

SMALL BUSINESS, ENTREPRENEURSHIP, AND INNOVATION

INSTITUTE FOR COMPETITIVENESS & PROSPERITY
Working Paper 15 February 2012



Institute for Competitiveness & Prosperity

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 Working Paper are welcome and should be directed to the Institute for Competitiveness & Prosperity. The Institute is funded by the Government of Ontario through the Ministry of Economic Development and Innovation.

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AND INNOVATION**

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Exhibits

EXHIBIT 1	Smaller businesses differ from entrepreneurial businesses	12
EXHIBIT 2	Smaller businesses account for most firms and a large share of employment in Canada and the United States	13
EXHIBIT 3	Business owners report the highest level of well being	14
EXHIBIT 4	In Canada's food processing industry, smaller establishments are less productive than larger ones	20
EXHIBIT 5	Larger firms pay higher wages for more educated workers than smaller firms	21
EXHIBIT 6	Larger firms contribute more to GDP	22
EXHIBIT 7	Larger firms account for most R&D spending	23
EXHIBIT 8	Very few small firms conduct R&D	23
EXHIBIT 9	Start-ups typically follow existing industry patterns	24
EXHIBIT 10	Most start-ups do not survive for more than a few years	25
EXHIBIT 11	The minority of the start-ups that survive generate significant employment growth, Canada and United States	26
EXHIBIT 12	More medium-sized firms have growth intentions than small firms	27
EXHIBIT 13	Larger manufacturing facilities are better managed	27
EXHIBIT 14	Large firms generate most export value	28
EXHIBIT 15	Canada's regulatory environment is more favourable for entrepreneurship than that of most other countries	31
EXHIBIT 16	Canada ranks high on entrepreneurial activity in the Global Entrepreneurship Monitor survey	32
EXHIBIT 17	Preferential tax treatment for smaller businesses has fallen in Canada and Ontario	34
EXHIBIT 18	Marginal effective tax rate jumps as firms' growth spurts	35
EXHIBIT 19	Most ICP Global Leaders have been in business for over 25 years; <i>Backbone</i> Top 250 Canadian Tech Companies tend to be younger	45
EXHIBIT 20	More than half of ICP Global Leaders started exporting within 5 years	46
EXHIBIT 21	The majority of founders of ICP Global Leaders and <i>Backbone</i> Top 250 Canadian Tech Companies were 30 years or older when they started their firms	46
EXHIBIT 22	Most founders of ultimately successful firms had industry experience	47
EXHIBIT 23	A minority of founders had previous entrepreneurial experience	47
EXHIBIT 24	Most founders were born in Canada	48
EXHIBIT 25	Founders of ICP Global Leaders and successful start-ups were highly educated	48
EXHIBIT 26	Most founders had a science or engineering education	49

Contents

CERTIFIED GENERAL ACCOUNTANTS OF ONTARIO FOREWORD	4
CHAIRMAN'S FOREWORD & ACKNOWLEDGEMENTS	5
SMALL BUSINESS, ENTREPRENEURSHIP, AND INNOVATION	6
SMALL- AND MEDIUM-SIZED ENTERPRISES AND ENTREPRENEURIAL FIRMS: WHAT ARE THEY AND WHY DO THEY MATTER?	10
Definitions of small businesses and entrepreneurial businesses vary	11
Smaller and entrepreneurial firms contribute significantly to our economy	13
IS SPECIAL PUBLIC POLICY REQUIRED TO SUPPORT SMALLER AND ENTREPRENEURIAL FIRMS?	16
What is market failure?	17
Should public policy support smaller businesses and entrepreneurial firms to overcome market failure?	19
HOW CAN PUBLIC POLICY SUPPORT SMALLER FIRMS AND ENTREPRENEURS?	30
What is the environment for entrepreneurship in Canada?	31
A common question for government programs is whether to support all or focus on the few	32
Current tax treatment is not an optimal approach for encouraging entrepreneurship	35
Venture capital supports entrepreneurship	35
Clusters contribute to entrepreneurship	38
Government procurement could promote innovation	40
WHAT MAKES ENTREPRENEURS SUCCESSFUL?	42
What do we know about successful entrepreneurs?	43
Many of the things we "know" about entrepreneurship are myths	44
Some realities govern successful start-ups	45
WHAT SHOULD WE DO?	50
PREVIOUS PUBLICATIONS	56



SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs) COMPRISE A SIGNIFICANT PORTION OF OUR ECONOMY. It is vital that we have a public policy framework that fosters a culture of entrepreneurship and innovation in Ontario and the rest of Canada. Certified general accountants understand this, because thousands of our members own, serve, or are employed by SMEs.

As a self-regulating professional association, the Certified General Accountants of Ontario represents more than 21,000 CGAs in Ontario and 8,000 students in the CGA program of professional studies. There are more than 73,000 CGAs and students working and studying around the world, with affiliate associations across Canada, China, Hong Kong, and the Caribbean. CGAs work in industry, commerce, finance, government and public practice, where their clients range from major corporations to the SME sector addressed in this Working Paper.

As SMEs represent a sizable segment of our stakeholders, we are pleased to have sponsored the research that the Institute for Competitiveness & Prosperity has undertaken in ascertaining the factors that make certain sub-segments of the SME sector more prosperous than others.

We'd like to thank Roger Martin, James Milway and the entire team at the Institute for conducting this extensive research. We are confident that it will provoke thought and stimulate discussion with colleagues, in private and public forums, and with government officials, because a public policy framework that ensures a thriving and strong SME sector is in everyone's interest.

We hope that the series of recommendations developed through this Working Paper will help our innovative and growing SMEs compete and prosper in the 21st century.

As we say at CGA Ontario, CGAs see more than numbers. We see the opportunities that lie behind the numbers. And with this Working Paper, we see opportunities to create a strong SME sector that can and will compete on the global stage.

A handwritten signature in black ink that reads "Doug Brooks". The signature is written in a cursive, flowing style.

Doug Brooks, FCGA
Chief Executive Officer
Certified General Accountants of Ontario

Our public policy emphasis should be on enabling entrepreneurial firms to drive innovation and prosperity.



I AM PLEASED TO PRESENT WORKING PAPER 15 OF THE INSTITUTE FOR COMPETITIVENESS & PROSPERITY. In this Working Paper, we examine the importance of small business and entrepreneurship to our prosperity in Ontario and Canada.

Many observers argue correctly that an important element of our economic progress is the success of small and medium enterprises. Smaller businesses are the backbone of our economy, and among them are our future global leaders.

But not all smaller businesses are the same. The vast majority do not have significant growth ambitions; nor do they drive innovation any more than other businesses. In this Working Paper, we conclude that we should be focusing on enabling entrepreneurial, high-growth, high-impact firms. They are the firms that will help drive productivity, innovation, and prosperity. To the extent our public policy can identify growth firms and help them along the way, that should happen. But this is a very challenging goal – and there is no special formula for achieving it.

We can start by having a clearer sense of the factors that tend to be associated with successful entrepreneurs – education, specific experience, maturity, and the benefit of clusters. We can implement smarter procurement by governments to help spur the growth of entrepreneurial firms. We can re-orient tax policy to encourage growth rather than smallness.

We have programs provincially and federally that are aimed at helping growing entrepreneurial firms succeed, and we encourage their ongoing development – with experimentation and rigorous evaluation. “Picking winners” is not something we’re recommending; rather, we’re trying to improve the odds for successful entrepreneurs.

For this Working Paper, I want to extend a special thank you to the Certified General Accountants of Ontario whose generous financial assistance helped make this research and publication possible. However, the conclusions in this working paper are our own.

The Institute gratefully acknowledges the ongoing funding support from the Ontario Ministry of Economic Development and Innovation. We look forward to sharing and discussing our work and our findings. We welcome your comments and suggestions.

Roger L. Martin, Chairman

Task Force on Competitiveness, Productivity and Economic Progress
Dean, Joseph L. Rotman School of Management, University of Toronto

SMALL BUSINESS, ENTREPRENEURSHIP, AND INNOVATION



THE GREATEST OPPORTUNITY TO RAISE PROSPERITY IN ONTARIO AND CANADA IS TO STRENGTHEN OUR INNOVATION CAPABILITIES. As we have shown over the past decade, we are less productive than other developed economies like the United States, France, and Germany. That is to say, we are less successful in creating value from our human, physical, and natural resources than other countries. Lower productivity is synonymous with lower innovation, since product and process improvements result in more value being created with the same resources. The economic progress we have enjoyed is the result of more people working and working more hours in Ontario and Canada than in many other peer jurisdictions. We work more, but not smarter.

Many observers argue correctly that an important element of our economic progress is the success of our small and medium enterprises. We hear that these smaller businesses are the backbone of our economy, that they are the engine of job growth, and that our innovation performance is highly dependent on their success. Small- and medium-sized suppliers are said to be critical to the success of our globally competitive firms and exporters. And it is generally accepted that ambitious entrepreneurial firms challenge the current business environment, making the status quo uncomfortable and sometimes providing the spark for the creative destruction described by the noted economist, Joseph Schumpeter.

All of this is true, but much of our public policy is based on mythology, on an exaggerated sense of the importance of all smaller businesses to our economy, and on the need for special support for that sector of the economy. In this Working Paper, we conclude that we should avoid over emphasizing their importance and the impulse to favour them in our public policy. The focus, instead, should be on helping, where necessary and possible, the entrepreneurial, high-growth, high-impact firms with the potential to become strong global players – a very challenging goal.

Entrepreneurial firms – ones that are innovative and are realizing success in the marketplace through growth – are the firms that will help drive Ontario's productivity and prosperity.

We propose an approach to public policy for the smaller business sector that is based on the premise that a small fraction of these businesses have the potential to grow significantly and become major contributors to our innovation, productivity, and prosperity. This means that we should avoid over arching policies for all start-ups and smaller businesses, and focus instead on creating a supportive environment that breeds success and on eliminating frictions for growing businesses.

We also recommend that government policy continue to pursue ways of supporting specific companies that have a solid chance of success by fostering networks of like-minded entrepreneurs, mentoring opportunities, and advice on expansion. The Ontario Government has several such programs in place. We encourage ongoing assessment of these programs to ensure they are having the desired impact.

More specifically we recommend that public policy:

Continue to support economic policy that promotes innovation and productivity growth in all sectors.

Our small and medium enterprises track the economy as a whole and are an integral part of its various sectors; they will succeed to the extent our economy succeeds. But of particular relevance to small- and medium-sized businesses are policies related to education and industry clusters. If more of our young people pursue post secondary education, we will improve the quality of our start-up businesses. Governments and educators should work with small business groups to increase the breadth and depth of business education and training opportunities. Public policy that strengthens the environment for industry clusters will also help improve the quality of our entrepreneurial start-ups.

Build on current approaches that are customized to specific businesses.

The needs and aspirations of a stable, locally focused small business – the corner grocer or local trades person – are much different than those of an aggressive, export-oriented entrepreneur. It is much less risky to design programs for all small- and medium-sized businesses. But this has the drawback of spreading scarce public resources too thinly. It is riskier for governments to seek out high-potential firms and provide tailored support for their success. We encourage governments to experiment in this area – identifying opportunities for assisting specific firms in areas like market research funding, export market development, and management training. Ontario already has some tailored programs, and we urge that these be monitored closely for expansion opportunities – and for relentless pruning where results are not achieved.

Expand smart procurement by governments to create opportunities for small- and medium-sized businesses – and all businesses.

More and better government outsourcing is a significant opportunity for government service and for the success of our private sector. In areas like customer service, transactions processing, human resources systems, and information circulation, governments will find service improvement and cost reduction opportunities by contracting with the private sector. We are not recommending special treatment for domestic firms – or for smaller firms. But because of proximity and local knowledge, our domestic firms will have an advantage in winning open competitions for providing these services. Winning such contracts will give our growth-oriented entrepreneurs reference customers and valuable experience to support their success.

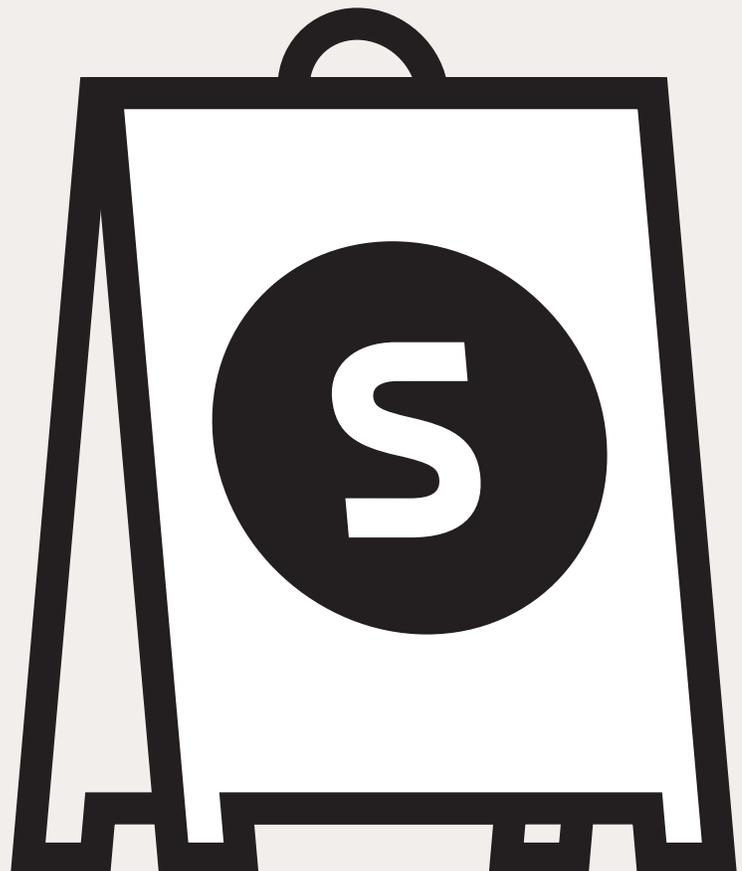
Entrepreneurial firms are the ones that will help drive Ontario's productivity and prosperity.

Make the tax system as neutral as possible, but explore specific changes to help growth-oriented small- and medium-sized businesses.

Our research indicates no good reason for much of the preferential tax treatment given to small- and medium-sized businesses. They are not challenged with market inefficiencies that require government correction, and they do not, as a group, provide economy-wide benefits for which they are not rewarded. As other corporate tax changes are implemented, we encourage governments to work toward reducing the income tax benefit small- and medium-sized businesses receive versus larger businesses. At the same time, we encourage governments to explore tax changes that promote investments by growth-oriented firms of all sizes, reduce capital gains taxes when firms go public, and lower the impact of capital gains taxes as barriers to asset sales for entrepreneurs looking to sell their businesses.

Small- and medium-sized businesses are the cornerstone of our economy. They operate in all industries and across all regions. They provide jobs and incomes for a large number of Ontarians and Canadians. But public policy does not need to provide special treatment and support for them. It makes little sense to effect a transfer of resources through our taxing and public spending system from larger to smaller firms. Larger businesses are major employers and, in fact, are critical for our success in innovation, productivity, and prosperity. The focus for small- and medium-sized businesses has to be on encouraging those firms that aspire to and progress toward becoming large businesses. While some public policy can be specifically aimed at helping such firms succeed, much of Ontario's and Canada's success will come from a supportive environment for innovation and productivity by all firms and people.

SMALL- AND
MEDIUM-SIZED
ENTERPRISES AND
ENTREPRENEURIAL
FIRMS: WHAT ARE
THEY AND WHY DO
THEY MATTER?



POLICY MAKERS ARE KEENLY INTERESTED IN SMALL BUSINESSES and entrepreneurs and their contribution to economic well being, growth, and prosperity. In every federal and provincial election, the major political parties have promises for them as part of their platform. And most budgets have initiatives directed at small- and medium-sized enterprises and entrepreneurs. Is the special attention to smaller businesses and entrepreneurs warranted? How important are they to our productivity, innovation, and prosperity?

In this chapter, we:

- Define what we mean by “smaller businesses,” “entrepreneurial businesses,” and related concepts.
- Elaborate on the reasons why they are important to an advanced economy.

Definitions of small businesses and entrepreneurial businesses vary

The term “small- and medium-sized enterprise” is used broadly, but official definitions and those in popular usage are often not the same. It’s important to distinguish between the various classifications that are often grouped under the general umbrella of “small- and medium-sized enterprises” – or businesses.

In general, businesses are classified based on the number of employees. Industry Canada defines a small business as one with fewer than 100 employees, while a medium business

is typically between 100-499 employees, and a large business is one with 500 employees or more.

In the United States, classifications are more ambiguous. The US Small Business Administration (SBA) classifies a small business as a firm with fewer than 500 employees and does not differentiate by size of firms bigger than that. The US Internal Revenue Service (IRS) has different definitions for different industries, using the four- or five-digit North American Industry Classification System (NAICS). Definitions in some industries are based on revenues and in others on employment, with different thresholds in different industries.

The OECD defines small firms as those with fewer than 50 employees, and micro-enterprises as those with fewer than 10 employees. It considers a firm medium if it has between 50 and 249 employees, and large with over 250 employees.

In general, we use the Industry Canada definitions in this Working Paper, unless otherwise indicated. For simplicity, we will refer to small- and medium-sized businesses as “smaller” firms or businesses – differentiating between small and medium only where necessary.

Another way of differentiating businesses is by their legal structure. This is more than a legal technicality, since a business’s structure can have a significant impact on its ability to obtain financing and grow. At the outset of a business’s life, the owner or owners must decide whether they will incorporate the business or whether it will remain unincorporated. If they choose to maintain an

unincorporated business, they then need to decide whether to run it as a partnership or a sole proprietorship.

Corporations are used less frequently as business structures, because they are more difficult and costly to set up. But they have several advantages. Corporations allow for ease of ownership change, which promotes equity investment. They also limit liability to the business’s assets, and not the owner’s personal assets, thereby facilitating more risky investments. Corporations tend to be larger than unincorporated businesses.

Regardless of the corporate structure, it is important to distinguish between a smaller business and an **entrepreneurial firm**. On the surface, this may seem peculiar, as it is popularly believed that smaller business owners are entrepreneurs. Oxford English Dictionary defines an entrepreneur as “a person who sets up a business or businesses, taking on financial risk in the hope of profit.” Using this definition, entrepreneurs and business owners are synonymous.

But the academic literature goes further and has developed more specific definitions of an entrepreneur, though they vary too. We use the definition established by Sander Wennekers and Roy Thurik through their exhaustive literature review. The definition has two components: ability and roles. The authors define entrepreneurial ability as the skills of an individual or team to “perceive and create new economic opportunities, new organizational schemes” as well as to introduce “their ideas in the market in the face of uncertainty and other obstacles,

by making decisions on location, form, and the use of resources and institutions.”¹ The authors go on to specify distinct roles entrepreneurs can play, such as risk taker, supplier of financial capital, decision maker, innovator, manager, coordinator of economic resources, employer of factors of production, and owner of an enterprise.

Why is it important to differentiate between smaller businesses and entrepreneurial firms? Though they share some common traits, a major difference between the two is that entrepreneurs have an essential ambition to grow, while this is not necessarily the case for smaller businesses (*Exhibit 1*).

Successful entrepreneurial firms realize periods of above-average growth – otherwise, they are not really differentiating themselves in the marketplace. Some entrepreneurial firms will grow even further, and become medium-sized. Truly entrepreneurial firms become larger, and may achieve global leadership, as we have defined it, generating more than \$100 million in revenue and being one of the top five globally in their market segment. Of the 3,250 large

firms in Canada in 2007, we identify 90 ICP Global Leaders, or 2.7 percent of large firms. Later we will review our research on the factors that seem to contribute to entrepreneurial firms’ success in achieving global leadership.

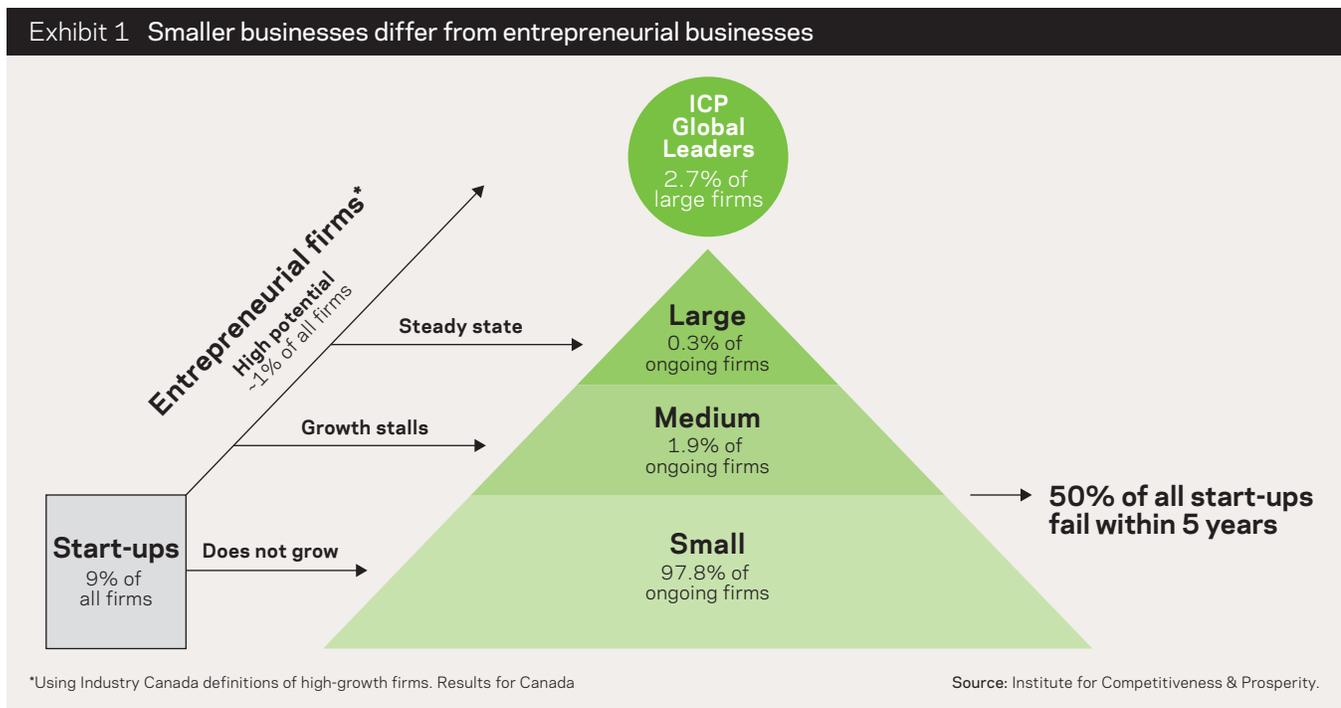
A special kind of entrepreneurial firm is one that exhibits particularly high growth. Industry Canada defines “high-growth” firms as those with average annual growth of 20 percent or more, either in the number of employees or sales, over a three-year period.² High-growth firms that are less than five years old are often called “gazelles.” In the United States, there is no official definition of high-growth or gazelle, although the terms are used loosely by various researchers and writers.

At some point, however, most entrepreneurial firms stop growing or fail – and do not become large firms or global leaders. At this point, these firms are no longer “entrepreneurial,” because they have achieved a steady state of competitiveness and size. They are important contributors to our economy, as we shall see, but no more important than most other firms.

All businesses begin as start-ups and will reach a certain size depending on the degree to which they are truly entrepreneurial. Most start-ups are not entrepreneurial. Most stay small because the owners prefer to operate a small, steady business – for example, the local law firm or dry cleaner; or because the business simply cannot be scaled up, despite the owner’s vision. Many start-ups fail in their early years.

In summary, most smaller firms have ongoing steady operations that do not grow. Some are truly entrepreneurial in that they bring special talents and skills to develop innovative products, services, or business processes to achieve a competitive advantage that fuels their business growth. Both types of firms began as start-ups. But the economic impact of smaller businesses and entrepreneurial businesses differ.

1 Sander Wennekers and Roy Thurik, “Linking Entrepreneurship and Economic Growth,” *Small Business Economics*, Vol. 13, Issue 1, 1999, pp. 27-55.
 2 Provided the firms employed 10 or more workers at the beginning of three-year period.



Smaller and entrepreneurial firms contribute significantly to our economy

The two types of firms contribute in different ways to our socioeconomic fabric. Smaller firms make up a large part of our economy and are important elements in our day-to-day well being. They provide critical support to our larger firms. Entrepreneurial firms stimulate competitive intensity in our economy and are the source of our economy's future success.

Smaller firms account for much of our economic activity

Small firms are an important component of our economy, making up an astounding 97.8 percent of the 1.1 million employer businesses in Canada and a similar share in the United States in 2007 (*Exhibit 2*). They also account for almost half of employment in Canada. The trend is similar in the United States, though large firms there contribute more to employment and payroll than they do in Canada. Starting with a much larger domestic market, US firms are larger than their Canadian counterparts. For example, the three

largest firms on the Canada *FP500* list would not be in the top 50 of the *Fortune 500*. Once medium firms are considered too, it becomes clear that smaller firms as a class are essential to the prosperity of our economy, and the well being of our workforce. As we shall see, however, larger firms are more important contributors to our economic output than the number of firms and their employment would indicate.

Smaller firms contribute to happiness

Of course, employment and economic contributions are not the only factors in a country's well being. It is important for a society's citizens to be satisfied and happy as well as economically prosperous. In the United States, the Gallup-Healthways Well-being Index surveys individuals in various occupations along six categories of questions to determine their overall well being. Business owners top the list, with the highest well being, followed by people with professional designations, and executives/managers (*Exhibit 3*). This may reflect the autonomy and flexibility that running one's own firm can bring, as well as the intangible satis-

faction many people get from "being their own boss."

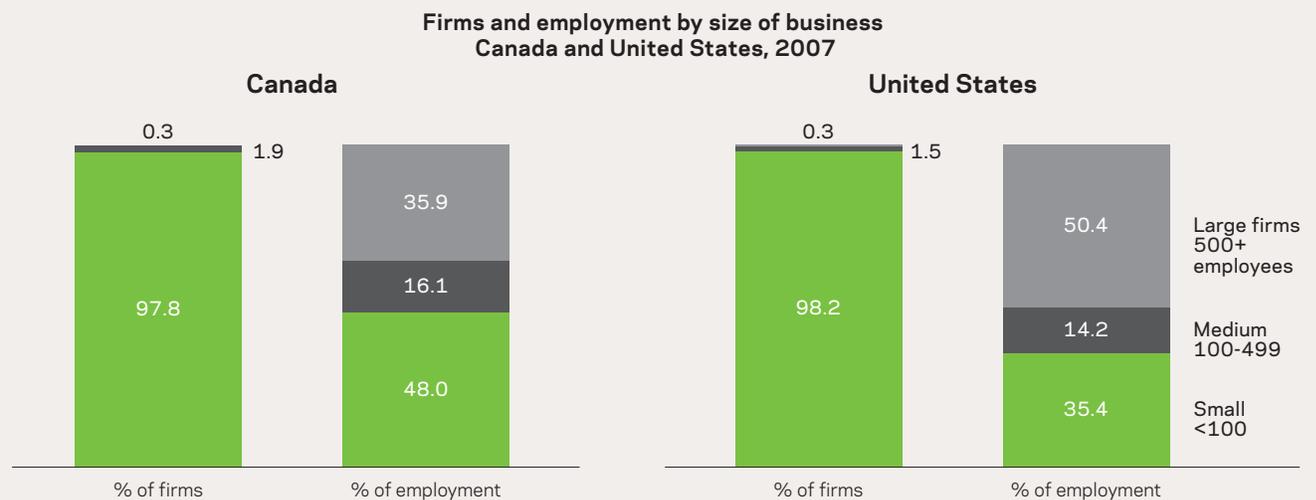
Though the same poll is not conducted in Canada, Statistics Canada generates the Community Health Survey that measures the life satisfaction of individuals. The Statistics Canada results are similar to those in the United States, though more ambiguous. Self-employed people are more likely than employees to report being "very satisfied."

Young, dynamic firms spur innovation and "creative destruction"

New firms with different kinds of skills, products, services, and processes play a vital role in innovation and economic growth. In fact, modern economic growth, beginning in the eighteenth century in Britain and Northern Europe, coincided with increased entrepreneurship. A strong legal framework, property rights, high rates of urbanization, a monetized economy, and well functioning, stable markets encouraged business formation and risk taking.³

³ Wennekers and Thurik, "Linking Entrepreneurship and Economic Growth," pp. 27-55

Exhibit 2 Smaller businesses account for most firms and a large share of employment in Canada and the United States



Note: US data based on firms, Canadian data based on establishment counts.

Source: Institute for Competitiveness & Prosperity analysis based on data from Industry Canada, Key Small Business Statistics (July 2008), Statistics Canada, US Bureau of Labor Statistics and the US Small Business Administration.

Private property protection extended to knowledge through patent laws, encouraging the development and dissemination of inventions. This sparked an explosion of innovative and entrepreneurial activity that led to the Industrial Revolution in Europe as well as North America.

Innovations and inventions were developed, then brought to market and implemented by firms, thereby raising productivity until yet another innovation was created that could improve upon established processes and challenge incumbents. This continual change is often referred to as “creative destruction,” a term coined by Joseph Schumpeter⁴ to describe the churn of firms in the economy over time – a process of innovation that ultimately drove growth and prosperity.⁵ Creative destruction, which depends heavily on new firms, provides important contributions to productivity and prosperity in two ways.

First, when new firms enter the market with innovative products or processes to improve efficiency and economic productivity, they render incumbent firms obsolete, unless the incumbents match or exceed the

improvements introduced by the upstarts. Philippe Aghion and other economists studied the effects of new firm entry on the productivity of incumbent firms and found that they respond to new firm entry by increasing innovative activities such as patenting. But this only holds true for more innovative industries.⁶

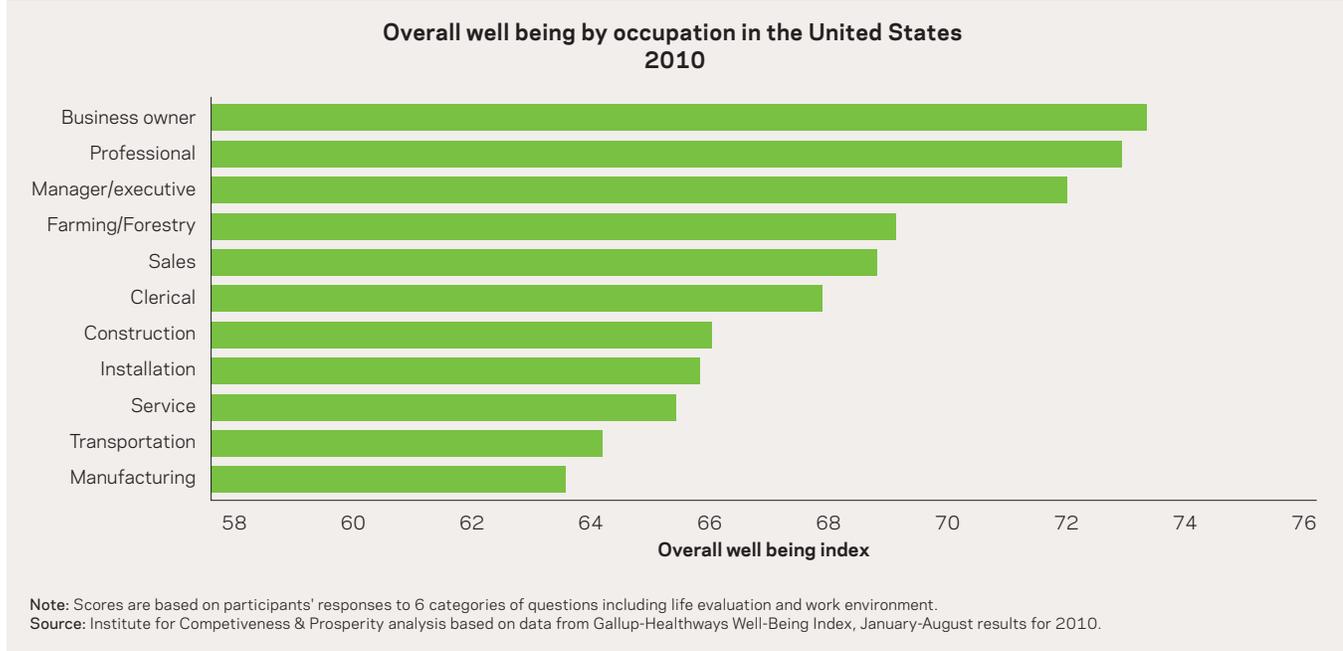
Second, new firms entering the market increase the intensity of competition and specialization. Dutch economists Niels Bosma, Erik Stam, and Veronique Schutjens examined the productivity effects of firm entry on total factor productivity in the Netherlands. They found that creative destruction led to productivity growth through more competitive intensity and that the effects were more positive in services than in manufacturing.⁷ Economists Lucia Foster, John Haltiwanger, and Cornell J. Krizan have found that 30 percent of total factor productivity growth can be accounted for by the net entry of firms in US manufacturing, with an even larger share of growth attributable to entry in the retail sector.⁸ In general, innovative industries will experience increases in both labour and total factor

productivity as a result of new firm entrants.

As economic development progresses, economists have found a U-shaped relationship between per capita income and self-employment in OECD countries.⁹ That is, less developed economies have a high share of self-employment, but lower income; as the economies develop, the proportion of self-employment declines and income rises; finally, in the most prosperous economies there is a higher percentage of

- 4 Joseph Schumpeter, *The Theory of Economic Development*. Cambridge, Massachusetts: Harvard University Press, 1934.
- 5 Zoltan Acs, Randall Morck, Myles Shaver, and Bernard Yeung, “The Internationalization of Small and Medium Sized Firms: A Policy Perspective,” *Small Business Economics*, Vol. 9, Issue 1, 1997, pp.7-20.
- 6 Philippe Aghion, Richard Blundell, Rachel Griffith, Peter Howitt, and Susanne Prantl. “The Effects of Entry on Incumbent Innovation and Productivity,” *Review of Economics and Statistics*, Vol. 91, No. 1, 2009, pp. 20-32.
- 7 Niels Bosma, Erik Stam, and Veronique Schutjens. *Creative Destruction and Regional Competitiveness*, EIM Business and Policy Research, Scales Research Report, 2006.
- 8 Lucia Foster, John Haltiwanger, and Cornell J. Krizan, *Aggregate Productivity Growth: Lessons from Microeconomic Evidence*, NBER Working Paper No. 6803, 1998.
- 9 Sander Wennekers, Andre Stel, Roy Thurik, and Paul Reynolds, “Nascent Entrepreneurship and the Level of Economic Development,” *Small Business Economics*, Vol. 24, Issue 3, 2005, pp. 293-309.

Exhibit 3 Business owners report the highest level of well being



Although smaller firms are the backbone of our economy, few are truly entrepreneurial.

self-employment. The U-shaped relationship emerges as a result of a fundamental economic shift from manufacturing-driven growth to service-driven growth, which can favour smaller firms, since economies of scale are less essential. This is also driving a shift away from the “managed” economy toward the “entrepreneurial economy.”¹⁰

In recent decades, economists have increasingly linked entrepreneurship to sustained economic growth. They conclude that public policy in advanced economies needs to ensure ease of entry by new firms, well-functioning intellectual property rights to enhance commercial exploitation of scientific findings, a well-developed market for venture capital, and incentives for self-employment.^{11,12}

The process of creative destruction can be seen by looking at some of the largest, most successful publicly traded companies over time. Specifically, the S&P/TSX Composite Index in Canada exhibits significant churn, with old companies being delisted and new ones emerging to fill their place. As of 2011, the Index included 255 companies across 10 broad sectors. Between 2009 and 2011, 68 companies were added to the index, while 24 were removed. In addition, there were many instances of reweighting, reflecting changing market capitalization and industry market share. Some sectors become more important and some become less important to our economy. On the Fortune 500, a grouping of the 500 largest US public and private firms, 256 firms moved on and off the list between 2000 and 2010. This

significant churn means that large incumbent firms are not guaranteed their market position over time. Some of today’s small firms will be tomorrow’s large, successful companies.

High-growth smaller firms generate more employment

While smaller firms are ubiquitous, high-growth firms are few and far between. They represent about 1 percent of smaller firms in Canada¹³ and only 2 to 3 percent of small firms in the United States.¹⁴

However, despite their small numbers, high-growth firms account for a very large proportion of employment growth in the Canadian economy. Statistics Canada researchers Garnett Picot and Richard Dupuy found that 5 percent of smaller firms in the economy accounted for 43 percent of job creation in Canada. This suggests that most small firms are not the significant job creators in Canada.¹⁵

In the United States, Zoltan Acs, William Parsons, and Spencer Tracy found that almost all job creation can be accounted for by a small number of high-growth firms. They also found that these high-growth firms were not necessarily small: 33.5 percent of US job creation was accounted for by firms with 25 employees or less; 24.1 percent by firms with 25-499 employees; and 42.4 percent by firms with more than 500 employees.

It is important to note that in both the Canadian and US studies, firms that were growing quickly in the first period of analysis often did not stay in high-growth categories in subsequent periods.

Smaller firms are important elements of our society and not just because of their sheer numbers. They truly are the backbone of our economy and provide essential support to our larger firms. But not all of them are entrepreneurial - the ones that stimulate innovation in our economy and drive employment growth. Important questions to ask are whether either type of firm requires special support from our public policy and how much.

10 Martin Carree and Roy Thurik. “The Impact of Entrepreneurship on Economic Growth” in *International Handbook of Entrepreneurship Research*, edited by Zoltan Acs and David Audretsch, 2002.

11 Wennekers, Stel, Thurik, and Reynolds, “Nascent Entrepreneurship and the Level of Economic Development,” pp. 293-309.

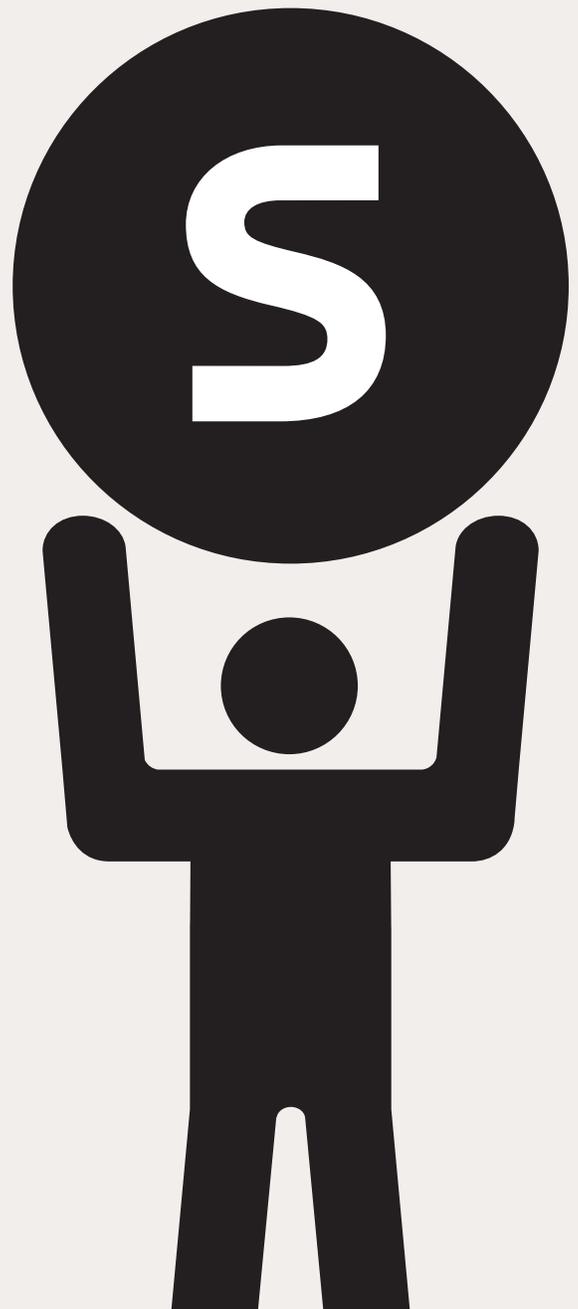
12 Wennekers and Thurik, “Linking Entrepreneurship and Economic Growth,” pp. 27-55

13 Industry Canada, *State of Entrepreneurship in Canada*, 2010.

14 Zoltan Acs, William Parsons, and Spencer Tracy, *High Impact Firms: Gazelles Revisited*, Small Business Administration Office of Advocacy, June 2008. The authors report 2 to 3 percent of US firms are “high-impact firms,” defined as high-growth firms that have at least doubled both sales and employment over the last four years.

15 Garnett Picot and Richard Dupuy, *Job Creation by Company Size Class: Concentration and Persistence of Job Gains and Losses in Canadian Companies*, Statistics Canada Business and Labour Market Analysis Division, Research Paper No. 93, 1996.

IS SPECIAL PUBLIC
POLICY REQUIRED
TO SUPPORT
SMALLER AND
ENTREPRENEURIAL
FIRMS?



WE HAVE SEEN THAT SMALLER FIRMS AND ENTREPRENEURS are important players in our economy. But are there special features of their contribution and of the barriers they face that require special treatment in public policy? We first summarize the rationale for special treatment of industries and firms, often seen as a necessity to overcome “market failure.” We then review the evidence to determine if smaller firms and entrepreneurs are affected by market failure – concluding that, by and large, the evidence is pretty slim. The real public policy challenge is to identify and encourage, if necessary, the truly entrepreneurial firms that can grow and make a difference to our economic prospects.

What is market failure?

Economists observe that a competitive market allocates resources efficiently. Investments flow to businesses with the best returns, with appropriate adjustments for risk; wages are paid to most skilled and productive workers; and prices adjust to reflect the value of products as perceived by customers. In allocating resources through these mechanisms, the market achieves the maximum economic output and well being for its citizens with the most efficient use of resources. In any economy, structures or conditions may stand in the way of the best allocation of resources by the market – this is called market failure. Resources are allocated efficiently when, for each good produced, its marginal cost of production is equal to its marginal

benefit. When this condition is violated, market failure occurs.

Market failure is commonly found in four situations; some argue that the externalities and informational asymmetries do affect smaller and entrepreneurial firms.¹⁶

Firms have excessive market power

A firm with market power has the ability to affect either the prevailing price in the market or the total quantity of the product produced or service delivered to all consumers. This market power can be the result of conditions such as special access to raw materials, delivery channels, an insurmountable technical advantage, or increasing returns to scale in production. These advantages can lead to monopolies or oligopolies having excessive market power. And firms that have this market power will maximize their profit at a price above or at a level of output below what would be achieved in a competitive market.

Economists have concluded, however, that government policy should not necessarily be aimed at eliminating firms’ market power. Not only would this be impossible, but it would also be undesirable, since much of the innovation and productivity growth in our economy comes from firms with such power. Instead, the goal of government policy is to prevent firms from abusing their power in a way that unduly harms consumers and reduces the amount of innovation.

Examples of excessive market power often cited include Microsoft

and its operating system, telecommunications providers with licenses to build cellular networks, and utilities with power grids. For telecommunications carriers and power utilities, governments often regulate rates to protect consumers.

Public goods are not paid for by private actions

Certain things, like national defence or infrastructure, are referred to as “public goods.” Once they are produced, it is very difficult, and often impossible, to exclude anyone from using public goods without paying. In a free market, self-interested individuals tend to be “free-riders” of the good once it becomes available – not paying for the benefit they receive. Because producers are also profit-driven in a free market, public goods will be under provided or not provided at all. This leads to an inefficient allocation of resources in the economy, as necessary public goods are less available than is required for optimum efficiency. One remedy is for government to provide the good, financed from its tax revenues or to impose tolls on users of the public good.

Firms and individuals take actions without due consideration of others

Economic efficiency is achieved when the marginal benefit from the last unit of output just matches the marginal cost of production. But whose costs and benefits are relevant? Normally, firms are interested in their

¹⁶ Christopher Ragan and Richard Lipsey, *Economics*, 12th Canadian Edition, Pearson Education, 2007.

own costs of production, and consumers are interested only in the benefits they receive. They often ignore any costs or benefits that may accrue to others – those that they do not bear or receive themselves.

An effect – or externality – occurs whenever actions taken by firms or individuals impose costs or benefits on others not directly involved, and the extra costs or benefits are not taken into account in the economic activity of producers, consumers, and policy makers. Externalities arise in many different ways, and some may be harmful or beneficial to third parties.

A good example of a negative externality is pollution, where the cost to society is not fully borne by the firm that causes it, though the benefit of production is fully captured by the firm. In this case, public policy needs to impose costs on the polluter to reflect the full costs to society; this would raise the price of the good ultimately paid by its consumers. Alternatively, public policy could put regulations in place to limit pollution. Without these kinds of intervention, firms and people will tend to ignore the pollution they create.

Where producers do not reap the full benefits of their contribution (called “positive externalities” by economists), the market will produce too little. R&D and innovation are often cited as examples. The knowledge created by the firm investing in R&D or a new innovation will become available to others outside the firm – a “knowledge spillover.” This spillover helps stimulate economic progress for society. Although inventors are protected by patents and copyright laws, others can still benefit from the new knowledge without compensation for the entrepreneur and investor. Public intervention in such cases typically includes special tax credits for R&D, direct subsidies for R&D activity, and other ways of helping firms absorb the costs of innovation.

Actors on the two sides of economic transactions lack complete information

Well functioning markets require as much relevant information as possible for all economic actors. “Asymmetric information” occurs when one party in a transaction, either the buyer or the seller, has special knowledge that the other doesn’t. This causes an imbalance in market power among participants. The two important types of market failure that arise from asymmetric information are moral hazard and adverse selection.

- **Moral hazard** exists when one party with additional information has both the incentive and the ability to shift costs onto other parties. For example, in insurance contracts, some individuals and firms that are insured against losses will take less care than others to prevent the loss from occurring, because the cost of the loss (to be absorbed by the insurer) far exceeds the cost of preventing it (by the insured). The insurer cannot easily determine which of their insured parties are taking these risks.

Another example is a professional service provider. Dentists and lawyers both have a financial interest in giving customers answers that will encourage them to buy their services. Clients and patients do not have the information or knowledge to determine if the advice is appropriate.

There are market-based solutions like independent agencies that provide ratings of insurance providers or potential clients. And service customers can seek out second opinions. Liability and contractual enforcement offer legal solutions. Governments help to mitigate this market failure by requiring codes of professional ethics, licensing, and certification practices.

- **Adverse selection** occurs in insurance and lending activities when insurers or lenders are unable to differentiate between customers and thus cannot set prices or rates differently for good risks and bad risks. Instead, they are forced to set average prices for all. This feature will tend to attract more “lemons,” because it represents a good deal for the consumer, and turn away high quality customers. With information asymmetries, costs will be less than the benefits to the producer, and too little of the product or service will be available.

One way that markets have reduced the problems of asymmetric information is “signaling.” Economist and Nobel Laureate Michael Spence concluded that individuals in a transaction could signal information about themselves, thus reducing the information asymmetry. The best known example is the educational attainment of a job candidate. Not only does a university degree indicate that a job candidate has certain skills, it also signals that the person has the ability to learn and the discipline to complete four years of focused study and research. These skills may not be readily discernible in a job interview. Signaling is not perfect, however, since an inability to complete university may be the result of other factors, such as the candidate’s low income background or a different way of learning that is not encouraged in post secondary institutions.

We should note that the existence of market failure does not automatically call for a government solution. Nobel Laureate Elinor Ostrom has shown that non-government solutions are often developed to address limitations of the market. Community groups and co-operating firms can develop responses to address the externalities associated with common property – in many cases, better solutions than those from government intervention. Government

approaches to market failure are sometimes worse than the original problem.

In some cases, time will solve market failures. In the 1960s and 1970s, some people called for the breakup of General Motors because of its excessive market power in the North American automotive industry. But the competition from Japanese producers beginning in the early 1980s ended GM's market dominance. In 1969, the US government launched an investigation into IBM's monopolization of the mainframe industry. The thirteen year investigation became irrelevant when the computer industry shifted away from mainframes to personal computers – but after great costs to the government and IBM.

Should public policy support smaller businesses and entrepreneurial firms to overcome market failure?

The broad-based support that major political parties provide to small firms in election platforms suggests that politicians and public servants think that there are significant impediments to small businesses growth. Clearly, assisting smaller businesses makes for excellent politics. From an economic perspective, the only rationale for assisting them as a class is if market failures are resulting in fewer resources being provided to small- and medium-sized enterprises. Typically, proponents of special assistance for smaller businesses and entrepreneurs point to two types of market failures – information asymmetries and externalities. But we find that these market failures do not generally exist in this case or are not solved by government intervention.

Do information asymmetries lead to under financing of smaller and entrepreneurial firms?

For young, small firms with little collateral or revenue history, the

form of market failure that is most often discussed is the principal agent problem arising from information asymmetries between managers and investors. It is argued that potential lenders and investors cannot assess start-ups, smaller businesses, and entrepreneurial firms adequately as they do not possess proper information.

During the start-up phase, good quality businesses seeking external financing may experience difficulties, because lenders or investors perceive high risk, the business product may be unproven, and the management team may lack credibility. Investors, with imperfect knowledge about the business, find it hard to distinguish the good quality businesses from the poor ones. They rely on a set of imperfect standards that helps them to assess the risk of the businesses. For example, lenders often favour businesses that have established a track record, possess solid financial assets, including collateral, operate in less risky industries, and carry less debt – all signals of sound credit worthiness.

Equity investors look at similar factors. Firms that do not meet these conventional standards may be put at a disadvantage. Also, because of adverse selection, the existence of poor quality businesses makes it more expensive overall for good quality firms to obtain financing.

Information asymmetries can also lead to credit rationing by commercial banks that can lead to a financing gap.¹⁷ There will be under funding for some firms that do not meet the conventional standards, despite the ability to generate great returns. In many cases, market failure can be alleviated through increased information gathering and monitoring by the investor. Typically, this type of monitoring is undertaken by venture capitalists. However, venture capital investors incur a significant cost to obtain this information and thus may not

be willing to do this for all firms. Generally, venture capital firms are active in industries where information asymmetries are prominent. Typically, these are knowledge based industries, rather than more numerous businesses, such as retail outlets or restaurants.¹⁸ This indicates that the market has already alleviated some of the information asymmetry problem by focusing efforts where new industries and new technologies make information most critical.

But are there still areas where government intervention in financial markets is required to close a financing gap? For government financing to be effective, it would have to identify and target a financing gap. However, evidence suggests that traditional commercial banks financed 53.5 percent of loans for smaller firms in Canada in 1998; when we include mortgage loans and credit unions, banks' share of loans rose to 69.6 percent.¹⁹ The same study reports that only 7.9 percent of smaller business debt financing comes from Crown Corporations. Further, evidence from both Canada and the United States suggests that loan programs by government supported entities, such as the Business Development Bank of Canada (BDC) and the US Small Business Administration (SBA) loan program, do not significantly improve access to financing for smaller businesses overall. These programs can even lead to under qualified firms receiving financing, because these organizations have a mandate to fund firms rejected by the private sector. This not only creates a liability for taxpayers, but also means an under

17 It is worth noting that there is significant debate in the literature concerning whether or not financing gaps exist, dating back to the seminal paper Bruce Greenwald, Joseph Stiglitz, and Andrew Weiss, "Imperfections in Capital Markets and Macroeconomic Fluctuations," *American Economic Review*, Vol. 74, No. 2, 1984, pp. 194-199.

18 Raphael Amit, James Brander, and Christoph Zott, "Why do Venture Capital Firms Exist? Theory and Canadian Evidence," *Journal of Business Venturing*, Vol. 13, 1998, pp. 441-466.

19 "Gaps in SME Financing: An Analytic Framework," Prepared by Equinox Consulting. Note: These values are for debt financing only.

qualified company will now be in the market competing with firms that were good enough to receive private sector funding, possibly resulting in an overall economic loss.²⁰

Veronique De Rugy of the American Enterprise Institute found no evidence of credit rationing in US capital markets and noted that the SBA loan program funds only 1 percent of smaller firms annually. The firms the SBA does finance are over represented in the retail and wholesale sectors and have a higher default rate than commercial loans in the private sector. These sectors tend to be already crowded with competitors.²¹ The results are similar for the BDC in Canada, which has much higher allowances for credit losses than the private sector (around 4 percent of the commercial loan portfolio). It also has an over representation of firms financed in the wholesale and retail sectors and an under representation in professional services and knowledge based industries.²² In addition, Allan Riding, Prescott Ensign, and Brad Belanger in a report prepared for Industry Canada, found that 75 percent of participants in the Canadian Small Business Financing

Program would not qualify for an ordinary commercial loan.²³ They concluded that such a ratio is much higher than could be explained by market failure.

For venture capital financing, economist Josh Lerner noted that government intervention is also based on the premise that the government could somehow identify those firms.²⁴ On the surface, there is no reason to assume that this is the case. As we shall see, governments in Canada, through direct investments and tax subsidies for specialized venture capital firms, referred to as Labour Sponsored Investment Funds, have produced sub par financial and societal returns.²⁵

Rather than target efforts to provide financing, it might be better, as proposed by economists Duanjie Chen and Jack Mintz, to tackle the information asymmetry problem causing the market failure.²⁶ An example of clear signaling that a good quality firm can send is to have a reference client. Persuading a reputable organization to purchase their product or service would signal that the firm may be of good quality. Government procurement policies may

be useful. But such policies have to be executed carefully. Chen and Mintz observe that government financing of poor quality firms increases the financial strength of a firm, and such signals may persuade private sector financiers to over invest in such firms.

In summary, it is likely that market failure through information asymmetries is standing in the way of adequate funding flowing to smaller firms and entrepreneurs. But it is hard to determine the extent to which this is the case, and it is even more difficult to make the case that governments are capable of addressing

20 *Ibid.*

21 Veronique De Rugy, *Why the Small Business Administration's Loan Programs Should be Abolished*, American Enterprise Institute Working Paper No. 126, 2006.

22 Vincent Chandler, "The Economic Impact of the Canada Small Business Financing Program," Industry Canada, 2010.

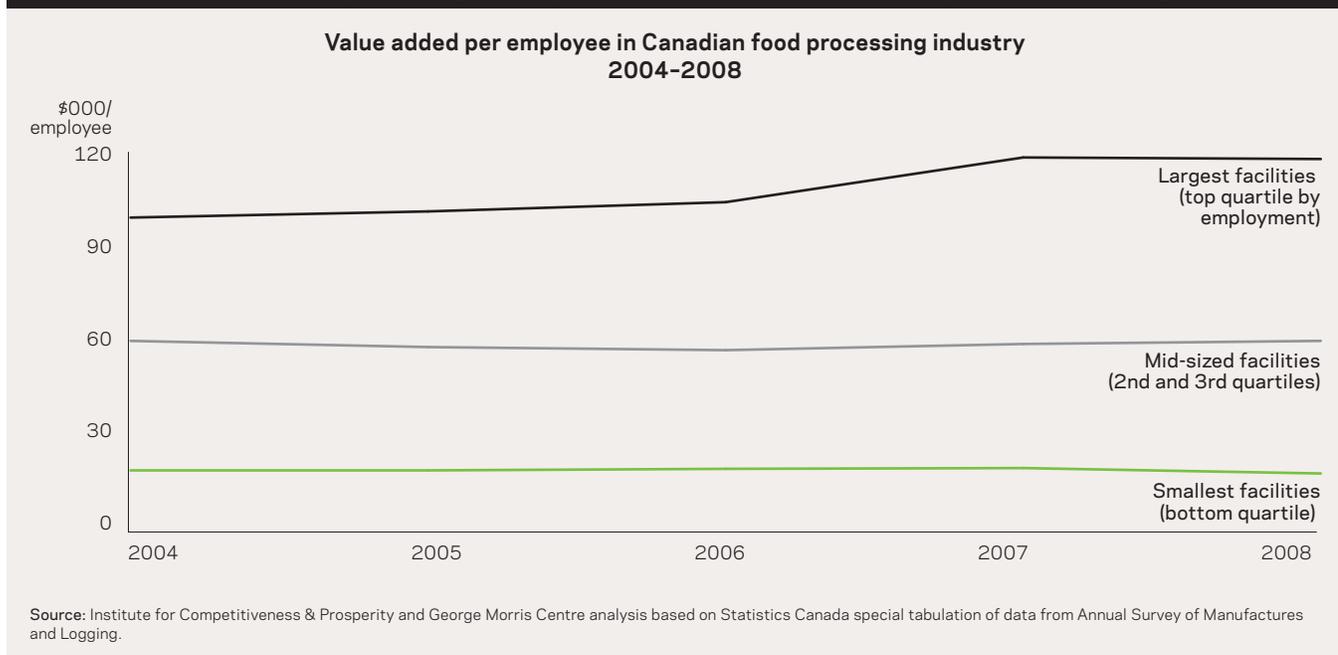
23 Allan Riding, Prescott Ensign, and Brad Belanger, *Financing Canadian SME Exporters*, Industry Canada, 2007.

24 Josh Lerner, "Angel Financing and Public Policy: An Overview," *Journal of Banking and Finance*, Vol. 22, Issue 6/8, 1998, pp. 773-783.

25 James Brander, Edward Egan, and Thomas Hellmann, *Government Sponsored Versus Private Venture Capital: Canadian Evidence*, NBER Working Paper, No. 14029 (2008).

26 Duanjie Chen and Jack Mintz, *Small Business Taxation: Revamping Incentives to Encourage Growth*, SPP Research Papers, Vol. 4 Issue 7, School of Public Policy, University of Calgary, 2011.

Exhibit 4 In Canada's food processing industry, smaller establishments are less productive than larger ones



this market failure. We will explore the results from such interventions later in this Working Paper.

Do smaller firms and entrepreneurial firms create externalities for which they are not rewarded?

The other key market failure is that smaller firms and entrepreneurs bring benefits to our economy for which they are not rewarded. But across a variety of possible externalities, we find little evidence that such benefits exist.

Are smaller firms more productive? If smaller firms tended to be more productive and created more value added per worker, it would be worth while for public policy to stimulate their creation and development. But on common measures of productivity, smaller firms do not perform well compared to large firms.

While not specifically comparing small and large firms, some recent work the Institute conducted with the George Morris Centre in the food processing industry shows that larger establishments, or processing facilities, generate higher value

added per employee than smaller ones (*Exhibit 4*). Because of scale economies, larger facilities are more productive. This phenomenon is fairly typical across manufacturing industries.²⁷

To be sure, these results are related to the size of the establishment, not the firm. But they are nonetheless instructive. To determine the impact of firm size on productivity, we assessed wage differences by size of firm. Productivity is the value added per hour of work in a business, and it is distributed to owners in the form of profits and to workers in earnings – with workers’ earnings typically accounting for most of the proceeds from the value added. As we have seen in our past work, higher productivity in a province or state is closely related to higher wages.²⁸

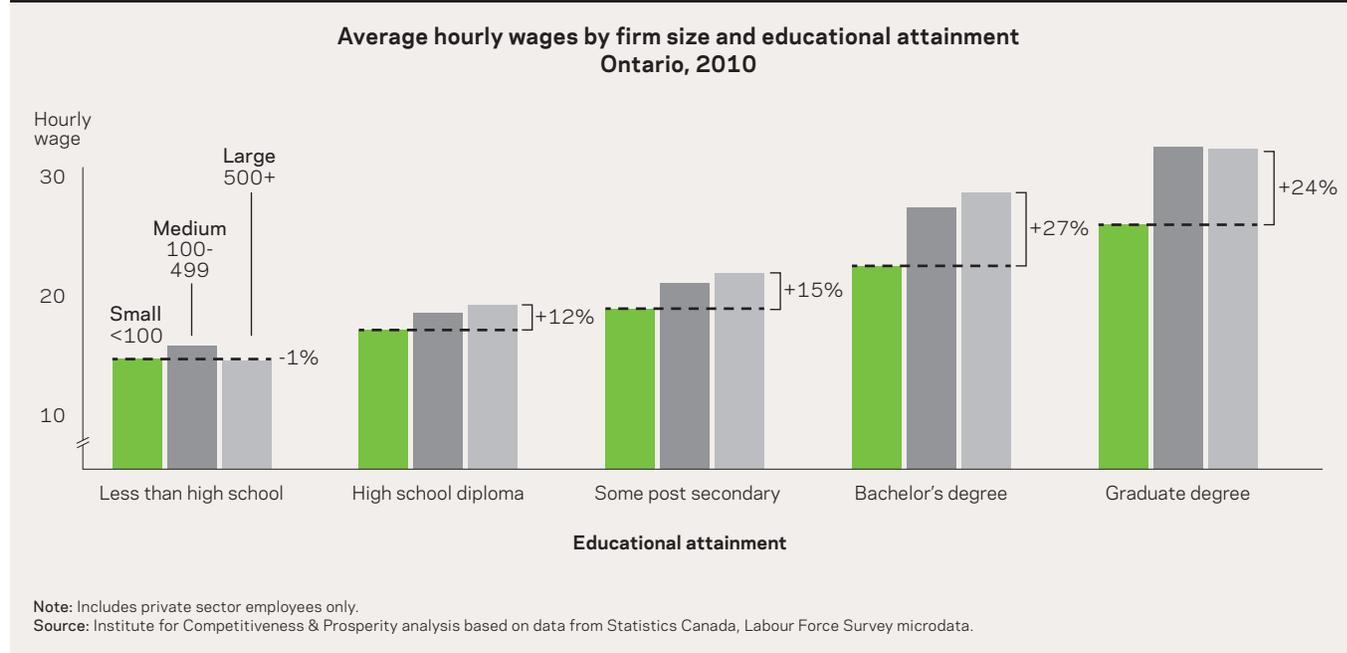
In Ontario, workers earn more at larger firms than at smaller firms. Through the last decade, this pay premium has averaged 13 percent. One explanation for this premium may be that workers in larger firms tend to be better educated and, thus, better compensated than their counterparts in smaller firms. But the premium paid by large firms exists at

all educational attainment levels at or above the high school diploma level. This premium increases to 27 percent for bachelor’s degree holders and 24 percent for graduate degree holders (*Exhibit 5*). Larger firms tend to have more educated employees; but regardless of educational attainment, workers earn a premium at larger firms. And the higher the educational attainment, the higher the premium.

Economists John Gibson and Steven Stillman examined the wage premiums paid by large firms in nine OECD countries, including Canada. They tested the hypothesis that these premiums were the result of workers in larger firms being more highly skilled and more productive, not the size of the firms.²⁹ Using standard econometric techniques, they controlled for earnings differences for characteristics such as worker

27 George Morris Centre and the Institute for Competitiveness & Prosperity, *Improving Productivity in Canada’s Food Processing Sector through Greater Scale*, February 2012.
 28 Task Force on Competitiveness, Productivity and Economic Progress, *Sixth Annual Report, Path to the 2020 Prosperity Agenda*, November 2007, pp. 29.
 29 John Gibson and Steven Stillman, “Why do Big Firms Pay Higher Wages? Evidence from an International Database,” *The Review of Economics and Statistics*, Vol. 91, No. 1, 2009, pp. 213-218.

Exhibit 5 Larger firms pay higher wages for more educated workers than smaller firms



skill, immigration status, language ability, literacy scores, firm location, years of work experience, industry, marital status, and occupation. They then found that the premium still existed. The authors concluded that the premium is not due to differences in worker characteristics between large and small firms, but results from higher productivity in larger firms. However, higher productivity did not explain the entire premium. The researchers also concluded that larger firms were able to generate higher earnings for their workers, attributing this phenomenon to their ability to generate “economic rent,” which is typically the result of large firms’ market power, some of which is passed on to workers in the form of higher wages.

Taken together, the greater size,

higher productivity, and wage premium in larger firms means that they contribute much more to Canada’s Gross Domestic Product than is indicated by their numbers. While large firms only account for 0.3 percent of all firms, they employ 35.8 percent of workers and account for 45.7 percent of GDP in the private sector (*Exhibit 6*).

Are smaller firms more innovative? Though small firms may have lower productivity and pay lower wages in aggregate, this could overshadow some of the other contributions smaller firms make to the economy. Perhaps they are highly innovative – creating and introducing new, disruptive technologies to the market for the benefit of all.

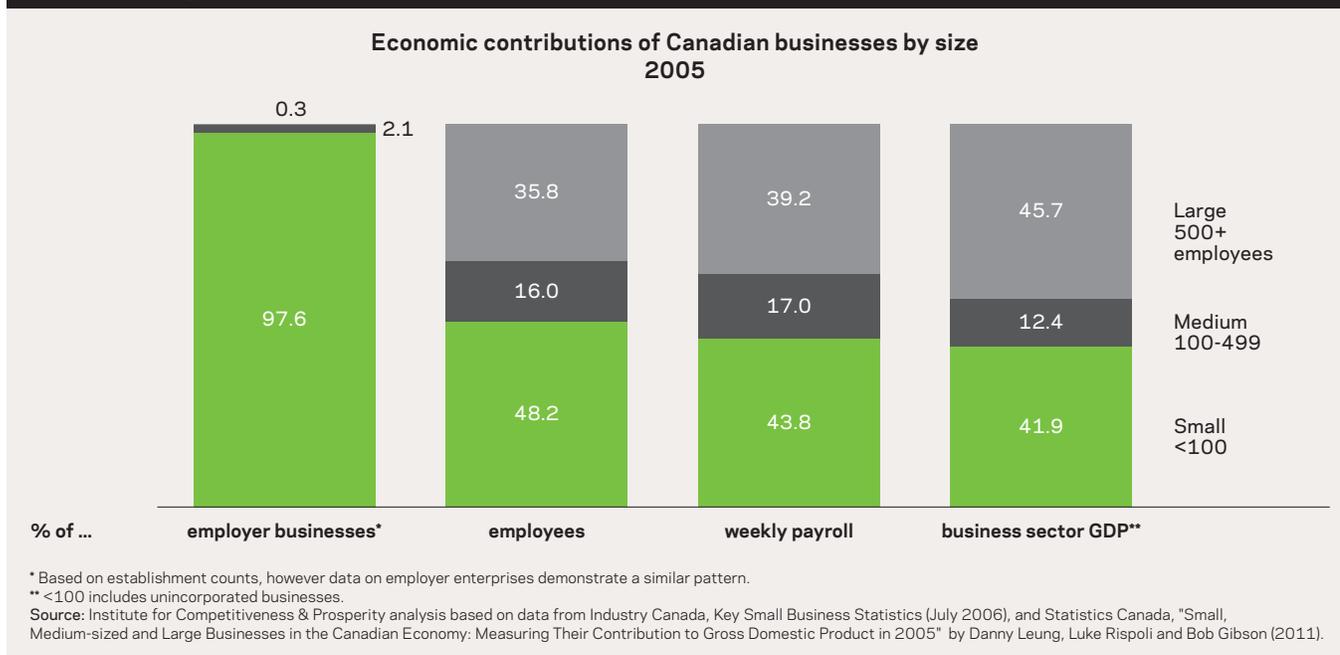
Small firms dominate the number

of R&D performers, accounting for 87.6 percent of R&D performing firms in Canada and 74.2 percent in the United States; medium-sized firms account for 9.4 percent and 17.3 percent respectively (*Exhibit 7*). The high percentage of R&D performing firms that are small reflects their sheer number within the economy.

In fact, only 1 percent of small firms conduct R&D; by comparison, 10 percent of medium-sized firms and 15 percent of larger firms conduct R&D (*Exhibit 8*).

Among small- and medium-sized firms actually conducting R&D, they invest nearly 5 percent of their revenues in R&D, while large firms doing R&D invest 2.2 percent. But using the percentage of revenue as an indicator of R&D is misleading. Given their low level of sales revenue, a small amount

Exhibit 6 Larger firms contribute more to GDP



of R&D in small- and medium-sized firms registers as a higher percentage of revenue. In absolute dollars, large R&D performers spend nearly ten times as much as small- and medium-sized enterprises.³⁰

A study conducted by Zoltan Acs and David Audretsch found that about half of all innovative output comes from small firms. They measure innovative output based on a unique dataset collected and published by the US Small Business Administration that tracked approximately 8,000 US innovations at the four-digit Standard Industry Classification (SIC) level.³¹ The authors also noted that innovation is not necessarily a function of large or small firms, but is related to the market structure.³²

It is important to note that innovation is difficult to measure and is not a simple function of how much R&D a firm conducts. In addition, looking at patents or trademarks can be deceiving, because small firms are less likely to use these types of intellectual property protection because of the high costs associated with registering a patent or trademark. Another way to measure the contribution of smaller firms, particularly start-ups, is to examine the extent to which they identify new opportunities in the economy.

Do start-ups spot opportunities that others don't? Successful entrepreneurs are savvy business people who spot opportunities where others cannot. However, new businesses as a group are not all entrepreneurial and are not especially effective at discerning

30 Thitima Songsakul, Bernice Lau, and Daniel Boothby, *Firm Size and research and Development Expenditures: A Canada-US Comparison*, Industry Canada Working Paper Series 2008-12, 2008.

31 Zoltan Acs and David Audretsch, "Innovation in Large and Small Firms: An Empirical Analysis," *American Economic Review* Vol. 78, Issue 4, 1988, pp. 678-690.

32 Specifically, that innovation is negatively related to unionization rates and market concentration (or low level of competition).

Exhibit 7 Larger firms account for most R&D spending

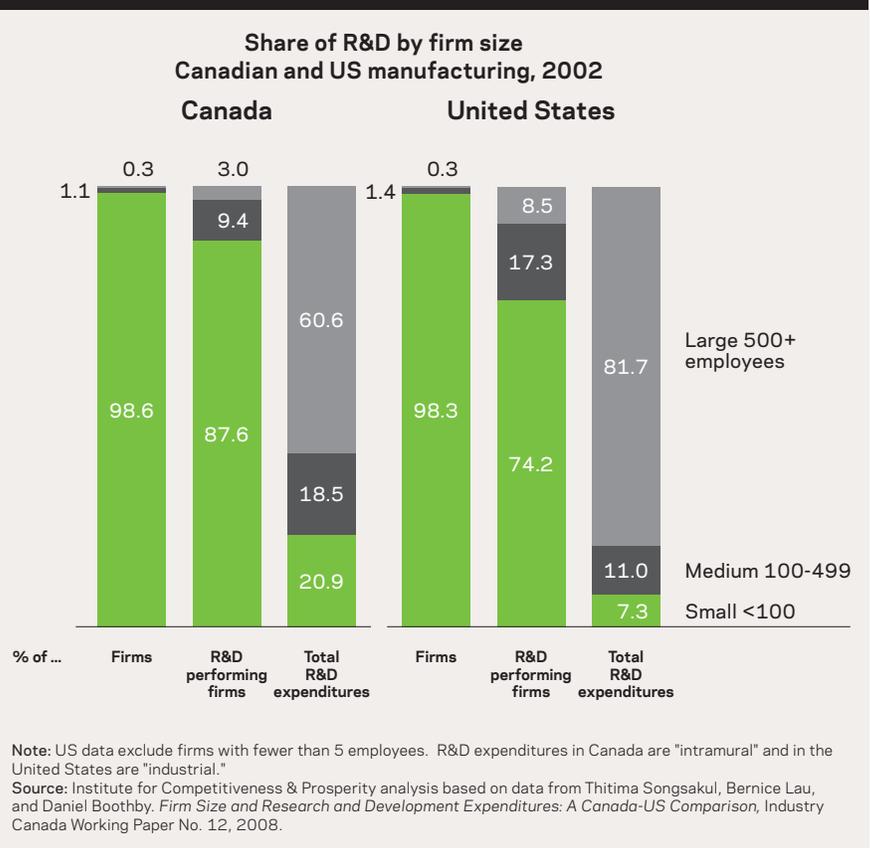
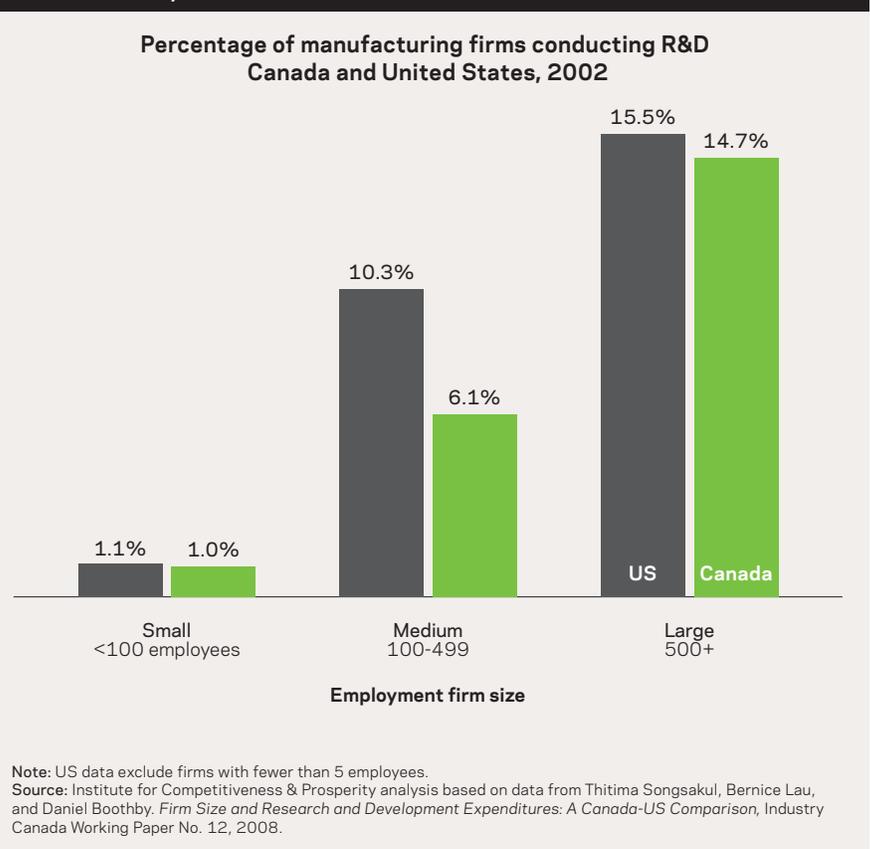


Exhibit 8 Very few small firms conduct R&D



which industries would provide superior business opportunities and which would not. Start-ups tend to enter into crowded industries where there are already a large number of incumbent firms (*Exhibit 9*).

Entry rates could, of course, be affected by barriers to entry, such as regulation and high fixed costs that preclude small firms with limited capital from entering a given industry. But small firms exist in all industries and so this cannot be the only factor at work.

Do start-ups as a class spot industries that are about to grow faster than the economy as a whole? When we compared the entry of start-ups and output growth in an industry, we found no relationship between them.

Given that new entrants as a group do not appear to be particularly adept

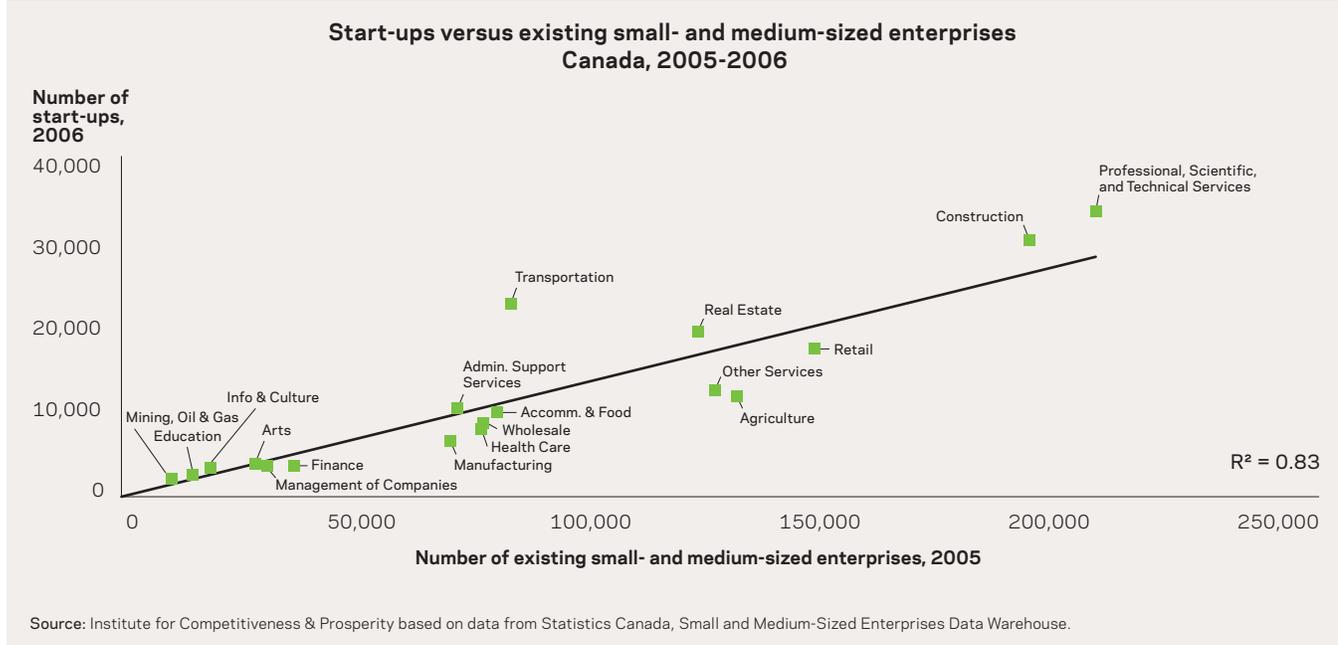
at choosing industries that offer the best economic opportunities, it is not surprising that many new firms that are founded fail and exit the industry. These rates do not differ significantly between Canada and the United States or over time. About half of the firms starting up in a given year will be out of business within three years of formation in Canada and about four years in the United States (*Exhibit 10*). Nearly 70 percent of entrants are out of business within six years in Canada and thirteen years in the United States.

However, there is some evidence that industry choice can have an effect on a firm's chances of success. Industry characteristics, in particular the technological regime, will have an effect on a firm's ability to grow as well as survive. Economists Jonathan

Eckhardt and Scott Shane analyzed 192 industries between 1984 and 1997 and found that small and large high-growth firms were over represented in different industries with different industry characteristics.³³ After controlling for industry sales levels, patent counts, establishment counts, and other industry variations, the authors' major findings are that small high-growth firms are typically found in industries that require high levels of technical knowledge as measured by the number of scientists and engineers in the industry, while high-growth large firms are more likely to be found in industries that are

33 Jonathan Eckhardt and Scott Shane, *Innovation and Small Business Performance: Examining the Relationship Between Technological Innovation and Within-Industry Distribution of Fast Growth Firms*, Small Business Administration Office of Advocacy, 2006.

Exhibit 9 Start-ups typically follow existing industry patterns



characterized by highly scaled production. David Audretsch explored a similar hypothesis and examined a large sample of firms across various manufacturing industries. He found that the lack of economies of scale and the high capital-to-labour ratios lowered the likelihood of firm survival for young firms.³⁴

Do smaller firms that are start-ups create all the jobs? Probably the most common assertion made about small firms is that, as start-ups, they are responsible as a class for generating a large portion of jobs in the economy. Estimates and methods vary widely as to the contribution small firms make to both gross and net job creation. The conventional wisdom that small firms create nearly all new jobs is not, however, sup-

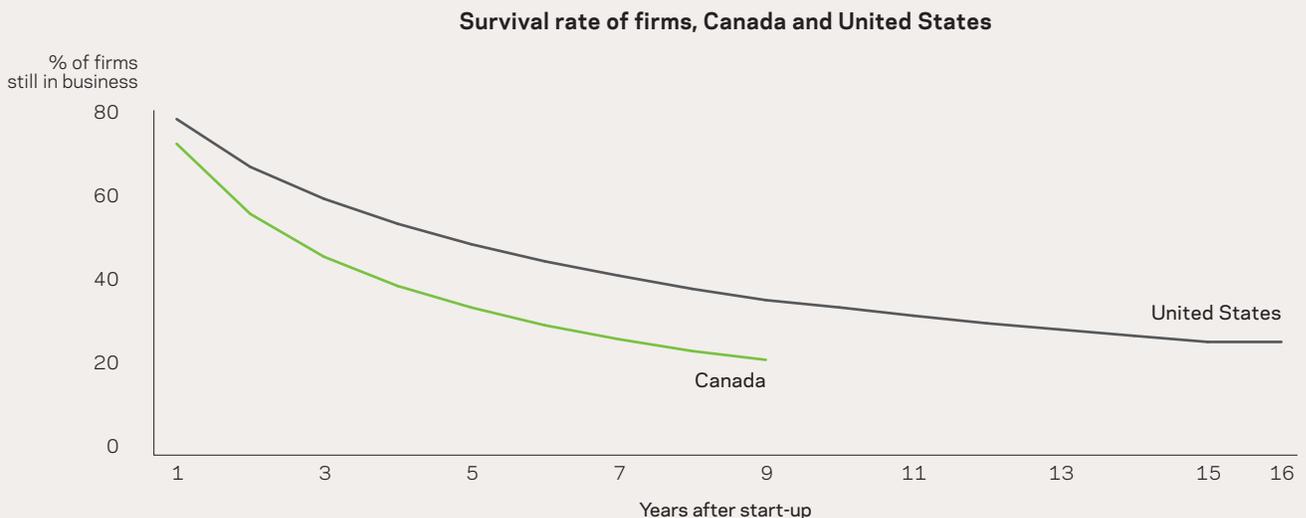
ported strongly by the data once firm age and other factors are controlled for.³⁵ In fact, when economists John Haltiwanger, Ron Jarmin, and Javier Miranda formally controlled for age, the relationship between firm size and employment growth disappeared. The authors found that it is young firms, which do tend to be small, that generate most net jobs.

By definition, start-up firms create new jobs, but how persistent are these new jobs? Following a cohort of firms born in the same year revealed that, as a group, the firms have the largest effect on employment during their first year in business. Then, as some of the firms begin to fail and lay off workers, the share of employment in the cohort begins to decrease. This is consistent with research by Haltiwanger, Jarmin, and Miranda, who

found that 40 percent of start-up jobs are gone within ten years.³⁶ Perhaps more surprising is the employment growth that occurs in enterprises that are able to survive for ten years after birth; they more than doubled in both Canada and the United States (*Exhibit 11*). In short, the challenge in supporting job growth through start-ups is to identify the small number that create the net new long-term jobs. Most of the jobs created by start-ups are akin to a revolving door, contributing to employment churn in the economy.

34 David Audretsch, "New-Firm Survival and the Technological Regime," *Review of Economics and Statistics*, Vol. 73 No. 3, 1991, pp. 441-450.
 35 John Haltiwanger, Ron Jarmin, and Javier Miranda. *Who Creates Jobs? Small vs. Large vs. Young*, National Bureau of Economic Research. Working Paper 16300. August, 2010.
 36 *Ibid.*

Exhibit 10 Most start-ups do not survive for more than a few years



Note: Only firms with paid employees are included. Each line represents the average of several cohorts of start-ups; tracks Canadian firms started up between 1984 and 1991 up to 1992; tracks US firms started up between 1994 and 2007 up to 2008.
Source: Institute for Competitiveness & Prosperity analysis based on data from Kenneth Hendricks, Raphael Amit, and Diana Whistler, *Business Taxation of Small and Medium-sized Enterprises in Canada*, University of British Columbia Working Paper No. 97-11, 1997.

We note that there are some measurement issues surrounding job creation. It is important to emphasize net job creation over gross job creation, since the latter does not tell the full employment story. When economists measure employment over time, they are often restricted to discrete periods, because of data constraints that do not capture the

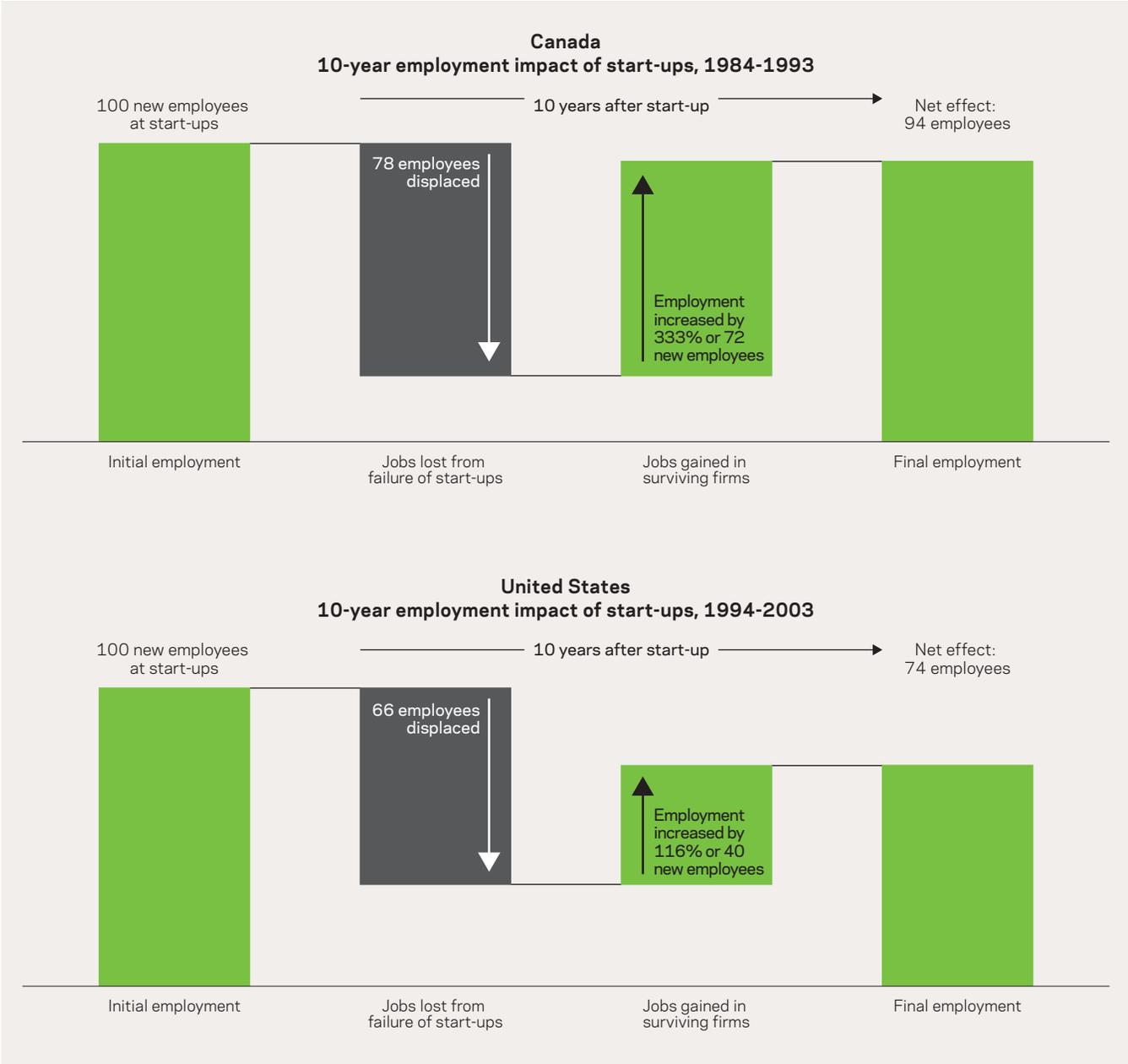
full life cycle of the firm, including transitions to different size categories. The result can be an unintended bias of attributing jobs to large or small firms.

Do smaller firms grow faster?

If the goal of policy makers is to assist smaller firms through different growth stages, or to promote growth

in the small business sector in general, it is important to distinguish between the ones that intend to grow and those that don't, targeting policy programs to address the former and not the latter. In 2007, the percentage of all small- and medium-sized enterprises that intended to grow in the next two years rose as the size of the firm increased, with a

Exhibit 11 The minority of the start-ups that survive generate significant employment growth, Canada and the United States



Note: Data for Canada cover 1984-1993; for United States, 1994-2003.
Source: Institute for Competitiveness & Prosperity analysis based on data from Kenneth Hendricks, Raphael Amit, and Diana Whistler, *Business Taxation of Small and Medium-sized Enterprises in Canada*, University of British Columbia Working Paper No. 97-11, 1997, and US Bureau of Labor Statistics, *Business Employment Dynamics*.

larger percentage of medium firms intending to grow (*Exhibit 12*).

Are smaller firms better managed? A large contributor to firm success is the quality of management. Among small manufacturing firms with up to 50 employees, the United States has a significant advantage in management skill over both Ontario and Canada (*Exhibit 13*). But in Ontario, Canada, and the United States as the employment size of the manufacturing location increases, management quality, as measured by a survey developed by Nick Bloom and John Van Reenen, improves.³⁷ Larger establishments are more likely to have implemented lean management and embedded it into the ongoing management process of the organization. This is an area where our small firms could improve. The good news is that management skills and practices can be taught and thus do not present the same barriers as the lack of industry scale or high capital intensity.

Other research confirms that smaller firms are less well managed. Louise Earl identified eight management practices that suggested the

potential for growth, including: risk management, succession management, commercialization strategy for intellectual property, mentoring or coaching programs, employee feedback surveys, marketing strategies, written plans for managing growth, and organizational structures.³⁸ Through a survey, she found that small firms were less likely to

37 As measured by a survey developed by Nick Bloom and John Van Reenen. See Institute for Competitiveness & Prosperity, Working Paper 12 *Management matters*, March 2009.

38 Louise Earl, *Are Small Businesses Positioning Themselves for Growth? A Comparative Look at the Use of Selected Management Practices by Firm Size*, Statistics Canada Working Paper, October 2006.

Exhibit 12 More medium-sized firms have growth intentions than small firms

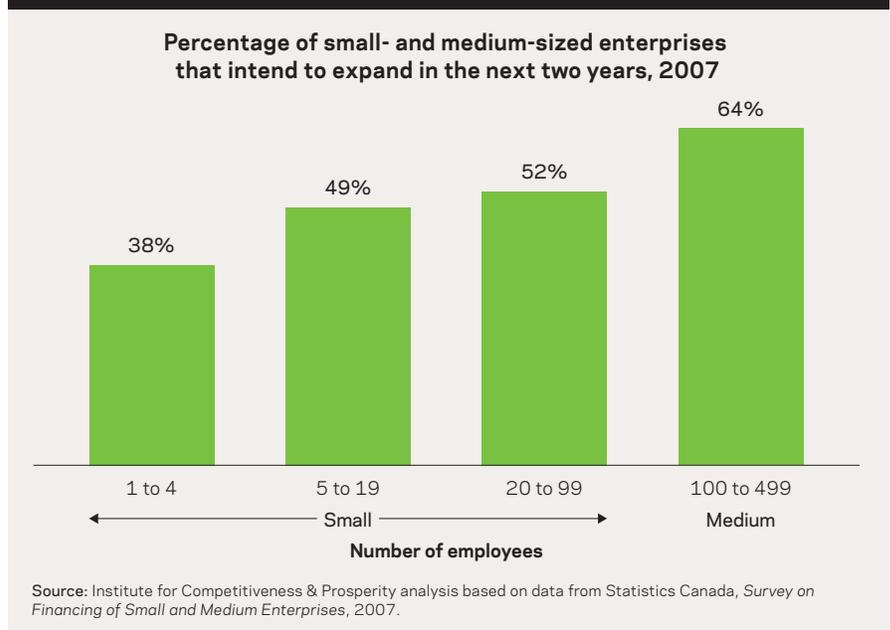
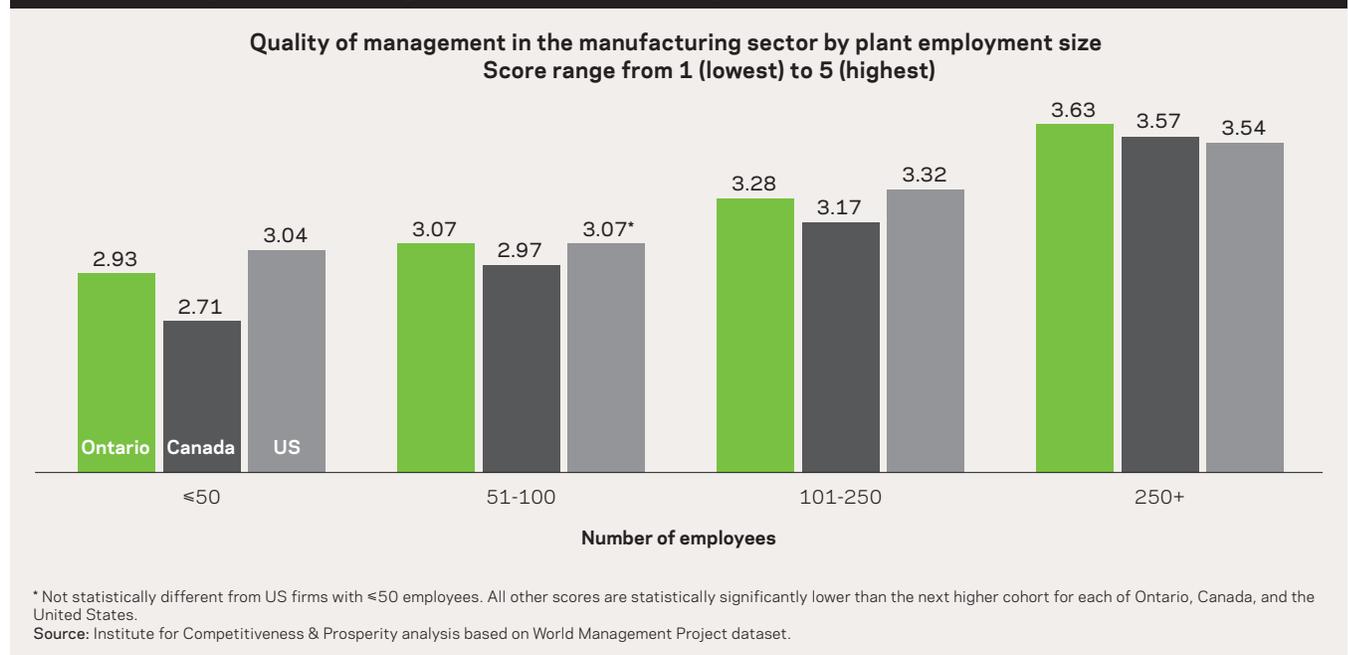


Exhibit 13 Larger manufacturing facilities are better managed



have these management practices in place than medium and large firms. On average, small firms employed just 1.2 of 8 practices and medium firms employed 3.1, while large firms employed 4.9.

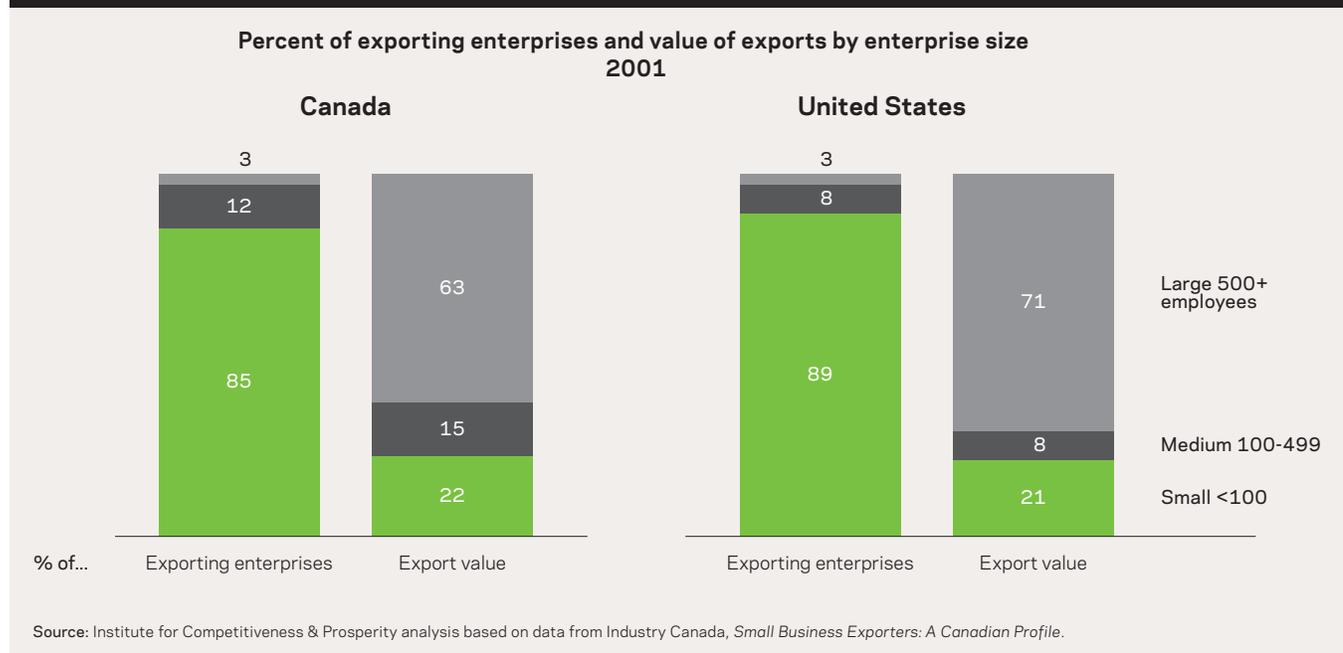
Do smaller firms export more than larger firms? Closely following the trends for businesses in general, smaller firms account for a high share of exporting firms, but larger firms generate most of the dollar value (*Exhibit 14*).

In summary, most of the arguments made for the existence of positive externalities from smaller firms and start-ups do not stand up to scrutiny. These firms are important contributors to our economy – but not so important that they require special public policies.

Market failure is an ongoing challenge for public policy, and its effects on smaller businesses and entrepreneurial firms are no exception. For smaller businesses, as a class, we find that the need for remedial policies and programs to

help them overcome market failure is over stated. Instead of trying to help this class of firms, it would be wiser to find ways to identify and assist the truly entrepreneurial firms that could become the high impact firms in our economy. For entrepreneurs, the source of market failure typically identified is the lack of financing because of information asymmetries. Here, the evidence of market failure is mixed. And it is unclear that government has been able to help overcome this challenge - as we shall see in the next chapter.

Exhibit 14 Large firms generate most export value



**HOW CAN PUBLIC
POLICY SUPPORT
SMALLER FIRMS
AND
ENTREPRENEURS?**



WHAT ARE THE PUBLIC POLICY LEVERS AVAILABLE TO SUPPORT the flourishing of entrepreneurship here in Ontario and in Canada? In this chapter, we review the evidence on whether we have a positive environment for entrepreneurship and how various government policies and programs can help. More specifically, we:

- Draw on international comparisons of the environment for entrepreneurship in Canada
- Identify some common themes and approaches for public policy to encourage entrepreneurship
- Review taxation policies related to small- and medium-sized firms
- Assess government efforts to improve access to venture capital
- Discuss the impact of strong industry clusters and entrepreneurship.

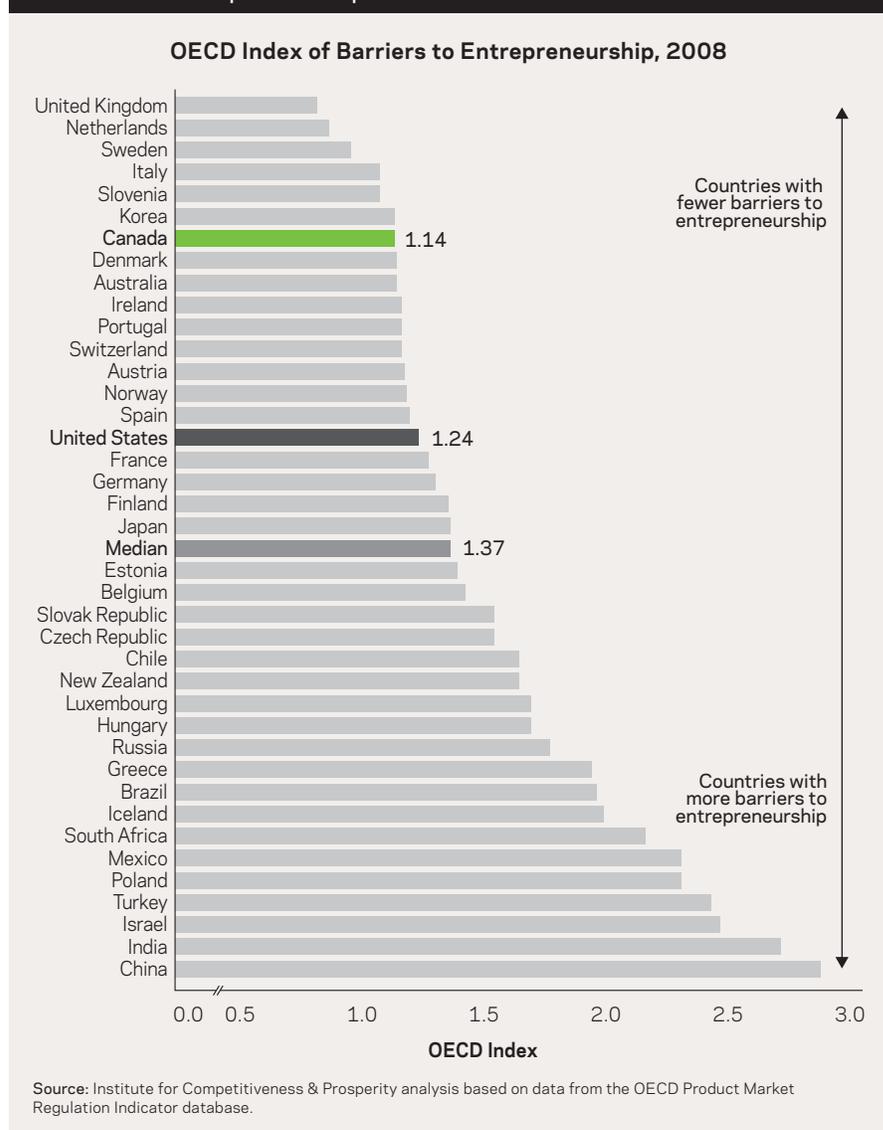
What is the environment for entrepreneurship in Canada?

In comparison with other countries, Canada appears to have a good **regulatory environment** for encouraging entrepreneurship. The Organisation for Economic Cooperation and Development (OECD) creates an index that measures regulatory burdens to business start-ups across countries. On this measure, Canada performs well, behind only six countries in the overall barriers to entrepreneurship (*Exhibit 15*).

The World Bank publishes a similar report, *Doing Business*, comparing the regulatory environment for business across 183 countries. While the OECD focuses on start-ups, the World Bank measures barriers to doing business at nine stages of a firm's life.

Canada compares well versus international peers, including the United States – ranking seventh for ease of doing business compared with fifth for the United States; and third for starting as well as closing a business compared with ninth and fourteenth

Exhibit 15 Canada's regulatory environment is more favourable for entrepreneurship than that of most other countries



for the United States, respectively. We rank fifth for protecting investors, tied with the United States on this measure.

It may be surprising to some that Canada also ranks highly on measures of **early stage activity** (Exhibit 16). The index, compiled by the Global Entrepreneurship Monitor (GEM), looks at more than just the number of businesses that are founded, using responses to a forty question survey. In broad terms, the survey is separated into environmental factors and personal factors:

- *Environmental factors* include angel investor activity, whether a survey respondent knows an entrepreneur, and whether an individual plans or knows someone who is planning to start a business in the next six months. Canada is among the middle of the pack in these measures.
- *Personal factors* include whether the individual surveyed has been involved in a start-up in the past, whether the respondent's current job is at a start-up, whether the individual believes they have the

capacity to start a business, or whether the individual is an owner-manager of a business. Canada ranks only behind the United States among G7 countries on these measures.

In summary, Canada has favourable conditions for start-ups and entrepreneurs, and levels of entrepreneurial activity comparable to those of most other developed countries.

A common question for government programs is whether to support all or focus on the few

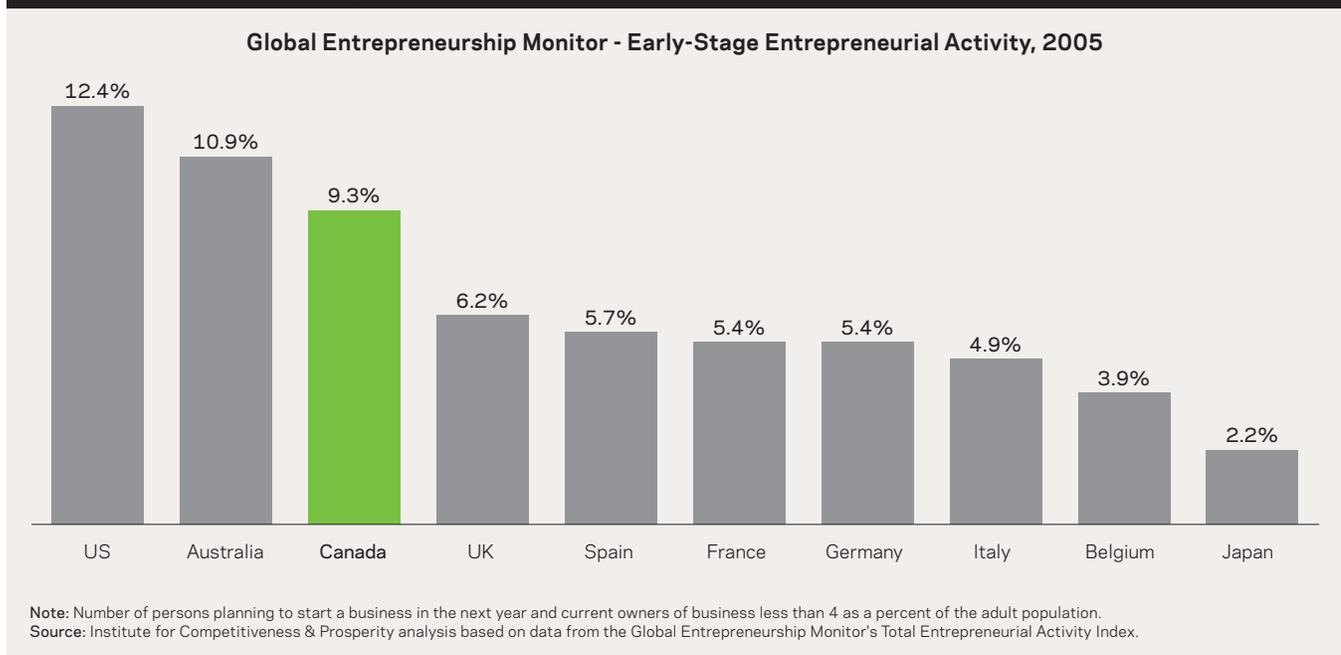
An important tension in public policy is the trade off between providing public support for all small and medium firms or entrepreneurial firms or focusing efforts behind fewer firms with a target of fostering more high impact firms – and ultimately global leaders.

Entrepreneurship expert and professor at Imperial College London, Erkkö Autio and his colleagues studied public policies for promoting entrepreneurship and high-growth firms across nine developed economies,

not including Canada and the United States. They examined a full range of policies – from general initiatives to improve the environment for innovation to dedicated support initiatives for advice, training, and mentoring at specific firms. They found the following common features:

- *Co-operation between public and private institutions is limited.* Public policy is typically driven to correct market failure, and programs are not designed to work with market institutions. But this may be changing. Israel developed a successful approach that involved the private sector. The Yozma program brings public and private venture capital funds together, but with the private sector venture capitalists managing the investments. It is designed so that the private venture capitalists can earn a much higher share of the returns should an investment be hugely successful. For unsuccessful investments, the public investments bear a higher share of the losses. This approach is being adopted in Ontario through the Ontario Venture Capital Fund program.

Exhibit 16 Canada ranks high on entrepreneurial activity in the Global Entrepreneurship Monitor survey



- *Surprisingly few initiatives focus explicitly on high-growth firms.* Many public programs for smaller business and entrepreneurial firms are one-size-fits-all. This is an ongoing challenge for governments, as they are encouraged to treat all constituents evenly. As most “clients” are smaller businesses that do not intend to grow, more programs are aimed at them than at entrepreneurial firms with the desire and potential to become high-growth, high-impact firms.
- *Technology sectors are over emphasized.* Public sentiment and public policy have a perception of “high-tech” firms and industries as the primary drivers of innovation and invention in our economy. Though these firms and industries are essential to our future prosperity, they should not be targeted at the expense of other industries. Our research on clustered industries indicates that only 2.2 percent of Ontario’s total employment comes from high-tech clusters; only 1.9 percent across Canada; and only 2.6 percent in the United States. Looking at the magazine, *Inc. 500*’s list of fastest growing US firms in 2010, only two of the top ten fastest growing firms were in high-tech industries. For the full list of 500 companies, 94 could be classified as high-tech.³⁹ Research by Zoltan Acs and his colleagues found that high-growth firms come from a wide range of industries in the United States.⁴⁰
- *The dominant focus is on universities and institutes of higher education as sources of potential entrepreneurs.* Autio’s work and our own research here in Canada showed that the highest rate of high-growth, successful entrepreneurs is among individuals aged 35 to 44 who already have a job and are working in a related industry. There is little

evidence to show that successful entrepreneurs are still in school. This is not to say that programs to develop entrepreneurship skills at universities are not worth while. The VeloCity program at the University of Waterloo is focused on students from all disciplines with high potential for successful entrepreneurship. Students accepted into the program have “exclusive access to people and companies that can help you grow and take your ideas to the next level – industry leaders, venture capitalists, professors, and entrepreneurs.” VeloCity provides its participants the opportunity to live and work in a residence that allows them to collaborate with other top students in various complementary disciplines.

- *Initiatives typically belong to one single agency, not an entire government.* In some sense, smaller firms and entrepreneurs tend to be left to a special division or ministry focused on their needs. But a well performing economy with solid support and pressure for innovation by all firms is the best foundation for the success of our smaller firms and entrepreneurs.

Autio concluded that to promote entrepreneurship and high-growth firms, public policy needs to distinguish them from the vast number of smaller businesses and that they need to have the following features:

- Entice and support the “right” people to become entrepreneurs versus encouraging more people to become entrepreneurs
- Focus on the growth of entrepreneurial firms, versus the number of firms
- Provide advice and mentorship to those committed to growth, versus basic start-up assistance for all

- Select potential successes versus being available for all requiring assistance.⁴¹

Targeting prospective companies with a high probability of success is much easier said than done. Investments made by venture capital firms, which earn a return from investing in early stage companies, have a high failure-to-success ratio.⁴² The below average returns in the venture capital industry in both Canada and the United States also indicate that it is having difficulty picking winners.

So, if the private sector has difficulty selecting winners, can we reasonably expect governments to do a better job? In some instances, though they may not be “picking winners,” governments can contribute to the probability of a firm’s success. For non-finance related initiatives, one way governments can improve their odds of picking viable companies is to select only companies that have been well capitalized by the private sector, since a well capitalized firm sends a signal that the firm or management is considered capable and of high quality. But rather than picking winners, governments should focus on policies that are targeted at helping growing firms improve their odds of success.

In Ontario, the Innovators Alliance is a network of CEOs of high-growth companies originally established by the Ministry of Economic Development and Innovation in 1999. To be eligible, companies must have at least \$2 million in revenues and a cumulative growth rate of 30 percent in the past three years. CEOs should also

³⁹ Defined as software, IT services, computer hardware, telecommunications equipment, pharmaceutical products, medical devices.

⁴⁰ Zoltan Acs, William Parsons, and Spencer Tracey, *High Impact Firms: Gazelles Revisited*, Small Business Administration Office of Advocacy, 2008.

⁴¹ Erikko Autio, *2007 Global Report on High-Growth Entrepreneurship*, Global Entrepreneurship Monitor, 2007.

⁴² Union Square Venture Partners, a New York City based venture capital firm, reports that one-third of investments will fail and another one-third will under perform.

be committed to “growth through innovation.” Today with more than 100 members and sponsorship from the Government of Ontario as well as leading companies, they help members innovate through a peer mentoring process, then ask them to share how their company practices innovation in confidential peer-to-peer meetings. Another program aimed at entrepreneurs is the Ontario Network of Excellence (ONE), providing education and advisory support.

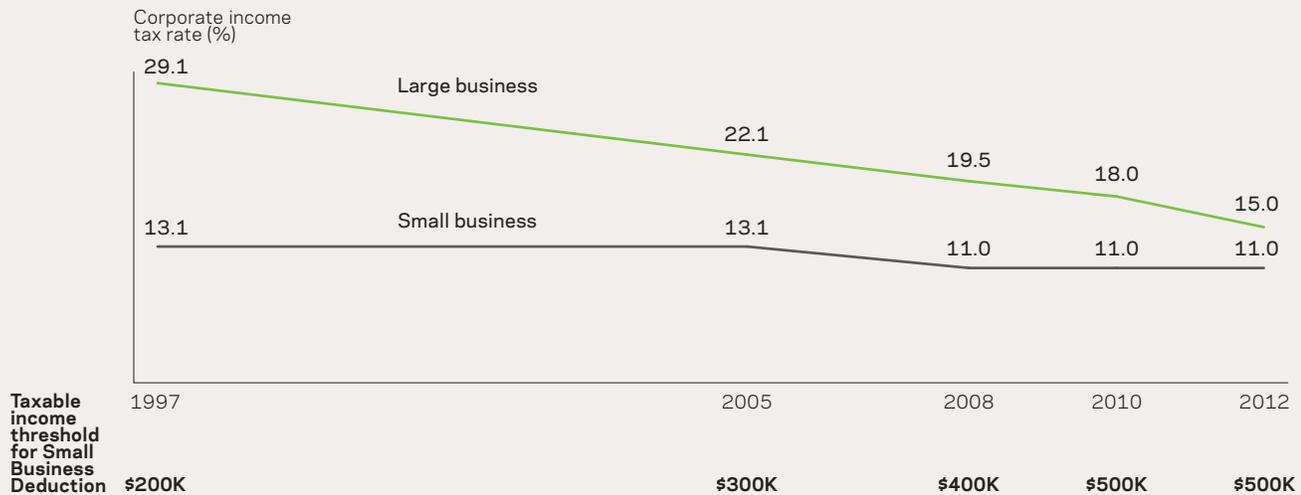
We have not evaluated the efficacy of these provincial programs, but we conclude that their aims are in the right direction.

Federally, the National Research Council’s Industrial Research Assistance Program (IRAP) is specifically targeted at helping smaller firms improve their innovative capacity. IRAP’s clients are required to contribute their own funds alongside public funds to projects that strengthen their innovative capacity in areas

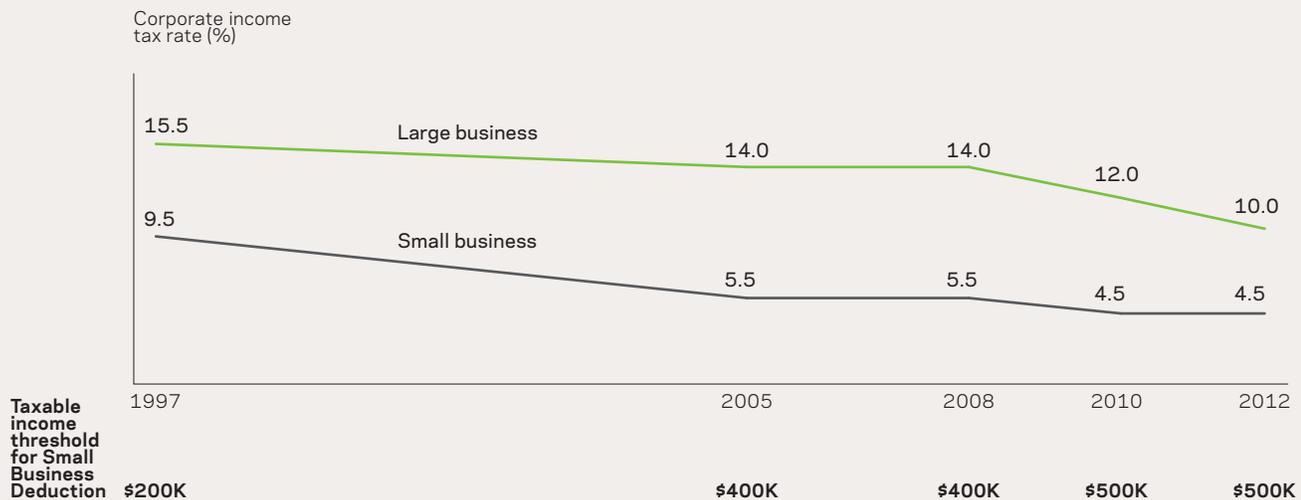
like R&D, investment in technology, and management capabilities. This requirement ensures that firms truly intent on growing are drawing on IRAP assistance. We have not conducted our own assessment of IRAP, but a Treasury Board evaluation finalized in 2008 concluded that over a five-year period, IRAP clients increased sales by just over 28 percent, employment by 30 percent, and company assets by 15 percent.

Exhibit 17 Preferential tax treatment for smaller businesses has fallen in Canada and Ontario

Canadian federal tax treatment of large and small firms, 1997-2012



Ontario provincial tax treatment of large and small firms, 1997-2012



Source: Institute for Competitiveness & Prosperity analysis of Duanjie Chen and Jack Mintz, *Small Business Taxation: Revamping Incentives to Encourage Growth*, SPP Research Papers, Vol. 4 Issue 7, School of Public Policy, University of Calgary, 2011.

Current tax treatment is not an optimal approach for encouraging entrepreneurship

In Canada, large businesses are taxed at a higher rate than small businesses, although this gap has been shrinking (*Exhibit 17*).⁴³

In theory, high marginal effective tax rates for small business discourage these small firms from growing for fear of being taxed at a higher rate once an income threshold is reached. Taxation has been put forth as a hypothesis for laggard growth in the small business sector. In 1997, the small business deduction threshold was \$200,000. As of 2010, that threshold was raised to \$500,000. Nevertheless, the differential tax rates between large and small businesses have been shrinking in both Ontario and Canada, decreasing by 12 percentage points at the federal level and 0.5 points at the provincial level over the past fifteen years.

Business owners may pay themselves a salary to reduce taxable income; however, new evidence suggests that it may be advantageous to pay the small business tax rate and then distribute dividends.⁴⁴ Even in this case, small businesses may have a

disincentive to keep funds internally and reinvest them in new projects. The marginal effective tax rates faced by small businesses jumps from 27.5 percent when capital is \$10 million to 35.3 percent at \$11 million (*Exhibit 18*).

If taxation were a barrier to business growth, we would see a grouping of firms around \$10 million in capital, but evidence of a clustering of firms around this threshold is limited. In fact, the vast majority of firms are at revenue and capital levels well below small business thresholds for special tax treatment. Nevertheless, our tax system provides special support for smaller businesses rather than high-growth entrepreneurial firms. This likely stimulates inefficient financial engineering to keep firms small for tax purposes. And, as we have recommended in the past, our tax system would be improved if it had far fewer preferred treatments for specific cases and a lower overall rate.

Venture capital supports entrepreneurship

As we have seen, entrepreneurship is important to our economic and social well being – fostering innovation, enhancing competition, and

promoting growth. Many start-up firms require substantial financial resources to develop and grow. And there is evidence that start-ups, particularly those that contribute the most to the economy, could be suffering from under funding.⁴⁵

As we discussed earlier, start-ups face potential market failure problems as a result of information asymmetries and externalities not being rewarded (or punished). Venture capitalists typically try to solve the first challenge by expending resources to obtain superior information about start-ups and earning high returns for their investors by making sound investments in risky start-ups.

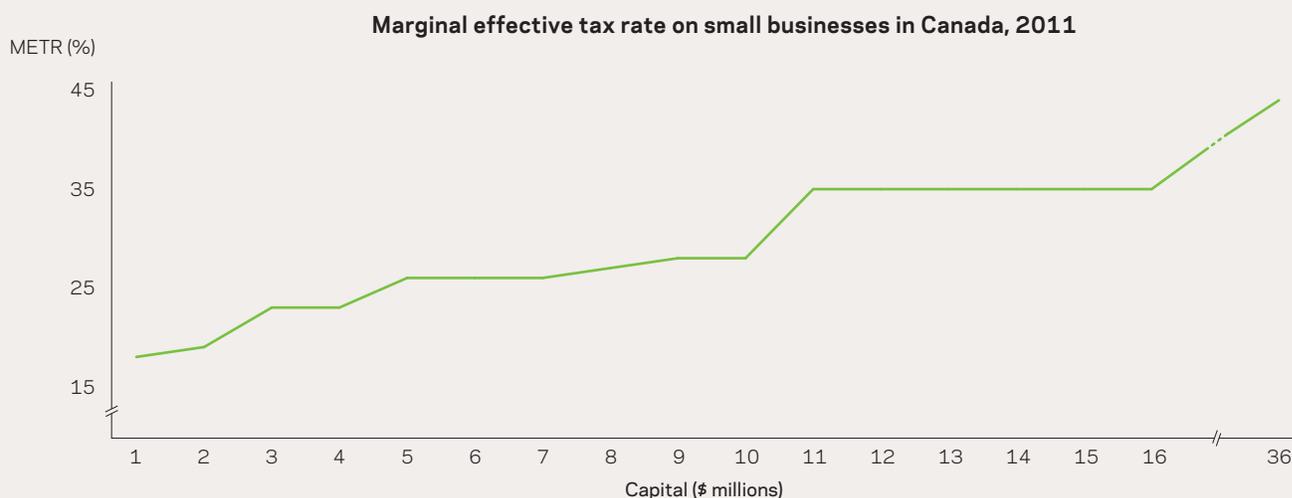
Aside from generating returns for investors, venture capitalists also contribute significantly to public welfare through employment creation and innovation spillover. The latter can be significant, since venture capital

43 Duanjie Chen and Jack Mintz, *Small Business Taxation: Revamping Incentives to Encourage Growth*, SPP Research Paper, Vol. 4, Issue 7, School of Public Policy, University of Calgary, 2011.

44 Jamie Golombek, "Bye-bye Bonus! Why small business owners may prefer dividends over a bonus," CIBC, 2011.

45 Shunji Wang, *Financing Innovative Small and Medium Enterprises in Canada*, Small Business and Tourism Branch, Industry Canada Working Paper, 2009.

Exhibit 18 Marginal effective tax rate jumps as firms' growth spurts



Note: Ontario results not significantly different from national results.

Source: Institute for Competitiveness & Prosperity analysis of Duanjie Chen and Jack Mintz, *Small Business Taxation: Revamping Incentives to Encourage Growth*, SPP Research Papers, Vol. 4 Issue 7, School of Public Policy, University of Calgary, 2011.

firms typically focus on high-growth, innovation intensive industries.

The ability to overcome or minimize adverse selection and moral hazard allows venture capitalists to invest in high risk start-ups that are often involved in creating innovative new technology or products not yet proven in the market. Such firms can often experience high growth if their technology proves successful. By contrast, given the unproven nature of the technology, it is difficult for traditional commercial bank lenders to assess risk. In addition, the development of these technologies may require significant R&D before the company can earn any revenue, making it difficult or impossible to secure a bank loan.

In addition to capital injection, venture capital firms can provide start-ups with an invaluable network of contacts and sound business advice. This can be especially helpful for an entrepreneur who has strong technical abilities but lacks the business skills necessary for the launch of a successful product. Venture capital expert and Harvard economist, Josh Lerner, reported that “a single dollar of venture capital generates as much innovation as three dollars of corporate research and development.”⁴⁶ But can governments effectively increase the amount of venture capital to entrepreneurs?

Is government sponsored capital as effective as private venture capital?

Given the value of an active venture capital market, governments in Ontario and across Canada have devoted substantial resources to bridging the perceived financing gap in venture capital markets. The primary means of government support is through Labour Sponsored Investment Funds (LSIFs). To qualify, a fund must issue common shares available for purchase by individual, or “retail,” investors similar to a mutual fund; this differs from a

typical venture capital fund, which is restricted to institutional investors, like pension funds, and high net worth individuals and is structured as a limited partnership. In addition, LSIFs are restricted to investing in smaller firms with total assets under \$50 million and must commit this capital for eight years. If these conditions are met, LSIFs receive a tax credit, and investors can receive tax benefits through their RRSPs.⁴⁷ In 2004, LSIFs had approximately \$20 billion in assets under management.⁴⁸

The Institute has been critical of LSIFs as a means of generating venture funding for our entrepreneurial firms – because of their poor design, their low returns, and the cost to the public treasury. Recent research has solidified the case against government sponsored venture capital.

In their paper, *Government Sponsored versus Private Venture Capital: Canadian Evidence*, James Brander, Edward Egan, and Thomas Hellmann from the University of British Columbia compared the performance of government sponsored venture capital (GVC) to private venture capital (PVC) using a data set of 3,720 enterprises funded by both types of Canadian venture capital. While previous studies have focused primarily on investor returns, the researchers assessed GVC from the perspectives of both private value-creation and public welfare. The results indicated that GVC is inferior to PVC on both of these measures for several reasons.

First, the study found that GVC under performed PVC at creating economic value, as measured by the market capitalization of the firm at either the initial public offering (IPO) or a third-party acquisition. The research indicated that enterprises supported by PVC are more prone to successful exits, IPOs, or third-party acquisitions, and tend to generate higher value when they exit successfully. The expected commercial value of an enterprise financed by

PVC is significantly higher than one financed by GVC. In addition, PVC financed enterprises are less likely to go out of business over the investment time horizon and are more likely to attract US investment.

Second, GVC funded firms are less likely to generate innovations. Although it is hard to measure actual innovation results, enterprises funded by PVC show a greater propensity to patent, suggesting that PVC results in more innovation than GVC.

Third, it is also important to understand the cause of the under performance associated with firms funded by GVC. Does it arise from PVC selecting a better pool of ventures than GVC? With some further investigation, Brander and his fellow researchers concluded that the differential performance is due entirely to treatment rather than to selection – GVC tends to provide less effective mentoring and other value added skills to the enterprises it funds, causing them to perform worse than otherwise equivalent enterprises supported by PVC.

Fourth, governments’ intervention is primarily based on the argument that it helps to create public welfare and, most importantly, innovation spillovers. The fact that GVC tends to generate less innovation than PVC therefore challenges the efficacy of public intervention in venture capital markets. However, this is not the whole story. The study further suggested that government funds are crowding out private investments to some extent. Simply put, government

46 Josh Lerner, “The Future of Public Efforts to Boost Entrepreneurship and Venture Capital,” *Small Business Economics*, Vol. 35, Issue 3, 2010, pp. 255-264.

47 LSIFs tax credits are being phased out in Ontario and will no longer exist as of the 2012 tax year. The tax credits prior to 2010 when the phase out began were 15 percent at both the provincial level and federal levels.

48 Ayi Ayayi, “Public Policy and Venture Capital: The Canadian Labor-Sponsored Venture Capital Fund,” *Journal of Small Business Management*, Vol. 42 No. 3, 2004, pp. 335-345.

Best practices for public investment in entrepreneurship and venture capital

Entrepreneurship and finance professor at Harvard Business School, Josh Lerner has devoted considerable time to studying the venture capital and private equity industries, which he has outlined in various articles and three books. Some best practice lessons for policy makers are outlined in Lerner's recent paper, "The Future of Public Efforts to Boost Entrepreneurship and Venture Capital":

- > **Make public funding market driven as much as possible.** Public funds should be available only when companies have received financing from private sources.
- > **Limit the capital restrictions on publicly supported funds.** Policy makers must resist temptations to place restrictions on the location of investment, the type of investment, or the way venture capitals raise funds.
- > **Leverage academic research capacity.** Given the strength of public funding for university research in Canada, it is important to use technology transfer offices to help academic entrepreneurs become successful.
- > **Recognize the global nature of the industry.** It is important for policy makers to appreciate that global venture capitalists and institutional investors may be deterred if securities regulation in a country is too onerous or idiosyncratic. It is also important to embrace the notion that most successful venture capitalists will have a multinational presence and should not be restricted geographically, as mentioned above.
- > **Initiatives must be goldilocks-sized.** Initiatives cannot be too small or too large, they must be just right. Creating too large a capital pool where few opportunities exist may create wasteful investment with low returns and little innovation, while too small an initiative won't be effective at improving the environment.
- > **Education should be a centerpiece of public initiatives.** Providing information to potential venture capitalists can spur investment. This provides a role for government in the funding or support of trade associations to provide useful data. In addition, educating entrepreneurs about the expectations of venture capitalists and other investors can help bridge the divide between the two groups and increase collaboration.
- > **Improve the flexibility and evaluation of initiatives.** Governments must be prepared to evaluate initiatives to determine whether goals have been reached and what future needs, if any, are present. Policy makers must be prepared to wind down unsuccessful programs and to recognize when public funds are no longer needed.
- > **Have patience.**

is investing in some businesses that would have been funded by private venture capital otherwise. As Lerner stated, “the Canadian Labour Fund Program, not only backed incompetent groups that did little to spur entrepreneurship, but it crowded out some of the most knowledgeable local investors.”⁴⁹ Further research by Schulich School of Business economist Douglas Cumming and University of Toronto law professor Jeffery MacIntosh confirms the crowding out effect reported by Lerner.⁵⁰

The research raises important questions about the efficacy of government investment in venture capital for entrepreneurial firms. Josh Lerner having studied this issue across many jurisdictions has documented the lessons learned (See *Best practices for public investment in venture capital*).

Clusters contribute to entrepreneurship

Industry clusters are important sources of innovation and economic growth for regions and countries. There is much evidence that clusters are particularly beneficial to entrepreneurial start-ups and small- and medium-sized enterprises.

Clustering – or agglomeration – refers to the tendency of some industries to mass together in specific geographic areas. While every town above a certain size has a corner store or a law office, steel mills or movie studios are only found in certain areas. Much of this is the result of scale requirements. But scale is not the only reason agglomeration

occurs. Historically, natural factors, such as forests and mineral reserves, led to resource industries in particular locations. Deep water ports and rivers created the conditions for certain types of industries to flourish in other locations. And the presence of highly skilled workers was the driving force for the growth of financial services in London or the fashion industry in Paris. These skills became more and more specialized as the industry clusters developed. Clusters also flourished as firms were driven to improve because of the demands of highly sophisticated customers. London evolved as a world-class insurance centre in no small part because of the significant risk management needs of merchants trading goods throughout the British Empire. Clusters also developed because very capable firms were competing aggressively with one another. As clusters developed, technical innovation has been almost continuous, as capable rivals try to outdo one another.

Research by Michael Porter and our own research showed that clustered industries drive superior innovation and higher wages. While these benefits apply to all businesses within a cluster, some of the them have a disproportionate effect on smaller businesses. University of Toronto professors David Wolfe and Meric Gertler surveyed the academic literature on clusters and identified benefits of superior access to specialized inputs, diverse specializations, improved capacity to innovate through access to knowledge, and the stimulation of firm formation through start-ups and spinoffs.⁵¹ Much research shows the

impact of industry clusters in overcoming difficulties faced by start-ups and smaller firms:

- Clusters help smaller firms **overcome disadvantages from lack of scale**. Because they are small, they face difficulties in obtaining economies of scale in both production and the purchase of inputs and professional services. It is equally difficult for them to obtain economies of scale to lower costs of regulatory compliance, employment search, training, market research, and technological innovation. But easier access to the special expertise in industry clusters helps them overcome these scale disadvantages.⁵²
- Clusters provide better **access to highly skilled labour**.⁵³ Having a large, relatively proximate skilled labour pool allows for lower employment search costs and better matching of skills to job specifications, which improves productivity. For smaller firms, the value of this labour pool is even greater than for a large firm. Though large firms can also benefit

49 Josh Lerner, “The Future of Public Efforts to Boost Entrepreneurship and Venture Capital,” *Small Business Economics*, Vol. 35, Issue 3., 2010, pp. 262

50 Douglas J. Cumming and Jeffery G. MacIntosh, *Crowding Out Private Equity: Canadian Evidence*, University of Alberta Working Paper, 2002.

51 David Wolfe and Meric Gertler, “Clusters from the Inside Out: Lessons from the Canadian Study of Cluster Development,” *Urban Studies*, Vol. 41, Issue 5/6, 2004.

52 *Development of Clusters and Networks of SMEs*, The UNIDO Program, 2001.

53 Paul Krugman, *Geography and Trade*. Cambridge, Massachusetts: MIT Press, 1991.

from pooled labour, given the resources at their disposal, such as a human resources department, the external economies of scale in the labour market are more valuable for smaller firms for whom conducting employment searches can be time consuming and costly.

- Clusters help smaller firms **gain relevant information**. In a competitive economy, it is essential for firms' survival that they adapt and innovate. For smaller firms, it can be difficult to stay on top of all industry developments; the knowledge spillovers that occur in clusters help them. Though studied extensively, the phenomenon of innovation spillover is still difficult to test empirically because the effects are often indirect and intangible. However, MIT economist Eric Von Hippel attributed the phenomenon of knowledge spillovers to proximity to suppliers, customers, and competing firms.⁵⁴ The existence of clusters can induce innovation spillover through informal, local social networks.^{55,56} There is also evidence that firms located inside clusters innovate more than firms outside clusters and that knowledge spillover is localized, a phenomenon that seems to hold across a number of innovation measures and regression techniques.⁵⁷
- Perhaps counter intuitive, **knowledge spillovers do occur** in highly competitive environments.⁵⁸ For example, positive externalities arise from similar firms benefiting from technological advances of direct competitors, a process that is accelerated by regional specialization and clusters, thus fostering increased growth. Through his research, Michael Porter concluded that firms in a cluster need not be cooperative; in fact, the industries can be highly competitive for these benefits to arise.⁵⁹

- Clusters help entrepreneurs **gain access to financial resources**. Entrepreneurs find it difficult to obtain financing because of information issues owing to a lack of history or an untested product. Clusters can provide the benefit of proximity to financing sources, which can serve to reduce these information costs to both the financial intermediary and the entrepreneur. The result might be greater access to financial resources, a lower rate on a loan or better collaboration with a venture capitalist that can promote growth. In addition, the informal sector for capital, comprised mostly of angel investors who invest in seed and early stage companies, tend to invest locally,⁶⁰ typically within fifty miles.⁶¹

Taken together these benefits create a powerful link between the strength of clusters and the vitality of entrepreneurs.

Mercedes Delgado, Michael Porter, and Scott Stern also studied the effect of regional clusters on regional entrepreneurship.⁶² They found accelerated start-up activity in industries and regions surrounding strong clusters.

Industries located within a strong cluster, or those with access to strong related clusters, had higher growth rates in the number of new firms as well as start-up employment. This is because the presence of clusters surrounding an industry increases the supply of competitive resources and reduces barriers to entry. Strong clusters provide more diverse opportunities for entrepreneurial start-ups and reduce the cost of launching a firm. They also enhance the medium-term performance of young start-ups measured by employment level.

Another finding of this study is that new establishments of existing firms – for example, a national firm opening a local factory or retail outlet in the city region – also benefit

from clusters. The authors explained that these establishments are often present in similar clusters in other locations, but that they open new establishments to benefit from comparative advantages of each location.

Drawing on Canadian data, University of Edinburgh professor Richard Harrison and his colleagues, Sarah Cooper and Colin Mason, demonstrated the value of clusters for entrepreneurs in the Ottawa, Ontario, technology cluster. This value results from “cost sharing for collective resources, the development of a local labour market for specialized skills, reduced inter-firm shipment and transaction costs, and knowledge spillovers, and learning and adaptation.”⁶³

London Business School professor Hector Rocha summarized the benefit of clusters to smaller firms and entrepreneurs quite clearly:

“...clusters foster entrepreneurship providing established relationships and better information about opportunities; lowering entry and exit barriers; opening up niches of specialization...fostering a competitive climate and strong

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- 54 Eric Von Hippel, *The Sources of Innovation*. New York: Oxford University Press, 1988.
- 55 Stefano Breschi and Franco Malerba, “The Geography of Innovation and Economic Clustering: Some Introductory Notes,” *Industrial and Corporate Change*, Vol. 10, No. 4, 2001, pp. 817-833.
- 56 Chris Debresson and F. Amesse, “Networks of Innovators: A Review and Introduction to the Issue,” *Research Policy*, Vol. 20, 1991, pp. 363-379.
- 57 Rui Baptista and Peter Swann, “Do Firms in Clusters Innovate More?” *Research Policy*, Vol. 27, No. 5, 1998, pp. 525-540.
- 58 *Ibid.*
- 59 Michael Porter, *The Competitive Advantage of Nations*. New York: The Free Press, 1990.
- 60 *Gaps in SME Financing: An Analytical Framework*, prepared for Small Business Policy Branch, Industry Canada by Equinox Management Consultants, 2002.
- 61 D.M. Short and Allan Riding, “Informal Investors in the Ottawa-Carleton Region: Experiences and Expectations,” *Entrepreneurship and Regional Development* Vol. 1, 1989, pp. 99-112.
- 62 Mercedes Delgado, Michael Porter, and Scott Stern, “Clusters and entrepreneurship,” *Journal of Economic Geography*, 2010, pp.1-24.
- 63 Richard Harrison, Sarah Cooper, and Colin Mason, “Entrepreneurial Activity and the Dynamics of Technology-based Cluster Development: The Case of Ottawa,” *Urban Studies* Vol. 41, Issue 5/6, 2004, pp. 1045-1070.

“Smart procurement” by governments can nurture entrepreneurship and innovation.

rivalry among firms that impose pressure to innovate due to the presence of close competitors. [Clusters capture] important linkages...spillovers from technology, skills, information, marketing, and customer needs that cut across firms and industries which is key to the direction and pace of new business formation and innovation; providing access to physical, financial, and commercial infrastructure; easing the spin offs of new companies from existing ones, reducing risk and uncertainty for aspiring entrepreneurs; and providing a cultural environment where establishing one's own business is normal and failure is not a social stigma."⁶⁴

Government procurement could promote innovation

Governments in Canada and other industrialized countries are major buyers of private sector goods and services, with government procurement typically accounting for 10 to 15 percent of a country's GDP. In 2009, the federal government bought approximately \$29 billion worth of goods and services from thousands of suppliers spanning a variety of industries, such as aerospace, manufacturing, professional services, and scientific research. If used successfully, governments could turn this huge and ongoing demand into a valuable tool in promoting growth and innovation in the private sector.

Government procurement provides support and pressure for businesses in a number of ways. The large orders

and potential follow-on sales provide firms with cash flow and facilitate raising debt and equity for investments in growth. When governments act as sophisticated and demanding customers, they encourage suppliers to compete for lower costs and better value and to come up with innovative solutions for their needs. Furthermore, government procurement creates a signaling effect as a lead user and influences the diffusion of the innovation more broadly. Firms that sell to the government gain valuable experience and reputations to attract future customers. From the government's perspective, more and smarter procurement brings solutions that boost the quality in public service and saves taxpayer's money.

Public tendering should be open and fair, without offering special privilege to any industry sectors. In Canada, smaller firms play a significant role in public procurement, accounting for 66 percent of contracts and 43 percent of the value historically. Governments in Canada have devoted considerable effort to ensure that smaller firms have equal access to compete for procurement as large firms. Recognizing the possible barriers facing smaller firms, governments have established special offices to assist them and are committed to reducing regulatory burdens.

Governments around the world have long fostered innovation in firms by focusing on supply-side measures, such as public investment in R&D and venture capital support. To obtain the best results, supply-side innovation policies need to be complemented by demand-side

measures. Public procurement is the primary demand-side tool available to governments. While Canadian governments assist smaller business in navigating the procurement process, it could be a more effective instrument in promoting innovation. A recent OECD project on demand-side innovation approaches showed that countries are increasingly using public procurement to stimulate innovation.⁶⁵

In its recent report, the Expert Review Panel on R&D, chaired by Tom Jenkins, discussed how Canada should use procurement as a tool to support innovation.⁶⁶ This is especially important, knowing that Canada currently has plenty of supply-push innovation programs, but lacks complementary demand-pull programs. Canada's effort has also been modest compared with that of other countries. The Panel recommended that governments make business innovation a core objective of procurement. This includes changing the procurement culture from a traditional focus on lowest cost to a value based approach that emphasizes innovation. The Panel urged Canadian governments to consider a wider use of performance-based procurement specifications, to leave room for

64 Hector Rocha, "Entrepreneurship and Development: The Role of Clusters," *Small Business Economics* Vol. 23, Issue 5, 2004, pp. 363-400.

65 OECD, *Demand-side Innovation Policies*, OECD Publishing, 2011.

66 *Innovation Canada: A Call to Action, Special Report on Procurement, Review of Federal Support to Research and Development - Expert Panel Report*, Expert Review Panel on Research and Development, 2011.

innovation. The Panel also identified some other major areas where policy could improve. These include:

- *Increasing the contracting out of R&D.* The current R&D efforts are largely kept in-house by government agencies, mainly for historical reasons. According to Statistics Canada, federal in-house R&D was estimated to be \$1.9 billion in 2010-11, while R&D contracted to businesses was estimated at \$0.3 billion, or about 15 percent of the in-house R&D. More than 80 percent of the external R&D contracts are accounted for by two agencies – the Canadian Space Agency, and the Department of National Defence. There is no government-wide policy mandating or even encouraging contracting out.
- *Capturing trade agreement benefits.* Trade agreements have rules that exempt R&D contracts and “first product or services” and “prototype development” from open bidding. This means that Canadian-based suppliers could capture the benefits from this practice.
- *Increasing the support for smaller firms.* The Panel recommends the government make use of procurement set-asides for smaller firms, as permitted by international trade agreements. The rationale behind this favouritism is that some innovative smaller firms that have the potential to meet the large and ongoing demand by government

need to be nurtured until they reach a point where they can compete without assistance.

- *Leveraging defence procurement.* Defence procurement demands sophisticated, innovative technology and accounts for a large share (46 percent in 2009) of total federal procurement expenditure. It is also exempt from international free trade regulations. It has the potential to be better leveraged for fostering innovation.

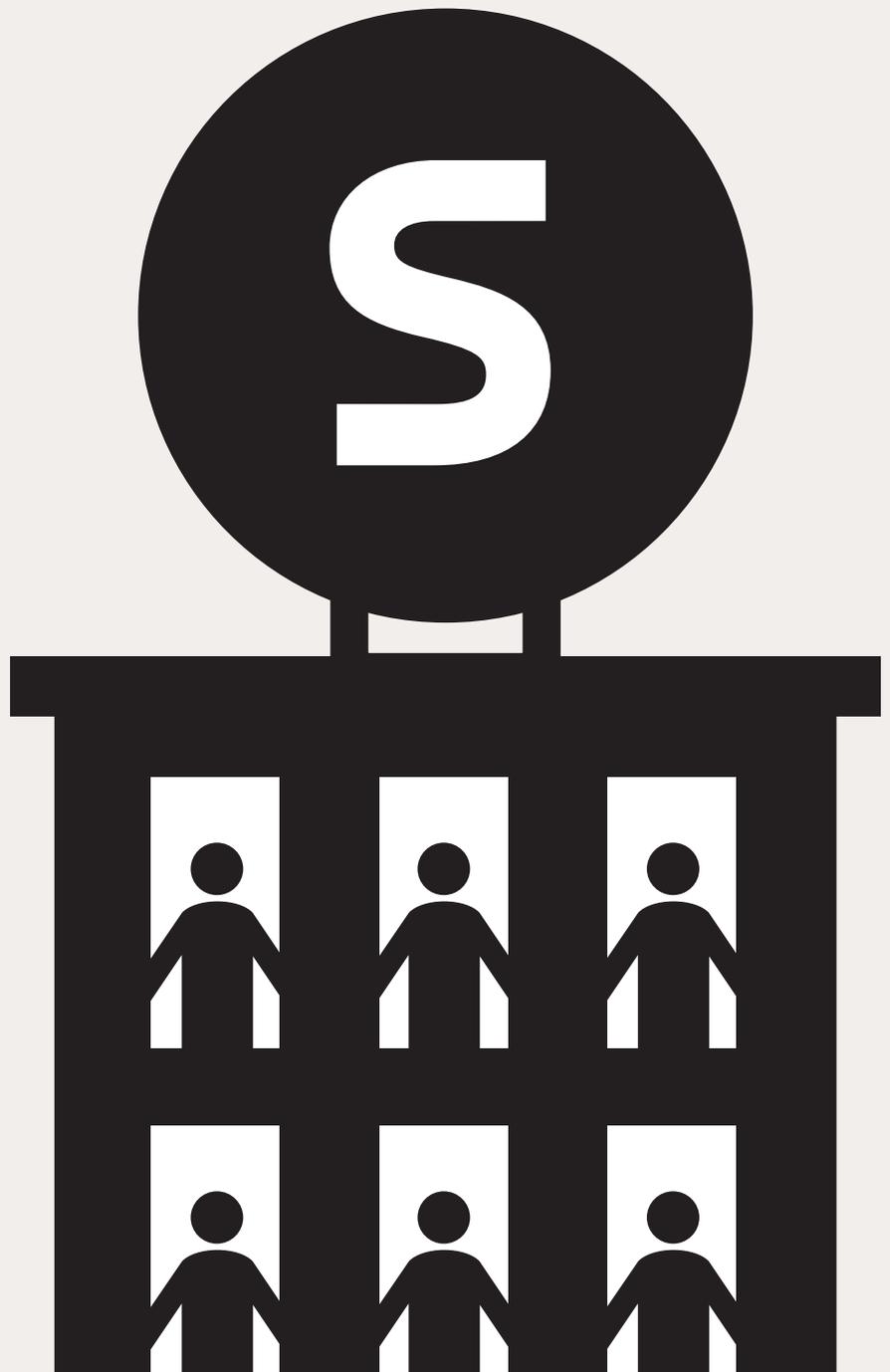
The Panel pointed to the success of two US procurement programs: SBIR and STTR.

The Small Business Innovation Research (SBIR) program in the United States is a legislative mandate that requires federal agencies that contract out more than \$100 million annually in R&D to set-aside 2.5 percent for small businesses. This translates to an annual expenditure of \$2 to 3 billion. The program provides up to \$150,000 for phase 1 proof-of-principle studies for no more than six months, and up to \$100,000 for phase 2 R&D work for no more than two years. However, it does not fund phase 3 commercialization. Firms need to turn to conventional sources – equity, debt and retained earnings – to advance to the next stage of development.

The Small Business Technology Transfer (STTR) program requires federal agencies with over \$1 billion in extramural R&D budgets to set aside 0.3 percent for small business R&D partnerships with non-profit research institutions.

If government policy should be more focused on entrepreneurial firms with great growth potential, can we identify the characteristics of successful firms? In the following chapter we review our and others’ research to help shed some light on this.

WHAT MAKES ENTREPRENEURS SUCCESSFUL?



IF WE WANT PUBLIC POLICY TO HELP THE SMALLER FIRMS that are more likely to be successfully entrepreneurial, are there ways to identify such firms? Help – where necessary and possible – can potentially lead to a great impact on overall economic success. There is a wide variety of academic research that helps answer this question – although much of it does not address the issue squarely. To add to this, we have completed our own research to help identify some of the common traits of ICP Global Leaders and successful technology firms.

What do we know about successful entrepreneurs?

Many people's views on entrepreneurs are formed through reading the popular press accounts of people such as Microsoft's Bill Gates, Dell's Michael Dell, or Facebook's Mark Zuckerberg, the young university dropouts that have led their businesses to huge success. These accounts often perpetuate the myth that entrepreneurs have particular psychological, demographic, and other identifiable characteristics. But close examination of research on entrepreneurship shows that successful entrepreneurs do not conform to the popular myths.

Psychological make-up does not differ

That entrepreneurs differ in the psychological make-up has been called into question by the US Panel Study of Entrepreneurial Dynamics, which found that entrepreneurs

do not differ from the rest of society in most psychological dimensions. However, some evidence does suggest a higher than average propensity for risk taking. For instance, Mirjam Van Praag and Jan Salomon Cramer find that less aversion to risk is correlated with the pursuit of self-employment.⁶⁷ Economists Andrew Burke, Felix Fitzroy, and Michael Nolan found that children who were more tolerant of “anxiety provoking situations” were more likely to become self-employed.⁶⁸ Though these studies find small effects from psychological factors, these effects are outweighed by factors such as age, experience, educational background, and entrepreneurial motivations.

Entrepreneurs are mostly over thirty

It is relatively rare for a young adult to become an entrepreneur, regardless of actual success. It is more common for male mid-career professionals, 35 to 54 years old, with industry experience, to become successful entrepreneurs.⁶⁹ A study conducted for the Global Entrepreneurship Monitor by Erkko Autio for a large group of countries found that 35 to 54 year olds were over represented as entrepreneurs compared to their share of the adult population. In addition, young people aged 18 to 24 make up only 3.1 percent of self-employed persons and 1 percent of business owners in the United States,⁷⁰ far lower than the proportion of the population in this age demographic. A further study conducted for Business Development Bank of Canada by Fondation

de l'entrepreneurship, found that the most common profile for a Canadian entrepreneur is a male between the ages of 35 to 54 who is both “well off” financially and more educated than the general population.⁷¹ A survey conducted by Industry Canada supports these claims, reporting that 41 percent of all smaller firm owners were 30 to 49 years of age.⁷²

Entrepreneurs have years of work experience in an industry

Given the age demographics of entrepreneurs, it is not surprising that many of them have both general and industry specific work experience. For example, in a survey of Canadian entrepreneurs by Industry Canada, economist Sonja Djukic reports that the average survey respondent had twenty-one years of experience in an industry related to their entrepreneurial activity. These entrepreneurs have a greater chance of success not only because they have industry specific knowledge, but also because

67 Mirjam Van Praag and Jan Salomon Cramer, “The Roots of Entrepreneurship and Labour Demand: Individual Ability and Low Risk Aversion,” *Economica*, London School of Economics and Political Science, Vol. 68 No. 269, 2001, pp. 45-62.

68 Andrew Burke, Felix FitzRoy, and Michael Nolan, *What Makes a Die-Hard Entrepreneur? Beyond the ‘Employee or Entrepreneur’ Dichotomy*, IZA Discussion Papers No. 2307, Institute for the Study of Labor, 2006.

69 Sonja Djukic, *Profile of Mid-Career Entrepreneurs: Career trade-offs and income appropriation of high human capital individuals*, Industry Canada, 2011.

70 Small Business Administration, *The Small Business Economy: A Report to the President*. Washington, D.C.: US Government Printing Office, 2005.

71 *Canadian Entrepreneurship Status 2010*, prepared by Fondation de l'entrepreneurship for the Business Development Bank of Canada.

72 Sonja Djukic, “Profile of Mid-Career Entrepreneurs.”

they are likely to have developed a wider network of professional contacts. For example, these entrepreneurs are more likely to obtain an angel investment than the average business owner.⁷³

Entrepreneurs are well educated

Another important factor is the educational background of owners of smaller firms. In the United States, *The Small Business Economy: A Report to the President* found that more highly educated persons are likely to be owners of high-growth firms. This is consistent with the Global Entrepreneurship Monitor for a wider range of high-income countries, including Canada.⁷⁴ Using data from Industry Canada's Micro-Enterprises Survey in 2000, Evangelia Papadaki and Bassima Chami found a positive and statistically significant relationship between the probability of high growth within a firm and the owner-manager's educational attainment level for a large sample of micro-businesses, where a micro-business is defined as having one to four employees.⁷⁵

Entrepreneurs are motivated to grow their business

The desire and motivation of an entrepreneur to grow the business is an essential feature in assessing the growth profile and subsequent economic contribution, in the form of jobs or revenues that the business will produce. In fact, it is essential for an entrepreneur to be motivated to grow a business. When smaller businesses lack this motivation, they are not entrepreneurs. For example, Evangelia Papadaki and Bassima Chami report that the primary motivation of 50 percent of owner-managers of micro-businesses in Canada is to gain independence and to be one's own boss, whereas only 14 percent stated that their main goal was to achieve a higher income level.⁷⁶ If we accept a desire for higher income as a proxy for a desire for business growth, we

can conclude that most small business owners are not interested in growing their business. This is consistent with the conclusion of economist Scott Shane who found that, contrary to popular belief, most entrepreneurs start businesses because they want to be their own boss.⁷⁷

Many of the things we "know" about entrepreneurship are myths

Shane goes further to discount myths surrounding entrepreneurship. Some of the results are surprising, contrary to popular belief, and essential for policy makers to understand. Some of the myths he "busts" are:

Start-up businesses are primarily in innovative, technology intensive, and highly productive industries

Perhaps in part because of the tech bubble in the late 1990s, a modern public perception is that most start-ups are high-tech firms in cutting edge industries, such as software or life sciences. However, the reality is that most start-ups are formed in traditional industries, such as retail trade or accommodation and food services. It is not surprising that most newly founded firms do not have growth intentions and do not plan new product innovations to gain a competitive advantage. Indeed, 91 percent of firm owners expect to have no impact on competition or innovation in their market.⁷⁸

Most start-ups require significant financing

The typical belief is that most start-ups need a large amount of capital to get off the ground and receive this financing from venture capital funds or angel investors in the form of equity. However, in the United States most start-ups do not require a significant amount of capital and can normally get started with approximately \$20,000. Often the initial financing

does not come from a venture capitalist or angel investor, but from the owner's personal savings. Even among those businesses that do receive outside capital when the business is started, it often comes in the form of debt financing, and even then, some 20 to 30 percent of financing still comes from the founder.

So, are potential entrepreneurs discouraged because they do not have significant personal capital? While higher wealth is associated with more business start-ups, the statistical evidence does not suggest it is a driver; other related factors, such as higher education and business experience, matter more.

Most entrepreneurs get rich

Given the idolization of successful entrepreneurs in society, it is a common belief that business founders become financially successful. This is a popular misconception. In fact, most of them earn less than they would if they were employed by another business. An earnings gap of 18 percent holds even after controlling for industry, skill level, and type of occupation. This gap persists despite the fact that self-employed persons tend to work more hours than their counterparts at other firms. In addition, most start-up businesses are not very profitable, with the median profit in an owner-managed firm at a meager \$39,000 annually.

Entrepreneurial success depends on the Eureka! factor

Most entrepreneurs do not have a 'eureka!' moment when they generate the big idea. On the contrary, most

⁷³ *Ibid.*

⁷⁴ Erkkö Autio, *2007 Global Report on High-Growth Entrepreneurship*, Global Entrepreneurship Monitor, 2007.

⁷⁵ Evangelia Papadaki and Bassima Chami, *Growth Determinants of Micro-Businesses in Canada*, Small Business Branch, Industry Canada, 2002.

⁷⁶ *Ibid.*

⁷⁷ Scott Shane, *The Illusions of Entrepreneurship: The Costly Myths that Entrepreneurs, Investors, and Policy Makers Live By*. New Haven: Yale University Press, 2008.

⁷⁸ *Ibid.*

business owners surveyed in the United States reported that business ideas were developed over time, and often after their business was founded.⁷⁹

Some realities govern successful start-ups

Our own research corroborates many of the findings of other economists and adds important information about Canadian entrepreneurial success stories. These findings provide further insights for public policy.

Since we think the most important small- and medium-sized enterprises are the ones that will eventually become large successful companies, we thought it important to identify the historical characteristics of Canadian success stories. Canada's Global Leaders, defined by the Institute, provided a useful set of insights that we analyzed to determine the realities of their start-up years and their founders. We also performed a similar analysis on Canada's leading technology firms in the "Top 250 Canadian Tech Companies," as developed by Branham Group Inc. and published annually in the Canadian magazine, *Backbone*.

The Institute developed and maintains a list of Canada's Global Leaders. We identified Canadian owned firms with revenues greater than \$100 million and determined which of them are in the global top five of their industry category. This ranking is usually defined by revenues, although in some cases we use industry specific measures, such as rooms managed for hotel chains – as some chains own all their properties while others manage them for local owners – or market capitalization in financial services.⁸⁰ As of late 2011, we identified 89 Canadian Global Leaders.

The Top 250 Canadian Tech Companies is a comprehensive list of information and communications technology (ICT) firms ranked by gross revenue. Every year more than a 1,000 ICT companies, public or private, are approached to participate in the program.⁸¹ The Institute's researchers analyzed the companies on the 2010 list that had revenues of at least \$100 million.

Our research objective was to identify characteristics of these successful firms from their start-up period. Using publicly available data, our researchers determined what year each firm began business and identi-

fied characteristics of the founders and the firms. In all, we analyzed 86 of the Institute's Global Leaders and 29 of the *Backbone* Top 250 Canadian Tech Companies.⁸²

The factors we explored were:

- Age of the global leader or technology firm
- How long it took the company to begin exporting
- The age of its founders
- Whether the founders had relevant industry experience before they started their firms
- Whether the founders had previous entrepreneurial experience regardless of success

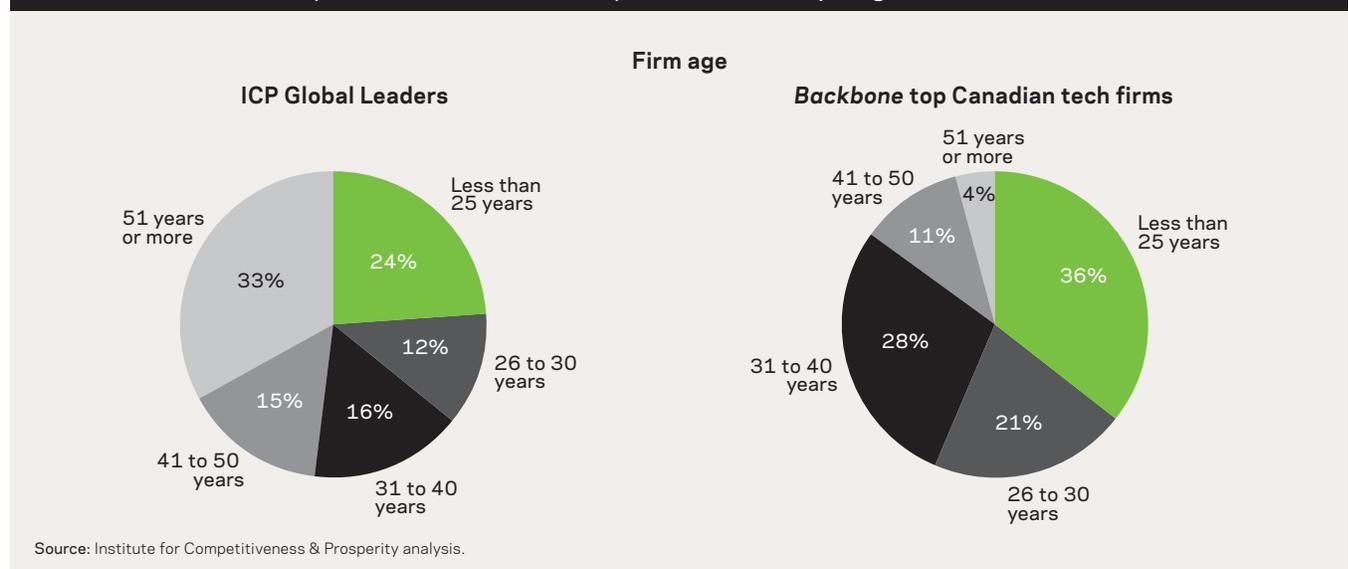
⁷⁹ *Ibid.*

⁸⁰ See http://www.competeprosper.ca/index.php/canada_global_leaders for more information and a complete list of Canada's Global Leaders

⁸¹ <https://www.branham300.com/application/index.php>

⁸² At the time of writing there were 89 current and 37 previous ICP Global Leaders. In total, 40 companies were excluded for either being too old; formed by mergers, acquisitions, spinoffs or government privatization; acquired by foreign global leaders; or lack of sufficient information. Out of the *Backbone* Top 250 Canadian Tech Companies, only 47 had revenues greater than \$100 million and 18 were excluded in the same manner as ICP Global Leaders.

Exhibit 19 Most ICP Global Leaders have been in business for over 25 years; *Backbone* Top 250 Canadian Tech Companies tend to be younger



- Whether founders were born in or immigrated to Canada
- Educational attainment of founders and the subject area of their education.

The trends we identified are not, of course, ironclad rules for predicting high potential start-ups, but they do provide insight into some factors that are associated with success. They also dispel some myths or commonly held views on successful start-ups. We do not conclude that some of the presently held views are wrong, but rather that there is not a lot of evidence that they hold true in the majority of cases.

Most ICP Global Leaders and Backbone Top 250 Canadian Tech Companies have been in business for more than 25 years

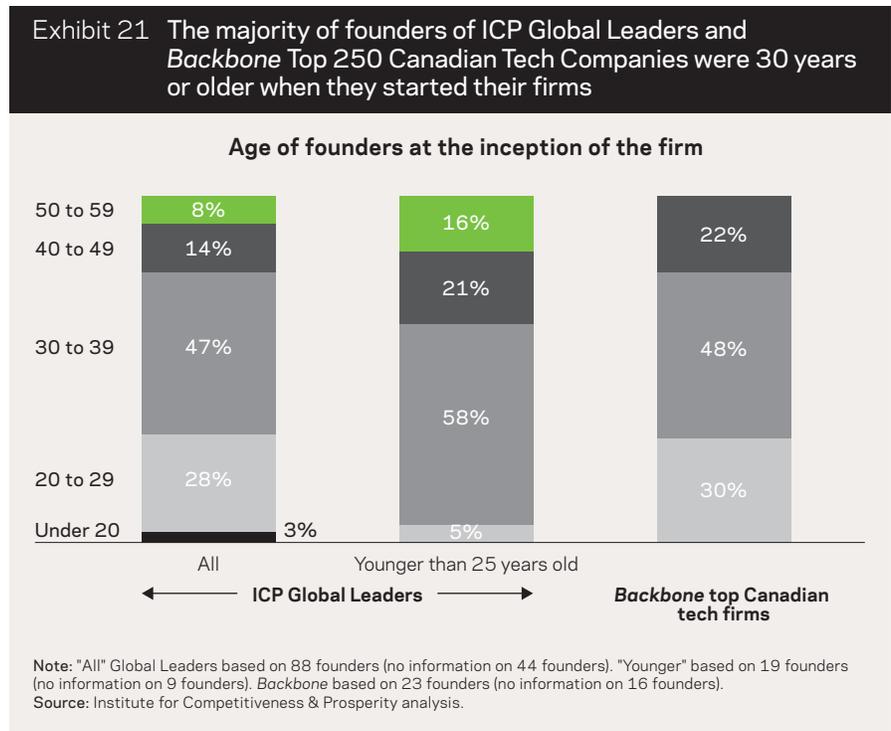
Our review of successful start-ups covers a period going well back into the twentieth century (*Exhibit 19*). In fact, a third of the Global Leaders analyzed have been in business for more than 50 years. As expected, successful technology firms tend to be younger. It is quite possible that more recent successful start-ups differ markedly from older ones. We show separate results for the 17 Global Leaders that are under 25 years old.

More than half of ICP Global Leaders started exporting within five years; half of young Global Leaders within the first year

Since Global Leaders are by definition active in multiple international markets, we should not be surprised by this. Here the main insight is that most of our successful Canadian firms began exporting early on. Of all Global Leaders, 28 percent started exporting within one year (*Exhibit 20*). This trend is even more pronounced among young Global Leaders, where half of the firms exported within the first year. Unfortunately, not enough

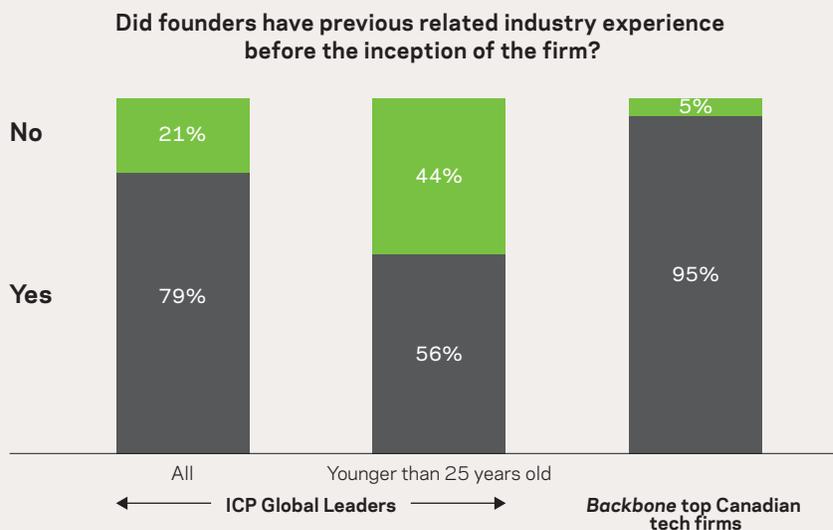
information is available to assess the export path of top technology firms. A firm's propensity to export and ability to penetrate international markets are good indicators of growth aspirations and potential. Policy makers can use such clues to tailor the eligibility requirements for support programs. As well, specific

programs that help emerging firms enter new markets and compete successfully, without violating WTO agreements, will likely be more fruitful than those with a general focus that assist all smaller firms.



Founders of Global Leaders and successful tech companies share traits that offer clues for designing public policy.

Exhibit 22 Most founders of ultimately successful firms had industry experience



Note: "All" Global Leaders based on 94 founders (no information on 38 founders). "Younger" based on 25 founders (no information on 3 founders). Backbone based on 20 founders (no information on 19 founders). Source: Institute for Competitiveness & Prosperity analysis.

Founders of ICP Global Leaders and Backbone Top 250 Canadian Tech Companies were likely to be thirty or older

Our culture has popularized young entrepreneurs such as Bill Gates, Steve Jobs, and Mark Zuckerberg, but the median age of the founders of ICP Global Leaders is thirty-two. Founders of our more recent Global Leaders and of our Backbone Top 250 Canadian Tech Companies tended to be older, though their median age was still in the thirties (Exhibit 21). Undoubtedly, it is possible for entrepreneurs in their twenties to build firms that are ultimately successful, but the odds are better for entrepreneurs who are older.

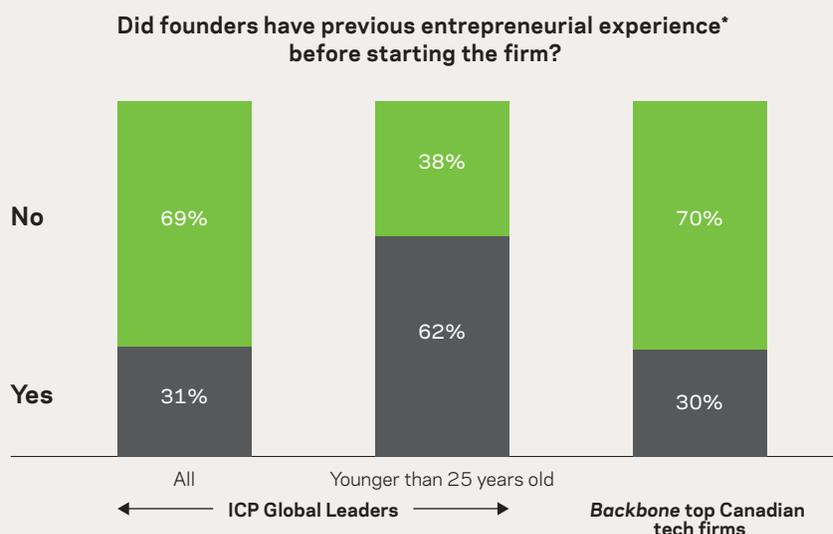
A significant proportion of ICP Global Leaders' founders, as well as those of Backbone Top 250 Canadian Tech Companies, had previous industry experience

This tendency was not as strong among young Global Leaders, but nonetheless more than half of their founders also had worked in the field before starting their own firm (Exhibit 22). It seems that tangible experience plays a major role in the success of a company. Once again the image of the young entrepreneur with little professional experience, who starts out in a garage and grows operations to a large company, is inconsistent with the evidence.

There is some evidence for the success of serial entrepreneurs

Only 31 percent of ICP Global Leaders' founders and 30 percent of Backbone Top 250 Canadian Tech

Exhibit 23 A minority of founders had previous entrepreneurial experience



*Defined as any previous experience in starting a company regardless of success. Note: "All" Global Leaders based on 64 founders (no information on 68 founders). "Younger" based on 16 founders (no information on 12 founders). Backbone based on 20 founders (no information on 19 founders). Source: Institute for Competitiveness & Prosperity analysis.

Companies founders had previous entrepreneurial experience (*Exhibit 23*). Among young global leaders, the evidence suggests the contrary, although the sample size for this particular group is small.

While there are valuable lessons that can be learned from establishing a company, whether it thrives to become a large firm or it fails miserably, our research indicates that industry experience is important, and

that successful entrepreneurs tend to succeed in their first attempt.

Most founders of ICP Global Leaders and Backbone Top 250 Canadian Tech Companies were born in Canada

Among all these Global Leaders' founders, 65 percent were Canadian born (*Exhibit 24*). For founders of young Global Leaders and *Backbone* Top 250 Canadian Tech Companies,

this was 83 and 81 percent, respectively. The percentage of foreign born successful entrepreneurs in our younger Global Leaders and tech firms is close to the 20 percent, similar to their share of the Canadian population.⁸³ Immigrants from non-English speaking countries

⁸³ Statistics Canada, *Census Snapshot – Immigration in Canada: A Portrait of the Foreign-born Population, 2006 Census*.

Exhibit 24 Most founders were born in Canada

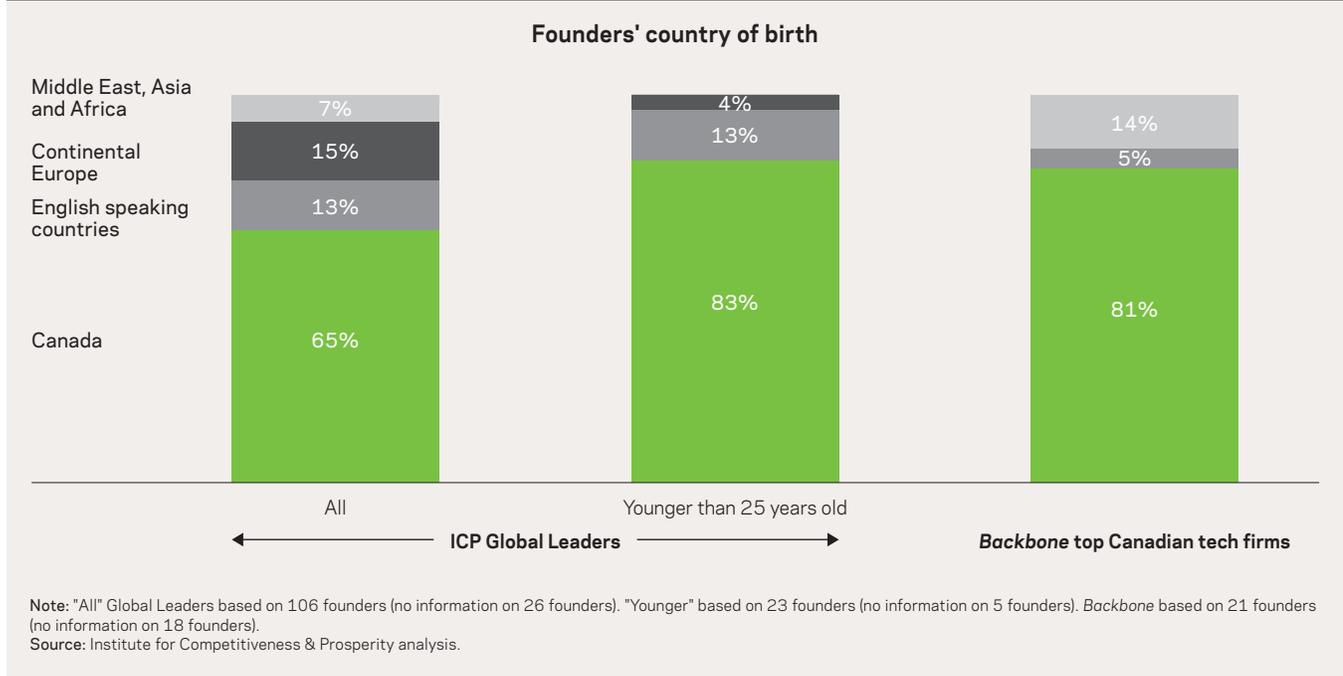
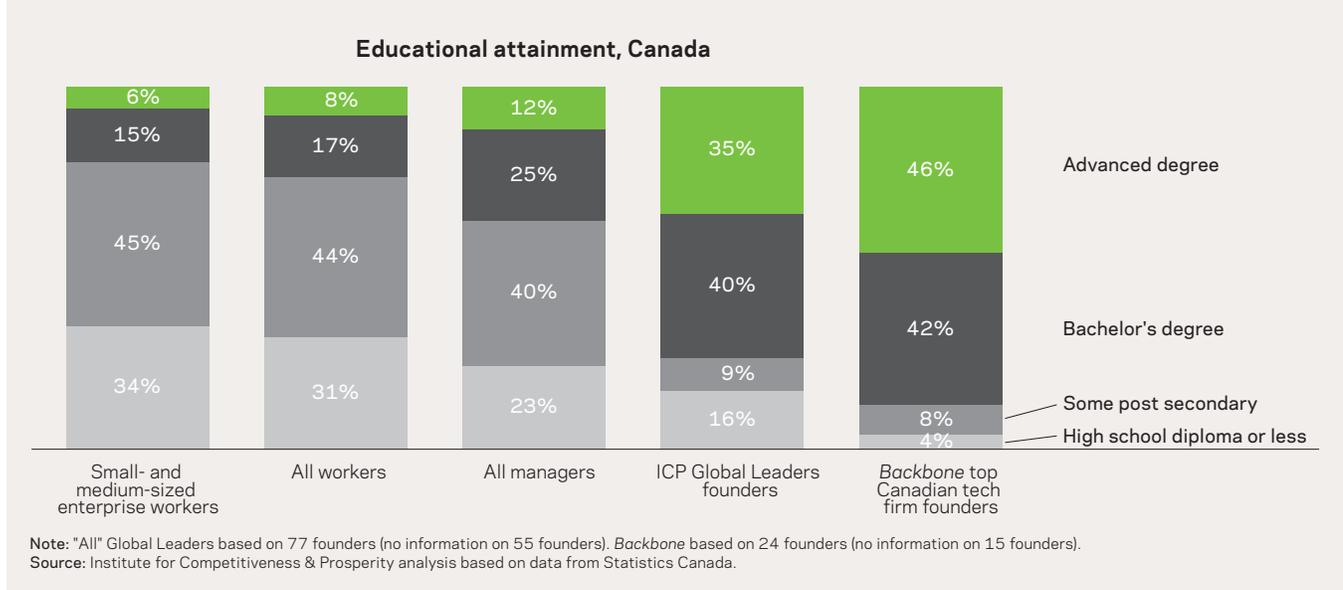


Exhibit 25 Founders of ICP Global Leaders and successful start-ups were highly educated



and outside continental Europe do not make up a large share of our successful entrepreneurs.

The under representation of immigrants among successful entrepreneurs highlights the importance of networks in establishing and leading a company to success. This also follows immigrants' labour market outcomes, where they tend to earn less and suffer from higher unemployment rates than the rest of the population.

Founders are highly educated

Contrary to the great stories of successful entrepreneurs who were university dropouts, our research highlights the importance of higher education in determining the success of start-ups. The cases where dropouts are amazingly successful are extremely rare, and should not inform public policy.

One of the most striking patterns revealed in our research has been the superior educational attainment of founders of Global Leaders, young Global Leaders, and tech start-ups. Fully 75 percent of all Global Leaders' founders and 96 percent of young ones had a university degree. Similarly, among *Backbone* Top 250 Tech Companies, 88 percent of

founders either had a bachelor's or a master's degree or a PhD (*Exhibit 25*).

These results are more significant when compared to the educational attainment of workers in smaller firm, all employees, and all managers. Only 21 percent of smaller firm workers and 25 percent of all employees had a university degree. Among all managers, some post secondary diploma or certificate was the most common credential (similar to smaller business workers and all employees), and only 37 percent of managers had a university degree. Important policy implications arise from this evidence.

The most common field of study among founders of Global Leaders and *Backbone* Top 250 Canadian Tech Companies has been science and engineering, although young global leaders' founders were more likely to study commerce (*Exhibit 26*). Other Institute research has concluded that current CEOs of Global Leaders are almost all formally trained managers.

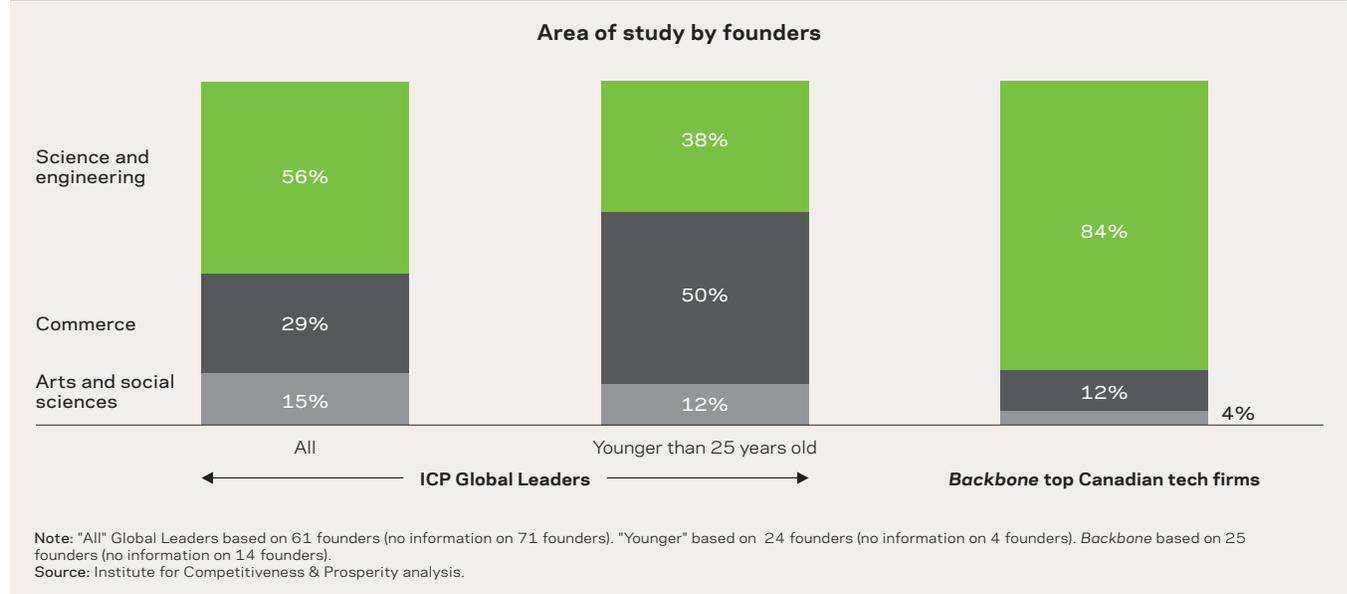
First, and perhaps more germane to this discussion, is the opportunity for small business policy makers to use educational attainment as a proxy for competence and a tool to differentiate between promising start-ups and mediocre performers.

Highly educated founders and managers are simply better equipped to run complex businesses that compete in dynamic markets.

Second, if Canada had a better educated population, we would likely produce more high-growth businesses and Global Leaders. Our research to date has shown that under investment of Canadians and their governments in post secondary education is a contributing factor to Ontario's and Canada's prosperity gap compared to peers, as well as our widening productivity gap. Therefore, investment in post secondary education ought to be a top priority for all Canadians.

Not all small businesses are the same. Some are true entrepreneurial firms - innovating and growing. Finding them is a challenge, but there are some traits that successful young businesses portray. These traits provide useful clues for designing effective public policy in this area.

Exhibit 26 Most founders had a science or engineering education



WHAT SHOULD WE DO?



The smaller business sector is an important part of the economy in Ontario and Canada. It provides the backbone of support for our larger businesses, employs many of our citizens, and is favoured by public policy. However, our research leads us to conclude that the smaller business sector does not require special public policy treatment. Instead, the emphasis should be on creating the best environment for all firms to flourish. In some cases, there are broad-based and specific opportunities for public policy to improve the odds that entrepreneurial firms succeed. These firms provide the innovative spark that can pressure our incumbent firms to perform better and in some cases are future Global Leaders.

Continue to pursue sound economic policy that promotes innovation and productivity growth in all sectors

Smaller firms and entrepreneurs are typical of the economy as a whole. Their industry mix matches that of the overall economy, and they are connected with the rest of the economy as suppliers, customers, and competitors. As entrepreneurial business expert Zoltan Acs has observed, “there is no such thing as ‘entrepreneurship policy’ *per se*. There is only public policy in an entrepreneurial society.” Specific areas of economic policy can assist our smaller firms to be successful entrepreneurs:

Support more post secondary education in general

We found that smaller business founders and employees tend to be less well educated than those in large firms. Employees earn less than their counterparts in large businesses. In some cases, small- and medium-sized businesses offer economic opportunities of last resort. We need to ensure that as many of our young people as possible have the opportunity to pursue post secondary education as far as possible. This will raise the quality of start-up business owners and their employees. We have acknowledged the provincial government’s ongoing effort to invest in post secondary education; our latest research indicates that its positive effect on entrepreneurship is one more reason to make these investments.

Support more business education, specifically

We have seen that smaller businesses are less likely to be well managed. We need to find creative ways to help entrepreneurs gain access to management education through executive education programs. In partnership with business schools, the Ministry of Economic Development and Innovation could create pilot projects for small business executive education.

Government procurement programs are an important way to help smaller innovative firms gain traction

Encourage cluster development

Research by Michael Porter and his colleagues concluded that regional industry clusters with depth and breadth are closely associated with entrepreneurial success in the region. Governments can improve the environment for entrepreneurial businesses by helping local cluster organizations develop their capabilities to support local cluster development. We recognize that this is a challenge for governments. As Porter, and others have concluded, governments do not have a successful track record of creating new regional industry clusters. But they can provide catalytic support for industry clusters that are emerging on their own steam. Examples include cluster support organizations, specialized training, data collection, and provision of helpful public infrastructure.

Further develop approaches that are customized to high-growth entrepreneurial businesses

Within an overall framework of sound economic policy, government assistance to small- and medium-sized business can be more tailored to specific opportunities. The assessments of government programs to assist smaller businesses that we reviewed in the Working Paper concluded that they are often too general and do not discriminate between high potential firms and mediocre performers.

Focus on the few

On the one hand, public programs are meant to be even handed and available to all who qualify. But on the other hand, if it is possible to identify firms with better potential, shouldn't government efforts be focused on them? A related tradeoff challenge for governments is the extent to which they should support all firms or actively seek out potentially successful ones.

As we discussed in this Working Paper, there are examples of government programs that are aimed at growing, successful firms, such as Ontario's Innovators Alliance and the Ontario Network of Excellence, as well as the federal Industrial Research Assistance Program.

Experiment more in focused programs

The Ontario Government currently provides comprehensive assistance to high-performing firms. We encourage it to experiment with different approaches to sharpen further its focus on finding the high potential firms in the region and actively working with them to improve their odds of success. Such assistance could include funding domestic and foreign market research, consulting advice, and management training. Governments would need to be relentless about focusing their resources on high-potential firms. They would also need to assess results very carefully to determine whether the pilot had demonstrated success versus other regions' performance, controlling for important factors like the health of the local economy.

Expand government procurement to create opportunities for smaller - and all - businesses

Raise the credibility a firm can earn through reference customers

Well known customers with challenging requirements can provide beneficial pressure for young firms to build world class capabilities and to demonstrate these capabilities to other potential customers. Governments can be reference customers through outsourcing their services more. From the government's and taxpayer's perspective, if done well, outsourcing can deliver services at a lower cost and a higher quality.

Identify service providers with expertise in the latest technology and process improvements through competitive tendering

From the technology industry's perspective, more opportunity for business with a large, sophisticated customer will provide the support and pressure to improve their innovation capacity. We are not promoting special treatment for Ontario firms, or for small- and medium-sized firms – the competitive process should be on a level playing field that maximizes value-for-money. Yet local firms will have an advantage of client proximity and familiarity that should allow our technology providers to win a good share of such competitions.

The Independent Panel on Federal Support to Research and Development, headed by Tom Jenkins, identified government procurement programs as an important way to help small innovative firms gain traction in their quest to grow. We agree.

Make the tax system as neutral as possible; but explore specific changes to help growth-oriented businesses

Treat larger businesses the same as smaller businesses in tax policy

As we have concluded in our research, there are not many reasons to differentiate fiscal policy with respect to business size. Smaller businesses are not challenged by market inefficiencies that need corrective public policy. Economic performance is not enhanced by the special tax treatment for smaller businesses. In a perfect world, income tax rates for smaller businesses would be no different than those for other businesses. Outside of a process of overall tax reform – which would be helpful to Canada and Ontario – we doubt that small business tax rates can be increased. Where governments have determined that they will reduce corporate taxes, we urge them to focus such reductions on the general rate to reduce the disparity with smaller business rates. If increases are planned, we recommend an opposite approach.

If we are to give tax preferences to business, then we should consider a preference for growing, not small firms.

Explore opportunities to reduce or eliminate taxes on growth

If policy makers are to give tax preferences, then they should consider a preference for growth rather than a preference for small. As firms increase their sales and income, they typically need to invest more in the business – in more people and capabilities, hard assets, and working capital. Governments could assist such firms by reducing or eliminating tax on income in excess of income from the previous year. This would be available to all firms, but have the effect of supporting growing firms. And once firms stop growing, they would lose the tax advantage associated with growth. Many design details would need to be worked out. For example, might this work just as well, at lower cost to the treasury, if taxes on incremental income were deferred? Could the growth be calculated against an average of the previous three years' income?

Tax experts Duanjie Chen and Jack Mintz have proposed some tax changes that focus on removing barriers to growth by smaller businesses, and we endorse them:

Allow a proportion of a business's capital investment to be expensed rather than depreciated over several years.

Business owners, whether of larger or smaller firms, need to replace some of their fixed capital every year, since these assets wear out or become obsolete over time. In effect, this portion of capital investment is maintenance spending. Regular maintenance spending is deductible from the current year's income, thereby reducing taxes on income immediately. Depreciation means spreading the expense over several years and delaying the tax benefit of the investment. If some percentage of the value of fixed assets were eligible for expensing to reflect maintenance, the tax burden related to investing would fall. This change would apply to all businesses; thus, losing this tax benefit would not be a barrier to growth by small businesses.

Reduce capital gains taxes on shares issued when a firm goes public.

A major event in the life of a successful firm is becoming a publicly held company. Owners of a privately owned firm sell shares in their company to shareholders in an initial public offering. Often they receive shares in the now public company as their compensation for giving up total control of the business. The hope and dream of entrepreneurs selling some or all of their firms is that these public shares will grow in value over time. But these returns are diminished by capital gains taxes. At the margin, more entrepreneurial owners would take their firms public if capital gains investments did not apply. Chen and Mintz suggest that any shares issued in an initial public offering of a firm with less than \$50 million in assets be exempt from capital gains tax, if held for more than five years. Such a policy exists in the United States to help smaller businesses go public. An added benefit of this policy is that after five years, owners will not hold onto their shares simply to avoid capital gains taxes. This leads to another broader recommendation.

Lower the impact of capital gains taxes as a barrier to asset sales.

Investors wishing to reduce their exposure in one asset and reinvest in different assets face the capital gains tax. If investors were allowed to roll over assets without attracting capital gains taxes, they would operate in a more efficient manner – rather than holding on to a security or a business simply to avoid capital gains tax.

Smaller business owners wanting to sell their businesses can defer capital gains taxes if they invest in another small business within a specified time. It would be better to broaden this exemption for any kind of new investment. This eases exit from a small business when the owner no longer wishes to invest there. Our tax system should not encourage people to invest in smaller businesses; nor should it discourage them from exiting.

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