OPEN FOR BUSINESS:
Strategies for improving Ontario’s business attractiveness
The Institute for Competitiveness & Prosperity is an independent not-for-profit organization established in 2001 to serve as the research arm of Ontario’s Task Force on Competitiveness, Productivity and Economic Progress.

The mandate of the Task Force, announced in the April 2001 Speech from the Throne, is to measure and monitor Ontario’s competitiveness, productivity, and economic progress compared to other provinces and US states and to report to the public on a regular basis. In the 2004 Budget, the Government asked the Task Force to incorporate innovation and commercialization issues in its mandate.

Research by the Institute is intended to inform the work of the Task Force and to raise public awareness and stimulate debate on a range of issues related to competitiveness and prosperity. It is the aspiration of the Task Force and the Institute to have a significant influence in increasing Ontario’s and Canada’s competitiveness, productivity, and capacity for innovation. We believe this will help ensure continued success in creating good jobs, increasing prosperity, and building a higher quality of life. We seek breakthrough findings from our research and propose significant innovations in public policy to stimulate businesses, governments, and educational institutions to take action.

Comments on this report are welcome and should be directed to the Institute for Competitiveness & Prosperity. The Institute is funded by the Government of Ontario through the Minister of Economic Development, Employment and Infrastructure.

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OPEN FOR BUSINESS:
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**Exhibits**

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXHIBIT 1</td>
<td>15 major factors influence business location decisions</td>
<td>18</td>
</tr>
<tr>
<td>EXHIBIT 2</td>
<td>Ontario has 9 major and 7 fringe competitor regions</td>
<td>19</td>
</tr>
<tr>
<td>EXHIBIT 3</td>
<td>Number of establishments grew faster in Ontario than in most regions</td>
<td>22</td>
</tr>
<tr>
<td>EXHIBIT 4</td>
<td>Ontario has low population density</td>
<td>22</td>
</tr>
<tr>
<td>EXHIBIT 5</td>
<td>Ontario has the third lowest GDP per capita among peers</td>
<td>23</td>
</tr>
<tr>
<td>EXHIBIT 6</td>
<td>Ontario’s geographical location is not favourable for accessing larger markets</td>
<td>24</td>
</tr>
<tr>
<td>EXHIBIT 7</td>
<td>Lower wages in Ontario are an advantage in business attractiveness</td>
<td>25</td>
</tr>
<tr>
<td>EXHIBIT 8</td>
<td>Labour cost is higher in Ontario than in most competitor regions</td>
<td>26</td>
</tr>
<tr>
<td>EXHIBIT 9</td>
<td>Ontario is a low tax province</td>
<td>28</td>
</tr>
<tr>
<td>EXHIBIT 10</td>
<td>Ontario’s corporate tax structure is not in line with that of competitor regions</td>
<td>30</td>
</tr>
<tr>
<td>EXHIBIT 11</td>
<td>Ontario needs more investment in highway infrastructure</td>
<td>31</td>
</tr>
<tr>
<td>EXHIBIT 12</td>
<td>Ontario cities benefit from proximity to Pearson International Airport</td>
<td>32</td>
</tr>
<tr>
<td>EXHIBIT 13</td>
<td>Ontario is part of the motor vehicle parts manufacturing agglomeration</td>
<td>35</td>
</tr>
</tbody>
</table>
Contents

FOREWORD & ACKNOWLEDGEMENTS 4

6 OPEN FOR BUSINESS: STRATEGIES FOR IMPROVING ONTARIO'S BUSINESS ATTRACTIVENESS

10 WHERE DOES ONTARIO STAND IN THE COMPETITION TO ATTRACT BUSINESSES?

12 WHAT DO ECONOMISTS SAY ABOUT BUSINESS INCENTIVES?
   Eight elemental issues surround business subsidy policies 13
   Business subsidies have little effect on location decisions 15

16 HOW DO BUSINESSES DECIDE WHERE TO LOCATE?
   Business location decisions involve a three-step process 17
   Many factors contribute to a firm's location decision 18

20 ONTARIO IS LESS ATTRACTIVE TO BUSINESSES THAN COMPETITORS
   Market and demand conditions are not as favourable in Ontario as in close regions 21
   Some input costs in Ontario are advantageous 24
   Fiscal policy is an area with potential for improvement in Ontario 28
   Public infrastructure is crucial for improving Ontario's business attractiveness 31
   Agglomeration is one of the most important factors in business location decisions 33

38 ONTARIO HAS OPTIONS TO ATTRACT MORE BUSINESSES
   Enhance Fund operation and strategy 40
   Strengthen fundamental characteristics to attract businesses 42

PREVIOUS PUBLICATIONS 48
During the last provincial election in 2014, a battle raged between two competing “economic visions.” One argued for the tax cuts as a means of attracting private investment. The other spoke to the importance of government subsidies in bringing new jobs to Ontario. As is often the case in elections, the debate was heated, but overly simplistic. This Working Paper takes a close look at how companies make their location decisions and finds that the province should not rely on subsidies alone to attract new investment to Ontario. Only with sound economic fundamentals, like appropriate taxation and strong infrastructure, will subsidies be truly effective.

It is difficult to blame governments for getting into the subsidy game. Sub-national jurisdictions across North America have been competing in a “race to the bottom” for about a decade now, each one trying to provide a new shiney bauble to bring an industry to their part of the world. In Ontario, the latest vehicle is the $2.5 billion Jobs and Prosperity Fund. The challenge is how to use this Fund most effectively by targeting firms that would not have located in the province in the absence of such funding, thus attracting truly incremental investment.

The Fund is a long-term commitment to provide business incentives, or subsidies, with the intent of securing job growth and investment. The provincial government hopes that financial incentives will tip the scale in favour of Ontario in the competition for new plants or business establishments. These funds are attractive politically because they are easy to explain and relatively easy to launch, compared with the more important fundamental work required to improve the underlying conditions of the economy. However, without that hard work, the Fund is unlikely to be successful.

In this Working Paper, we provide a detailed literature review of incentive funds to lay the groundwork for the thinking behind them. Next, we complete an analysis of how companies select a jurisdiction. Then, we conduct a comparative look at the fundamental elements of sub-national economies and what Ontario can do to improve in some crucial areas. Finally, the Institute offers suggestions on how Ontario can attract more businesses and how these ideas could be applied to the Jobs and Prosperity Fund.

There is work to be done to increase the likelihood of success for the Fund. First, increasing the Fund’s transparency is essential. This will not only hold the government to account, it will also ensure that companies do not try to game the system. Second, ensuring that the Fund allows for, and focuses on, productivity enhancements and
employee training is important. These are the types of investments that will benefit the province in the long run, not merely the immediate job creation. Finally, and as always, government investments in infrastructure, such as highways and air service, are essential to the long-term success of the province. Later this year, the Institute plans on providing a detailed look at what type of infrastructure is best for enhancing productivity.

This Working Paper will be useful to business, policy makers, and politicians alike as they wrestle with how best to create a province that becomes a magnet for high-paying, long-lasting, resilient, and relevant jobs. Ontario can and should be a place that the world’s corporate leaders look to and consider when they are thinking of expanding. As a province, Ontario needs to make sure it is thoughtful and intentional in where it spends its money, and time, in building a place that becomes home to the economy of tomorrow.

The Institute for Competitiveness & Prosperity is grateful for the funding support from the Ministry of Economic Development, Employment and Infrastructure. We look forward to sharing and discussing our work and findings with all Ontarians. We welcome your comments and suggestions.

Jamison Steeve, Executive Director
Institute for Competitiveness & Prosperity
Over the past several decades, it has become common for jurisdictions across North America to offer monetary incentives in order to entice new and expanding businesses to locate in their regions. These incentives can range in size from modest to immense.
IN A BUSINESS CLIMATE where governments are competing to attract firms hoping they will bring new jobs, expanded R&D capacity, innovation, and economic growth, the current situation has evolved into governments resorting to “bidding-for-business.” Because these incentives are non-trivial, the Institute has investigated how Ontario can best position itself to attract new businesses, while guaranteeing the best return for the $2.5 billion Jobs and Prosperity Fund.

In the current economic climate, firms have become increasingly mobile and have the luxury to set up production in jurisdictions that have the policies that are best suited to their economic activities. Because many jurisdictions within a specific geographic region may appear similar on the surface, governments feel the need to offer business incentives to gain an edge on their competition. There are situations in which subsidies have shown to be successful at attracting new investment. But at what cost, and is there a better way that these funds could be used to attract new business investment?

The current situation could be described as a race-to-the-bottom, an environment where firms that already have plans for expansion are able to negotiate with multiple jurisdictions to find the best deal. Jurisdictions need to be careful. There have been cases where firms have been offered large incentives, when they were planning on locating in the particular jurisdiction even in the absence of such a deal. For example, Nevada has recently signed a deal with Tesla Motors amounting to $1.25 billion in incentives to entice them to establish a new plant in the state.¹

The challenge becomes how to use the Fund most effectively by targeting firms that would not have located in the absence of such incentives, thus attracting truly incremental investment into the province.

Ontario faces the challenge of using the Jobs and Prosperity Fund strategically to attract new businesses, but also to create a business friendly climate so that firms will choose to stay in Ontario, even after the incentives have dried up. The Institute has identified opportunities for improvement in Ontario’s corporate taxation structure, critical investments that need to be made in transportation infrastructure, as well as other strategies, which will

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all work to make Ontario a more attractive place for businesses to locate. Also, the Institute has some recommendations on how to implement the Jobs and Prosperity Fund for it to be most effective.

One caveat is in order: any bundle of business incentives will not make up for severe locational disadvantages. What this means is that, if Ontario does not lay a strong foundation for businesses, the Jobs and Prosperity Fund will be fiscally irresponsible and ultimately ineffective at attracting new companies. By creating the right policies and investing in the critical areas where the province needs the most improvement, Ontario will be in a better position to use the Jobs and Prosperity Fund effectively.

The province faces a few innate challenges. In relation to the group of selected peers, Ontario’s income is low, and the province is not well positioned geographically to access more and larger markets. Ontario also fares very poorly in highway infrastructure – measured either by kilometres per capita or density. Both these factors contribute to Ontario being more “economically isolated” relative to the selected peers. Ontario’s current corporate tax structure, as well as the lower government spending-to-revenue ratio, also present challenges for firms seeking new locations to expand their operations.

Governments also face the challenge of garnering popularity for their business incentive programs. Such subsidies can be argued to be a regressive form of taxation, essentially transferring resources from taxpayers to multi-billion dollar, often foreign-owned, companies. Governments are faced with justifying their spending, being transparent without violating firms’ confidential information, and ensuring that citizens view the Jobs and Prosperity Fund as part of an overall growth strategy that expands opportunities for the province.

Ontario needs to correct the underlying factors that shape its business environment, because modest subsidies will not be able to make up for such locational disadvantages. This will enable the Jobs and Prosperity Fund to be most effective at achieving its ultimate goal – attracting incremental business investment into the province.

**ONTARIO SUBSIDIES**

Recent Government Fundings (US dollars)

- **$263 Million**
  - Partnership with Ubisoft expected to leverage a $543-million investment and create a total of 800 jobs by 2020

- **$190 Million**
  - Cisco System to invest up to $4 billion and to create up to 1,700 new jobs in the next 6 years

- **$3.6 Million**
  - Glaxo Smith Klein to expand its manufacturing facility, create 70 new jobs, and protect 300 existing ones

**ONTARIO JOBS AND PROSPERITY FUND**

The **$2.5 billion Jobs & Prosperity Fund** is divided into three streams:

- **The New Economy Stream**
- **The Strategic Partnerships Stream**
- **The Food and Beverage Growth Fund**
## THE US SUBSIDY LANDSCAPE

Sample of High Value Subsidies, 2014 (US dollars)

<table>
<thead>
<tr>
<th>State</th>
<th>Amount</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>California</td>
<td>$420 Million</td>
<td>Lockheed Martin for Military Aviation</td>
</tr>
<tr>
<td>California</td>
<td>$420 Million</td>
<td>Northrop Grumman for Stealth Bomber production</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$400 Million</td>
<td>United Technologies facilities upgrade and expansion</td>
</tr>
<tr>
<td>Missouri</td>
<td>$229 Million</td>
<td>Boeing for company retention</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$224.8 Million</td>
<td>JP Morgan Chase Bank for the retention and expansion of the bank’s operations hub</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$223.3 Million</td>
<td>Sayreville Seaport Associates LP (majority-owned by Prudential) for retail and residential development</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$260 Million</td>
<td>Holtec International for a small nuclear reactors manufacturing facility</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$117.8 Million</td>
<td>Subaru of America for headquarters retention and relocation</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$107 Million</td>
<td>Lockheed Martin for the relocation of laboratory facilities from another location in New Jersey</td>
</tr>
<tr>
<td>New York</td>
<td>$750 Million</td>
<td>Solarcity for a manufacturing facility for solar panels</td>
</tr>
<tr>
<td>Nevada</td>
<td>$1.25 Billion</td>
<td>Tesla Motors to create a new manufacturing facility of electric vehicles</td>
</tr>
<tr>
<td>Oregon</td>
<td>$2 Billion</td>
<td>Intel for a semiconductor manufacturing facility</td>
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</tbody>
</table>
In Ontario’s April 2014 Budget, the province announced plans for a ten-year Jobs and Prosperity Fund (the Fund hereafter), committing $2.5 billion to help with job and investment growth in the economy.

WHERE DOES ONTARIO STAND IN THE COMPETITION TO ATTRACT BUSINESSES?

THE FUND IS DIVIDED INTO THREE STREAMS: The New Economy Stream, The Strategic Partnerships Stream, and The Food and Beverage Growth Fund. While the first two streams focus on improving R&D capacity, productivity, and entrepreneurial activity in general, the third stream is targeted to manufacturing projects in the food, beverage, and bio product sectors. In essence, however, the Fund is a long-term commitment to provide business incentives, or subsidies, with the intent of securing job growth and investment. The provincial government hopes that financial incentives will tip the scale in favour of Ontario – relative to similar jurisdictions – in the competition for new plants or business establishments.

Measures to boost Ontario’s global competitiveness and business attractiveness are always welcomed. But the province needs to assess which strategies are the most effective. Generally, business subsidy programs are difficult to evaluate from a cost-benefit standpoint. Although governments are able to attract new businesses and influence their decisions regarding plant and establishment location, the costs of these efforts in most cases are higher than the benefits. Policymakers are often blinded by the number of jobs that are created and ignore the extra costs generated, who gets the new jobs, and the overall welfare impact of the endeavour. Moreover, policymakers tend to assume that positive spillovers will necessarily be created when new firms are attracted to a region.

The Institute for Competitiveness & Prosperity reviewed many studies on the determinants of business location and the effectiveness of incentive programs in order to support the provincial government’s efforts to make the best use of the Fund. Our research shows that a number of factors contribute to a company’s location decision. Most of these factors have more long-lasting effects on the probability of attracting businesses, jobs, and investment than financial incentives or subsidies. With companies being increasingly mobile, Ontario needs to address the fundamental reasons that companies settle in a region for the long term, rather than trying to gain advantages in short-term “subsidy wars.”

Among the determinants of business location, the balance between taxes and public expenditure, unit labour cost, and industry agglomeration are crucial to the business attractiveness of a region. The effect of these factors varies with industry, firm size and style (e.g., small and medium enterprises, and innovation-driven enterprises), and level of analysis (state or provincial level versus metropolitan area level).³

To make useful recommendations, the Institute compared Ontario to regional competitors to assess the areas where the government should act first in order to get the better returns from the Fund. Because of the process that firms use for site selection – first, broad regions, and then states or provinces within the selected area – it makes sense to limit the comparisons to geographically close competitors. These regions comprise a subset of the Institute’s North American peers, with the addition of a few fringe states of the United States that show similar industrial composition and GDP per capita to those of Ontario.

For decades, jurisdictions across North America, including Ontario, have given out monetary incentives and grants to lure businesses to their regions. A wave of programs occurred in the 1980s and 1990s in the United States, with many jurisdictions offering financial incentives.
OPEN FOR BUSINESS: STRATEGIES FOR IMPROVING ONTARIO’S BUSINESS ATTRACTIVENESS

subsidies is controversial since, despite the many failures, some jurisdictions seem to achieve success. The problem is defining success. Economic development subsidies can certainly work, in the sense that a company can be enticed to locate in one region as opposed to another. Yet the relevant question is: At what cost? A successful subsidies program is one where the benefits outweigh the costs, not one that simply accomplishes its apparently primordial task: in this context, convincing a company to locate in Ontario.

Eight elemental issues surround business subsidy policies

A noted economist, Timothy J. Bartik, put forward eight elemental issues with incentive policies: the problem of benefits versus costs of the incentives; the decision to target companies; the choice of rules or discretion methods; the timing of the incentives; the advantages of incentives versus small business assistance; the zero-sum game argument; the federal government’s role; and equality issues.

FROM 1990 TO 2000, the automotive industry in the United States saw a series of incentive deals with large multinational automobile corporations, such as BMW, Toyota, Honda, and General Motors. These incentives on average amounted to roughly $139,000 per job, created over 14,000 jobs, and generated a total of $5.8 billion dollars of investment. This also happened in other countries on a smaller scale.

This business subsidy activity continues to this day, which to some degree forces Ontario to participate in this “bidding-for-business” process. But these incentive packages are not confined to the automotive industry. More recently, in Ontario, the province settled an agreement with Cisco Systems, a company in the Networking & Communication Devices industry, that could generate $4 billion worth of investments and create up to 1,700 new jobs over the next ten years. This deal would come at a price tag of $111,000 per job.

Despite the large sums of money, and apparently important increases in investment and jobs, these incentive policies might not be a good deal for the long-term economic development of regions. Research on the topic generally converges to the notion that these forms of incentives are not necessarily good public policy. But the topic of business subsidies is controversial since, despite the many failures, some jurisdictions seem to achieve success. The problem is defining success. Economic development subsidies can certainly work, in the sense that a company can be enticed to locate in one region as opposed to another. Yet the relevant question is: At what cost? A successful subsidies program is one where the benefits outweigh the costs, not one that simply accomplishes its apparently primordial task: in this context, convincing a company to locate in Ontario.

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5 http://www.cbc.ca/news/business/cisco-ontario-deal-may-create-up-to-1-700-jobs-1.2462749
When evaluating projects, governments will often underestimate costs while overestimating benefits. Policymakers tend to look only at job growth to justify the incentives offered – there is an assumption that all growth is good. This rationale overlooks that not all jobs will be filled by local residents and the unemployed, and that there are considerable increases to public expenditures. Moreover, it is common for policymakers to assume that spillover effects will occur, which represent added benefits of the program. But these spillovers are not guaranteed, and are mostly unmeasurable. Although there is a statistically significant effect of taxation on business location decisions, many of them do not depend on taxation levels. If financial incentives, or subsidies, are interpreted as the reverse of a tax, the likely effect of these incentives can be very small.

One solution to increase the net benefit of these incentive programs is to target companies that can provide higher social benefits, either through higher wages or the possibility of hiring more local residents. However, measuring the potential for higher social benefits before offering incentive packages is complex and heavily dependent on assumptions. Moreover, it is not uncommon to have political pressure cloud the targeting decisions, given that some of the agreements between government and multinational corporations can attract a lot of media attention.

This leads to the third issue with incentive policies: discretion versus rule. Most incentive programs follow discretion rather than rules for fund allocation. From an efficiency perspective, distributing subsidies to all firms that provide similar social benefits per dollar of incentive is ideal. Although the optimal scenario dictates a cost-benefit analysis on a case-by-case basis, the impracticality of that, coupled with uncertainty in the measurements, suggests that subsidy allocation rules could provide better outcomes. The Fund will, according to the province, use a scorecard for evaluating projects, but the parameters of this scorecard are not clear, which constitutes another issue of business incentive policies: lack of transparency. One of the solutions proposed is to make financial incentives part of the regular tax code, with credits being given to firms that increase new employment and show wage rate increases for the new jobs.

The rule-based incentive programs can also be more efficient if the subsidies are paid up front with adequate “clawback” provisions attached to them. This is thought to be more effective, because company executives tend to discount future cash flows heavily, so monetary amounts to be received ten years from now have little impact on current location decisions. Following this strategy, however, can be detrimental for long-term economic growth. As companies become increasingly mobile, the upfront incentive program increases the risk of companies taking advantage of short-term incentive packages but leaving the region as soon as the milestones of the program are reached. This builds little commitment to the local communities and the long-term economic development of regions. To mitigate this, subsidy programs would have to set long-term goals that would most likely reduce the attractiveness of the upfront incentives, limiting the impact of the program on location choices.

Starting at the beginning of the 1990s, a new wave of incentive programs appeared, offering customized services to help businesses instead of financial subsidies. Although this type of program could be more effective, it also assumes that there are market inefficiencies or failures that the government needs to correct by offering the services. Moreover, this type of program can become costly and difficult to evaluate, given its mostly indirect approach.

Another crucial issue of business subsidy policies is the zero-sum game aspect, when evaluated from a nationwide point of view. In a zero-sum game, for one player to benefit another player, or group of players, must be incurring an equalization cost. As Ontario provides business incentives, some part of the economic activity destined to other provinces will be diverted to this province – another cost that is often overlooked in cost-benefit analyses. This could trigger an incentive war among provincial governments that would mostly benefit multinational corporations. From the federal government’s standpoint, this scenario is not desirable, which could lead to costly intervention, such as revisions of the equalization rules.

In addition, the competition through incentive programs raises the issue of inequality, since richer regions of a country have more resources at their disposal to attract businesses, leaving the poorer regions in even worse conditions. With redistribution commonly seen as a federal issue and with companies becoming more mobile, concerns about the cost of job relocation and wealth distribution become more pressing. No matter the solution to these issues, the likely scenario is costly interventions from the federal and provincial governments that could be avoided by addressing the more fundamental reasons for new businesses attractiveness.

Analysts have identified several situations that improve the odds of incentive policies being cost-effective. First, areas with high local unemployment should be targeted by incentive programs, so that new jobs go to the residents who need them the most. If the new businesses locate in an area of low unemployment, the new jobs will most likely be filled by shifts of those who are already employed. These individuals have normally high reservation wages, or opportunity costs, making the per job cost of the incentive higher relative to the benefit.\(^8\) Second, the jobs should be high paying. As is often the case, policymakers will compare their per job financial disbursement against the expected wages the new jobs will provide; however, that calculation overlooks workers’ opportunity costs, which include the value they place on leisure, and tends to overestimate the benefit of the new jobs. If the incentives help to attract jobs that pay higher-than-average wages, the possibility of the incentive program improving overall welfare increases. Lastly, to maximize the benefits of the program, the majority of the new jobs should go to local residents. Empirical research shows that the long-term effects of local employment growth are less prominent when the job growth is allocated to more “transient populations.”

Together with the notion that firms are increasingly “footloose,” targeted incentive programs that aim at increasing local employment in high unemployment areas have certainly a greater chance of being successful. But once again the definition of success is problematic since, even with these conditions, the cost-benefit evaluations of the programs are not easily done, and most likely do not take into account hidden costs. In addition, the high mobility of firms can work in both directions: incentives can easily lure new companies, but a change in conditions may also take them away.

### Business subsidies have little effect on location decisions

Some studies take a more quantitative approach and try to evaluate the direct impact of subsidies on business location decisions. This approach requires detailed data from regions that implemented specific subsidy programs. Although there are only rare occasions for such types of study, valuable insights can be gained from the ones that directly evaluate the impact of these incentives.

In a study performed in the United Kingdom, the results show that “discretionary government grants” have a small effect on the plant location decisions of both domestic and foreign multinational corporations.\(^9\) For a region increasing business grants by £100,000, the expected increase in the probability of attracting businesses is around 1 percent (i.e., an increase from 1.0 to 1.01 percent). More importantly, the effect of grants is heavily dependent on previous economic activity. That is, incentives offered for areas that concentrate existing plants in the same industry as the new firm have greater effects on the plant location decision. The average effect of the grant increases threefold once the interplay between grants and existing plants is accounted for. The authors argued that subsidy policies are less effective once the influence of co-location is taken into account, which suggests that agglomeration is much more important to firms than the short-term benefits of the grants. If subsidies are more likely to have net benefits in high unemployment areas, but companies do not value incentives for those areas, the incentive policies can be hugely ineffective and inefficient from a cost-benefit perspective.

Even when the subsidies are applied directly to taxable income, through “tax holidays,” their effects on location decisions do not seem to be statistically significant. In a study about industrial location in Puerto Rico, the authors found no statistically significant effects on location decisions for zones of the country that had incentive policies. Even the zone that offered over fifteen years of tax holidays and state assistance did not show statistically significant results. Yet, manufacturing agglomeration, measured by the number of manufacturing establishments, showed a positive and large effect on the location choices. This shows that the effect of incentive programs pales in light of the effects of other measures, specially existing economic activity.

Financial incentives are not as effective as fundamental changes to the economic environment. With the results of incentive programs clouded with uncertainty, the Ontario provincial government should not rely on those as strategies to attract businesses. Evaluating these programs is not only difficult, but can also increase administrative costs for the government. In addition, the contradictory effects - incentives are more cost-effective for high unemployment regions, but firms are unlikely to co-locate there despite the subsidies – make this type of policy harder to justify. To make a better use of the Fund, the government of Ontario needs to understand how businesses make their location decisions, and what factors affect those decisions.

\(^8\) In economics, the reservation wage refers to the lowest wage that a worker would be willing to accept for a certain job.

Research on modelling business location decisions is extensive. The vast majority of the studies we reviewed involve identifying state or municipality characteristics that influence the location decision of firms, and evaluating their marginal effects.

Perhaps one of the major insights of the studies is that modelling the probability of locating in a certain region, rather than relying on indirect aspects of the decision, such as employment or investment growth, is more effective. This direct modelling approach can lead to more precise recommendations for public policy design.

Many of the studies only consider the location decision of foreign multinational corporations, but this is useful because what guides the decision of a company to locate in a foreign country could be very different from what guides a domestic (or already established) firm’s decision to

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10 Many studies on business location decision compare countries to determine global distribution of business, but this is not the focus of our report. In addition, the majority of the research on the topic, including the papers we reviewed, focuses on the US economy.
expand its operations in a region. Given the objectives of the Fund, understanding the principles behind firms' decisions, particularly in the case of foreign multinationals, can be crucial for better policy design.

After reviewing over seventy articles on business location decisions, the Institute has identified several characteristics that consistently affect a company’s decision. Out of our broad literature review, we identified twenty studies that followed similar methodology, and had comparable results. These articles included in their models similar regional characteristics, and their results were generally consistent. Nonetheless, a few of the variables tested by them showed mixed or inconclusive results.

**Business location decisions involve a three-step process**

In deciding to expand operations, businesses take an intuitive three-step process. *The first step consists of the decision either to grow operations through investment in a new facility or to expand the capacity of current production facilities.* Although this part of the process is not directly related to the location decision, it can affect the final outcome, since this initial decision depends on the reasons for expansion. For example, a company might contemplate increasing its production capacity because of higher growth in its local markets, or because it is trying to access foreign markets. In each case, considerations of export barriers and transportation costs might affect the overall decision.

*The second step, once a company has decided that a new facility is needed, is to choose a broad region to locate in.* This means that company officials tend to look first at larger geographical areas, rather than specific ones. For example, in this second step, firms might compare North America’s Northeast and Southeast regions as suitable, broad location options. As it is true for the first step of the process, this step is also guided by reasons for expanding capacity: local demand or access to new markets.

Regardless of the reasons for the expansion, within the broad geographical options, most firms consider regions in their home country. Nevertheless, experts in this process point out that companies, as well as their production processes, are becoming increasingly *footloose* – it is becoming increasingly easy for firms to relocate their operations to take advantage of cost saving opportunities.

This conclusion is particularly important for public policy design. Companies can easily take advantage of
short-term incentives, like subsidies provided by the Fund, but not build long-term commitments to the regions in which they chose to locate. By supplying more of these subsidies, a region can certainly attract more businesses and improve employment numbers and investment in the short-term. But those benefits can be quickly eroded as other regions offer similar incentives and firms can easily relocate, which creates uncertainty and labour market volatility. A smarter strategy perhaps would be to focus on creating favourable business conditions that hold in the long-term and offer continued cost-saving opportunities. Following this strategy, a region would most likely lose some of the short-term investments and jobs, as some companies would favour the short-term incentives. But the long-term benefits could vastly outweigh the short-term costs.

The third step of the location decision process consists of the firm’s decision about where to locate within the broad geographical region, and this step is precisely the focus of our study. Some of the existing research is at the state level, while some studies are on a municipal level. Studies at these two aggregation levels, however, show that similar characteristics affect the selection process, with the importance of each aspect being the true differential. For example, property taxes seem to affect business decisions much more at the municipal level than at the state level. This is expected because two municipalities within the same state share more similarities than two states do, which means any difference in taxation would affect the firm’s decision more heavily.

Many factors contribute to a firm’s location decision

When considering where to locate a new plant or facility – step three of the decision process – firms take many different state or provincial characteristics into account. The majority of these characteristics are fairly intuitive and could have been predicted even before complex modelling is attempted. But more important than the overall effect of these characteristics are their effects relative to each other and the interplays between them.

We have identified four groups of variables: market and demand; input costs; taxes and public services; and agglomeration (Exhibit 1). Within each of these major groups, different metrics have been used consistently in the modelling of business location decisions. In total, the Institute found

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11. The list of variables was compiled from the twenty most relevant papers from our literature review. The metrics are either the measurements used in the estimations conducted by the authors, or slight modifications of those when the original metric was unattainable because of lack of data. For example, corporate tax rates are calculated in many different ways, such as percentage of GDP, effective tax rates, and statutory rates. Here, we compared both taxes as percentages of GDP and statutory rates.
fifteen variables that consistently influence business location decisions. Most of the variables have the expected effect on business location decisions. Some of these variables show more consistent results than the others when it comes to direction of impact and statistical significance, but these fifteen variables were the most prevalent in the studies of the location decision problem. Certainly, other variables affect the decision process, but the results of those are far less consistent and more dependent on specific research topics (e.g., impact of environmental regulations on business location decision).

Apart from identifying the major determinants of the location decisions, the Institute also narrowed down the list of competing regions. The most relevant states and provinces in the comparison with Ontario are the regions in the Northeast area of North America. Within this broad region, we identified two groups of states and provinces to use for the comparisons: major and fringe regions (Exhibit 2). The major regions are the ones with industry compositions, population levels, and GDP per capita that are close to those of Ontario. This group also contains Ontario’s traditional peer states – as defined in our Annual Reports – that are part of the Northeast region. The fringe regions had similar industry composition and GDP per capita, but were fairly different in population levels.

It is important for policymakers to understand the process firms follow to decide where to locate their businesses. Without that knowledge, development policies become ineffective, and subsidizing a firm that was coming to Ontario regardless of any monetary incentive becomes more likely. If the fundamental pieces of business location decisions are in place, the return on subsidy programs, and their net benefit, tends to increase.

Exhibit 2  Ontario has 9 major and 7 fringe competitor regions

After comparing Ontario against this select group of states and provinces in each of the variable groups, the Institute found that Ontario has some advantages, but needs to work to improve some crucial areas.
ON THE ONE HAND, Ontario currently has advantages in input costs and in agglomeration for some industries. On the other hand, despite having an overall low tax burden, Ontario should improve its fiscal environment, particular physical infrastructure spending and the corporate tax structure. Part of the Fund could be diverted to these activities for the province to achieve long-lasting increases in business attractiveness.

Market and demand conditions are not as favourable in Ontario as in close regions

Attracting new businesses and guaranteeing the expansion of already established companies in a region depend heavily on current economic conditions. The presence and growth of competitors and suppliers are crucial for the location decision of a firm. Research shows that existing activity, measured by the number of establishments, can account for a large part of the decision process. In the manufacturing sector, there is a one-to-one correlation between the number of existing plants and the probability of a new firm locating in a region: a one-percent increase in the number of existing plants increases the probability of a firm locating in a region by roughly one percent relative to an average region.¹³ Ontario has a clear advantage when it comes to establishment count numbers, at least in relative terms. The growth of the number of establishments in the province is higher than that in most competitor regions, ranking only behind Illinois (Exhibit 3). Although the average growth between 2000 and 2013 masks great declines in the mid-2000s, the overall finding of higher growth in the number of establishments is positive for Ontario. All regions in the comparison suffered sharp declines through the mid-2000s, but Ontario experienced one of the fastest recoveries.

By contrast, Ontario has a much lower population density and income per capita than the other regions, which are two measures commonly used to estimate market size and economic activity. Population density is expected to be lower in Ontario than in the other regions, except for Québec, because of its overall land area and scarcely inhabited Northern regions. After adjusting the population density to exclude the less populated Northern areas of

Ontario, the province shows higher density than most fringe states, but still much lower density than most major states (Exhibit 4).

Nevertheless, population density is not a particularly conclusive indicator of market access. While some studies show positive effects of population density, other studies show no statistically significant effects. Inconclusive results might be a result of population density having positive effects until a certain point, but then becoming detrimental to economic activity after that. One study suggests the optimal point of population density depends on the type of manufacturing.14 Using the results from this study and based solely on population density, Ontario would be more likely to attract low technology manufacturing.14

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manufacturing, and perhaps some high-technology manufacturing. But companies in top-technology manufacturing and high-technology services would most likely not choose Ontario from a population density perspective.\textsuperscript{15}

More concerning than low population density is the comparison of state or province income, which we estimated using GDP per capita.\textsuperscript{16} Studies show that regional GDP is a good measure of local market size and access. Firms will be more likely to locate in regions that have higher local income, since they can more readily take advantage of local markets to increase sales and growth in the first years of operation. Out of the seventeen regions in this analysis, Ontario ranks fifteenth in GDP per capita (Exhibit 5). Despite its high growth in the number of establishments, the province does not generate as much output in dollar value as other competing regions. With a total GDP per capita of $47,400, Ontario is roughly $11,000 below the average GDP per capita for the regions in the analysis. In addition, the manufacturing sector in Ontario contributes to approximately 15 percent of the output, while the average for the competing regions is around 19 percent.

The effect of regional GDP, or income, is similar to the effect of existing economic activity, measured by establishment count. A one-percent increase in regional GDP leads to an increase in the probability of a firm locating in certain region by approximately one percent.\textsuperscript{17} Yet, this result depends on two other important measures: adjacent regions’ income and agglomeration.

With increasing ease of intraregional and international trade, the income level of neighbouring regions becomes an important aspect of business location decisions. A relatively small region, whether in terms of population or income, can achieve higher levels of economic activity and business attractiveness by simply being closer to larger markets. Despite

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\textbf{Region} & \textbf{Ontario} & \textbf{Québec} & \textbf{Wisconsin} & \textbf{Pennsylvania} & \textbf{Minnesota} & \textbf{Ohio} \\
\hline
\hline
\textbf{GDP per capita (PPP adjusted)} & \$47,400 & \$46,600 & \$47,500 & \$47,000 & \$48,000 & \$48,500 \\
\hline
\textbf{Manufacturing} & 15% & 16% & 14% & 13% & 15% & 14% \\
\hline
\textbf{Non-manufacturing} & 85% & 84% & 86% & 87% & 85% & 86% \\
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\end{tabular}
\caption{Ontario has the third lowest GDP per capita among peers}
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\textsuperscript{15} The industry classifications used by the study are based on levels of R&D.

\textsuperscript{16} Because measures of personal income cannot be fully reconciled when comparing Canadian provinces and US states, the Institute opted to use GDP per capita as the closest approximation to income.

its geographical location, Ontario ranks lowest in adjacent region GDP per capita (Exhibit 6). All the other regions of the Northeast region of North America are better located to serve more and larger markets. For example, regardless of its size, Connecticut is geographically close to important economic centres, such as New York, Pennsylvania, and Massachusetts. This means that a firm can locate in Connecticut and still have fairly easy access to larger markets. As the following sections will show, public infrastructure spending in Ontario is generally lower than in the competitor regions, and yet it could be the solution for improving Ontario’s access to larger markets.

Although aspects such as population density and geography cannot be changed, or at least not in the short term, there might be strategies that Ontario can adopt to improve market and demand access. Growth in the number of establishments has been very positive in the province, but the output generated by them is not on par with the amounts generated in other regions. The problem of lower productivity in Ontario is long-standing, and the Institute has shown how it can greatly influence economic growth and living standard improvements. To address irreversible aspects of the problem, for example geographical location, the Ontario government needs to think creatively and use the tools at their disposal to attract new business to the province. As we will show, better public infrastructure for market access can be one of the solutions.

**Some input costs in Ontario are advantageous**

The cost of inputs is an important determinant of a company’s profitability and competitiveness, especially in manufacturing industries. Despite the clear connection between cost and profitability, as inputs can be more easily shifted across regions and processes can be outsourced, the impact of input costs on location decisions is reduced. Studies show that for the most part, input costs have mixed effects on firms’ location decisions, depending on what other effects they control for. Because most of the literature on location decisions focuses on the manufacturing sector, wages represent an important determinant in the choice of facility site. But further research shows that the relationship between wages and productivity is far more important than the isolated effects of either one. Companies are willing to accept higher wages as long as average productivity is also higher.

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18 The adjacent region GDP per capita for a certain region is calculated as the sum of the GDP per capita of each state and province in the continuous North American continent divided by the distance between the reference state’s major city and the major cities of each of the other states or provinces. For example, the adjacent GDP per capita for Ontario relative to New York is the GDP of the state of New York divided by the distance (in kilometres) between Toronto and New York City. This procedure is repeated for each state relative to Ontario to arrive at Ontario’s overall adjacent region GDP per capita. Similar steps were followed for each of the states in the analysis, and because our focus was on the relative differences we used Ontario’s number as the base to construct the indexes. The distances between cities were gathered using The Google Distance Matrix API, and represent the shortest distance between two major cities by road.

Looking at wages alone, Ontario shows a large advantage (Exhibit 7). Given that higher wages generally affect the location decision negatively, the lower the average wages, the higher the attractiveness of a region. In both the manufacturing and non-manufacturing sectors, Ontario has a wage advantage. The average manufacturing wage in Ontario is 32 percent lower than the average of the competitor regions. In the case of non-manufacturing, the average wage in Ontario is 26 percent lower than the average for the competitor regions. As the latest Task Force Annual Report shows, a large part of the manufacturing wage difference comes from large differences in wages between Ontario and its US peers for advanced manufacturing. Moreover, differences in industry composition can also affect the overall average wage, since the numbers reported here are for largely aggregated sectors of the economy.

Wages alone cannot tell the full story behind labour input costs. When skilled and unskilled labour wages (based on education levels) are used, the former show positive effects, while the latter show negative effects on location decisions. By controlling for skill level, analysts are in fact attempting to measure how perceived productivity affects the location decision of companies. One superior strategy to splitting wages between skilled and unskilled wages is to control directly for GDP per worker, using unit labour cost as the variable. Unit labour cost measures the cost of labour per unit of output produced. The higher the unit labour cost, the higher a company has to pay to its workers per unit of output produced. Studies using this variable find negative, statistically significant effects of it on the probability of a business locating in a certain region.

The Institute has shown many times that productivity levels in Ontario are generally lower than those in its North American peer states. More importantly, productivity growth in Ontario has been particularly poor in the last two decades. From a unit labour cost perspective, Ontario is not as

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<th>Exhibit 7 Lower wages in Ontario are an advantage to business attractiveness</th>
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| **Ontario, Québec, and selected peers, 2013**
| **Manufacturing and non-manufacturing average annual wages (C$, PPP)** |
| Connecticut | $78,500 | $104,600 |
| Massachusetts | $77,600 | $102,800 |
| New Jersey | $74,700 | $99,900 |
| New Hampshire | $61,100 | $84,100 |
| Illinois | $65,700 | $82,300 |
| Michigan | $56,400 | $82,300 |
| New York | $79,300 | $82,000 |
| Minnesota | $77,300 | $77,300 |
| Pennsylvania | $63,100 | $73,300 |
| Indiana | $61,900 | $73,100 |
| Ohio | $54,500 | $72,000 |
| Vermont | $51,100 | $71,500 |
| Maine | $48,400 | $68,900 |
| Wisconsin | $52,000 | $68,500 |
| Iowa | $49,800 | $66,100 |
| Ontario | $43,800 | $47,500 |
| Québec | $39,700 | $47,500 |

Note: The numbers for the US states were adjusted to Canadian dollars using OECD’s purchasing power parity (PPP) for private consumption. Annual wages were rounded to the nearest hundred. Source: Institute for Competitiveness & Prosperity analysis based on data from the Statistics Canada, Survey of Employment, Payroll and Hours (SEPH), and the US Census Bureau, Quarterly Census of Employment and Wages (QCEW).
well-positioned as other competitor regions (Exhibit 8). In manufacturing, Ontario is above the average for the competitor regions. For every dollar of real manufacturing output, on average, the labour cost amounts to 67 cents in Ontario, while the average for the analyzed regions is 59 cents.\footnote{This analysis uses 2012 as the reference year because this is the latest year when available US data can be adjusted to be fully comparable to Canadian data.}

In non-manufacturing, Ontario has the highest unit labour cost of all regions in this analysis – a labour cost of 83 cents per dollar of real non-manufacturing output produced, while the average is 55 cents. Apart from the finance, information, and mining sectors, Ontario is consistently worse than the other regions, except for Québec. This means that, from the perspective of output-to-labour input cost, Ontario is not a desirable region for businesses to locate, particularly for non-manufacturing.

Unit labour cost, however, can be very responsive to exchange rates. For example, as the Canadian dollar depreciates, a foreign company could relocate to Ontario to produce goods and services to be sold in US dollars, while paying labour in a cheaper currency. Back in 2012, the US and Canadian dollars were roughly on par. By March 2015, the average exchange rate was 1.26 Canadian dollars per US dollar. If the unit labour cost ratio remained roughly constant, this depreciation of the Canadian dollar makes Ontario much more attractive. Converting the numbers using recent exchange rates shows that the average manufacturing unit labour cost for the US regions would increase from 59 to 74 cents, while Ontario’s remains at 67 cents. In the non-manufacturing sector, Ontario would still have a much higher unit labour cost at 83 cents, while the average for US regions would increase from 52 to 65 cents.

It is difficult to determine whether this currency condition will continue for an extended period of time. Nevertheless, with an exchange rate above or at 1.14 Canadian dollars per US dollar, Ontario’s unit labour cost in manufacturing would be at or below the average for the competitor regions. In the case of non-manufacturing, the exchange rate would have to be 1.60 to bring Ontario to the average unit labour cost. Whereas the first scenario is plausible, an exchange

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**Exhibit 8** Labour cost is higher in Ontario than in most competitor regions

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Note: Unit labour cost is calculated by dividing total compensation of employees by real GDP (chained 2007 dollars). US data was converted to Canadian dollars using an average for 2012 of the exchange rate between the US and the Canadian dollar.

rate of 1.60 Canadian dollars per US dollar does seem to be a reasonable expectation. To improve the non-manufacturing sector’s business attractiveness, fundamental changes to labour cost and productivity would have to happen.

The comparisons using unit labour cost and wages reveal another important difference between Ontario and its geographically close competitors. If we only use wages in the calculation of unit labour cost, we find that Ontario would be on par with the average for manufacturing, and would be much lower in non-manufacturing. This means that supplements to wages and salaries, which include employers’ contributions to social security funds, are much higher in Ontario compared to other regions. These extra labour costs in the province could be considerably hurting its business attractiveness.

Other input cost measures that can potentially affect business location decisions are unemployment rates and unionization. Theoretically, higher unemployment rates, on the one hand, should have a positive effect on business location decisions by lowering reservation wages, or the wages that unemployed workers are willing to accept, through supply-side competition. Unionization rates, on the other hand, should present negative effects because more unionized workers would increase costs for business through added labour market frictions (e.g., possibility of stoppages and longer wage bargaining processes). Empirically, however, the results for both variables are mixed, and heavily dependent on the other control variables used in the studies.

Despite the lack of consensus, the Institute compared Ontario to the selected regions to evaluate any potential differences. First, the total unemployment rate in Ontario is higher than the average for the regions analyzed – roughly 7.6 percent in Ontario compared to an average of 6.4 percent. This higher rate is driven primarily by non-manufacturing unemployment in the province, which amounts to 8.2 percent; the unemployment rate in manufacturing is roughly 4.8 percent in Ontario. If the theoretical effect of unemployment holds, from a labour pool standpoint alone, Ontario is well-positioned to attract new businesses, or propel expansion plans of already established enterprises. Second, the unionization rate in Ontario is much higher than the average for the analyzed regions. Roughly 22 percent of Ontario’s manufacturing employees are unionized, with the average for the competitor regions being 14 percent. For the non-manufacturing sector, the unionization rate in Ontario is 13 percent, and the average for the regions analyzed is around 9 percent. This could be a deterrent for businesses to locate in Ontario when compared to geographically close regions, if the theoretical predictions are true in reality.

One input constantly brought up as a potential business deterrent is electricity prices. Opposition to clean energy initiatives often claims that higher electricity prices that these technologies impose will slow down economic activity and attract fewer businesses or foreign direct investment. But our research shows that the effect of energy prices on the probability of location is mixed, and most often statistically insignificant. Some studies do, however, show negative effects of higher electricity prices. Interestingly, older studies tend to show larger negative effects of electricity prices, with results being more often statistically significant. Perhaps this was the case because older technologies were less energy efficient and represented a larger cost in the overall manufacturing process. Regardless of the empirical findings, the Institute compared the electricity prices in Ontario against the ones for the competitor regions, and found that the province sits close to the average for electricity costs. But because of challenges in adjusting the numbers for electricity prices among regions, these results need to be interpreted with caution.

The price per kWh in Ontario is around 12.7 cents and the average for the analyzed regions is around 12 cents. There is a large variation, however, in electricity prices. Some of Ontario’s closest competitors, such as Illinois, Indiana, and Ohio, have much lower averages at 8.2, 8.9, and 9.3 cents per kWh. While Ontario and Illinois rely on nuclear energy, Indiana and Ohio have coal as their primary energy source. If these numbers are good approximations of average prices faced by businesses, Ontario is generally not disadvantaged. The only caveat is that closer regions and with very similar industry composition – namely Illinois, Indiana, and Ohio – have an average lower electricity costs.

23 Québec has the highest unionization rate of all the regions analyzed at 34 percent.
24 Public sector is not included in the unionization statistics.
25 Instead of relying on reported average data for the regions, the Institute calculated the average cost per kWh by dividing the total revenue from electricity distribution by the total billed kWh. Although still an imperfect measurement, this procedure guarantees that no hidden charges are left out and that differences in fee structures are not affecting the average costs. Nevertheless, the numbers for Québec are not completely comparable to the rest because a detailed breakdown of revenues was not available.
Fiscal policy is an area with potential for improvement in Ontario

The effect of taxes on the location decision of firms is a branch of research on its own. Many studies focus primarily on determining the final effect of taxation on the probability of attracting new businesses, either foreign multinational corporations or expansions of already established businesses. One of the major challenges of uncovering the tax effects on business location is the fact that the expenditure side of the problem needs to be considered simultaneously. Governments charge taxes to finance necessary public services. Although companies try to minimize the amount of taxes paid, they also need and value the public services provided by government agencies. This interplay between taxes and expenditures means that companies value jurisdictions that offer the greatest service value per dollar of taxation, rather than simply the lowest tax region.

Total taxes negatively affect the probability of a business locating in a certain region, but this effect is small if government expenditures are not controlled for. The effect of taxes becomes larger if spending in public services are included in the models. This means businesses are willing to face higher taxes as long as the services provided by the local government justify the higher tax rates. In some cases, the positive effects of spending, excluding welfare expenditures, are larger than the negative effects of corporate taxation.26 This means businesses are willing to finance higher levels of public spending – excluding welfare – through higher taxes. In most studies, either physical infrastructure spending (such as kilometres of highways and number of airports), or expenditures on police and fire protection, were used as metrics for public spending. Once these types of public spending are controlled for, most measures of taxation show their expected negative effect on the location decision.

As a proportion of GDP, total taxes in Ontario are the fourth lowest at 26.4 percent, whereas the average for the competitor regions is around 29 percent – approximately 9 percent lower in Ontario relative to the average (Exhibit 9).27 According to one of the studies, increasing total taxes as a percentage of GDP in a certain region by 10 percent would decrease the number of new foreign-owned manufacturing plants locating...

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27 The tax revenue includes both local and provincial government in order to capture the entire amounts of taxes levied on businesses and residents, particularly for the property tax component. The average taxation as a proportion of GDP reported in the text is a simple average of the states and provinces in the analysis – we compared the results to revenue-weighted and GDP-weighted averages, and they are very similar (within less than a full percentage point).
in that region by between 2.1 and 2.4 percent.\textsuperscript{28} Although this finding is important and encouraging for Ontario, studies show it is necessary to breakdown taxes into components, such as individual and corporate income tax, to fully understand their effects.

Noteworthy for policy makers, some studies explore the effects of both corporate and individual income tax rates. These studies find that both individual and corporate income tax rates have significant negative effects in attracting businesses to a region. Analysts conjecture that ultimately the location decision is made by company officials who take into account their personal finances when deciding where to establish a new facility. Even if they will not be working in the new location themselves, officials might believe that attracting qualified individuals to high-tax regions can be challenging, and therefore select a region with lower individual income tax rates. This can be especially true for managerial positions that will most likely face the highest marginal income tax rates.

In the case of corporate income taxes, the results are very sensitive to whether or not spending on public services are being controlled for. When expenditure variables are controlled for, the effect of corporate tax becomes unambiguously negative and statistically significant. This again alludes to the point that companies will compare the level of taxation to the level of public spending when deciding where to locate. This might be less of an issue from the individual perspective, particularly for highly ranked company officials who are less likely to take full advantage of government services while paying high taxes.

While having the lowest individual income tax, Ontario has the third highest corporate income tax as a percentage of GDP. The average individual and corporate income taxes as percentages of GDP for the regions analyzed are 18.3 and 2.6 percent, respectively. For Ontario, these numbers are 12.9 and 3.5 percent. From the individual income tax perspective, Ontario is competitive, but from the corporate perspective, it is not.

Some studies discuss the concept of tax exportation, which refers to the mismatch between tax burden for residents and businesses of a certain area. More commonly related to property taxes, tax exportation occurs mainly for political reasons, when municipalities often lower property tax rates rate for residents and export the tax burden to non-residents. This results in local governments shifting a disproportionate amount of the local property taxes to commercial and industrial property owners.\textsuperscript{29} One study showed a statistically significant, negative effect of this tax shifting on the number of private establishments in Massachusetts.\textsuperscript{30} Although this concept is more directly applicable to property tax, the idea of disproportionate tax burden can be applied to individual and corporate income tax. Higher ratios of corporate-to-individual income tax revenues might signal to corporations a less business-friendly environment and unfair mismatches between public service use and charges. The ratio of corporate-to-individual income tax is higher in Ontario than in any other region. In Ontario, there are 27 cents of corporate income tax revenue for every dollar of individual income tax revenue, while the average for the analyzed regions is 14 cents.

\textsuperscript{29} The shift factor can be calculated by dividing the tax burden of commercial and industrial by the total tax burden of the region, and in turn dividing that by the ratio of commercial and industrial property value to total property value in a region.
Another point of concern for Ontario is the corporate tax structure. Comparing the corporate income tax rates also showed important differences between Ontario and the other regions (Exhibit 10). Eleven out of fifteen US states in this analysis have flat corporate income tax rates, and the others at least offer progressive systems that increase the rate more gradually than in Ontario. In addition, despite the fact that some states do have small business tax relief programs, their taxable income cut-off point is much lower than that of Ontario. For example, in New Jersey, businesses with net income of less than $100,000 and less than $50,000 pay 7.5 and 6.5 percent of that income in taxes, respectively, instead of the 9.0 percent flat rate. According to one study, the larger the tax break given to small businesses, the lower the probability of attracting new small business, holding everything else constant. One of the reasons for this might be that start-ups with high-growth potential avoid regions that facilitate competition for companies that would otherwise fail. The small business tax relief would create an unfair competitive advantage to firms that in fact do not have superior products or services. Meanwhile, the truly competitive firms would face increasingly higher tax rates and be disadvantaged. Although this result is not completely comparable with the problem of the location choice, it helps elucidate the unintuitive effects of taxation on business decisions.

The other components of tax revenue in Ontario do not show great differences when compared to the other regions, except for the sales tax. Ontario and Québec have higher sales tax revenues as proportions of GDP than the average for the other states. However, most studies do not use sales tax as a factor in the location decision of companies. Those that do control for sales taxes are mostly concerned with their effect on small business activity, and they do not find statistically significant effects on location decisions. For property taxes, state level studies show small or statistically insignificant effects of that type of tax on the decision process. When analyzed at a municipal level, sales tax can be a significant factor in the location decisions of companies. For example, Ontario and Québec have higher sales tax revenues as proportions of GDP than the average for the other states. However, most studies do not use sales tax as a factor in the location decision of companies. Those that do control for sales taxes are mostly concerned with their effect on small business activity, and they do not find statistically significant effects on location decisions. For property taxes, state level studies show small or statistically insignificant effects of that type of tax on the decision process. When analyzed at a municipal level, sales tax can be a significant factor in the location decisions of companies.

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The other components of tax revenue in Ontario do not show great differences when compared to the other regions, except for the sales tax. Ontario and Québec have higher sales tax revenues as proportions of GDP than the average for the other states. However, most studies do not use sales tax as a factor in the location decision of companies. Those that do control for sales taxes are mostly concerned with their effect on small business activity, and they do not find statistically significant effects on location decisions. For property taxes, state level studies show small or statistically insignificant effects of that type of tax on the decision process. When analyzed at a municipal level, sales tax can be a significant factor in the location decisions of companies.

### Exhibit 10 Ontario’s corporate tax structure is not in line with that of competitor regions

**Ontario, Québec, and selected peers, 2015**

**State corporate income tax structure (as of January, 2015)**

<table>
<thead>
<tr>
<th>State / province</th>
<th>Tax rate % (lowest-highest)</th>
<th>Tax structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>7.50</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Illinois</td>
<td>7.75</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Indiana</td>
<td>7.00</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Iowa</td>
<td>6.0 – 12.0</td>
<td>Progressive tax rates for income from $25,000-250,001, with 4 tax brackets</td>
</tr>
<tr>
<td>Maine</td>
<td>3.5 – 8.93</td>
<td>Progressive tax rates for income from $25,000-250,000, with 4 tax brackets</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>8.00</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Michigan</td>
<td>6.00</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Minnesota</td>
<td>9.80</td>
<td>Flat rate</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>8.50</td>
<td>Flat rate</td>
</tr>
<tr>
<td>New Jersey</td>
<td>9.00</td>
<td>Flat rate</td>
</tr>
<tr>
<td>New York</td>
<td>7.10</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Ohio</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>9.99</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Vermont</td>
<td>6.0 – 8.5</td>
<td>Progressive tax rates for income from $10,000-25,000 with 3 tax brackets</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>7.90</td>
<td>Flat rate</td>
</tr>
<tr>
<td>Ontario</td>
<td>4.5 – 11.5</td>
<td>Lower rate for first $500,000 of taxable income if taxable capital below or equal to $1.0 million</td>
</tr>
<tr>
<td>Québec</td>
<td>8.0 – 11.9</td>
<td>Lower rate for first $500,000 of taxable income if taxable capital below or equal to $1.0 million</td>
</tr>
</tbody>
</table>

Note: To qualify for the lower rate in Ontario and Québec, firms also need to be classified as Canadian controlled private corporations (CCPC); Ohio has a different tax system that imposes a Commercial Activity Tax (CAT); Indiana’s tax rate is scheduled to decrease to 6.5 percent on July 1, 2015.


31 More details regarding the tax schedule of the US states used in this analysis can be found at http://www.taxadmin.org/fta/rate.
level, however, property tax rates consistently and significantly affect the location decision. This result is expected given that property tax rates are commonly the major difference between two municipalities in the same state or province. That is, because there are other more prominent differences between states or provinces, the effect of property taxes gets diluted. But once these other differences are fixed (i.e., two municipalities in the same state), the effect of property tax rates becomes significant.

Public infrastructure is crucial for improving Ontario’s business attractiveness

Closer comparisons of Ontario and its regional competitors show that the province has room for improvement regarding its fiscal policy. Despite the overall lower taxes, when considering only state and local governments, the expenses-to-tax revenue ratio in Ontario is the lowest of all regions analyzed at 1.2 dollars of spending in public services per dollar of tax revenue. The average ratio for the competitor regions is 2.0, or 2 dollars spent on public services per dollar of tax revenue. From a fiscal responsibility standpoint, this might be beneficial for the province, but from the business attractiveness perspective it can hurt Ontario’s competitiveness against geographically close regions. This finding gets exacerbated when the same ratio is calculated using corporate income tax revenue only. There are roughly 11 dollars of public spending per dollar of corporate income tax in Ontario, while the average for the regions in the analysis is roughly 67 dollars.

If firms are attracted to regions that offer the highest value per tax dollar, not necessarily the lowest tax region, Ontario is fiscally disadvantaged relative to the competitor regions. One might argue that this ratio simply measures the amount of spending covered by tax revenue, and that Ontario can still have high spending financed through other sources of revenue. Unfortunately, this is not the case. Of all the regions analyzed, Ontario has the lowest overall public spending per capita at roughly $9,300, while the average for the regions in the analysis is approximately $12,900. Moreover, looking at the ratio of expenses-to-total revenues, the results are similar, and Ontario continues to be a less competitive region.

The expenses-to-tax revenue ratio becomes important in the context of lagging transportation infrastructure in Ontario relative to the competitor regions. For example, using the metric that most studies consider, highway density, it is clear that Ontario is very far behind its close US competitors (Exhibit 11). Even after adjusting the province’s land area by excluding scarcely populated areas (without excluding the kilometres of highways associated with them), Ontario still shows a dismayingly low highway density when compared to competitor regions. Dividing the kilometres of highway per person, which gives an approximation of congestion, does not improve Ontario’s situation. There are roughly five kilometres of highway per person in Ontario, while the average for the other regions is around thirty kilometres per 10,000

### Exhibit 11  Ontario needs more investment in highway infrastructure

![Graph showing highway density comparison between Ontario, Quebec, and selected peers, 2012.](image)

Note: The adjusted measures for Ontario and Quebec exclude land areas of the two provinces that are scarcely populated. For Ontario, we excluded the Census Divisions of Rainy River (50), Kenora (60), Thunder Bay (58), and Cochrane (56). For Quebec, we excluded Sept-Rivières–Caniapiscau (97), Minganie–Le Golfe-du-Saint-Laurent (98), and Nord-du-Québec (99).

Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada and the US Census Bureau.
inhabitants. This can mean slower and costlier transport of goods and services, and large productivity losses for the province.

Low levels of transportation infrastructure are a direct result of low public spending in transportation in Ontario. For over twenty-five years, Ontario has lagged other Canadian provinces in physical infrastructure spending per capita. In 2009 (latest year of data available), public expenditure per capita on transportation in Ontario amounted to roughly $270, while the average for the competitor regions was around $395, making the province the third lowest out of the seventeen regions analyzed. Québec, which in most metrics ranks behind Ontario, spent $590 per capita in transportation.

Accessibility or proximity to major airports is another important factor influencing business location decisions. Similar to the effect of highways and other physical infrastructure, proximity to a major airport has a positive effect on location decisions. The advantage for a business being close to a hub airport is that it gives employees, executives, and clients the most direct access to other cities through the hub-spoke networks. In a survey of executives and high level management personnel, proximity to major US airports ranked as the most important location factor. The importance of proximity to major airports differs across industries, being ranked most highly by consultants, followed by executives in banking, manufacturing, insurance, and as having no importance for retail businesses. One study found that a shift in US direct defence spending to procurement contracting, led to a high concentration of high-tech contractors establishing themselves close to a major airport (Dulles International Airport, used as a hub by United Airlines). Also, Mississauga is home to over sixty Fortune 500 Canadian head offices, mainly located either adjacent to Pearson, or in close proximity along a 400-series highway with easy access. In addition to the time savings of business travel, proximity to major airports can positively contribute to business investment, because it can improve the lifestyle and desire of owners or executives to live in the area.

Exhibit 12  Ontario cities benefit from proximity to Pearson International Airport

<table>
<thead>
<tr>
<th>Province</th>
<th>Average distance to hub airport (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>50</td>
</tr>
<tr>
<td>Minnesota</td>
<td>100</td>
</tr>
<tr>
<td>New York</td>
<td>150</td>
</tr>
<tr>
<td>Ontario (all 24)</td>
<td>200</td>
</tr>
<tr>
<td>Ontario (4)</td>
<td>250</td>
</tr>
<tr>
<td>Illinois</td>
<td>300</td>
</tr>
<tr>
<td>Michigan</td>
<td>350</td>
</tr>
<tr>
<td>Quebec</td>
<td>400</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>450</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>500</td>
</tr>
<tr>
<td>Vermont</td>
<td>550</td>
</tr>
<tr>
<td>Michigan</td>
<td>600</td>
</tr>
<tr>
<td>Ohio</td>
<td>650</td>
</tr>
<tr>
<td>Maine</td>
<td>700</td>
</tr>
<tr>
<td>Indiana</td>
<td>750</td>
</tr>
<tr>
<td>Iowa</td>
<td>800</td>
</tr>
</tbody>
</table>

Note: Distances between cities and airports were calculated using Google maps. Hubs as defined by each airline’s website. The hubs used were Cincinnati/Northern Kentucky, Detroit, Atlanta, JFK NYC, LaGuardia NYC, Boston, LAX, Minneapolis-Saint Paul, Salt Lake City, Seattle-Tacoma, Dallas/Fort Worth, Miami, Chicago, Charlotte, Philadelphia, Phoenix, Washington Dulles, Denver, Houston, Newark, San Francisco, Calgary, Montreal, Toronto Pearson, Vancouver, and Ottawa (an Air Canada Focus City).

Source: Institute for Competitiveness & Prosperity analysis based on data from Google and Airline companies’ websites.
Using a population-weighted average distance to airport calculation, Ontario fares quite well (Exhibit 12). To calculate this average distance, we used the cities with populations of over 100,000 residents in each state or province, as these locations are the most likely candidates for new business investment. We focused on major airports that serve as a hub for at least one legacy airline. The average distance to a hub airport for Ontarians living in these selected cities is 59 kilometres. Although most cities with populations over 100,000 residents are likely to have an airport, travel times may be longer because passengers are more likely to be offered less frequent service, indirect or connecting flights; also, those who choose to fly out of a hub airport will supplement their travel with more ground transportation.

Although many of Ontario’s cities are located within close proximity to Pearson International Airport, commute times to the airport can be quite lengthy. Congestion can increase driving times, and there is a lack of convenient public transit options. Infrequent services and lengthy travel times faced by surrounding municipalities may reduce the viability for businesses to operate in these areas. The Ontario government is confronting these issues by building the Union Pearson Express, as well as proposing the high-speed rail from Toronto to Windsor, through London and Kitchener-Waterloo. The Institute supports these strategic initiatives as they will improve the region’s accessibility and attractiveness. In addition to improving ground transportation that connects cities to airports, the Ontario government should investigate ways of improving air transportation out of already established airports in Ontario’s secondary cities such as Kingston, Kitchener-Waterloo, London, and Sudbury.

Aircraft restrictions prohibit US airlines from operating between two points within Canada, and vice versa. Reciprocally relaxing the restrictions would increase competition and lead to improved air service for Ontario (and Canada), making air travel to, from, and within Ontario more efficient and timely. Alternatively, there may be some room in the Fund to entice airlines to expand and intensify operations in underserved markets.

To attract businesses, the dollar value of public services needs to be as high as possible. Companies value public services and are willing to pay higher taxes for them. The current situation in Ontario represents a mismatch between tax revenue and desirable public spending. Corporations are taxed disproportionately higher than residents in Ontario compared to the other regions. Yet the services they value, such as highway infrastructure, are not supplied in Ontario at the same levels as they are in competing regions. To improve market accessibility and attractiveness, while decreasing costs, Ontario needs to invest heavily in physical infrastructure. Moreover, changes to the taxation structure and marginal rates can also help make Ontario a more business-friendly region. With simpler or more progressive systems, the competitor regions might be gaining an advantage over Ontario by maintaining more intuitive structures, regardless of the overall higher tax levels.

**Agglomeration is one of the most important factors in business location decisions**

Another important factor that attracts businesses to a region is industry agglomeration, which in turn involves the mechanisms that drive employees and firms to co-locate geographically. Agglomeration has a statistically significant, positive effect on attracting new businesses. Firms are less responsive to government subsidies in areas where there are fewer existing plants in their industry. Foreign-owned multinationals also favour locations with higher numbers of existing foreign-owned plants in their industry. For example, in addition to the positive effect of same-industry establishments, Japanese investors appear to be attracted to US states with other Japanese plants in the same industry.

Despite the strong effects of agglomeration, policymakers concerned with regional economic development still do not fully understand what the sources of the agglomeration economies are; which industries have been agglomerating in each region; and how governments can further assist with this process. These are complex issues with no one-size-fits-all solution. Nevertheless, some general

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40. The majority of Ontario’s large cities are located in close proximity to Pearson International Airport.
41. For Ontario we consider the 10 largest cities, as well as all 24 cities with populations over 100,000. Maine and Vermont have no cities with populations over 100,000, so we used the largest city in each state. Population statistics are from the 2011 Canadian Census and 2010 US Census.
42. Legacy carriers with hubs in the jurisdictions include American Airlines Group (American Airlines and US Airways), Delta Airlines, United Airlines, and Air Canada. For Air Canada, we also considered “focus cities” in addition to hubs.
44. Ibid.
principles emerge from extensive research on the topic.

Agglomeration economies have several sources. Knowledge spillovers, labour market pooling, and vertical linkages were identified as the main sources of the agglomeration economies in research that dates back to the 1920s. Firms using similar technologies, inputs, and types of workers might have incentives to co-locate. Studies have found that labour market pooling has the most robust effect, positively influencing agglomeration at all levels of geography. By contrast, knowledge spillovers positively affect agglomeration only at the postal code level. Reliance on manufactured inputs, natural resources, and product shipping costs positively affect agglomeration at the state level, but has little effect on agglomeration at lower levels of geography. This explains why manufacturing-based industries usually agglomerate in a large area, while industries that benefit significantly from knowledge spillovers, such as the financial investment industry, co-locate mainly on one street and its surroundings, such as Wall Street in New York City and Bay Street in Toronto. This might also be true for other knowledge-intensive industries, such as biotechnology and computer systems design.

There are also many other causes of agglomeration, such as home market effects, urban consumption opportunities, and natural advantages. For some industries, regional development could be explained by market access. For instance, a substantial shift in the economic geography of manufacturing occurred in Mexico after NAFTA came into effect in 1994. A new concentration near the border with the United States arose while traditional concentration around Mexico City declined. Urban consumption in large cities is also regarded as a source of agglomeration. Larger markets allow for goods and services to be tailored to individual tastes. For example, a study of radio listening patterns showed that the average portion of the population listening to radio will increase by 2 percent as a city’s population increase by one million. Lastly, roughly 20 percent of the geographic concentration can be explained by a small set of natural cost advantages.

It is now clear that agglomeration may take place anywhere for various reasons: natural cost advantages (oil industry in Alberta); home market effects (manufacturing concentration in Southern Ontario); and urban consumption reinforcement (large cities as magnets for diverse industries). In addition, there remains a variety of causes for agglomeration not identified in this paper. Even though we are not sure how and when the agglomeration of industry would occur in a region, it is clear that it will not happen only because of government incentives.

Vital industries have been agglomerating in the region. Many experts have tried to find a standardized metric for agglomeration – examples are industry clusters, creative class theories, and broadly used standard classifications of industries. These attempts are valid but debatable, since they all use political and geographical areas as reference. However, the shape of the agglomeration and the space it takes up vary and sometimes may cross borders. Hence, the Institute uses a broad area that consists of 15 US peer states and two Canadian provinces as reference region.

As each sector has its own agglomeration pattern and geographical coverage limitation, the Institute examined three sectors that are most likely to export goods and services: manufacturing; information; and professional, scientific, and technical services.

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47 Ibid.
Motor vehicle parts manufacturing remains one of the most promising opportunities for Ontario’s economy. Among the eighty-three industries in the manufacturing sector, motor vehicle parts had the most employment in the selected broad reference region in 2013, suggesting that this region has a big agglomeration in this industry. Moreover, Ontario is a major part of this agglomeration, indicated by its high location quotient. This means that Ontario has a higher proportion of both employment and establishments in this industry than the average level in the broad reference region (Exhibit 13).

The global shift in manufacturing and the rise of Mexico as a new regional competitor, however, have changed the dynamics of the motor vehicle parts industry in North America. This is illustrated by the large decline in the industry’s share of exports and loss of employment. Still, Ontario has accumulated a large pool of skilled labour in motor vehicle parts and its related industries. The province has also established successful supporting training programs in the area and enjoyed the agglomeration benefits of existing leading foreign-owned automotive companies.

Given the benefits of agglomeration, Ontario should seek new forward-looking opportunities that would leverage its strong advantages in motor vehicle parts manufacturing and related industries. Possible opportunities could be making Ontario a more electric-car friendly province and becoming one of the first-movers in electric car manufacturing or facilitating driverless automotive production with companies like Google or Uber.

Ontario’s knowledge-intensive industries agglomerate in urbanized regions and usually close to universities. Knowledge spillovers have positive effects on agglomeration only at lower levels of geography, such as postal code level. This pattern also holds true for knowledge-intensive industries in Ontario. The Institute selected two industries to examine the pattern and identify the location of their agglomerations. One is software publishers, the most agglomerated industry in Ontario’s information sector. The other is computer systems design and related services, the largest industry by employment in the reference region’s selected three sectors combined.

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Exhibit 13  Ontario is part of the motor vehicle parts manufacturing agglomeration

<table>
<thead>
<tr>
<th>State/province</th>
<th>LQ of establishment</th>
<th>LQ of employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Indiana</td>
<td>2.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Ohio</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Ontario</td>
<td><strong>1.4</strong></td>
<td><strong>1.7</strong></td>
</tr>
<tr>
<td>Iowa</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Illinois</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Connecticut</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>New York</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Québec</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>Minnesota</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Maine</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>New Jersey</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Vermont</td>
<td>0.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: Location Quotient (LQ) is a way of quantifying how concentrated a particular industry is in a region as compared to the selected broad region. LQ greater than 1 means the region has a higher concentration in industry than the reference region overall. Source: Institute for Competitiveness & Prosperity analysis based on data from Statistic Canada and US Bureau of Labor Statistics.
The Institute found that these industries are highly concentrated in the Greater Toronto and Hamilton Area (GTHA) and Ottawa, which are the two leading areas in Ontario. Small agglomerations are also found in the Kitchener-Waterloo, London, and Windsor areas. Large establishments that employ more than 500 people mainly locate in Toronto and Ottawa. The effect of agglomeration could be raised with proper facilitation, such as professional association services, productivity-enhancing infrastructure, and training services. The Institute recommends that the province develop facilitating services and infrastructures in the identified areas to enhance agglomeration and productivity.

**Ontario should offer incentives to enhance Ontario’s agglomeration of innovative industries**

Globalization and the rise of new information and communication technologies have drastically reduced the transaction costs of information transfers across geographic space. Paradoxically, the agglomeration of skilled labour and innovation activity has not slowed down. One reason is that the creation of new technology and knowledge involves some degree of ambiguity, including “non-codified” or “non-standard” languages or symbols that are harder to transfer through virtual means than through face-to-face interactions. In addition, trust plays a vital role in cooperation and is generally easier to build offline than online. For instance, e-businesses that require less physical space and could easily hire remote employees are still agglomerated. Top e-business professional services are following agglomerations of economic activity and not necessarily geographic market opportunity. They are mostly locating in highly urbanized metropolitan areas, with San Francisco and New York having a disproportionately larger number of those companies than other regions.

These dynamics should be considered in policy making. The increased importance of the innovation-based economy has led many regional policy makers to shift from big-firm-hunters to regional cluster or agglomeration builders. To facilitate this shift in Ontario, the Institute recommends five approaches based on the study of 356 cluster organizations in over 50 countries world-wide. They are:

- Ontario should focus on leveraging existing strong clusters rather than creating them.
- Ontario’s cluster initiatives should hire leaders or managers with longer work experience in the industry/cluster, which is proven to be strongly correlated with the cluster initiative’s performance.
- Ontario’s cluster leaders need to contact different types of actors, especially with firms, other clusters, and global markets.
- Ontario needs to inform companies where their competitors or supporting industries are located to stimulate or grow agglomerations. For knowledge-intensive industries, industrial parks and innovation districts will contribute to increasing productivity within the industry.
- Ontario’s industry-led cluster initiatives play vital roles in growing clusters in the region. Governments from all levels should facilitate them to create a robust management cadre that has deep knowledge of other clusters, firms, financial institutions, and global markets.

**Geographically close regions can be fundamentally different, despite their proximity. These differences can lower the probability of success for subsidy programs. In the case of Ontario, there are fundamental disadvantages when compared to geographically close competitors. The province is not particularly competitive in labour costs, public service spending, corporate tax structure, and market access. These need to be addressed by the provincial government if Ontario is to achieve higher business attractiveness, and get the highest return for the Fund’s resources. In addition, in some industries, such as motor vehicle parts, computer systems design, and software publishing, Ontario has agglomeration advantages that should be leveraged by the provincial government.**

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ONTARIO HAS OPTIONS TO ATTRACT MORE BUSINESSES

The Institute offers recommendations to enhance the operation and strategy of the Jobs and Prosperity Fund and to strengthen Ontario’s fundamental characteristics to attract businesses.

IN SOME FACTORS, Ontario fares quite well relative to the peer average, making Ontario an attractive location for new and expanding firms. However, several factors are holding Ontario back, and there is room to make improvements.

The Jobs and Prosperity Fund is designed to attract new business activity to the province, with the intention of improving R&D capacity, entrepreneurial activity, employment, and productivity in Ontario. The Institute has identified many factors that, in addition to subsidies, contribute to firm location decisions. In this Working Paper, the Institute took a close look at them and evaluated how Ontario stacks up against peers in the Northeastern...
regions such as Ontario would be able to tip the scale in their favour in attracting businesses. Our research suggests, however, that there are important differences in fundamental characteristics, which prevent subsidy programs from being effective. For Ontario to become more attractive to businesses, the provincial government needs to focus on changing these fundamental characteristics. This will not only make financial subsidies less necessary, but also in the situations where they can be useful, their effect will be amplified.

To aid the provincial government, the Institute offers ten policy options to improve Ontario’s ability to attract businesses to the province. While some of the recommendations are directly related to the design and implementation of the $2.5 billion Fund, others are designed to improve Ontario’s fundamental economic characteristics.

region of North America. These peers include some of the Institute’s traditional peers, as well as “fringe” states in the Northeast. Ontario is most likely competing against regions in this broad area in the final location choice. This is when different characteristics of each state or province, as well as the Fund, affect the firms’ decisions.

There is active competition between jurisdictions, and between cities within a jurisdiction, to attract new and expanding businesses. Rather than participating in a race-to-the-bottom, where each jurisdiction offers more and more attractive tax breaks and subsidies, resulting in increased fiscal pressures on the government, the Institute recommends that Ontario works to improve the long-term attractiveness of the region, creating lasting conditions that are conducive to business investment, rather than simply relying on business incentives or subsidies. Also, by improving the overall attractiveness of the region, firms will be more responsive to subsidies, and their effects will be stronger.

There is a misguided belief that the jurisdictions within a certain broad geographic region converge to similar fundamental economic characteristics. If this were true, the effect of business subsidies would be enhanced, and
Make operation and evaluation of the Fund public knowledge

One of the major challenges with subsidy programs is their lack of transparency. Despite the fact that governments claim to have solid evaluation and operation frameworks, details about those are seldom shared with the public and consultants. Making the Fund operations and evaluation open to public scrutiny has two major benefits: constructive feedback and accountability.

Better reports and studies can be conducted if the details of the Fund are open to analysts outside of the public administration. This means the government can have access to expert suggestions and proposed modifications, without incurring lengthy and costly consultation processes. This approach can reduce implementation time, as well as reduce cost of fine-tuning advanced stages of program implementation. In addition, greater transparency can help small and medium enterprises assess whether they are eligible for funding, without incurring high costs from consulting efforts. Lastly, opening the details to the public also helps program administrators to be more accountable for subsidy choices, and prevents political pressure from distorting the Fund’s objectives.

Prioritize productivity enhancements on the Jobs and Prosperity Fund scorecard

The Fund should be used in a way that attracts businesses that can provide technological spillovers and productivity enhancements for other sectors of the economy, thus giving the province the best “bang for the buck.” The proposed scorecard should include a metric for improvements in total factor productivity (TFP). Firms do their best to set optimal capital-labour ratios. Scoring performance and doling out subsidies based on increases in employment or increases in investment in machinery and equipment may lead to inefficient distortions, thus reducing TFP, something Ontario drastically needs to improve.

If the scorecard evaluates recipient firms on “new jobs” created, there is no telling whether these jobs were filled by previously unemployed workers, or if the employees were transferred from other firms, or other branches of the same firm. Also, the scorecard should not evaluate performance based simply on increased revenues, because any firm that receives a subsidy should be able to purchase more factors of production, naturally leading to higher sales even in the absence of productivity enhancements. Tying subsidies to TFP improvements, evaluated through performance audits, will aid the province in picking “winners” and identifying “losers,” leading to a more sustainable Fund that is more effective at achieving Ontario’s goals.
Open the Fund to all sizes of companies

Existing economic activity and agglomeration are important aspects of business attractiveness. Apart from the focus on total factor productivity, the Fund should not necessarily target just large firms. Employment and investment increases can be achieved by attracting one large firm, or several small- and medium-sized enterprises. Depending on the Fund stream, there are different eligibility criteria; however, to be eligible to receive money from the Fund, a company’s project cost must be at least $5 million for the Food and Beverage Growth Fund, and at least $10 million for the other two streams. By imposing this minimum cost, the Fund will not be helping in the creation of a pool of firms from which competition champions and innovation can emerge.

A large firm can be more productive from day one, and the establishment of several large firms might facilitate the appearance of spillover effects and agglomeration. But it could be more beneficial to attract several companies that collectively improve existing activity and agglomeration than to attract one large firm and hope for others to follow. Moreover, increasing the overall number of firms can make enticing larger firms to come to Ontario easier.

Use the Jobs and Prosperity Fund to co-finance employee training

The Fund should play a role in subsidizing investment in employee training. By encouraging recipient firms to educate and train the local population, the firm is more likely to commit to a lasting relationship with Ontario, because the innovative firm will have created a sufficient supply of adequately trained personnel, and a higher proportion of the desirable high-wage jobs will be available for local Ontario residents. This will aid in creating technical knowledge and building human capital, as well as expanding Ontario’s range of capabilities. Also, the presence of highly skilled labour may attract similar, competitor firms, potentially leading to a high value-added industry cluster. For example, Ontario ranks second in North America (after California) in the information and communications technology sector for number of businesses. Cisco, which recently struck a deal with the Ontario government and will receive up to $190 million of the Fund, cited the availability of “uniquely qualified” workers as one of the reasons that Canada is a great place to invest.
Modify the small business deduction tax structure

When compared to competitor regions, except for Québec, Ontario has a corporate income tax structure that reduces its business attractiveness. Most geographically close competitors either have flat tax rates or a progressive system for taxing corporate income. Although all of them have provisions for small businesses, Ontario shows the largest tax rate differential between small and large firms of all the regions analyzed. The Institute proposes two alternatives for changing the tax structure in Ontario.

The first option is to adopt a flat rate equal to the average of the Northeast region of North America, which would be 8.42 percent. This new rate would be applied to all corporations across the province, and the new system could have a provision for minimum tax amounts.

The second option would be to create more brackets to increase the income tax rate of corporations progressively. The Institute has suggested in the past a linear phase-out of the small business deduction. An alternative to that would be to create more brackets to achieve the same overall smoothing effect. The rates should increase progressively until the highest marginal rate of 8.4 percent (see table).

The small business deduction also takes into account “taxable capital” to determine whether the small business rate can be applied. With the flat rate alternative, the capital requirement would not be necessary, but it could continue to exist with the progressive system. For example, only corporations with taxable capital below $10 million would be eligible to the progressive tax rates.

In implementing a new corporate tax structure, the government should pay close attention to the ratios of individual-to-corporate income taxes and expenses-to-tax revenue. Our research shows that these ratios can be important determinants of business attractiveness, and Ontario does not show favourable numbers relative to geographically close competitors.

<table>
<thead>
<tr>
<th>Earnings before income tax (EBIT)</th>
<th>Tax rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT ≤ $100,000</td>
<td>4.4%</td>
</tr>
<tr>
<td>$100,000 &lt; EBIT ≤ $200,000</td>
<td>5.2%</td>
</tr>
<tr>
<td>$200,000 &lt; EBIT ≤ $300,000</td>
<td>6.0%</td>
</tr>
<tr>
<td>$300,000 &lt; EBIT ≤ $400,000</td>
<td>6.8%</td>
</tr>
<tr>
<td>$400,000 &lt; EBIT ≤ $500,000</td>
<td>7.6%</td>
</tr>
<tr>
<td>EBIT &gt; $500,000</td>
<td>8.4%</td>
</tr>
</tbody>
</table>

58 The Institute calculated the average rate using the flat rates of each state, and the highest tax bracket for those states that do not have flat rate systems. In addition, the calculation excludes Québec and Ontario.

Allow foreign companies to be eligible for the small business deduction

Currently, to qualify for Ontario’s small business deduction, a business must be a “Canadian-controlled private corporation (CCPC) throughout the tax year.” If the government of Ontario decides to continue with the Small Business Deduction – preferably using the progressive system described in the previous recommendation – the Institute believes the CCPC rule should be changed to improve Ontario’s attractiveness to foreign individuals and corporations.

Foreign entrepreneurs and expanding foreign corporations might be discouraged from establishing in Ontario, since they would face unfair competition against Canadian-controlled corporations. These entrepreneurs and corporations, however, can contribute a lot to the economy, not only through employment and investment growth, but also through knowledge-exchange and innovation. The Institute proposes that the small business deduction should be available to Ontario-incorporated private enterprises (OIPE). This means companies that have been incorporated in Ontario, regardless of their owners and shareholders, would be eligible for the progressive rates. This definition could also be broadened to exclude subsidiaries of public companies, or to consider parent-subsidiary joint taxable capital for the purpose of the deduction.

Upgrade and expand highway infrastructure outside the province’s economic core

Lower physical infrastructure spending in Ontario, particularly in transportation, is hurting the province’s ability to attract new businesses. One of our findings is that Ontario is not well positioned geographically to reach larger markets. In addition, its local demand might not be large enough to entice businesses to settle in the province. Ontario is a large land area. Improving the highway system would reduce the time required to access remote areas and help spur economic activity.

The southern part of the province, which includes the Greater Toronto Area and some other core economic regions, might be well-served in terms of highway infrastructure. But analyzing the area’s highway grid shows that even the southern regions could become more attractive if they were more accessible. For example, towns north and west of Kitchener and south of Owen Sound have access to highway infrastructure, but transportation times could be reduced if these highways were upgraded to standards similar to the 400-series highways. With generally lower land costs, towns such as Stratford could develop and attract more businesses if they were more directly connected to high-speed highways.

The same is true for cities in other regions of Ontario. Peterborough, with a metro area population of over 100,000 people and only 136 kilometres away from Toronto, could be an option to businesses if accessibility were improved. The city is connected to a few highways, but not directly connected to a 400-series highway. Thunder Bay and Sudbury are also examples of cities that could benefit from nearby highways being upgraded to 400-series status and standards.
Allow US airlines to operate domestic flights in Ontario and Canada

To strengthen Ontario’s ability to attract incremental business investment, the province will benefit from being better connected to other North American cities through improved air travel services. Relaxing the current cabotage restrictions will allow Ontario to integrate further into North America, making it a more viable option for new business investments and helping companies to “feel closer” to the larger American market.

Many of Ontario’s (and Canada’s) cities are currently underserved in terms of air travel service. There are only a few notable airlines in the country (Air Canada, WestJet, and Porter Airlines), whereas there are numerous legacy, regional, commuter, and low-cost carriers based in the United States. Because of international cabotage restrictions, an American airline is unable to fly between two points within Canada, and conversely, no Canadian airline is able to offer service between two points within the United States. Other regions have relaxed such cabotage laws, such as the single aviation market for members within the European Union, the agreement between Australia and New Zealand, as well as a few others. Such an agreement between the United States and Canada would allow, for example, a US airline to travel from an American city to a Canadian city, with a connection in Toronto. Relaxation of the cabotage restrictions would allow airlines to identify profitable opportunities and improve service for underserved cities in Ontario (and Canada).

International Air Transport Association (IATA) studies on the EU single aviation market found that liberalisation increases competition, resulting in more routes offered as well as lower fares. These studies also found that the increases in air traffic (as a result of liberalisation) led to growth in employment and GDP. According to international trade theory, mutual trade liberalisation produces greater benefits for the smaller country, which in this case would be Canada. Connecting Canadian cities through improved air service would undoubtedly make Ontario’s cities a more attractive option for new businesses investment.

Improve air services for Ontario’s secondary cities

An additional improvement to air transportation services in Ontario would be to use the Fund to provide incentives for Canadian airlines to expand and intensify service for underserved markets. For example, the only commercial Canadian airline offering service out of the Waterloo Region airport is WestJet, with a mere six flights weekly to Calgary, Alberta. Strengthening air service out of areas like London, Kitchener-Waterloo, Kingston, Sudbury, and Thunder Bay will make these areas more attractive for new business investment. These smaller areas have very high location quotients of employment in education and knowledge creation (ranging from 1.54 to 4.49 when compared to the rest of Ontario), as they are home to numerous post-secondary and research institutions. Combined with lower property/land costs, these smaller cities could be strong candidates for new business investment.

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61 Ibid.
62 Ibid.
Become an early adopter of electric vehicles

Both the federal and Ontario governments have continuously invested in automotive innovation and fuel efficient cars since 2004. In 2004, the provincial government announced the Ontario Automotive Innovation Fund (AIF) to support large-scale capital investments within the industry. In the 2008 budget, the federal government earmarked $250 million for one to five years for the AIF. In January 2013, the Prime Minister renewed the AIF with an additional $250 million over the next five years. In February 2014, the federal government announced an additional $500 million over two years (2014-2016) to support significant new strategic research and development projects and long-term investments in the Canadian automotive sector. As the hub of the automotive sector in Canada, Ontario has a good opportunity to leverage these funds and become a world-class leading area in automotive manufacturing, especially in fuel efficient car innovation and production.

Despite the strength and opportunity Ontario possesses, there is still some room for improvement, specifically in facilitating the demand side of the automotive sector. For example, the easy access to electric vehicle (EV) charging stations is one of the main concerns for customers to switch from traditional cars to EVs. However, Ontario has a relatively low coverage compared to its peers in the number of EV charging stations per thousand square kilometres. Connecticut topped the list with 16.3 EV charging stations per thousand square kilometres, followed by California with 15.8. Ontario only has 2.5 EV charging stations per thousand square kilometres after land adjustment. Although in the most urbanized areas, EV charging stations are relatively concentrated and easily accessible in Ontario, it is still inconvenient for people to travel to far places without enough charging stations along highways and in small towns. Ontario has already started rebate programs for EV charging stations and purchasing an EV, giving rebates of $1,000 and $8,500 respectively. However, the result is far from satisfactory. Therefore, Ontario needs to make more efforts to respond to the needs of customers and become one of the most electric car friendly provinces, gaining the first-mover advantage of becoming the leading region in fuel efficient car production to spur the agglomeration effect.

65 The Institute uses adjusted land area for Ontario and Quebec. The adjusted measures for Ontario and Quebec exclude land areas of the two provinces that are scarcely populated. For Ontario, we excluded the census divisions of Rainy River (59), Kenora (60), Thunder Bay (58), and Cochrane (56). For Quebec, we excluded Sept-Riveres-Cantapiscau (97), Minganie-Le Golfe-du-Saint-Laurent (98), and Nord-du-Quebec(99).
Ontario faces great competition for attracting businesses. Its neighbouring jurisdictions are some of the richest and most developed regions of the North American continent. Whether attracted by agglomeration, existing economic activity, or available public services, companies locate in those regions because of their fundamental economic advantages. In some important aspects of firms’ location decisions, Ontario is far behind its competition.

Unit labour cost, transportation infrastructure, and corporate tax structure are three major areas that need improvement in the province. Without bringing these up to speed with other regions, programs such as the Jobs and Prosperity Fund will only grant the province short-term gains. To be successful, the Fund will need costly monitoring and evaluation, and even so, assessing its costs and benefits could be impractical. Yet, by addressing the fundamental aspects of business attractiveness, the province can improve the odds of the Fund being successful, while not having to depend on it in the first place to attract incremental business activity.
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The Institute for Competitiveness & Prosperity is an independent not-for-profit organization established in 2001 to serve as the research arm of Ontario’s Task Force on Competitiveness, Productivity and Economic Progress.

The mandate of the Task Force, announced in the April 2001 Speech from the Throne, is to measure and monitor Ontario’s competitiveness, productivity, and economic progress compared to other provinces and US states and to report to the public on a regular basis. In the 2004 Budget, the Government asked the Task Force to incorporate innovation and commercialization issues in its mandate.

Research by the Institute is intended to inform the work of the Task Force and to raise public awareness and stimulate debate on a range of issues related to competitiveness and prosperity. It is the aspiration of the Task Force and the Institute to have a significant influence in increasing Ontario’s and Canada’s competitiveness, productivity, and capacity for innovation. We believe this will help ensure continued success in creating good jobs, increasing prosperity, and building a higher quality of life. We seek breakthrough findings from our research and propose significant innovations in public policy to stimulate businesses, governments, and educational institutions to take action.

Comments on this report are welcome and should be directed to the Institute for Competitiveness & Prosperity. The Institute is funded by the Government of Ontario through the Minister of Economic Development, Employment and Infrastructure.

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