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# **INVESTING IN A RESILIENT CANADIAN ECONOMY**

ADVISORY COUNCIL ON ECONOMIC GROWTH  
December 1, 2017

## Executive summary

To thrive in a rapidly evolving world, Canadian businesses in nearly every industry must enter new markets and develop more innovative products and services. Policy makers must ensure businesses and workers can make the investments necessary to do so. Furthermore, the definition of investment needs to be broadened beyond the traditional categories of structures, machinery and equipment, and intellectual property. Investments in human capital, in data assets, and in the adoption of new technology are increasingly vital drivers of growth and competitiveness.

Supporting higher levels of business investment needs to become a government priority. Investment in Canada's economy has lagged that of the United States and other peer countries, and our productivity has slipped from 90 percent of US levels in 1985 to 78 percent in 2016.<sup>1</sup> Median real wages have grown at a slower pace here than in the United States as well.<sup>2</sup>

The Council recognizes that this is a complex issue. Many of our prior recommendations will generate higher levels of investment—notably, launching innovation initiatives, establishing an Invest in Canada Hub, creating an Infrastructure Bank, and promoting growth in key sectors through the Economic Strategy Tables. But in this report, we go a step further. Building on the substantial work that has been done on this topic by many leading institutions,\* we make three additional recommendations to boost investment and Canada's economic resilience:

**1. An agile regulatory system that acts as a catalyst for investment and innovation.** The regulatory approach of the Government of Canada (hereafter “the government”) needs to evolve to better fit an economy where innovation and change are the norm. Regulation has to be agile and adaptive enough to address the ways that innovative companies will continuously rewrite the rules of competition, ensuring sufficient oversight to protect the public interest without posing obstacles to innovation. Ideally, Canada's regulatory environment should act as a catalyst for new products and business models, especially in promising industries such as life sciences, financial technology (fintech), and agri-food. Regulation also must be predictable, efficient, and consistent, so it is not a barrier to business investment, innovation, and ultimately, economic growth. To drive these changes, we recommend establishing a dedicated Expert Panel on Regulatory Agility.

**2. A targeted tax review to create incentives for investment.** The government must review Canada's tax system to ensure it spurs investment and competitiveness. When the country last conducted such reform decades ago, investments in physical assets were more important and global trade less so than they are today. Our tax system must be updated for the modern economic era— to safeguard Canada's status as a globally competitive tax jurisdiction and to ensure that it incentivizes investments in innovative technologies and intellectual capital. For example, under our current tax system, manufacturing companies are taxed at an effective rate of 8 percent—roughly one-third of the rate applied to the information and

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\* We thank the many experts who contributed their time and ideas in the creation of this report, and are grateful to have been able to rely upon the insights in the many reports previously published on these topics such as the Canadian Chamber of Commerce's *Ten Ways to Build a Canada That Wins*, the Conference Board of Canada's *Canada's New Trade and Technology Paradigm*, and the C.D. Howe Institute's *Equipment Failure: Feeble Business Investment Costs Canadians Their Competitive Edge*, as well as numerous publications by academic institutions, think tanks, Statistics Canada, and independent researchers across the country.

communications technology (ICT) industry. Therefore, we recommend a targeted review aimed at ensuring that the tax system fosters the government's economic goals, to be led by an independent panel.

**3. A tailored set of initiatives to unleash SME investment.** Small and medium-sized enterprises (SMEs) are the backbone of Canada's economy, representing 60 percent of private-sector employment and a third of Canada's GDP. However, Canadian SMEs invest less than their American counterparts, and they export less, in aggregate, than their Organization for Economic Co-operation and Development (OECD) peers. The challenges these companies face are different from those faced by large corporations, and require different solutions. The government should expand its advisory service programs, prioritize its export support programs, and promote the adoption of innovation and technology. These changes will stimulate greater investment by SMEs from coast to coast, helping them achieve sustainable growth.

Together, we believe these recommendations will not only provide an enduring boost to business investment, but lead to a more resilient Canadian economy and provide a step change in our long-term economic growth.



### **In the new global economy, business investment is more important than ever**

Change is the hallmark of our new economic era, and navigating it requires businesses to invest. Globalization and the accelerating pace of technological change are putting pressure on companies to reinvent themselves, transform their business models, and move into new markets faster than ever. Workers will need to acquire new skills as automation and other technological advances make their older ones become obsolete.

No sector of the economy, and no region of the country, is immune to disruption. Incumbents in industries as diverse as automotive manufacturing, financial services, and entertainment are under attack by new challengers such as Tesla, Wealthsimple, and Netflix. Whether they offer services or sell goods, companies are finding their business models threatened by innovative new technologies. Advances in additive manufacturing, for example, are increasingly enabling manufacturers' customers to print their own parts, reducing the need for factory machines, production lines, and transportation services. Even dominant players face the threat of disruption. Many retailers, for example, have been relatively slow to respond to the emergence of e-commerce, opening the door for Amazon to capture substantial market share.

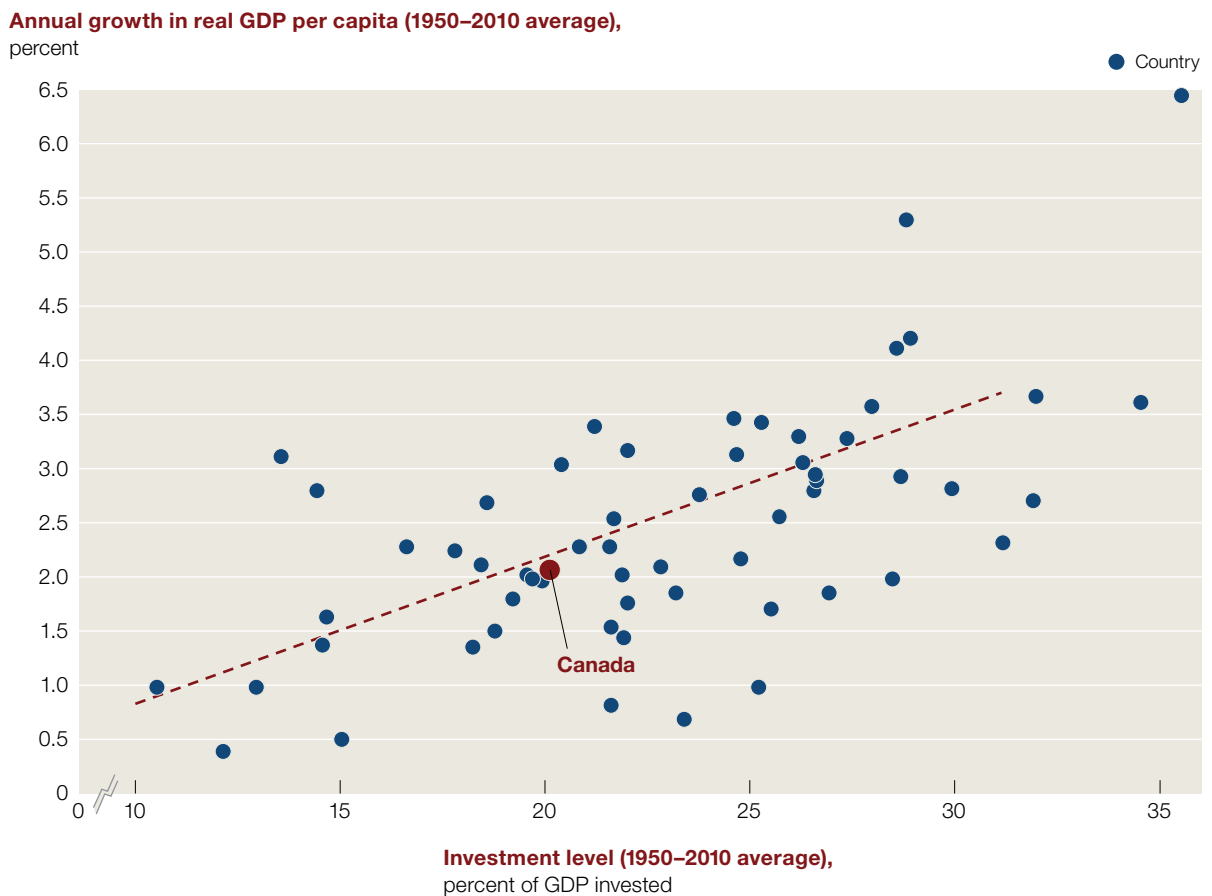
These shifts affect all participants in the economy—businesses, workers, suppliers, communities, and governments. (Our accompanying report, *Learning Nation: Equipping Canada's Workforce with Skills for the Future*, looks in depth at the impact of disruption on workforce training and the investments needed to enable workers to capture the opportunities created by the changing global economy.)

Companies must invest to adapt and grow. John Deere, for example, which has produced tractors and other farm equipment since the early 19th century, invested substantially over the last decade in its digital capabilities. The company is now a world leader in precision farming, Internet-enabled farming equipment, and agriculture analytics.<sup>3</sup> Similarly, Enbridge recently piloted the use of fibre-optic cables along pipeline routes to detect the small vibrations or changes in heat or sound that are characteristic of oil leaks, allowing it to detect and contain leaks more quickly.

Investment is also a core driver of productivity and growth in the broader economy.<sup>4</sup> For example, investment by farmers in combine harvesters during the first half of the 20th century helped them manage more land and produce bigger harvests. As a result, the percentage of the workforce employed in agriculture fell from 64 percent in 1850 to 2 percent today, while the output of the farming sector increased. This paved the way for the shift in employment to the manufacturing industry, and the accompanying increase in living standards.<sup>5</sup> Today, some farmers use technologies such as drones and sophisticated instruments to measure the health of their crops and determine the optimal level of water and nutrients they need, which could help double yields.

These types of advances drive sustained economic growth, resulting in rising living standards.<sup>6</sup> Exhibit 1 illustrates this point: over a 60-year period, countries with higher levels of business investment tend to be the ones with higher levels of income, as measured by real GDP per capita.<sup>7</sup> As markets and business

### Exhibit 1 There is a strong relationship between investment levels and GDP growth per capita.



Source: Analysis of World Bank data by Christopher Ragan

models continue to evolve at an ever-increasing pace, the need for such investments will become ever more urgent.

### **Broadening the definition of investment**

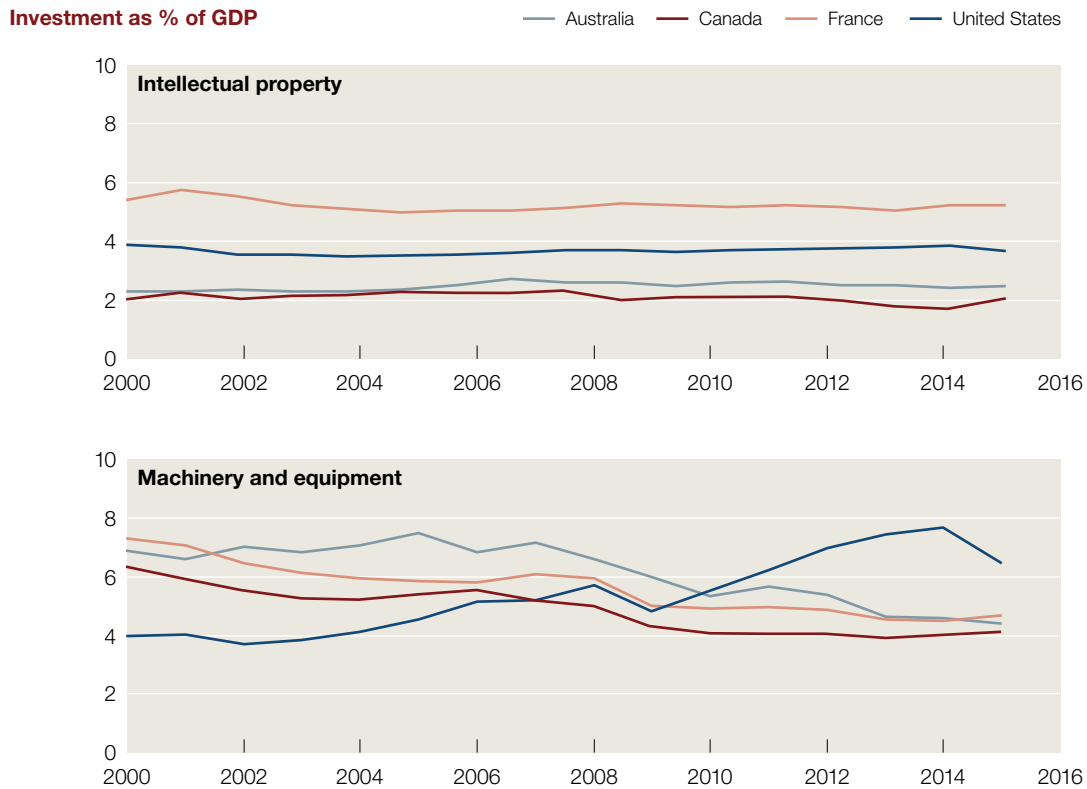
Traditionally, economists have focused on three types of business investment: investment in facilities, such as office buildings and factories, known as non-residential structures; investment in machines and equipment (M&E), such as trucks, conveyor belts, and computers; and investment in intellectual property (IP)—that is, the research and development that leads to innovative products and services.

Today, however, gains in productivity increasingly come from other types of investment. Investing in human capital by establishing worker-retraining programs or partnerships with educational providers makes employees more productive and allows them to reap the benefits of new employment opportunities created by technological progress.<sup>8</sup> Investment in adopting innovations developed by other companies rather than through internal R&D, meanwhile, can be a cost-effective and low-risk way to raise productivity.

Investments in data increase productivity, too. Through data analytics, companies can gain fresh insights about their consumers and operations. For example, in healthcare, new analytics solutions assess large pools of patient data and rapidly identify risk factors emerging in certain populations, as well as more effective solutions to treat them.<sup>9</sup> Data and digital solutions play an increasingly important role across all industries. Cross-border flow of data and information is expected to grow at 37 percent per year over the next five years.<sup>10</sup> Half of all traded services are digital; e-commerce now represents approximately 12 percent of the world's trade in goods; and by 2020, nearly a billion shoppers will spend nearly a trillion dollars in cross-border purchases.<sup>11</sup> Thus, while investments in physical trade infrastructure will continue to be essential for promoting trade in physical goods, investments in data will be increasingly important for promoting trade in services.

### **Despite a plethora of initiatives, Canadian businesses are not moving quickly enough**

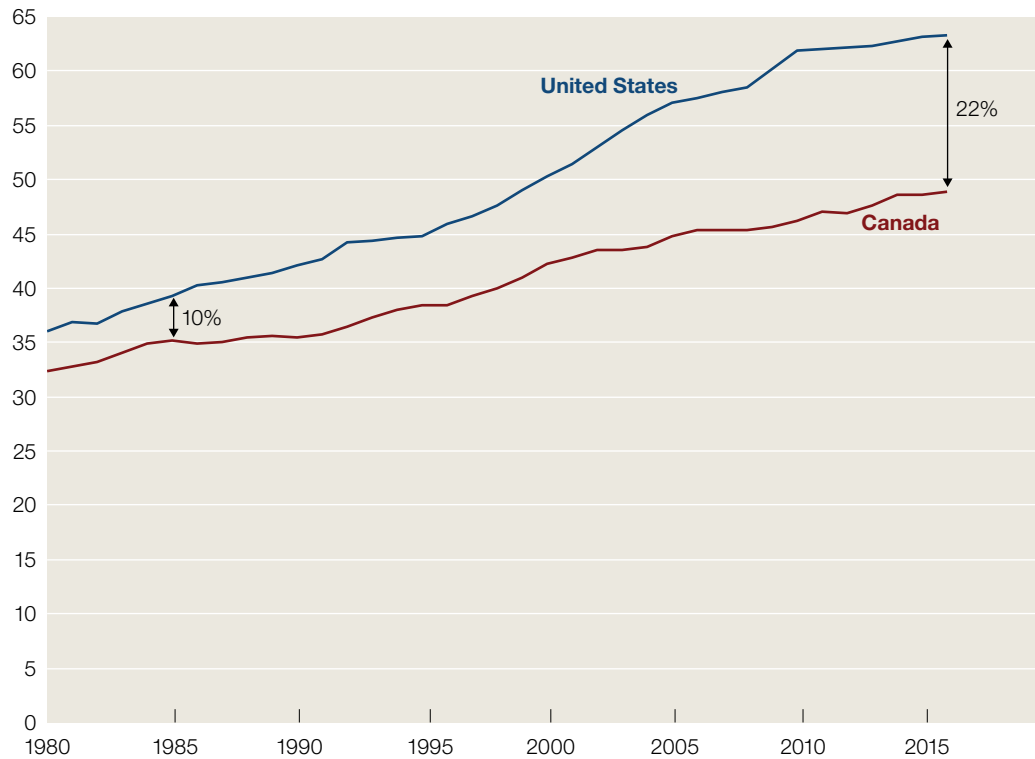
In the face of these changes, Canadian companies must invest more, invest differently—and invest now. Canada's record of investment is mixed. As a percentage of GDP, Canada invests 5.4 percent in M&E and 3.3 percent in IP—below the OECD average in both categories, and far behind the United States, which invests 6.6 percent and 5.0 percent, respectively.<sup>12</sup> On a per-worker basis, this means Canada has invested 30 percent less than the United States since 2000, and also trails other developed economies, such as France and Australia (Exhibit 2).

**Exhibit 2 Business investment intensity in Canada relative to peers**

Source: Organisation for Economic Co-operation and Development

The relatively low level of M&E investment is due almost entirely to meagre investment in information and communication technology (ICT), which accounts for more than 80 percent of the M&E investment gap between Canada and the United States.<sup>13</sup> ICT investment significantly boosts productivity, and it is essential to competitiveness in an age of disruptive technological change.

And while investment in non-residential structures has generally been healthy, recent announcements suggest a worrying shift. The cancellations of TransCanada's \$16-billion Energy East pipeline and Pacific NorthWest's \$36-billion liquid natural gas (LNG) facility, for instance, will substantially reduce capital investment in structures in the coming years.

**Exhibit 3    Labour productivity in Canada and the United States****GDP per hour worked (PPP adjusted USD at 2010 constant prices)**

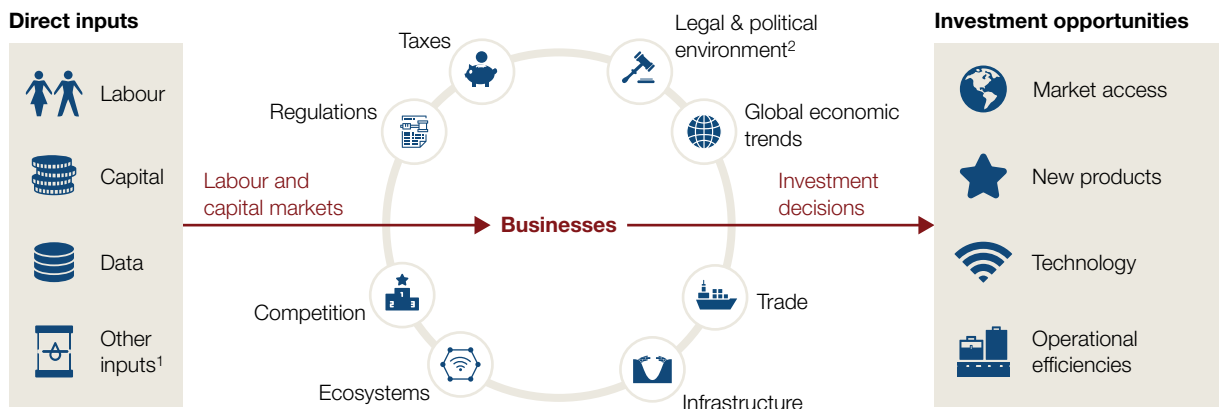
Source: Organisation for Economic Co-operation and Development

Years of underinvestment have contributed to Canada's lagging productivity,<sup>14</sup> which has slipped from 90 percent of US levels in 1985 to 78 percent of US levels in 2016 (Exhibit 3).<sup>15</sup> Over this time period, Canada's productivity growth ranked 15th-slowest out of 18 comparable OECD economies, and real median wages have remained effectively flat. While investment growth has spiked in the past three quarters, it is not sufficient to make up for decades of underinvestment.

The Council is cognizant of the numerous challenges to raising business investment. Canada's relatively low population density and our ageing population, for instance, are two factors that present barriers to investment. Additionally, many interrelated factors within the economy influence business investment

## Exhibit 4 Numerous factors influence business investment decisions

### Factors affecting investment decisions



<sup>1</sup> E.g. Raw materials, land, energy.

<sup>2</sup> E.g. Low geopolitical risk, well-functioning legal system, patent protection, etc.

decisions—from the existence of competitive pressures to modern infrastructure (Exhibit 4). And strong investment is both a *product* of a healthy economy and a *driver* of one. Thus, governments must consider a range of policies to improve investment, which in turn can create a virtuous cycle of economic growth.

For three decades, Canadian federal governments have implemented numerous economic measures that, directly or indirectly, aimed at promoting healthy business investment. We expect that the Council's previous recommendations will also contribute to higher levels of business investment. (See Box 1 for specific examples of each.)

But the government must do more, and soon. In a recent poll of 60 of Canada's largest companies, 30 percent of leaders said that Canada was a worse place to invest in than other countries in which their companies invested; only 14 percent said it was better. Additionally, a third said the investment climate had deteriorated over the past five years, while only 2 percent said it had improved.

The Council has undertaken extensive consultations with the business community and researchers in a wide array of fields to understand the root causes of these issues. Business leaders told us that investment opportunities, competition, and access to markets were three key factors influencing their investment

## Prior measures to promote investment, innovation, and economic resilience

For decades, Canadian governments have undertaken efforts to improve the economy and promote investment, innovation, and integration with the world economy.

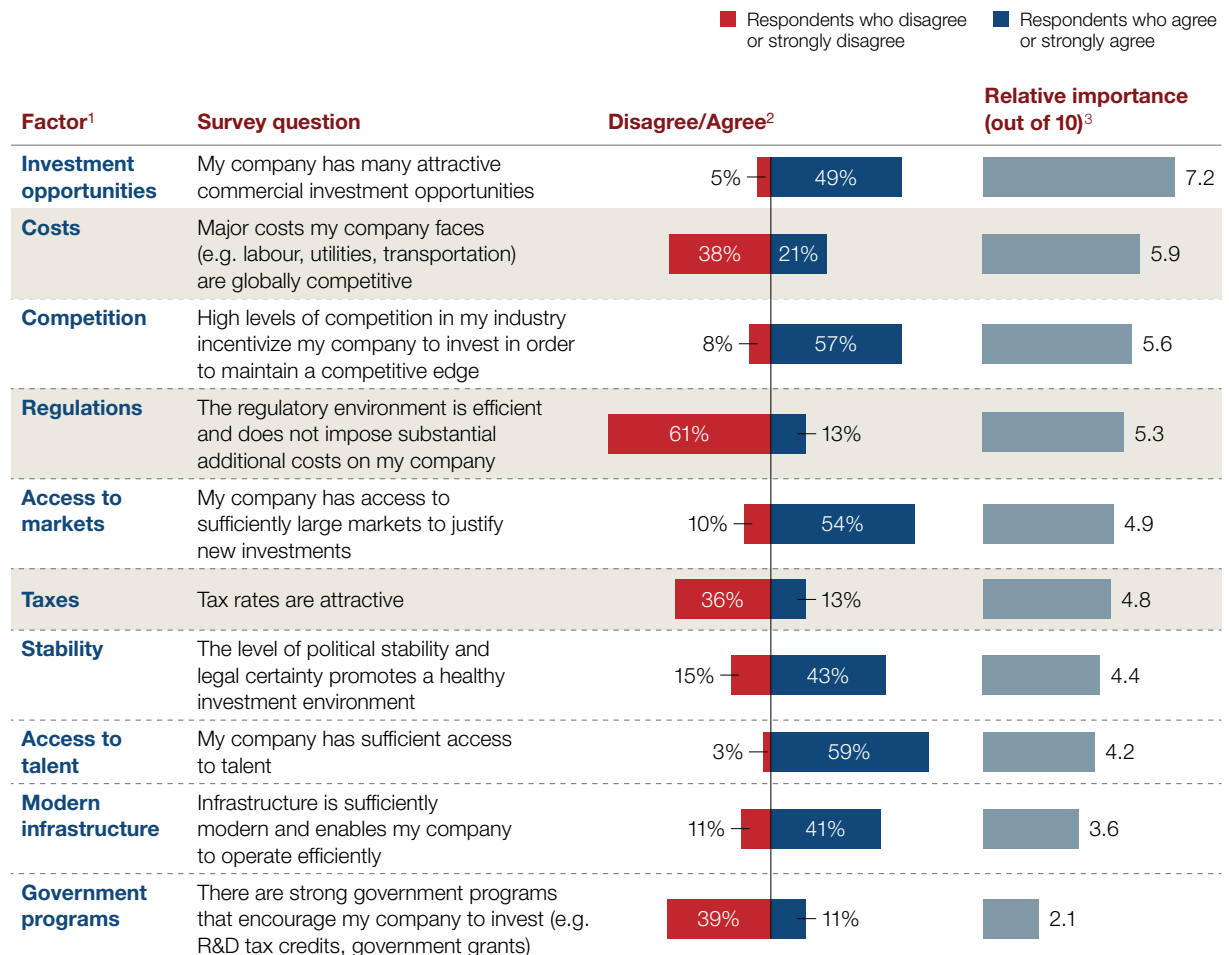
### Federal government initiatives

- **Taxes.** Since the early 2000s, the governments have made concerted efforts to make corporate tax rates in Canada more competitive as a means of attracting foreign companies and encouraging Canadian ones to invest.
- **Trade.** The signing of free trade agreements with countries representing 55 percent of the world's economy has given Canadian companies easier access to business opportunities abroad.
- **Foreign direct investment.** The government has signed foreign investment promotion and protection agreements with 36 countries, offering Canadian companies greater access to foreign markets.
- **Innovation.** The Business Development Bank of Canada (BDC) and the Venture Capital Action Plan give innovative young companies financing to support growth and new investments.
- **Inflation.** The federal government and the Bank of Canada have explicitly targeted and achieved low, stable inflation since the early 1990s. This contributes to overall economic stability, minimizing the risk of macroeconomic shocks.
- **Regulation.** Notable regulatory initiatives that support investment include the Canadian Free Trade Agreement, which came into force in July 2017, reducing barriers to trade between provinces, and the Cabinet Directive on Regulatory Management, improving the efficiency of regulation.

The Council made several earlier recommendations that we expect will drive economic growth and support higher levels of investment.

### The council's prior recommendations

- **Establish an Infrastructure Bank.** The bank will channel substantial additional private capital into infrastructure projects across Canada, boosting investment.
- **Unlock innovation to drive scale and growth.** The recommendations from the Council's February 2017 report that the government is in the process of implementing—including the Superclusters Initiative and the Canadian Business Growth Fund—are geared toward supporting investments in innovative companies and industries with a high potential for growth.
- **Invest in Canada Hub.** The proposed agency would squarely focus on attracting more foreign capital to Canada. This capital would translate into higher levels of business investment.
- **Boost trade.** Increasing access to foreign markets, including China, India, and Japan, encourages the growth and prosperity of Canadian companies. In an increasingly interconnected world, this will be essential to remaining competitive.
- **Re-skilling.** The establishment of a FutureSkills Lab and training programs supporting adult workers are critical components of the strategy to boost the country's competitiveness and productivity.

**Exhibit 5 Priority issues for Canadian business leaders**

<sup>1</sup> Costs, taxes, and regulation highlighted for emphasis.

<sup>2</sup> Other possible responses were "somewhat agree", "neither agree nor disagree", and "somewhat disagree"

<sup>3</sup> The relative importance of each factor for investment decisions. Respondents ranked each factor out of ten; average scores are shown.

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

decisions, and they view Canada as performing well in each of these areas. However, the executives cited input costs, regulations, and taxes as also playing important roles in business investment decisions, and graded Canada poorly in these three areas (Exhibit 5).

While it is difficult for the government to directly lower input costs for Canadian businesses,<sup>16</sup> it can—and must—tailor the regulatory and tax systems to a more dynamic era of technological disruption and global competition. As well, there is an additional set of investment challenges faced by SMEs in Canada.<sup>17</sup> A 2017 survey by the BDC looked at the barriers to growth among high-impact firms,<sup>18</sup> and highlighted

a number of challenges associated with financing operations, attracting talent, and a lack of confidence in the economy. The fact that these challenges differ from the issues faced by large businesses underscores the complexity of Canada's investment problem and the need for a multifaceted approach.

Reforms in these three areas have the highest potential to spur the investment and innovation that Canada needs to remain competitive in the evolving global economy. They also fall squarely within the purview of the federal government.

In addressing these three topics in our recommendations, we build on the substantial work already conducted by many of Canada's economists, universities, think tanks, and governments, including the C.D. Howe Institute, Conference Board of Canada, Canadian Chamber of Commerce, and Statistics Canada. Collectively, groups such as these have transformed the policy debate in this country and helped governments for decades make better-informed, more thoughtful decisions. Our recommendations in this paper would not be possible without their contributions.

## **Our recommendations**

### **Recommendation: Establish an agile regulatory system designed for the new economy**

Among OECD nations, Canada ranks in the top five on many key measures of regulatory governance.<sup>19</sup> Our system also has done well in safeguarding Canadians' health and our environment, ensuring fairness in commerce, and providing stability to our economy, as during the financial crisis of 2007–2008.

But to grow the economy, we must change how we design and administer regulations in many sectors. In a turbulent world of digital disruption and growing global trade, regulatory measures can both serve the public interest *and* encourage innovation. But to achieve this balance, we need to regulate differently than we have in the past. Building on our system's strengths, we need to enact changes based on three priorities:

- 1. Catalyze innovation across the economy.** Regulation must accommodate—if not outright foster—emerging technologies and business models, especially in high-potential sectors. For instance, immunology researchers are discovering ways to strengthen our bodies' natural immunity to diseases, but for Canadians to benefit from these discoveries, regulators need to be agile enough to implement rules that foster novel breakthroughs while also ensuring patient safety. Fintech companies, meanwhile, are simplifying how we invest and interact with our banks—challenging how we think about financial services, let alone how we regulate them. The question is: how can Canada develop a world-class regulatory environment that helps cultivate, attract, and retain the most innovative companies?
- 2. Drive coordination between agencies and jurisdictions.** Many Canadian companies that operate internationally and across provincial borders have to comply with inconsistent and overlapping rules among regulatory agencies and jurisdictions. We can improve the environment for investment by harmonizing rules and better coordinating regulatory agencies, both within Canada and internationally.
- 3. Promote efficient and predictable regulation.** Slow regulatory processes and overly burdensome regulations increase costs for entrepreneurs and businesses (often unnecessarily), and hinder their pursuit of new initiatives. We need to streamline inefficient and unpredictable regulatory processes.

Meeting these objectives will foster more businesses investment, stimulating faster economic growth for Canada, along with more well-paying jobs. But making these changes won't be easy. We recommend the government establish an Expert Panel on Regulatory Agility—an independent, standing body comprising private-sector and academic representatives—to guide its future regulatory plans. This panel, which we describe in greater detail later in this report, will act as the driving force behind the three priorities that our regulatory system must reflect.

### Priority #1: Catalyze innovation across the economy

In an era of accelerating global shifts, regulations must evolve hand-in-hand with the industries they govern, and encourage the development and testing of new ideas. This means the regulatory system must be open, flexible, and quick to adapt. However, drafting of regulations is typically a careful and time-consuming process. To reconcile this contradiction, some countries are implementing frameworks and policies that allow regulators to keep pace with sectors undergoing rapid evolution.

- In 2014, the United Kingdom launched Project Innovate, an initiative dedicated to supporting innovative financial services companies. Among other policies, Project Innovate created a regulatory “sandbox”—a policy framework that allows new financial services companies to safely test new business models without the burden of having to conform to all regulatory requirements.<sup>20</sup>
- The Japanese government has adopted fast-track approval processes for regenerative-medicine solutions that were originally outside the purview of traditional regulators, ensuring that patients and investors alike benefit from these breakthroughs quickly.<sup>21</sup> The country has also implemented regulatory sandboxes similar to those the United Kingdom is embracing.
- In Sweden, government agencies and the private sector collaborated to define new regulatory standards for the world's first electric road system.<sup>22</sup> The government recently opened a two-kilometre strip of highway to pilot this technology—the first of its kind in the world.<sup>23</sup>

Canada is starting to experiment with similar policies—one example is Ontario's ongoing pilot program to test self-driving vehicles<sup>24</sup>—but we need to do far more. For instance, we need up-to-date rules on the collection, storage, and use of data as they will determine how Canadian firms innovate and compete.<sup>25</sup> Canada needs to be more forward-thinking when designing these rules.

### Priority #2: Drive coordination between agencies and jurisdictions

A regulatory system can stall innovation if it is beset by overlapping, even conflicting regulations across regulatory bodies, regions, and trading nations. Inconsistent or duplicate regulations add unnecessary compliance costs and administrative burdens to businesses, and impede innovation. In the healthcare sector, for example, different regulatory standards among provinces limit the adoption of some diagnostics in parts of Canada—including ones with proven results, such as the highly effective FIT colorectal test for cancer. Introduced in British Columbia and Alberta in 2013, the test remained unavailable in Ontario in late 2017. We must eliminate this type of inconsistency if we are to create an environment that attracts global innovation and in which Canadian companies will flourish.

We must improve regulatory coordination in other respects, too. Legal and institutional barriers prevent agencies from sharing information when developing regulations; that must change. And government must include input from private-sector stakeholders in regulatory cooperation initiatives, such as the newly minted Regulatory Reconciliation and Cooperation Table.

Federal agencies also need to collaborate better with their provincial and international counterparts in setting regulatory objectives, standards, and enforcement mechanisms. While the federal government shares legal jurisdiction with other governments in many areas, it should use its influence and leadership to promote harmonization.<sup>26</sup>

Better coordination can make a significant difference. For example, Canada and the United States worked together through the Canada-US Regulatory Cooperation Council (RCC) to align energy efficiency standards across the two nations.<sup>27</sup> In addition, regulators on both sides of the border continue to share insights on how best to regulate drones.<sup>28</sup>

### Priority #3: Promote efficient and predictable regulation

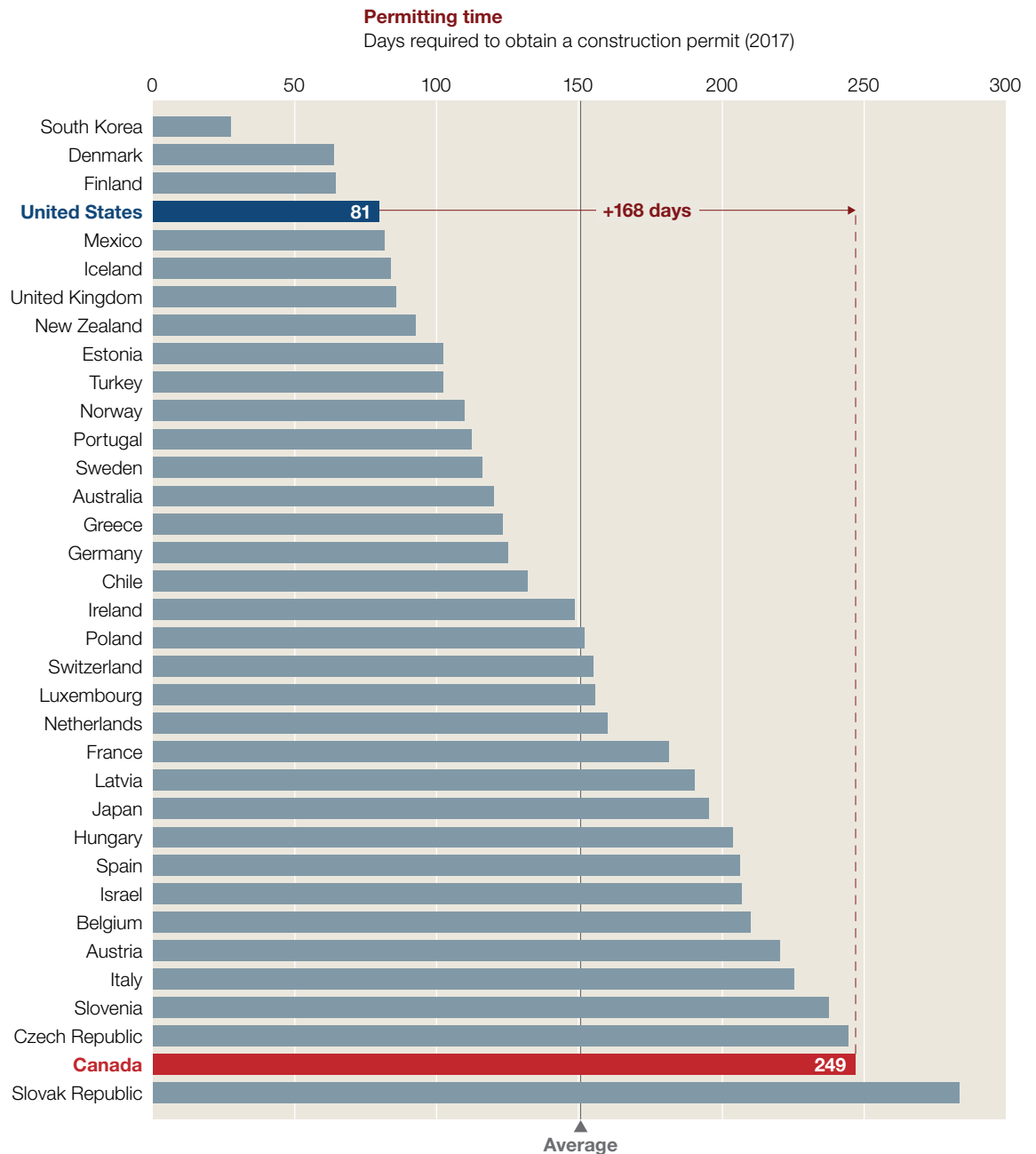
To stimulate more investment and attract more capital, Canada should aspire to set the global gold standard for regulatory efficiency and predictability. Efficient regulations achieve their intended social outcomes without imposing substantial unnecessary costs or delays on businesses. The Council believes there are several areas where regulatory efficiency must improve. For instance, researchers cite the stringency and detailed filing requirements of our regulatory system as one of the reasons that new drugs are introduced to Canada, on average, almost a year and a half after they are in the United States or Europe.<sup>29</sup> Service standards for various administrative processes—currently established by each department—could be set more aggressively. The approval process for major infrastructure and energy projects can take far longer than in other countries (see Box 2).<sup>30</sup> And Canada ranks 32nd out of 35 countries on the OECD's FDI restrictiveness index—an issue exemplified by ownership restrictions in the rail industry, which differ even between individual companies.<sup>31</sup>

These challenges are not isolated to the federal level.<sup>32</sup> The World Bank's *Doing Business* report, for example, ranked Canada 34th out of 35 OECD countries in the speed of permit granting for new construction projects, based on municipal permitting times in Toronto (Exhibit 6).<sup>33</sup>

Regulations can also be made more efficient and transparent by raising the engagement of the private sector in their design, particularly in new and emerging industries. Actively seeking regular private-sector feedback would allow regulatory bodies to better understand the potential impact of regulatory proposals and to potentially find less burdensome alternatives that achieve the intended outcomes. The United States, for instance, administers a single, centralized web portal where all proposed regulations are posted for public comment. The initiative has facilitated the submission of more than 1.7 million comments and proposals since its inception six years ago.<sup>34</sup>

Finally, applying regulations in a predictable and consistent manner helps businesses plan for the costs associated with abiding by the rules. Canada's regulatory system sometimes fails to meet this standard, particularly in industries where approval processes are complex, such as natural resources and pharmaceuticals.

**Exhibit 6 Canada ranks 34th out of 35 OECD countries in terms of the time required to obtain a permit for a new general construction project—168 days longer than the United States**



Source: The World Bank Doing Business Report

### Design principles for the Expert Panel on Regulatory Agility

The government should form an Expert Panel to oversee a wide-ranging review of existing regulations (so-called regulatory stock) and the relevant management processes. It also should undertake a comprehensive assessment of the aggregate regulatory burden shouldered by Canadian businesses. Taking account of this burden will be an important—albeit challenging—first step in reducing unnecessary and costly regulation. And while the Council is encouraged by recently published drafts of the new Cabinet Directive on Regulatory Management, which directs each department to evaluate its regulatory stock, such an assessment must be conducted across government.

In convening the panel, it is vital to ensure that the combined group has relevant expertise, independence, the ability to affect policy, and freedom to coordinate with other government bodies:

**Relevant expertise.** The panel should be led by representatives of the private sector and academia who would advise on changes occurring within key industries. Such a group would be best positioned to provide direction on the urgency and nature of the regulatory challenges facing Canadian companies, and provide input into the development of tools that can help drive effective and efficient regulations. The panel would also be supported by staff from the Treasury Board Secretariat to ensure that it leverages the considerable regulatory expertise within the government.

**Collaboration forums.** The Panel should host “co-creation projects”—forums that bring together private-sector representatives (incumbents and disruptors), government officials, and other stakeholders to collaborate on the design of new regulations in rapidly evolving industries. While the government would make all final decisions, these projects would inform how best to design regulations that both foster innovation and protect the public interest.<sup>35</sup>

**Independence.** The panel should be independent from the government so that it can make objective recommendations. To this end, it should be funded for an initial three- to five-year period before a review ensures its continued relevance and effectiveness.

**Policy impact.** The panel should make its recommendations directly to the Treasury Board, the Cabinet Committee responsible for regulatory oversight and planning. Its findings then would be published to ensure transparency, and the Treasury Board would have the responsibility to publish a formal response.

**Coordination with other government bodies.** The panel should work closely with the Economic Strategy Tables to ensure they are aligned with one another. It would also coordinate with existing regulatory cooperation forums, such as the Regulatory Reconciliation and Cooperation Table and the Canada–US Regulatory Cooperation Council.

Taken together, we are confident that the process outlined above can transform Canada’s regulatory system into one that enables investment and serves as a catalyst to innovation. Implementing them would be a significant step toward ensuring that Canada continues to have a vibrant, dynamic economy, regardless of the disruptions that technology or globalization may bring.

## Regulatory barriers to innovation in high-potential industries

**Life sciences and healthcare.** Canada has distinct advantages in these sectors, but we must update our regulatory policies if we are to capture the full economic opportunity presented by rapid advances in fields such as immunology and medical devices. Differences in standards and approval processes among provinces and between Canada and other countries slow the adoption of new treatments. The 2015 Report of the Advisory Panel on Healthcare Innovation, for example, argues that Canada lags in its adoption of international regulatory standards for medical devices. Similarly, lack of common provincial standards in the regulation of electronic health records limits our ability to take advantage of advances in healthcare analytics.<sup>1</sup> This not only curbs researchers' efforts to tap nationwide pools of data for insights, but can prevent institutions within the same city from sharing patient records—even when instructed to do so by patients.<sup>2</sup>

**Fintech.** Global investment in fintech is growing at almost 40 percent per year—a trend that will significantly disrupt the financial services industry. Canada has the potential to lead in this arena, thanks to the size of our financial sector, the strength of our banks, the cutting-edge research occurring at Canadian universities, and the growth of fintech innovation clusters. However, the full potential isn't realized, in part because burdensome regulatory requirements discourage start-ups and slow their growth. Similarly, differing policies among provinces prevent new companies from expanding nationwide.<sup>3</sup> Greater collaboration between regulators, combined with more flexible regulatory policies, could help stimulate the sector. For example, the 2017 report *The Blockchain Corridor* argues that the lack of a national strategy on the regulation of blockchain technology greatly hinders Canada's ability to create global champions in this growing field. Other countries are embracing this challenge: for example, the Monetary Authority of

Singapore (MAS) recently identified the establishment of conducive regulations as “one of the most critical pieces [to] get right” to support the industry.<sup>4</sup>

**Oil and gas.** Regulations play a particularly important role in the natural resource sector in protecting workers, the environment, and the rights of Indigenous people. However, regulations must be more predictable and efficient to avoid unnecessarily discouraging investment. The average pipeline approval time in Canada is between five and six years, significantly longer than in peer economies such as Australia or the United States. In the latter, approval times are a mere 18 to 20 months.<sup>5</sup> The impact of these delays is substantial; Kinder Morgan estimates it spent \$600 million to comply with the approval process for its proposed TransMountain pipeline. One potential solution would be for the Federal Cabinet to make rulings early in the approval process before investors have committed significant time and capital. We also acknowledge the ongoing *Review of Environmental and Regulatory Processes*. In this context, we underscore the importance of striking a balance between the development of Canada's natural resources in a responsible and sustainable manner and maintaining a regulatory environment that is conducive to investment.

**Manufacturing.** Advances in automation and additive manufacturing (i.e., 3D printing) could fundamentally transform the production and distribution of industrial goods, affecting companies throughout the manufacturing supply chain. It is essential that Canadian manufacturers keep up with these changes—something that is only possible if our intellectual-property laws balance the rights of innovators and consumers.<sup>6</sup> For example, without adequate regulatory protections, patented physical objects could be 3D-printed without permission, harming patent creators.<sup>7</sup>

## Box 2

**Agri-food.** Innovation is boosting productivity in this sector around the world. In the Netherlands, farms use cutting-edge techniques to grow tomatoes using less than one-twentieth of the water per pound of product than the global average.<sup>8</sup> An innovation-friendly business climate is fundamental to realizing similar

productivity gains in Canada. Coordinated regulatory standards between provinces and with foreign regulators will reduce costs and foster more investment in the sector. For example, growing regulatory obstacles to trading with the United States has added substantial burdens to agri-food companies in the last decade.<sup>9</sup>

<sup>1</sup> For more detail, see chapter 7 of the Report of the Advisory Panel on Healthcare Innovation, *Unleashing Innovation: Excellent Healthcare for Canada*, Government of Canada, July 2015, [canada.ca](http://canada.ca).

<sup>2</sup> Other examples exist as well. Advances in stem cell technology have outpaced the speed of regulatory change, with provincial regulators and Health Canada not yet having implemented policies that govern many stem-cell-based procedures that are available in Canadian clinics.

<sup>3</sup> For example, the November 2017 Conference Board of Canada report on crowdfunding cites a lack of harmonization between provincial regulators as one of the barriers that will need to be overcome in order to stimulate growth in crowdfunding. *Wisdom of the Crowd? Crowdfunding and Canadian Innovation*, Conference Board of Canada, November 2017, [conferenceboard.ca](http://conferenceboard.ca)

<sup>4</sup> As cited in a November 2017 speech by the managing director of the MAS. The full transcript of the speech is available at [mas.gov.sg](http://mas.gov.sg).

<sup>5</sup> HIS Markit report, cited in Stikeman Elliott, "The Timing of Major Energy Project Reviews," *Calgary Herald*, April 24, 2017, [pressreader.com](http://pressreader.com).

<sup>6</sup> Brett Slaney and Antonio Turco, "No Glasses Required: 3D Printing and the Current Canadian IP Framework," December 18 2013, [lexology.com](http://lexology.com).

<sup>7</sup> Rajeev Sachdev, "3D Printing Raises Intellectual Property Legal Issues Not Seen Before in Traditional Printing," IP Osgoode, October 26, 2016, [iposgoode.ca](http://iposgoode.ca).

<sup>8</sup> Frank Viviano, "This Tiny Country Feeds the World," *National Geographic*, September 2017, [nationalgeographic.com](http://nationalgeographic.com).

<sup>9</sup> Bob Seguin and Janalee Sweetland, *Drivers of Canadian Food Processing Competitiveness: Macro Factors and Micro Decisions*, Canadian Agri-Food Policy Institute, February 2014, [capi-icpa.ca](http://capi-icpa.ca).

## **Recommendation: Modernize the Canadian tax system through a targeted review to ensure it drives investment and innovation in the new economy\***

### **An overdue review**

Canada needs to update its tax system to create incentives for investment and innovation. To accomplish this, the government should undertake a targeted review. The global economy has evolved considerably since our tax system underwent the most recent significant review in 1986. While investment in physical capital such as factories and equipment once was the primary driver of economic growth, today it is intellectual capital that powers the economy. The value of intellectual property licensed in Canada, for example, has risen from \$56 million 30 years ago to over \$4.5 billion today—an 80-fold increase.<sup>36</sup> Moreover, Canadian companies increasingly must compete with companies based anywhere in the world.<sup>37</sup> And there are indications that current policy does not support these goals: there are opportunities to improve the tax-incentive

\* The Council wishes to thank Jeffrey Trossman of Blakes for his contributions to this section of the report.

programs for innovation; introduce favourable tax treatment of intangible assets and intellectual property; put all sectors of the economy on a level playing field; maintain competitive corporate tax rates in the face of changing global conditions, while ensuring that everyone pays their fair share; and apply a customer experience lens to tax administration.

The Council believes three priorities should guide how Canada shapes its tax system to support investment and growth. We highlight specific policies that merit further consideration in Box 3.

#### Priority #1: Foster the development and adoption of innovation

Effective tax policy can encourage investment in innovation by both established and growing companies by smoothing financial returns over time and supporting high-risk, high-reward bets. There is a notable need for more of this type of support in Canada.<sup>38</sup>

Several improvements to Canada's suite of tax-incentive programs could help provide this. First, administrative changes to existing programs such as the \$3.6-billion Scientific Research & Experimental Development (SR&ED) could allow them to deliver greater impact, as we detailed in our earlier report, *Unlocking Innovation to Drive Scale and Growth*. Second, Canada should introduce new tax-incentive programs based on models that have proven effective in other countries. For instance, the United Kingdom, the Netherlands, and Ireland have reduced rates on taxable income derived from the exploitation of intangible property in order to encourage businesses to not just conduct research but commercialize it. Third, Canada should review long-standing tax measures that are intended to support higher levels of investment but may no longer be appropriate. It could, for example, reduce depreciation periods for certain types of intangible assets, a move that would boost after-tax returns on such investments.

Moreover, the government can do more to moderate the impact of uneven tax rates between sectors or geographies, which distort the after-tax returns on investments. Such distortions lead to inefficient allocations of capital to investments with lower returns, limiting productivity growth. The manufacturing industry, for example, benefits from a marginal effective tax rate of 8 percent—roughly one-third of the rate applied to the information and communications technology (ICT) industry, putting ICT at a disadvantage in attracting investments.<sup>39</sup>

#### Priority #2: Solidify Canada's position as a global magnet for investment and talent

Global competition for foreign direct investment is intense, especially as developing countries have increasingly started to fight for capital.<sup>40</sup> While Canada is an attractive destination for investment today,<sup>41</sup> changes in tax policy could improve our competitive position. The tax rate on new investments—known as the marginal effective corporate tax rate<sup>42</sup>—is 17 percent, second lowest in the G7 behind the United Kingdom. A 2016 KPMG study ranked Canada as having the lowest overall corporate tax burden among ten peer advanced economies across a number subsectors, including R&D (e.g., biomedical research), digital services (e.g., software production), and corporate services (e.g., securities trading).<sup>43</sup>

But as other countries embark on tax reform, Canada may see its enviable competitive position erode, reducing FDI inflows. Proposed tax changes in the United States, for example, may reduce rates to levels in line with or below Canada's, produce more favourable rules for deducting capital expenditures, and lead to the adoption of a "territorial" system that encourages repatriation of corporate profits.

## Tax policies meriting further consideration

### Streamline existing programs that support investment.

Canada's \$3.6-billion SR&ED program encourages companies to conduct research and development, which boosts those companies' productivity, which in turn provides spillover benefits for the surrounding ecosystem.

As previously noted, there is an opportunity to make these programs even more impactful by, for example, simplifying the complex application and auditing processes.

**Introduce new programs that support investment.** The government should continue to assess the effectiveness of new tax instruments. For example, a growing number of countries and jurisdictions—including Quebec and British Columbia—have introduced “patent box” programs over the past decade.<sup>1</sup> These programs allow companies to pay lower tax rates on income derived from the exploitation of intangible property, such as licensing software. By raising the return on investment for such projects, the programs encourage businesses to commercialize research discoveries.

**Adjust withholding tax rates.** Unlike many other advanced economies, Canada makes companies pay “withholding taxes,” which are taxes on the royalties that Canadian companies pay to businesses in other countries for the use of their intellectual property, such as patents and software. Foreign companies often pass on the increased costs resulting from these taxes to the Canadian licensees in the form of higher prices, making it more expensive for Canadian businesses to adopt new

technologies developed abroad.<sup>2</sup> Canada imposes similar kinds of taxes on direct dividends paid to foreign investors as well, which can reduce FDI because such taxes don't exist in many peer countries.

**Adjust policies that influence investment.** Adapting tax rates and rules on certain types of investment could make such investments less expensive for Canadian companies. For example, some types of intangible assets (such as goodwill and unpatented know-how) are depreciated over periods in excess of 20 years, compared with 15 years in the United States. The longer amortization period reduces the after-tax return on those investments. As well, the regime for expenditures on patents generally requires the associated costs to be capitalized and depreciated rather than being expensed immediately, similarly reducing after-tax returns.

**Ensure multinationals are taxed fairly.** While it is important to foster an attractive investment environment, we must also make sure multinationals do not use loopholes to avoid paying their fair share of tax. In particular, countries around the world are grappling with issues around taxing digital services when customers and suppliers are based in different jurisdictions. The European Union, for example, is considering implementing a new common corporate tax base in order to avoid double taxation and opportunities for double non-taxation within the European Union. Canada's tax regime needs to be careful to strike the right balance between protecting the tax base and encouraging foreign direct investment.

<sup>1</sup> Nick Pantaleo, Finn Poschmann, and Scott Wilkie, “Improving the Tax Treatment of Intellectual Property Income in Canada,” CD Howe Institute, April 25, 2013, [cdhowe.org](http://cdhowe.org).

<sup>2</sup> Kenneth McKenzie, “An Analysis of the Economic Effects of Withholding Taxes on Cross-Border Income Flows for Canada,” Advisory Panel on Canada's System of International Taxation, September 2008, [fin.gc.ca](http://fin.gc.ca). We note that the OECD Model Tax Convention, upon which most OECD members' tax treaties are based, recommends the elimination of withholding taxes on royalties; however, Canada has a longstanding reservation under which it generally imposes a 10 percent withholding tax on royalties. Recently enacted “back-to-back” rules have also increased uncertainty with respect to the treatment of cross-border royalties, in some situations.

Similarly, talent—a key ingredient for innovative companies—is increasingly mobile, and tax is an important tool in the global war for talent.<sup>44</sup> Therefore, the Government should also review personal tax rates to ensure Canadian businesses can attract the talent they need to be innovative and globally competitive.

Transnational tax concerns also have an impact on Canada's competitiveness. Multinational companies—especially those engaged in the delivery of digital services—can shift profits to low- or no-tax jurisdictions. This has prompted governments to seek to coordinate tax systems across jurisdictions. The Base Erosion and Profit Sharing (BEPS) initiative by the G20 and OECD is one instance of this.<sup>45</sup> While Canada has been active in these discussions, rising levels of digital trade will only give rise to more of this type of issue.

### Priority #3: Bring a customer-experience lens to tax administration

Businesses' interactions with tax authorities influence their future investment decisions. Canada Revenue Agency (CRA) has improved its customer service in recent years, in part by streamlining its online tax-filing processes, but friction points remain. During tax audits, the agency's demands for information are sometimes overly broad.<sup>46</sup> There are often long delays in processing appeals: according to a 2016 Auditor General's report, it takes CRA an average of 454 days to process objections to corporate income tax assessments.<sup>47</sup> On occasion, the agency has not followed agreements it entered into with taxpayers.<sup>48</sup>

CRA should leverage technology to further streamline its operations while striving to provide a better customer experience for investors, both foreign and domestic. For example, tax agencies are starting to use big data analytics to quickly and effectively audit large numbers of companies, reducing both administrative costs for the government and compliance costs for taxpayers.

### The path forward

In the face of rapidly changing technology and an ever-more-competitive global marketplace, and potentially disruptive changes to US tax laws, Canada cannot afford to be complacent. Taxes have a direct impact on investment decisions by companies small and large. The world's leading entrepreneurs and workers have more flexibility than ever in choosing where to live and work, so we must ensure that our tax system supports efforts to make Canada a preferred destination for investment and talent.

While we need to adapt the tax system to the changes in the global economy, the Council does not believe a comprehensive examination like the 1966 Carter Commission is merited. Rather, we propose a targeted review, focused on identifying specific areas where our system has become an obstacle to growth and innovation. We recommend the following parameters:

- **Expertise.** The review should be led by a panel of independent tax experts from academia and the private sector.<sup>49</sup> The panel should engage in focused consultations with business leaders representing different geographies and industries to ensure that the implications of potential reforms are fully understood.
- **Scope.** The panel should consider changes to corporate and personal tax rates, the balance between types of taxes, and the use of tax instruments designed to support investment.

- **Outcomes.** Once the review is complete, the panel should deliver its report to the Minister of Finance and publish its findings, providing transparency into its work. The government, in turn, should publish a response to the panel's recommendations.

We acknowledge that the government has recently taken steps to review parts of the Income Tax Act, announcing plans to reduce the small-business tax rate to 9 percent and make changes to certain rules relating to Canadian-Controlled Private Corporations (CCPCs). Our recommendations do not directly relate to these planned changes. Once these legislative changes have been enacted, we are recommending a targeted review of other aspects of the Canadian tax regime that have a significant influence on business investment decisions and, if reformed appropriately, can help prepare Canada for the new global economy.

**Recommendation: Expand advisory programs for SMEs, double down on export support programs, and promote the adoption of innovations throughout Canada**

Small and medium-sized enterprises (SMEs) collectively account for more than 60 percent of private employment in Canada and a third of this country's GDP. Small businesses are also the source of many innovations—Canada's global champions of tomorrow.

Still, many SMEs fall short of their potential. Most struggle to achieve significant scale, with only one in 1,000 companies passing the milestone of 100 employees—40 percent fewer than in 2001.<sup>50</sup> Those that remain small do not prioritize innovation; on a per employee basis, SMEs invest one-fifteenth the amount of R&D as do large businesses.<sup>51</sup> Canadian SMEs also underperform their foreign peers in terms of foreign market reach and productivity.<sup>52</sup> And their exports represent only 25 percent of Canada's total; by contrast, the OECD average for SMEs is 40 percent.

The growth challenges and barriers to investment that smaller businesses face not only are distinct from those large companies confront but differ substantially among individual companies. However, SMEs' biggest challenges tend to be lack of access to capital, limited managerial experience, and higher relative costs due to their small size. The Council addressed many of these issues in our February 2017 report, *Unlocking Innovation to Drive Scale and Growth*, in which we recommend that the government establish a Canadian Business Growth Fund and a Canadian Matching Fund program. We also recommend a review and streamlining of federal innovation programs (this review is now under way). However, more work is needed to unleash the full potential of Canada's small and medium-sized businesses. Here, we identify three priorities that we believe will significantly spur investment and growth within this sector of the economy:

1. Expand the most successful SME advisory programs
2. Strengthen export-oriented programs to unlock \$20 billion in export potential
3. Promote the adoption of innovation among SMEs

### Priority #1: Expand the most successful advisory programs

High-impact SMEs—the subset of businesses that disproportionately contribute to economic growth and the creation of new jobs—often lack the confidence and expertise required to make significant investments, be it to adopt a new technology such as 3D printing or to build new capacity to access export markets. Trusted external advice can address this challenge and help SMEs deliver on their promise. For instance, research has shown that SMEs with advisory boards or access to advisory services outperform their peers.<sup>53</sup> While there is a wide array of advisory programs to support Canadian entrepreneurs—such as the BDC’s Growth Driver Program, the federal government’s Accelerated Growth Services (AGS), and numerous local, municipal, and provincial initiatives—the problem of SME underinvestment persists.

This is due to the limited scale and reach of these programs. The AGS intends to serve 1,000 firms, and BDC’s Growth Driver Program currently works with approximately 100 high-impact SMEs.<sup>54</sup> Even in terms of its broader Advisory Services programs, BDC delivers on only about 1,700 engagements per year. These programs offer much value to the SMEs who participate in them, but the impact is a drop in the bucket in a country with more than one million SMEs.

Expanding these programs will not be easy, due to the challenges of finding sufficiently high-level talent to counsel entrepreneurs and administering these offerings in a cost-effective manner. That said, we believe the upside potential is worth further attention, and suggest the following areas of focus:

- **Cost.** Numerous SME advisory programs charge only nominal fees for their services, with the result that many lose money. BDC, for example, reported cumulative net losses for its advisory programs of \$75 million in fiscal years 2016 and 2017. The government should consider subsidizing a portion of program operating cost, allowing providers to increase the scale of their programs while simultaneously reducing the prices charged to clients.
- **Access to talent.** Advisory programs need a larger pool of experienced professionals who can provide meaningful counsel to business operators. While additional funding could allow these programs to attract more skilled advisers, the government should also consider expanding peer-to-peer mentoring for high-potential SMEs, as conducted by the QG100 in Quebec.
- **Awareness and access.** Many small-business owners are not aware of the potential benefits of advisory programs. The government should launch a national branding campaign similar to the one used to promote British Columbia’s Small Business Awareness Strategy.<sup>55</sup> Moreover, the multitude of programs that support SMEs can make it challenging for entrepreneurs to find the ones best suited to their needs. While the government has introduced initiatives to streamline its suite of programs—such as its online Concierge service—simplifying how it interacts with SMEs would help time-pressed entrepreneurs more easily access the resources they need.

### Priority #2: Strengthen export-oriented programs to unlock \$20 billion in export potential

Exports mean more than just growth to SMEs. By exporting, small companies diversify their markets and so better manage risk. Exporting firms are also more profitable and see higher returns.<sup>56</sup> However, Canadian small businesses account for only 25 percent of Canada’s total exports despite representing 30 percent of

our GDP. If exports could be increased to levels proportionate with the overall GDP contribution of SMEs, revenues would jump by more than \$20 billion—an opportunity that will only rise as global trade flows increase.<sup>57</sup>

Yet small businesses face a wide range of challenges in foreign markets, from complex regulatory regimes to tariffs. Without the scale to afford employees dedicated to understanding export markets and procedures, they are poorly equipped to tackle these issues. As a result, providing meaningful export support to Canadian SMEs must go beyond advice, and put special focus on trade financing, guidance on navigating foreign regulations, and market intelligence about foreign markets. While the Trade Commissioner Service and Export Development Canada (EDC) provide these types of services, they do so with limited reach—the EDC has approximately 6,000 SME clients out of the 73,000 exporting SMEs in Canada.

One tool used to great effect abroad are export accelerators, which provide targeted, customized advice and support to high-potential firms. The accelerators' offerings include foreign-market intelligence, help in complying with different regulatory environments, and lead generation in foreign markets. In 2013, for example, Malaysia launched the Mid-Tier Company Development Programme, an accelerator designed to help promising SMEs maximize their potential in foreign markets. Participating companies saw a 15 percent increase in exports, compared with 1 percent in the rest of the Malaysian economy, and the program delivered more than \$500 million in value to the mere 150 companies it has served.<sup>58</sup>

### Priority #3: Promote the adoption of innovation among SMEs

As noted earlier in this report, investments in technology make companies more productive and competitive, helping them grow. Moreover, the need for companies to both innovate and adopt existing innovations will only become more urgent as the pace of global economic change quickens. Smaller firms, however, tend to underinvest in new technologies and R&D, in part because the potential benefits that such advances can offer are not widely known.<sup>59</sup>

The government should encourage greater adoption of innovations by Canada's small and midsize businesses. It could consider, for example, promoting peer-to-peer mentoring efforts between small and large companies that would allow entrepreneurs to learn about and see firsthand the innovations adopted by larger companies in their sector. In the recent *Made Smarter* report, a group of leaders in the UK manufacturing industry called for a similar program for the adoption of innovation to be piloted in order to nurture small business investment.<sup>60</sup>

Existing initiatives could also be either expanded or replicated. Between 2011 and 2014, for example, the National Research Council's Digital Technology Adoption Pilot Program (DTAPP) piloted a series of efforts to disseminate technological know-how to SMEs in Canada. Of the firms that participated, 94 percent indicated they would be more likely to adopt digital technologies.<sup>61</sup> The private sector initiated a similar program called the Digital Adoption Compass, which aims to strengthen relationships between companies and disseminate IT know-how online.

## Conclusion

Business investment not only is fundamental to a country's economic growth, but serves as a measure of the overall health of an economy. Canadian companies' low level of investment compared with their global peers has significantly contributed to our lagging productivity.

While Canada has taken many steps in recent years to stimulate corporate spending, we must do more. The drivers of growth in a globally connected, technology-fueled era are evolving, requiring investment not only in traditional assets such as buildings and equipment, but in assets endemic to a knowledge economy: high-tech tools, data analytics, and training programs that upgrade workers' skills (a topic we address in greater detail in our accompanying report, *Learning Nation: Equipping Canada's Workforce with Skills for the Future*). As the global economy continues to rapidly evolve, the government must ensure that its regulatory and tax policies foster investment and innovation, and assist the full spectrum of Canadian businesses to pursue the opportunities presented by new technologies and growing export markets. ■

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- <sup>1</sup> “GDP per Hour Worked,” OECD Data, accessed November 2017, [data.oecd.org](http://data.oecd.org).
- <sup>2</sup> Peter Harrison, *Median Wages and Productivity Growth in Canada and the United States*, Centre for the Study of Living Standards, accessed November 2017, [csls.ca](http://csls.ca).
- <sup>3</sup> Bernard Marr, “From Farming to Big Data: The Amazing Story of John Deere,” *Data Science Central*, May 7, 2015, [datasciencecentral.com](http://datasciencecentral.com).
- <sup>4</sup> While the term “investment” is also used to refer to purchasing of the ownership rights of another business’s equity, investments in new capital goods are larger drivers of economic growth; thus, the Council has focused its efforts here.
- <sup>5</sup> “Historical Timeline—Farmers and Land,” *Growing a Nation: The Story of American Agriculture*, accessed November 2017, [agclassroom.org](http://agclassroom.org).
- <sup>6</sup> For example, Mark Carney argued in a June 2017 speech on the British economy that “stronger investment will support productivity growth, stronger wages, and higher welfare for all.” For other examples about the relationship between investment and productivity, see “Low Machinery and Equipment Investment Levels Help to Explain Canada’s Poor Productivity Growth,” Conference Board of Canada, April 29, 2011, [conferenceboard.ca](http://conferenceboard.ca); Xavier Sala-i-Martin, “I Just Ran Two Million Regressions,” *American Economic Review*, Volume 87, Number 2, May 1997; and *The Productivity Puzzle: Why Is the Canadian Record So Poor and What Can Be Done about It?*, TD Economics, June 2010, [td.com](http://td.com).
- <sup>7</sup> Note that even small differences in the annual rate of growth of per capita GDP, if sustained over many years, can lead to dramatic changes in average incomes.
- <sup>8</sup> We explore the topic of human capital in detail in our concurrently released report, *Learning Nation: Equipping Canada’s Workforce with Skills for the Future*.
- <sup>9</sup> For example, IBM Watson is able to identify dietary and behavioural factors that contribute to the onset of diabetic episodes.
- <sup>10</sup> Data by Telegeography, as cited in “Digital Globalization: The New Era of Global Flows,” McKinsey Global Institute, February 2016, [mckinsey.com](http://mckinsey.com).
- <sup>11</sup> “The US Economy: An Agenda for Inclusive Growth,” McKinsey Global Institute, November 2016, [mckinsey.com](http://mckinsey.com).
- <sup>12</sup> Calculated from OECD data, accessed November 2017, [data.oecd.org](http://data.oecd.org).
- <sup>13</sup> “Investment Intensity in Canada and the United States, 1990 to 2011,” Statistics Canada, Economic Analysis Research Paper 11F0027M, Number 95, October 2014, [statcan.gc.ca](http://statcan.gc.ca).
- <sup>14</sup> Robert Brown et al., *Innovation and Business Strategy: Why Canada Falls Short*, The Expert Panel on Business Innovation, June 2009, [scienceadvice.ca](http://scienceadvice.ca).
- <sup>15</sup> Calculated from data published by the OECD. A similar study by the Conference Board of Canada estimated Canadian productivity in 2012 at \$42 per hour, compared with \$52 in the United States. This placed Canada 13th out of 16 comparable countries. Accessed May 2017, [conferenceboard.ca](http://conferenceboard.ca).
- <sup>16</sup> We note that governments can have an effect on labour and electricity costs through policies like minimum wage and electricity regulations.
- <sup>17</sup> SMEs also report that the total tax burden and government regulations are among the most important issues they face. See “Canada’s Red Tape Report 2015” by the Canadian Federation of Independent Business for further detail, [cfib-fcei.ca](http://cfib-fcei.ca).
- <sup>18</sup> High-impact firms are the subset of small and medium-sized enterprises that contribute to growth and exports disproportionately, given their size. Typically, they are rapidly growing companies.
- <sup>19</sup> However, while Canada ranks well on these metrics, it tends to measure the extent to which regulations drive outcomes like environmental safety or quality controls. There is opportunity to reduce the extent to which regulations burden those being regulated.
- <sup>20</sup> The Monetary Authority of Singapore (MAS) is implementing similar rules, including frameworks that dictate when and how new financial service products (e.g., virtual currencies) should be regulated. For further details on the United Kingdom’s Project Innovate, see the project’s website, [fca.org.uk](http://fca.org.uk).
- <sup>21</sup> Daisaku Sato, *Regulatory Trends in Regenerative Medicine in Japan*, Pharmaceuticals and Medical Devices Agency, March 2016, [pmda.go.jp](http://pmda.go.jp).
- <sup>22</sup> This road system would allow vehicles to drive using electricity transmitted directly from the electricity grid.
- <sup>23</sup> The Swedish transportation authority worked together with the country’s Energy Agency, the innovation agency of the federal government, a municipal authority, and two private-sector companies to fund and pilot an electric road system. The technology used in the road, which opened in June 2016, allowed cars and trucks to drive with unlimited range. It is a significant step toward the country’s larger efforts to move toward fossil-free vehicle fleets by 2030. For further details, see Scania, “World’s First Electric Road Opens in Sweden,” news release, June 22, 2016, [scania.com](http://scania.com).
- <sup>24</sup> Government of Ontario, “Automated Vehicles Coming to Ontario Roads,” news release, November 28, 2016, [news.ontario.ca](http://news.ontario.ca).
- <sup>25</sup> Project Innovate is administered by the Financial Conduct Authority (FCA) in the United Kingdom. While the Canadian Securities Administrators launched a similar regulatory sandbox platform in February 2017, it trails the progress of the FCA.

- <sup>26</sup> The federal government establishes Canada's national health policy framework and supports provincial government healthcare funding with over \$30 billion of transfers per year. It can use these tools to promote its federal policies across Canada.
- <sup>27</sup> "Regulatory Co-operation: Harmonizing Energy Efficiency Standards," Natural Resources Canada, August 16, 2017, [nrcan.gc.ca](http://nrcan.gc.ca).
- <sup>28</sup> "Regulations Amending the Canadian Aviation Regulations (Unmanned Aircraft Systems)," *Canada Gazette*, July 15, 2017, [gazette.gc.ca](http://gazette.gc.ca).
- <sup>29</sup> Ali Shajarizadeh and Aidan Hollis "Delays in the Submission of New Drugs in Canada," *Canadian Medical Association Journal*, Volume 187, Number 1, January 6 2015, [ncbi.nlm.nih.gov](http://ncbi.nlm.nih.gov).
- <sup>30</sup> HIS Markit report, cited in Stikeman Elliott, "The Timing of Major Energy Project Reviews," *Calgary Herald*, April 24 2017, [pressreader.com](http://pressreader.com).
- <sup>31</sup> "FDI Regulatory Restrictiveness Index," OECD, March 27, 2017, [oecd.org](http://oecd.org).
- <sup>32</sup> Daniel Seens, "SME Regulatory Compliance Cost Report," Government of Canada, September 2013, [reducingpaperburden.gc.ca](http://reducingpaperburden.gc.ca).
- <sup>33</sup> *Doing Business 2018*, World Bank, October 31 2017, [doingbusiness.org](http://doingbusiness.org).
- <sup>34</sup> The US government, for example, administers the website [regulations.gov](http://regulations.gov), which acts as a single point of access for those wishing to provide feedback to any one of 71 federal regulatory bodies and departments.
- <sup>35</sup> The co-creation projects run by the PCO Hub and Innovation, Science and Economic Development Canada could serve as models for these forums.
- <sup>36</sup> "Charges for the Use of Intellectual Property, Receipts (BoP, Current US\$)," World Bank, accessed November 2017, [data.worldbank.org](http://data.worldbank.org).
- <sup>37</sup> Global trade as a percentage of GDP has grown from 27 percent of world GDP to 58 percent between 1986 and today. Source: [data.worldbank.org](http://data.worldbank.org).
- <sup>38</sup> See, for example, Charles Plant, *Canada's Patent Puzzle*, Impact Brief, University of Toronto Impact Centre, May 2017, [impactcentre.ca](http://impactcentre.ca); Nick Pantaleo, Finn Poschmann, and Scott Wilkie, *Improving the Tax Treatment of Intellectual Property Income in Canada*, Commentary no. 379, C. D. Howe Institute, April 2013, [cdhowe.org](http://cdhowe.org); and Aaron Jacobs and Daniel Schwanen, "Canada's 'Commercialization Gap'—an International Trade Perspective," C. D. Howe Institute, August 25, 2017, [cdhowe.org](http://cdhowe.org).
- <sup>39</sup> Jack M. Mintz, *An Agenda for Corporate Tax Reform in Canada*, Canadian Council of Chief Executives, September 2015, [thebusinesscouncil.ca](http://thebusinesscouncil.ca).
- <sup>40</sup> Goran Vukšić, "Developing Countries in Competition for Foreign Direct Investment," The Vienna Institute for International Economic Studies, March 5 2015, [wiiw.ac.at](http://wiiw.ac.at).
- <sup>41</sup> Canada ranked third in the G7, ahead of the United States, in a recent ranking of overall FDI attractiveness. For more detail, see *Towards a Foreign Direct Investment (FDI) Attractiveness Scoreboard*, Copenhagen Economics, May 2016, [copenhageneconomics.com](http://copenhageneconomics.com).
- <sup>42</sup> Marginal effective tax rate is a metric widely used by economists use to measure the tax rate specifically on capital investment.
- <sup>43</sup> *Focus on Tax: Competitiveness Alternatives Special Report*, KPMG, 2016, [competitivealternatives.com](http://competitivealternatives.com).
- <sup>44</sup> This phenomenon has been observed widely in economic literature. See, for example, *The Exchequer Effect of the 50 per Cent Additional Rate of Income Tax*, HM Revenue and Customs, March 2012, [nationalarchives.gov.uk](http://nationalarchives.gov.uk), which also synthesizes evidence from prior literature on the topic.
- <sup>45</sup> For more details, see "Base Erosion and Profit Shifting," OECD, [oecd.org](http://oecd.org).
- <sup>46</sup> For example, in the recent Federal Court case of *Cameco Corporation* (2017 FC 763), CRA's demand to interview 25 individuals was held to be unreasonable.
- <sup>47</sup> *Report 2—Income Tax Objections—Canada Revenue Agency*, Office of the Auditor General of Canada, Fall 2016, [oag-bvg.gc.ca](http://oag-bvg.gc.ca).
- <sup>48</sup> For example, in the recent Tax Court case of *Sifto Canada Corp.* (2017-TCC 37), CRA assessed the taxpayer in a manner inconsistent with a "competent authority" agreement it had entered into. The Court decided CRA was required to abide by its agreement. There are also a number of cases where CRA has negotiated settlement agreements only to then decide not to abide by such agreements.
- <sup>49</sup> Similar to the nine-member panel that constituted the 1996 Technical Committee on Business Taxation.
- <sup>50</sup> "Small and Medium-Sized Businesses Struggling to Grow: BDC Study," Business Development Bank of Canada, September 20, 2016, [bdc.ca](http://bdc.ca).
- <sup>51</sup> Calculated from data provided in *Key Small Business Statistics*, Innovation, Science and Economic Development Canada, Small Business Branch, June 2016, [ic.gc.ca](http://ic.gc.ca).
- <sup>52</sup> Goss Gilroy Inc., *Evaluation of the Digital Technology Adoption Pilot Program*, National Research Council, May 24, 2013, [nrc-cnrc.gc.ca](http://nrc-cnrc.gc.ca).

- <sup>53</sup> See, for example, *Advisory Boards: An Untapped Resource for Businesses*, Business Development Bank of Canada, March 2014, [bdc.ca](http://bdc.ca); Y. Kamyabi and S. Devi, Use of Professional Accountants' Advisory Services and Its Impact on SME Performance in an Emerging Economy: A Resource-Based View," *Journal of Management and Sustainability*, Volume 1, Number 1, September 2011, available at [citeseerx.ist.psu.edu](http://citeseerx.ist.psu.edu); Sarah Dimick, "Three Lessons for SMEs Adopting Technology," Conference Board of Canada, December 9, 2013, [conferenceboard.ca](http://conferenceboard.ca).
- <sup>54</sup> "2017 Annual Report," Business Development Bank of Canada, Accessed November 15, 2017, [bdc.ca](http://bdc.ca).
- <sup>55</sup> "British Columbia's Small Business Roundtable: 11th Annual Report to Government", British Columbia's Small Business Roundtable, 2016, [smallbusinessroundtable.ca](http://smallbusinessroundtable.ca).
- <sup>56</sup> Daniel Seens, *SME Profile: Canadian Exporters*, Government of Canada, January 2015, [ic.gc.ca](http://ic.gc.ca).
- <sup>57</sup> World Trade Organization, "WTO Upgrades Forecast for 2017 as Trade Rebounds Strongly," news release, September 21, 2017, [wto.org](http://wto.org).
- <sup>58</sup> Value was measured by the increase in company equity.
- <sup>59</sup> Howard Solomon, "Canadian SMEs Urged to Go Digital," *IT World Canada*, October 29, 2014, [itworldcanada.com](http://itworldcanada.com).
- <sup>60</sup> The United Kingdom is considering this kind of program. The October 2017 *Made Smarter* report—a review of technology adoption in the United Kingdom by a conglomerate of industrial leaders—recently recommended a similar program, arguing that dissemination of technological know-how must come in part through knowledge sharing between firms, which the government can help foster. For more, see the report at [gov.uk](http://gov.uk).
- <sup>61</sup> Goss Gilroy Inc., Evaluation of the Digital Technology Adoption Pilot Program.