median household income ratio in the U.S. states range from 2.9 in Michigan to 4.2 in Wisconsin. Homes are still unaffordable in most of these places, but not to the extent that they are in Toronto. Although home prices do not directly affect business costs, they can affect labour availability since a severely unaffordable market like Toronto's, everything else being equal, is less attractive to people than those of other regions in this benchmarking analysis.

TOTAL TAX INDEX: Ontario has a favorable tax environment, according to the total tax index (TTI) compiled by KPMG. It scores 47.4 on the total tax index, which measures the total taxes paid by similar corporations in a given location and industry, calculated as a percentage of total taxes paid by similar corporations across the United States. Ontario is rated an "A", as it has the lowest total tax index among the 15 comparator regions. Quebec follows in second place. These two Canadian jurisdictions dwarf the competition in this category. That said, this index was calculated before the U.S. federal tax reform package was passed late last year. Ontario and Quebec's relative positioning on this index will surely deteriorate when the 2017 TTI is released, unless the Canadian federal government responds with a tax reform package of its own.

MEDIAN AGE: Ontario has a poor outcome on this demographic indicator, ranking in 14th position with a "D" grade. With a median age of 41.3, Ontario has a population that is seven years older than that of Texas, this indicator's front runner. Only Quebec has a population that is older than Ontario's, by 1.2 years. The baby boom was relatively larger in Canada than in the United States, and this helps explain Ontario and Quebec's higher median age. An older population signals that a greater share of the workforce will soon reach retirement age, raising questions about labour force availability.



POPULATION GROWTH: Ontario fares well on this indicator, ranking third and scoring a “B” grade. Between 2013 and 2017, Ontario’s population grew by an average of 1.1% per year, beating all jurisdictions except Texas and South Carolina—two southern U.S. states. At 1.7 %, Texas’ average annual population growth is 0.4 percentage points higher than South Carolina’s— this category’s second place finisher. Illinois ranks last and is the only region that posted a decline in population over this period.

PROPORTION OF THE POPULATION WITH AT LEAST A BACHELOR’S DEGREE: Ranking fourth, Ontario earns another “A” grade on this indicator, which seeks to gauge the skills of the workforce. With 31.9% of its population holding at least a bachelor’s degree, Ontario handily beats its Canadian counterpart Quebec. It also ranks above all southern U.S. states considered in this benchmarking study. New York, Minnesota and Illinois rank higher.

PROPORTION OF THE POPULATION THAT IS FOREIGN-BORN: Ontario is far and away the leader on this indicator. With 29.1% of its population being foreign-born, Ontario gets this category’s lone “A” grade. Second place New York trails Ontario by 6.5 percentage points, assuring that Ontario will remain this category’s leader for years to come. A region that is open to and welcoming to immigration, such as is Ontario, bodes well for labour force growth and will help offset the waves of baby boomers reaching their retirement age.

II. Location competitiveness indicators

REAL GDP PER CAPITA: New York dwarfs the competition in this category. At \$75,703, New York’s GDP per capita is \$12,500 above that of second place Illinois. Ontario performs poorly on this indicator, coming in 12th place and receiving a “D” grade. Still, it scores higher than Quebec, the other Canadian comparator region included in this study. It also ranks above Kentucky and South Carolina. However, it ranks lower than all states in the Great Lakes area.

REAL GDP PER CAPITA GROWTH: Although output per person disappoints, its growth has been relatively strong. In fact, Ontario is ranked third in this category and receives a “B” grade, with average annual growth of 1.0% between 2012 and 2016. In comparison, nine U.S. states posted either negative or flat GDP growth. Ontario’s growth was also double that of Quebec’s. Still, its performance pales in comparison to Michigan’s, this indicator’s front runner. It posted GDP per capita growth of 2.3% per year over the same five-year period.

EMPLOYMENT GROWTH: Ontario’s performance is disappointing on this indicator, as it comes in 14th position and receives a “D” grade. That said, its employment increased by a decent 1.0% per year between 2012 and 2016, but it was still a far cry from the job increases registered in category leaders Texas, Georgia and South Carolina. All three of these states posted average annual job gains above two %. The only region that ranks below Ontario is Quebec, which posted employment gains of 0.8% per year.

UNEMPLOYMENT RATE: Ontario is tied with Kentucky, Ohio and Quebec for the highest unemployment rate among our 15 comparator regions and, as such, were awarded “D” grades. At 5.0 %, Ontario’s unemployment rate is 1.4 percentage points higher than Minnesota’s—the lowest rated “A” region. Wisconsin has this report’s lowest unemployment rate, at 3.3 %.

YOUTH UNEMPLOYMENT RATE: Ontario’s youth unemployment rate is also high, which limits the region’s labour and economic attractiveness. As such, it places 12th on this indicator and receives a “D” grade. Of the three states with a higher youth unemployment rate than Ontario, two are in the southern U.S. (North Carolina and Georgia), while one (Illinois) is in the Great Lakes region. Ontario gets beaten by most of the other Great Lake states by wide margins—Wisconsin’s youth unemployment rate is a full 6 percentage points lower than Ontario’s.



ELECTRICITY RATES: Ontario is a middle-of-the-pack performer on this indicator, helped by a sub-par Canadian dollar. It ranks in eighth place and receives the final “C” grade. It is only 37 cents per kWh from falling to a “D.” Ontario also remains a long way behind category leader Quebec, the only jurisdiction to receive an “A” on this indicator. Its electricity rates are almost 40% lower than Ontario’s.

GOODS EXPORT GROWTH: Growth of Ontario’s goods exports tells a happy story, as Ontario receives an “A” on this indicator. Between 2014 and 2016, Ontario’s goods exports increased by an average of 4.1% per year, the fourth fastest pace of growth among the 15 comparator regions. South Carolina, the indicator leader, posted annual average growth of 5.9 %. Nine U.S. states saw their exports decline over this three-year period, with Texas posting the biggest drop and ranking last.

SHARE OF R&D EXPENDITURES PERFORMED BY THE BUSINESS SECTOR (BERD) AS A PERCENTAGE OF GDP: Ontario ranks 12th on this indicator and earns a “D” grade. At 1.1 %, the GDP share of BERD performed by the business sector is 2.0 percentage points below that of category leader Michigan. Ontario could easily move to a “C.” In Quebec, the lowest ranked “C” rated jurisdiction, businesses spend the equivalent of 1.5% of total GDP on R&D, only 0.4 percentage points above Ontario. Ontario and Quebec’s poor performances on this indicator highlights the fact that low BERD is a nationwide issue and is not unique to Ontario.

III. Labour cost indicators

AVERAGE HOURLY WAGE: It is well known that incomes are generally much lower in Canada than in the United states, so Quebec and Ontario’s first and fifth place finish, respectively, on this indicator should not come as a surprise. At \$25.95, workers in Ontario get paid a full \$9.45 less per hour than their counterparts in New York, the state with the highest labour costs. Three U.S. states—South Carolina, Kentucky, and Indiana—have lower hourly wages than Ontario, albeit by no more than \$1.0. Quebec is the jurisdiction with the lowest hourly wage, beating Ontario by \$1.93 in 2016.

MINIMUM WAGE: Ontario increased its minimum wage to CAD\$14 per hour in January 2018, with another planned increase to \$15 per hour in January 2019, all but assuring a poor performance in this indicator.¹⁰ Sure enough, Ontario finishes in last position, earning a “D” grade. Its minimum wage is CAD\$5.07 above that of nine of its competitors, whose minimum wage sits at CAD\$8.93 per hour, which is equal to the United States federal minimum wage. Even New York’s minimum wage, the only other jurisdiction to receive a “D”, is CAD\$1.19 per hour below Ontario’s. Although Ontario’s average wages are attractive to business, the province’s minimum wages are not. Had Ontario kept its minimum wage at CAD\$11.40 (the minimum wage that was in effect until January 1st, 2018), its ranking would jump from 15th to 14th place and would it get a “C” instead of a “D.”

¹⁰ If Ontario’s 2017 minimum wage still had been in effect, the province’s overall ranking would have improved from ninth to sixth and it would still have earned an overall “C” grade.



4 CONCLUSION

This report assessed the relative attractiveness of the province of Ontario in relation to other provinces/states in the Great Lakes-St. Lawrence region on key factors that influence the location decisions of businesses. Businesses typically screen locations in relation to three elements: of labour force talent availability and skill level, labour costs, and location competitiveness.

The results reveal that Ontario is a middle-of-the-pack performer, finishing in ninth place with a “C” grade. The region earns five “A” grades, four “B” grades, one “C” grade, and eight “D” grades. In other words, a “D” is Ontario’s most common assessed grade.

Ontario’s demographics offer a mixed picture. While the province registered the third highest population growth among the fifteen comparator regions considered in this study, Ontario’s population is aging, as evidenced by a relatively high median age. This might make it difficult for businesses to find the top-flight talent they need to thrive, given that older workers are reaching retirement. On the other hand, the region has the fourth highest proportion of bachelor degree holders, suggesting the availability of a skilled pool of labour.

Ontario’s labour costs also paint a mixed picture. Although it earns an “A” on average hourly wages, placing fifth, the province’s minimum wage is the highest in this survey, earning it a “D” grade.

Ontario’s labour market is average. Relatively moderate employment growth, a high unemployment rate, and a high youth unemployment rate all yielded Ontario “D” grades, raising questions about its potential ability to draw in skilled workers. Fortunately, this was offset by a high overall labour force participation rate and a high female labour force participation rate, both signs that Ontario’s residents, including its female ones, are more engaged in the labour force than their counterparts in Quebec and in several U.S. states.

A strong economy is also key to a region’s attractiveness to business. On this front, Ontario’s performance is somewhat disappointing. We estimate Ontario’s real GDP per capita at \$45,297, or 60% of frontrunner New York’s. On a positive note, Ontario’s real GDP per capita fairs better in growth terms, coming in third place and earning a “B” grade. This suggests that Ontario may be catching up to its counterparts, though it has a very steep hill to climb.

Ontario’s merchandise export growth was healthy between 2014 and 2016, as evidenced by the province’s “A” grade. While this suggests that businesses have an easy time getting their products to market, Ontario exporters face a great deal of uncertainty, as rising protectionism in the U.S. could lead to the termination of the NAFTA agreement, raising some doubts about the potential for continued healthy export growth over the near term.

Similarly, although Ontario also ranks highly on KPMG’s total tax index, indicating a favorable tax environment, this measure has yet to be revised to reflect the U.S. tax reform package passed at the end of 2017. In other words, this indicator likely overstates Ontario’s current tax competitiveness.

Finally, BERD as a share of GDP is a clear weak spot for the province. This indicator is important because R&D expenditures are used a proxy for innovation in this study, and firms that innovate enhance their competitiveness along with that of the region in which they operate. Quebec also performs poorly on this indicator, highlighting the fact that low business R&D spending is a pan-Canadian issue that is not unique to Ontario.



What is the bottom line? Ontario's middle-of-the-pack performance in this benchmarking analysis, along with the risk of a NAFTA collapse and U.S. corporate tax changes, means the government will need to take action to improve the province's competitiveness.



5 REFERENCES

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- Kavcic, Robert. 2017. *Great Lakes-St. Lawrence Region Driving North American Growth and*. Special Report, BMO Capital Markets. Accessed February 19, 2018. <https://economics.bmocapitalmarkets.com/economics/reports/20170425/sr20170425.pdf>.



APPENDIX 1: DETAILED RESULTS

INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Real gross domestic product (GDP) per capita # provinces / states ranked: 15	GDP, which measures the overall value of goods and services produced within the state/province, is divided by the total population. Data are from 2016 and are expressed in CAD\$ 2007 on a PPP basis.	A province/state with high real GDP per capita will have a high standard of living, making it more attractive to people and businesses.	New York, with a real GDP per capita of \$75,703, is the runaway leader on this category and gets the lone “A” mark. Illinois and Minnesota round out the top three. Ontario does poorly on this indicator, ranking in 12 th position and receiving a “D” grade. Quebec sits in last place, with a GDP per capita that is almost half that of New York.	1.	New York	75,703	A	9.	Indiana	50,912	C
				2.	Illinois	63,185	B	10.	N. Carolina	49,085	C
				3.	Minnesota	60,488	B	11.	Georgia	48,856	C
				4.	Texas	59,426	B	12.	Ontario	45,297	D
				5.	Pennsylvania	57,102	B	13.	Kentucky	44,984	D
				6.	Michigan	57,065	B	14.	S. Carolina	40,160	D
				7.	Ohio	53,879	C	15.	Quebec	38,341	D
				8.	Wisconsin	53,686	C				
Real GDP per Capita growth # provinces / states ranked: 15	The average annual increase in real GDP per capita over a five-year period, from 2012 to 2016.	Stronger real GDP per capita growth raises living standards more quickly, making it more attractive to both businesses and labour.	With a five-year average annual growth rate of 2.3 %, Michigan leads the way and gets the only “A” grade. New York is a distant second. Ontario comes in 3 rd place, with a “B” grade. But at 1.0 %, Ontario’s GDP growth is less than half that of Michigan’s. Four states posted GDP declines.	1.	Michigan	2.3	A	9.	Wisconsin	0.1	C
				2.	New York	1.2	B	10.	Illinois	0.1	C
				3.	Ontario	1.0	B	11.	Minnesota	0.0	C
				4.	Pennsylvania	0.8	B	12.	Indiana	-0.4	C
				5.	Texas	0.7	B	13.	N. Carolina	-0.9	D
				6.	Quebec	0.5	B	14.	S. Carolina	-1.3	D
				7.	Kentucky	0.2	C	15.	Georgia	-1.7	D
				8.	Ohio	0.2	C				



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Employment growth # provinces / states ranked: 15	Five-year average annual percentage growth in total employment is measured for 2012-2016.	Strong employment growth means more opportunities for workers, making it more attractive to people and thus businesses.	Canadian provinces do very poorly on this indicator, sitting in the bottom two positions and scoring a “D”. Ontario is tied with Pennsylvania in 14 th place, ahead of Quebec. Texas, Georgia, and South Carolina all posted employment growth above 2% between 2012 and 2016 and occupy the top three spots. They earn the three “A” grades on this indicator.	1.	Texas	2.5	A	9.	Ohio	1.3	C
				2.	Georgia	2.3	A	10.	Illinois	1.2	D
				3.	S. Carolina	2.1	A	11.	Wisconsin	1.1	D
				4.	N. Carolina	1.9	B	12.	Kentucky	1.1	D
				5.	New York	1.7	B	13.	Pennsylvania	1.0	D
				6.	Michigan	1.7	B	14.	Ontario	1.0	D
				7.	Indiana	1.4	C	15.	Quebec	0.8	D
				8.	Minnesota	1.4	C				
				Unemployment rate # provinces / states ranked:15	The percentage of the labour force aged 16 and over not working, based on 2017 data.	A region with a lower unemployment rate makes it more likely that someone without a job will find employment, which in turn, makes it more attractive to people.	Three states in the Great Lakes region—Wisconsin, Indiana, and Minnesota—dominate the top of the rankings on this indicator, occupying the top three spots. No region does well enough to earn a “B”, leaving the remaining 12 regions with a “C” or “D” grade. Quebec and Ontario do very poorly on this indicator, tied for a last place finish with Kentucky and Ohio. All four regions earn a “D” on this indicator.	1.	Wisconsin	3.3	A
2.	Indiana	3.6	A					10.	Illinois	4.9	D
3.	Minnesota	3.6	A					11.	Pennsylvania	4.9	D
4.	S. Carolina	4.2	C					12.	Quebec	5.0	D
5.	Texas	4.4	C					13.	Ontario	5.0	D
6.	N. Carolina	4.5	C					14.	Kentucky	5.0	D
7.	Michigan	4.5	C					15.	Ohio	5.0	D
8.	New York	4.6	D								



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Youth unemployment rate # provinces / states ranked: 15	The percentage of the labour force aged 16 to 24 that is not working, based on 2016 data.	A region with a lower youth unemployment rate makes it more likely that someone without a job will find employment, which in turn, makes it more attractive to people.	Wisconsin, Minnesota, and Kentucky were the lone three states to post a youth unemployment rate in the single digits, occupying the top three spots in the rankings. Ontario does poorly on this indicator, coming in 12 th place and earning a “D” grade. At 12.5 %, Ontario’s youth unemployment rate is almost double that of Wisconsin. Illinois sits in bottom place.	1.	Wisconsin	6.6	A	9.	Indiana	10.9	C
				2.	Minnesota	8.0	A	10.	Ohio	10.9	C
				3.	Kentucky	9.9	B	11.	Quebec	11.2	C
				4.	Texas	10.3	B	12.	Ontario	12.5	D
				5.	New York	10.5	C	13.	N. Carolina	12.6	D
				6.	S. Carolina	10.5	C	14.	Georgia	13.4	D
				7.	Michigan	10.6	C	15.	Illinois	14.2	D
				8.	Pennsylvania	10.7	C				
Participation rate # provinces / states ranked: 15	The proportion of the working age population that is either employed or actively looking for work. Data is for 2016.	A high participation rate indicates that a large proportion of a region’s population are either working or interested in employment, suggesting a bigger pool of available labour.	Ontario does well on this indicator, finishing in 4 th place, but is overshadowed by Minnesota’s singular “A” grade. Wisconsin and Illinois round out the top four. Kentucky ends up in last place with more than 40% of its working age population not participating in the labour force.	1.	Minnesota	69.5	A	9.	New York	63.1	C
				2.	Wisconsin	66.5	B	10.	Georgia	62.9	C
				3.	Illinois	65.2	B	11.	Pennsylvania	62.1	C
				4.	Ontario	64.9	B	12.	N. Carolina	62.0	C
				5.	Quebec	64.5	B	13.	Michigan	61.2	D
				6.	Texas	64.5	B	14.	S. Carolina	60.5	D
				7.	Indiana	63.7	C	15.	Kentucky	59.1	D
				8.	Ohio	63.2	C				



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Female participation rate # provinces / states ranked: 15	The proportion of the female working age population that is either employed or actively looking for work. Data are for 2016.	A higher female participation rate suggests the region encourages female participation in the economy, providing a bigger pool of labour.	Two Great Lake states—Minnesota and Wisconsin—dominate the top of the field on this indicator, earning the lone two “A” grades. Ontario ranks in 3 rd spot, just ahead of Quebec, and both end up with a “B” grade. Kentucky finishes in last place, with 45% of working age women not participating in the labour force.	1.	Minnesota	66.1	A	9.	Pennsylvania	58.2	C
				2.	Wisconsin	63.3	A	10.	Georgia	57.9	C
				3.	Ontario	60.7	B	11.	Texas	57.7	C
				4.	Quebec	60.7	B	12.	N. Carolina	57.4	D
				5.	Illinois	60.6	B	13.	Michigan	57.0	D
				6.	Indiana	59.1	C	14.	S. Carolina	56.2	D
				7.	Ohio	58.9	C	15.	Kentucky	54.8	D
				8.	New York	58.7	C				
Average hourly wage # provinces / states ranked: 15	Average hourly wage in Canadian dollars earned by employees in 2016. Data are for all occupations.	Business costs are elevated in regions with high hourly wages.	Ontario and Quebec do well on this indicator; they are among the top five regions and both earn “A” grades. Quebec finishes in first place, while Ontario ranks fifth. South Carolina, Kentucky, and Indiana round out the top five. New York has the highest hourly wage among the 15 comparator regions, earning the lone “D” grade on this indicator.	1.	Quebec	24.02	A	9.	Georgia	27.98	B
				2.	S. Carolina	24.96	A	12.	Michigan	28.45	B
				3.	Kentucky	25.10	A	13.	Pennsylvania	28.56	B
				4.	Indiana	25.80	A	14.	Texas	28.71	B
				5.	Ontario	25.95	A	13.	Minnesota	30.85	C
				6.	Wisconsin	27.19	B	14.	Illinois	30.95	C
				7.	N. Carolina	27.21	B	15.	New York	35.40	D
				8.	Ohio	27.60	B				



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Minimum wage* # provinces / states ranked: 15	The lowest hourly wage that employers can legally pay their employees. Data is for 2018.	Business costs are lower in regions with a low minimum wage.	At \$14.00, Ontario has the highest minimum wage among our 15 comparator regions, and is one of two regions to receive a “D”. Ten regions still have a minimum wage below CAD\$10 an hour, receiving “A” scores. Quebec’s minimum wage is \$2.75 below Ontario’s, enough to earn it a “B.” Quebec’s minimum wage will rise to \$12 in May.	1.	Georgia	8.93	A	9.	S. Carolina	8.93	A
				2.	Indiana	8.93	A	10.	Minnesota	9.69	A
				3.	Kentucky	8.93	A	11.	Illinois	10.16	A
				4.	N. Carolina	8.93	A	12.	Quebec	11.25	B
				5.	Ohio	8.93	A	13.	Michigan	11.39	B
				6.	Pennsylvania	8.93	A	14.	New York	12.81	D
				7.	Texas	8.93	A	15.	Ontario	14.00	D
				8.	Wisconsin	8.93	A				
				Goods export growth # provinces / states ranked: 15	The average annual increase in goods exports over a three-year period, from 2014 to 2016.	The higher the growth in goods exports, the more opportunities for businesses to sell their products abroad.	Four regions stand out in the field of 15: South Carolina, Kentucky, Quebec, and Ontario . They are well ahead, posting average growth greater than 4 %. Nine U.S. states post declines in their goods exports between 2014 and 2016.	1.	S. Carolina	5.9	A
2.	Kentucky	4.7	A					10.	Michigan	-2.7	C
3.	Quebec	4.4	A					11.	Wisconsin	-3.1	D
4.	Ontario	4.1	A					12.	Illinois	-3.4	D
5.	N. Carolina	0.9	B					13.	New York	-3.9	D
6.	Indiana	0.4	B					14.	Pennsylvania	-4.0	D
7.	Ohio	-1.2	C					15.	Texas	-5.9	D
8.	Georgia	-1.7	C								



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE																																																																								
<p>Total tax index (TTI)**</p> <p># provinces / states ranked: 15</p>	<p>The total taxes paid by similar corporations in a particular location and industry, calculated as a percentage of total taxes paid by similar corporations across the U.S, as calculated by KPMG.</p> <p>This indicator is based on each region's largest metro area.</p> <p>Data are for 2016.</p>	<p>The index is designed to compare the total tax burden faced by companies in each region, including: income taxes, capital taxes, sales taxes, property taxes, miscellaneous local business taxes, and statutory labour costs.</p>	<p>Canadian provinces do very well in this category; they land the top two spots, and earn the lone two "A" grades. Ontario ranks 1st, with a total tax index of 47.4. The best-performing U.S state is Ohio, but it still only earns a "C". U.S. tax reform will change the 2017 rankings.</p>	<table border="1"> <thead> <tr> <th>Rank</th> <th>Province/State</th> <th>Score</th> <th>Grade</th> <th>Rank</th> <th>Province/State</th> <th>Score</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Ontario</td> <td>47.4</td> <td>A</td> <td>9.</td> <td>Pennsylvania</td> <td>84.6</td> <td>C</td> </tr> <tr> <td>2.</td> <td>Quebec</td> <td>57.4</td> <td>A</td> <td>10.</td> <td>Michigan</td> <td>85.7</td> <td>C</td> </tr> <tr> <td>3.</td> <td>Ohio</td> <td>78.8</td> <td>C</td> <td>11.</td> <td>Minnesota</td> <td>89.2</td> <td>C</td> </tr> <tr> <td>4.</td> <td>Georgia</td> <td>81.6</td> <td>C</td> <td>12.</td> <td>Texas</td> <td>93.9</td> <td>D</td> </tr> <tr> <td>5.</td> <td>Indiana</td> <td>81.6</td> <td>C</td> <td>13.</td> <td>Illinois</td> <td>96.7</td> <td>D</td> </tr> <tr> <td>6.</td> <td>Kentucky</td> <td>81.7</td> <td>C</td> <td>14.</td> <td>S. Carolina</td> <td>97.6</td> <td>D</td> </tr> <tr> <td>7.</td> <td>Wisconsin</td> <td>83.0</td> <td>C</td> <td>15.</td> <td>New York</td> <td>104.7</td> <td>D</td> </tr> <tr> <td>8.</td> <td>N. Carolina</td> <td>84.3</td> <td>C</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Rank	Province/State	Score	Grade	Rank	Province/State	Score	Grade	1.	Ontario	47.4	A	9.	Pennsylvania	84.6	C	2.	Quebec	57.4	A	10.	Michigan	85.7	C	3.	Ohio	78.8	C	11.	Minnesota	89.2	C	4.	Georgia	81.6	C	12.	Texas	93.9	D	5.	Indiana	81.6	C	13.	Illinois	96.7	D	6.	Kentucky	81.7	C	14.	S. Carolina	97.6	D	7.	Wisconsin	83.0	C	15.	New York	104.7	D	8.	N. Carolina	84.3	C				
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<p>Industrial electricity rates</p> <p># provinces / states ranked: 15</p>	<p>This indicator compares retail industrial electricity prices, based on CAD dollars per kilowatt-hour.</p> <p>Data is for 2015.</p>	<p>This indicator is a measure of the cost of doing business. Regions with lower industrial electricity rates are more attractive to new business and investment.</p>	<p>Quebec ranks first, with the lowest industrial electricity rates among the 15 comparator regions. Ontario is a middle of the pack performer on this indicator, coming in 8th place with a "C" grade, just behind Illinois. The other Great Lake states lag: New York, Indiana, Ohio, Minnesota, Michigan, and Wisconsin all get "D" marks.</p>	<table border="1"> <thead> <tr> <th>Rank</th> <th>Province/State</th> <th>Score</th> <th>Grade</th> <th>Rank</th> <th>Province/State</th> <th>Score</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Quebec</td> <td>5.17</td> <td>A</td> <td>9.</td> <td>New York</td> <td>8.72</td> <td>D</td> </tr> <tr> <td>2.</td> <td>Kentucky</td> <td>6.80</td> <td>B</td> <td>10.</td> <td>Indiana</td> <td>8.74</td> <td>D</td> </tr> <tr> <td>3.</td> <td>Georgia</td> <td>7.35</td> <td>B</td> <td>11.</td> <td>Ohio</td> <td>8.75</td> <td>D</td> </tr> <tr> <td>4.</td> <td>Texas</td> <td>7.37</td> <td>B</td> <td>12.</td> <td>Minnesota</td> <td>8.89</td> <td>D</td> </tr> <tr> <td>5.</td> <td>S. Carolina</td> <td>7.68</td> <td>C</td> <td>13.</td> <td>Michigan</td> <td>9.13</td> <td>D</td> </tr> <tr> <td>6.</td> <td>N. Carolina</td> <td>8.09</td> <td>C</td> <td>14.</td> <td>Pennsylvania</td> <td>9.59</td> <td>D</td> </tr> <tr> <td>7.</td> <td>Illinois</td> <td>8.24</td> <td>C</td> <td>15.</td> <td>Wisconsin</td> <td>9.87</td> <td>D</td> </tr> <tr> <td>8.</td> <td>S. Ontario</td> <td>8.35</td> <td>C</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Rank	Province/State	Score	Grade	Rank	Province/State	Score	Grade	1.	Quebec	5.17	A	9.	New York	8.72	D	2.	Kentucky	6.80	B	10.	Indiana	8.74	D	3.	Georgia	7.35	B	11.	Ohio	8.75	D	4.	Texas	7.37	B	12.	Minnesota	8.89	D	5.	S. Carolina	7.68	C	13.	Michigan	9.13	D	6.	N. Carolina	8.09	C	14.	Pennsylvania	9.59	D	7.	Illinois	8.24	C	15.	Wisconsin	9.87	D	8.	S. Ontario	8.35	C				
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INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Housing affordability*** # provinces / states ranked: 14	The ratio of the median house price to the gross annual median household income, expressed as a decimal and using data from each region's largest metropolitan housing market. This indicator is calculated by Demographia. Data is for 2017.	A region with affordable housing is more attractive to labour, and thus more attractive to businesses.	Ontario performs very poorly on this indicator, based on Toronto data, placing in last place and receiving a "D" grade. At the other end of the spectrum, Michigan, Indiana, and Ohio occupy the top three spots and get "A" grades. Wisconsin and Quebec get the only "B" marks.	1.	Michigan	2.9	A	9.	N. Carolina	3.8	A
				2.	Indiana	3.0	A	10.	Illinois	3.8	A
				3.	Ohio	3.1	A	11.	Wisconsin	4.2	B
				4.	Kentucky	3.1	A	12.	Quebec	4.5	B
				5.	Georgia	3.2	A	13.	New York	5.7	C
				6.	Minnesota	3.4	A	14.	Ontario	7.9	D
				7.	Pennsylvania	3.5	A	15.	S. Carolina	N/A	
				8.	Texas	3.7	A				
				R&D expenditures performed by the business sector (as a share of total GDP) # provinces / states ranked: 15	Amount spent on R&D by the business sector (BERD) as a share of regional GDP. Data is for 2015.	BERD plays an important role in fostering creativity and innovation and businesses. Innovative breakthroughs are more likely to happen in regions with high R&D spending.	Michigan dwarfs the competition in this category, earning the lone "A" grade. Ontario performs poorly, coming in 12 th place, and receiving a "D" grade. Only Kentucky and South Carolina perform worse. Quebec earns a "C" grade.	1.	Michigan	3.1	A
2.	Minnesota	2.4	B					10.	New York	1.2	D
3.	Indiana	2.2	B					11.	Texas	1.1	D
4.	N. Carolina	2.0	B					12.	Ontario	1.1	D
5.	Illinois	1.9	C					13.	Georgia	1.1	D
6.	Wisconsin	1.8	C					14.	Kentucky	0.8	D
7.	Ohio	1.7	C					15.	S. Carolina	0.7	D
8.	Pennsylvania	1.7	C								



INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE																																																																
<p>Immigrant population</p> <p># provinces / states ranked: 15</p>	<p>The proportion of the population that are foreign born. Data is for 2016.</p>	<p>Immigration is key to boosting the future workforce.</p>	<p>With nearly 30% of its population foreign-born, Ontario finishes in first place and receives this category's lone "A" grade. New York and Texas round out the top-three, earning "B" scores. Kentucky is the jurisdiction with the lowest number of immigrants as a share of the population.</p>	<table border="1"> <tr> <td>1.</td> <td>Ontario</td> <td>29.1</td> <td>A</td> <td>9.</td> <td>Michigan</td> <td>6.4</td> <td>D</td> </tr> <tr> <td>2.</td> <td>New York</td> <td>22.6</td> <td>B</td> <td>10.</td> <td>Pennsylvania</td> <td>6.4</td> <td>D</td> </tr> <tr> <td>3.</td> <td>Texas</td> <td>16.7</td> <td>B</td> <td>11.</td> <td>Indiana</td> <td>4.9</td> <td>D</td> </tr> <tr> <td>4.</td> <td>Illinois</td> <td>13.9</td> <td>C</td> <td>12.</td> <td>S. Carolina</td> <td>4.8</td> <td>D</td> </tr> <tr> <td>5.</td> <td>Quebec</td> <td>13.7</td> <td>C</td> <td>13.</td> <td>Wisconsin</td> <td>4.8</td> <td>D</td> </tr> <tr> <td>6.</td> <td>Georgia</td> <td>9.8</td> <td>D</td> <td>14.</td> <td>Ohio</td> <td>4.2</td> <td>D</td> </tr> <tr> <td>7.</td> <td>Minnesota</td> <td>7.8</td> <td>D</td> <td>15.</td> <td>Kentucky</td> <td>3.5</td> <td>D</td> </tr> <tr> <td>8.</td> <td>N. Carolina</td> <td>7.7</td> <td>D</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1.	Ontario	29.1	A	9.	Michigan	6.4	D	2.	New York	22.6	B	10.	Pennsylvania	6.4	D	3.	Texas	16.7	B	11.	Indiana	4.9	D	4.	Illinois	13.9	C	12.	S. Carolina	4.8	D	5.	Quebec	13.7	C	13.	Wisconsin	4.8	D	6.	Georgia	9.8	D	14.	Ohio	4.2	D	7.	Minnesota	7.8	D	15.	Kentucky	3.5	D	8.	N. Carolina	7.7	D				
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<p>Proportion of the population with at least a bachelor's degree</p> <p># provinces / states ranked: 15</p>	<p>The percentage of the population aged 25 and over with at least a bachelor's degree, based on 2016 data.</p>	<p>Businesses have an easier time hiring skilled workers in regions with a highly educated population. Jobs that require a post-secondary education continue to account for a larger share of total employment.</p>	<p>With almost a third of its population having at least a bachelor's degree, Ontario finishes in fourth place and earns an "A" grade. New York (34.7%), Minnesota (34.2%), and Illinois (32.9%) join Ontario at the top of the field, and all earn "A" grades.</p>	<table border="1"> <tr> <td>1.</td> <td>New York</td> <td>34.7</td> <td>A</td> <td>9.</td> <td>Texas</td> <td>28.1</td> <td>C</td> </tr> <tr> <td>2.</td> <td>Minnesota</td> <td>34.2</td> <td>A</td> <td>10.</td> <td>Michigan</td> <td>27.4</td> <td>C</td> </tr> <tr> <td>3.</td> <td>Illinois</td> <td>32.9</td> <td>A</td> <td>11.</td> <td>Ohio</td> <td>26.7</td> <td>C</td> </tr> <tr> <td>4.</td> <td>Ontario</td> <td>31.9</td> <td>A</td> <td>12.</td> <td>S. Carolina</td> <td>26.5</td> <td>C</td> </tr> <tr> <td>5.</td> <td>Georgia</td> <td>29.4</td> <td>B</td> <td>13.</td> <td>Quebec</td> <td>25.5</td> <td>D</td> </tr> <tr> <td>6.</td> <td>Pennsylvania</td> <td>29.3</td> <td>B</td> <td>14.</td> <td>Indiana</td> <td>24.6</td> <td>D</td> </tr> <tr> <td>7.</td> <td>N. Carolina</td> <td>29.0</td> <td>B</td> <td>15.</td> <td>Kentucky</td> <td>22.7</td> <td>D</td> </tr> <tr> <td>8.</td> <td>Wisconsin</td> <td>28.4</td> <td>C</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1.	New York	34.7	A	9.	Texas	28.1	C	2.	Minnesota	34.2	A	10.	Michigan	27.4	C	3.	Illinois	32.9	A	11.	Ohio	26.7	C	4.	Ontario	31.9	A	12.	S. Carolina	26.5	C	5.	Georgia	29.4	B	13.	Quebec	25.5	D	6.	Pennsylvania	29.3	B	14.	Indiana	24.6	D	7.	N. Carolina	29.0	B	15.	Kentucky	22.7	D	8.	Wisconsin	28.4	C				
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INDICATORS	DEFINITION	SIGNIFICANCE	WHAT ABOUT ONTARIO?	THE GRADE							
Population growth # provinces / states ranked: 15	Average population growth is measured as the annual growth rate, compounded over five years from 2013 to 2017.	Population growth is a proxy for labour availability.	Ontario's five-year annual population growth rate of 1.1% is good enough to earn a "B" grade and third place finish, behind Texas and South Carolina. Illinois is the only region that registered a population decline from 2013 to 2017.	1.	Texas	1.7	A	9.	Kentucky	0.3	D
				2.	S. Carolina	1.3	A	10.	Wisconsin	0.3	D
				3.	Ontario	1.1	B	11.	New York	0.2	D
				4.	N. Carolina	1.0	B	12.	Ohio	0.2	D
				5.	Georgia	1.0	B	13.	Michigan	0.2	D
				6.	Quebec	0.8	B	14.	Pennsylvania	0.1	D
				7.	Minnesota	0.7	C	15.	Illinois	-0.1	D
				8.	Indiana	0.4	C				
Median age # provinces / states ranked: 15	The median age of a population is the age where half the population is younger than and half the population is older. Data is for 2016.	The younger the population, the easier it is for companies to find workers.	Canadian provinces disappoint on this indicator, coming in the bottom two spots. With a median age of 41.3, Ontario sits in 14 th position. Texas comes in first place, with its residents having a median age of 34.2—a full 7 years younger than Ontario's.	1.	Texas	34.2	A	9.	S. Carolina	38.8	C
				2.	Georgia	36.2	A	10.	Wisconsin	39.1	C
				3.	Indiana	37.4	B	11.	Ohio	39.3	C
				4.	Illinois	37.4	B	12.	Michigan	39.5	C
				5.	Minnesota	37.8	B	13.	Pennsylvania	40.6	D
				6.	New York	38.2	B	14.	Ontario	41.3	D
				7.	N. Carolina	38.3	B	15.	Quebec	42.5	D
				8.	Kentucky	38.6	C				



NOTES

* Minnesota's minimum wage is US\$9.65 for enterprises with annual receipts of US\$500,000 or more and US\$7.87 for enterprises with annual receipts of less than US\$500,000. Ohio's minimum wage is US\$8.30 for employers with annual gross receipts of US\$305,000 or more and US\$7.25 for employers with annual gross receipts of less than US\$305,000. Michigan's and Indiana's minimum wage is applicable to employers of two or more employees, while Illinois' is applicable to employers of four or more employees, excluding family members. Georgia's state level minimum wage is US\$5.15 and is applicable to employers of 6 or more employees. The state minimum wage doesn't apply to any employment that is subject to the federal Labor Standards Act.

** The total tax index is calculated for Atlanta in Georgia, Chicago in Illinois, Indianapolis in Indiana, Lexington in Kentucky, Detroit in Michigan, Minneapolis in Minnesota, New York City in New York, Charlotte in North Carolina, Cleveland in Ohio, Philadelphia in Pennsylvania, Spartanburg in South Carolina, Houston in Texas, Madison in Wisconsin, Montreal in Quebec and Toronto in Ontario.

*** Housing affordability is calculated for Atlanta in Georgia, Chicago in Illinois, Indianapolis in Indiana, Louisville in Kentucky, Detroit in Michigan, Minneapolis in Minnesota, New York City in New York, Charlotte in North Carolina, Columbus in Ohio, Philadelphia in Pennsylvania, Houston in Texas, Milwaukee in Wisconsin, Montreal in Quebec, and Toronto in Ontario.

Sources: The Conference Board of Canada; Statistics Canada; Bureau of Labor Statistics; Bureau of Economic Analysis; Organisation for Economic Co-operation and Development; KPMG; Demographia Housing Affordability Survey.

APPENDIX 2: BENCHMARKING METHODOLOGY

The overarching goal of the scorecard is to provide a comprehensive overview of Ontario's performance in relation to 14 other U.S. states and Canadian provinces on key economic and cost indicators. We benchmark the features that make these areas attractive to businesses and skilled workers, thereby revealing Ontario's relative competitive strengths and weaknesses. Therefore, this report should help the Greater Toronto Board of Trade identify priority areas for policy advocacy.

To gauge Ontario's performance, The Conference Board of Canada used its standard methodology for benchmarking. The Conference Board of Canada has been a Canadian leader in benchmarking analysis since it began producing its flagship *Performance and Potential* reports in 1996. Renamed *How Canada Performs* in 2007, this multi-year research program identifies relative strengths and weaknesses in the socio-economic performance of Canada and its provinces and territories. Following in the footsteps of *How Canada Performs*, the Centre for Municipal Studies began producing metro-level benchmarking reports in 2007.

State/province Selection Process

The first step involved selecting which state/provinces to include in the benchmark analysis. The selection of regions was done in consultation with the Greater Toronto Board of Trade. In the end, 15 states/provinces, including Ontario, were chosen. All the selected regions meet one or more of the following criteria:

- The state/province is one of Ontario's Great Lakes-St. Lawrence competitors (Quebec, Michigan, Minnesota, Illinois, Indiana, Wisconsin, New York, Ohio, Pennsylvania).
- The state/province is one of Ontario's Canadian competitors (Quebec).
- The state/region is one of Ontario's Southern U.S. competitors (Texas, Georgia, N. Carolina, Kentucky, South Carolina).

Indicator Selection Process

The second step involved selecting which indicators to include in the analysis. Like the comparator regions, the indicators were selected in consultation with the Greater Toronto Board of Trade.

The search for indicators began with a commitment to find measures that influence Ontario's attractiveness to businesses. The indicators that were selected provide valuable information about the performance or status of a state/province within a particular category, either as a direct output (e.g., average hourly wages) or a proxy measure (e.g., proportion of the population with at least a bachelor's degree as a proxy for the presence of a skilled workforce) and were tested by the Conference Board for availability and reliability. A total of 18 indicators were chosen.

Unfortunately, it was impossible to collect data on all 18 indicators for every state/province, mainly because of data incomparability. However, all 18 indicators were available for the Ontario region. All data sources were rigorously screened to ensure that each indicator for the U.S. areas had the same definition as its Canadian counterpart. In other words, we wanted to avoid an "apples to oranges" comparison. All U.S. data were converted to Canadian dollars using OECD purchasing power parity exchange rate estimates for the given year.

Benchmarking studies use annual historical data as a means of comparison. Given that this study was launched in the fall of 2017, data beyond the year 2016 were unavailable for any of the indicators (except

for the minimum wage, the population growth, the unemployment rate, and the housing affordability indicators). This does not imply, however, that the results of this study are compromised. A benchmarking analysis, by definition, is a relative comparison. Therefore, it is reasonable to assume that if 2017 full-year data were included in this study, the overall rankings would remain fairly stable.

Ranking Method

This study uses a report card–style ranking of A–B–C–D to assess the performance of state/provinces for each indicator. We assigned a grade level using the following method: for each indicator, we calculated the difference between the top and bottom performer and divided this figure by four. A state/province received a scorecard ranking of “A” on a given indicator if its score was in the top quartile, a “B” if its score was in the second quartile, a “C” if its score was in the third quartile, and a “D” if its score was in the bottom quartile. A state/province was assigned an “n.a.” if data were unavailable for that indicator.

For example, on the “real GDP per capita” indicator, the top performer (New York) had a real GDP per capita of \$75,703 in 2016, while the bottom performer (Quebec) had a real GDP per capita of only \$38,341. Applying the method for scoring yields the following ranges for each grade:

“A”: \$66,362–\$75,703

“B”: \$57,022–\$66,361

“C”: \$47,681–\$57,021

“D”: \$31,427–\$47,680

(Note: In this example, a high score indicates a high level of performance. For indicators where a low score signifies a high level of performance—such as on housing affordability—the ranking levels are reversed, i.e., the highest result receives the lower grade.)

It must be emphasized that a region getting an “A” grade do not necessarily perform equally according to this methodology. For example, for the unemployment rate indicator, a state/province with an unemployment rate of 3.3% would get an “A” grade in the same way that a region with a 3.6% unemployment rate would. However, when we establish a ranking of state/provinces, the region with an unemployment rate of 3.3% would place higher than the one with a 3.6% unemployment rate, even if they both get an “A” grade. Thus, in the tables, when looking at regions with the same letter grade, the one with the higher score is listed first. It must also be emphasized that the rankings for each indicator are relative. A region receives an “A” grade because it outperforms all other regions in our sample, not because it is necessarily a North American leader.

Overall Rankings & Overall Score

The overall rankings are based on a composite index (an average of the normalized scores for each indicator). In other words, the top-ranking region for a given indicator will receive a 1, while the bottom-ranking metropolitan area will receive a zero.

Normalization Formula

$$\text{Normalized value} = (\text{indicator value} - \text{minimum value}) \div (\text{maximum value} - \text{minimum value})$$

To use the example above, a score of 1 would be attributed to New York given that it leads all other regions in real GDP per capita (\$75,703). Meanwhile, a zero would be attributed to Quebec given that it ranks last with a real GDP per capita of \$38,341.

Using the formula, New York's score of 1 = $(75,703 - 38,341) \div (75,703 - 38,341)$, Quebec's score of 0 = $(38,341 - 38,341) \div (75,703 - 38,341)$, and a region with a real GDP per capita of \$53,879, for example, would get a score of 0.42 = $(53,879 - 38,341) \div (75,703 - 38,341)$.

To calculate an overall ranking, the regions were then ranked according to their composite index scores. No attempt was made to give explicit differential weights to indicators according to importance: we are implicitly giving equal weight to each indicator. We assigned a grade level to the overall performance using the following method: we calculated the difference between the composite index of the top and bottom performer and divided this figure by four. An area received a scorecard rating of "A" overall if its score was in the top quartile, a "B" if its score was in the second quartile, a "C" if its score was in the third quartile, and a "D" if its score was in the bottom quartile.