



Report **October 2010**

# Immigrants as Innovators Boosting Canada's Global Competitiveness



IMMIGRATION



Immigrants as Innovators: Boosting Canada's Global Competitiveness  
by Michelle Downie

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## Preface

*Immigrants as Innovators: Boosting Canada's Global Competitiveness* takes a comprehensive approach to understanding and quantifying the relationship between immigration and innovation at graduated levels—individually, in businesses, nationally, and globally. National and global datasets were analyzed, and a survey of employers and immigrant employees was conducted. The report is designed to help Canadian government officials and business leaders, as well as cities and communities, recognize the potential value of immigration to innovation performance. The report also provides Canadian leaders with insight into how they can better foster and capitalize on the innovative potential of new Canadians.

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## EXECUTIVE SUMMARY

# Immigrants as Innovators Boosting Canada's Global Competitiveness

### At a Glance

- ◆ This report evaluates the extent to which immigrants are contributing to innovation in Canada.
- ◆ The relationship between immigration and innovation is assessed at graduated levels—individual, business, national, global. At every level of analysis, the research found that there is a significant association between immigration and innovation.
- ◆ Barriers are identified, and recommendations are made to further facilitate immigrants' continued contributions to Canada and Canadian businesses.

purpose of this research report is to test this proposition. Is there a link between immigration and innovation—in Canada and abroad?

Current immigration policy in Canada emphasizes the need for skilled migrants as a response to demographic and socio-economic shifts. Most developed countries have rapidly aging populations. The shrinking population of working-age adults is leading to critical labour and skills shortages. Attracting immigrants is one strategy being adopted to meet these challenges. However, this report makes the case that, beyond meeting labour shortages, immigrants also increase Canada's innovative capacity.

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**This study explores the relationship between immigrants and innovation, in Canada and abroad.**

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**I**mmigrants<sup>1</sup> are making Canada more innovative. Making such a proposition does not require any stretch of the imagination. Indeed, one could logically argue that immigrants are by definition motivated go-getters who are prepared to face adversity and take risks in hopes of greater gains. They are seekers of a better way—the very embodiment of innovation. The

Canada lags behind many other developed countries in productivity and innovation.<sup>2</sup> Productivity and innovation are critical for economic development. This study explores the relationship between immigrants and innovation, in Canada and abroad. Specifically, it examines different dimensions of innovation across areas such as research, the culture sector, business, and global commerce, as well as at the level of the individual immigrant, the firm, and the national and international economy.

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<sup>1</sup> For the purposes of this report, an immigrant is anyone who was born outside of Canada to non-Canadian parents and at some point immigrated to Canada. They may have been living in Canada briefly, or for decades.

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<sup>2</sup> The Conference Board of Canada, *How Canada Performs 2009*, 6.

At every level of analysis, immigrants are shown to have an impact on innovation performance that is benefiting Canada. In particular:

- ♦ Immigrants are disproportionately recognized for their achievements in research and the arts.
- ♦ Immigrants are improving innovation in Canadian businesses.
- ♦ Immigration is increasing innovation by expanding Canada's trade relations.<sup>3</sup> A 1 per cent increase in the number of immigrants to Canada corresponds to an increase in imports of 0.21 per cent and exports by 0.11 per cent.
- ♦ Immigration rates in Canada are linked to greater foreign direct investment (FDI), which in turn increases innovation.<sup>4</sup>
- ♦ Globally, there is a positive relationship between net migration and country-level scores on a comprehensive innovation index.<sup>5</sup>

This report also highlights actions that Canada can take to develop the innovative capacities of immigrants and harness the benefits of immigrant-driven innovation. Despite the enormous benefits that immigrants can bring to Canada, they still face onerous and often unnecessary obstacles that limit their ability to participate to their fullest capacity as innovators in the economy. Some of the most severe barriers are:

- ♦ the failure of Canadian employers and regulators to adequately recognize international experience and qualifications, and to provide suitable opportunities for filling gaps in skills;
- ♦ the inconsistent application of initiatives by governments, employers, and communities to draw out the innovative capacities of immigrants (for example, through integration and diversity programs to facilitate immigrants' workplace contributions); and
- ♦ societal conditions and workplace environments that breed complacency in the face of these obstacles, including, in some cases, systemic discrimination.

In order to overcome these barriers, there are a number of things that employers and governments can do. Employers stand to benefit from the innovative capacities of immigrants, if they employ the following strategies:

- ♦ Manage talent effectively—diverse workgroups outperform non-diverse groups, as long as they are effectively managed.
- ♦ Value diversity—organizations that value diversity will create a more positive working environment for all employees, which is critical for fostering innovation.
- ♦ Hire immigrants at every level of the organization, including leadership roles—diverse employees will be more committed to an organization and motivated in their work if they see that the organization is committed to their advancement.
- ♦ Match the organization to its clientele—a diverse workforce will be better positioned to understand and anticipate the needs of an increasingly diverse marketplace.

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### **Immigration rates in Canada are linked to greater foreign direct investment, which in turn increases innovation.**

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Governments can help to ease the transition to life in a new country for innovative immigrants by:

- ♦ increasing pre-arrival services, including programs such as the Canadian Immigration Integration Project; and
- ♦ continuing to work with regulatory bodies to increase the speed and accuracy of foreign credential recognition.

Overall, this report highlights the positive relationship that exists between immigration and innovation in Canada. Employers and governments can play a critical role in ensuring that the innovative potential of immigrants is maximized for the benefit of all of Canada.

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3 This was demonstrated with a gravity model.

4 The relationship is also replicated across a sample of over 100 countries.

5 Andrew, DeRocco, and Taylor, *The Innovation Imperative in Manufacturing*.



## CHAPTER 1

# Immigration and the Innovation Advantage

### Chapter Summary

- ♦ Immigration is critical for the increasing of economic competitiveness and innovation in many industrialized countries, including Canada.
- ♦ In a knowledge-based economy, immigrants to Canada can contribute to innovation due to their high levels of education, experience, and knowledge of diverse languages, cultures, and market opportunities.
- ♦ Research in the United States has found that immigrants are disproportionately represented in innovative industries.

The world has fundamentally changed. Economist Lester Thurow captured this when he wrote: “The old foundations of success are gone. For all human history, the source of success has been the control of natural resources—land, gold, oil. Suddenly, the answer is ‘knowledge.’”<sup>1</sup> Famously, entrepreneurs such as Bill Gates and George Soros have achieved enormous success by exploiting the value of knowledge. As the consumer of knowledge, human capital—especially innovative human capital—has quickly become the most important currency for industrialized countries

and businesses. Innovative individuals use their knowledge and creativity to turn information and ideas into value. (See box “Defining Innovation.”)

### Defining Innovation

*The Conference Board of Canada defines innovation as:*

A process through which economic or social value is extracted from knowledge—through the creation, diffusion, and transformation of ideas—to produce new or improved products, processes, or services.

Among organizations that benchmark the socio-economic performance of countries, innovation is recognized as the fundamental driver of output and productivity.<sup>2</sup> In this respect, innovation is critical for a country’s continued economic growth. The Organisation for Economic Co-operation and Development (OECD) regularly assesses innovation capacities. In the past three years, it has evaluated innovation policies for countries as diverse as Luxembourg, South Africa, China, and Chile.<sup>3</sup> In speaking about success stories in innovation at the International Economic Forum of the Americas in June 2009, OECD Secretary-General Angel Gurría observed that the “interactions among players who innovate today look a bit like an airline’s global

1 Thurow, *Building Wealth*, XV.

2 OECD, *Oslo Manual*, 10.

3 OECD, “Reviews of Innovation Policy.”

routing map.”<sup>4</sup> He went on to note that in Canada over one-quarter of patents have foreign co-inventors, while half of all business R&D funds in Ireland, Belgium, and the Czech Republic come from foreign affiliates. Innovation is both an economic and a social process,<sup>5</sup> and it is increasingly a process that cuts across national borders.

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**One American study found that 25 per cent of engineering and technology companies that started up between 1995 and 2005 had at least one immigrant as a key founder.**

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While immigration has traditionally been thought of as a solution to labour and skills shortages (see box “Labour Shortages in Canada”), there is increasing recognition that immigration may also be a source of innovation in the new global economy. According to the president of the poverty-fighting Maytree Foundation, Ratna Omidvar, “There’s a mantra: innovate or stagnate . . . . When you inject new life experiences, new ideas, and a different perspective, you come up with new solutions.”<sup>6</sup> Russia has enacted legislation based on this premise. Effective January 1, 2011, Russia will simplify its migration process to attract more skilled immigrants.<sup>7</sup> The new legislation also introduces significant tax incentives for highly skilled immigrants. These changes coincide with a recent announcement that Russia is proposing to build its own “Silicon Valley” in Skolkovo, near Moscow.<sup>8</sup> While Russia has had restrictive immigration policies in the past, this legislation is expected to help employers attract highly qualified immigrant employees to work in what Russia is hoping will become a hi-tech hub.

Examples of countries and companies that are working to maximize the benefits of skilled immigration are increasingly common. However, as valuable as the anecdotal evidence is, it needs to be supplemented with analyses of broader samples. This report addresses

### Labour Shortages in Canada

In 2006, one in six workers were between the ages of 55 and 64. By 2016, it is projected that the ratio will rise to more than one in five. As a large proportion of the Canadian population moves toward retirement, the number of potential replacement workers is declining. For the last 30 years, Canada has had an average fertility rate of 1.6 children per woman—significantly below the replacement level of 2.1. Consequently, the percentage of the population that is under 15 years of age has been declining for several decades. Unless something is done, we will soon reach the point where more Canadians retire each year than enter the labour market. Immigration is part of the solution for offsetting this looming labour shortage. In fact, immigration already accounts for all of Canada’s net population growth and will soon be the sole net source of the country’s labour force growth.

Sources: Statistics Canada; Citizenship and Immigration Canada.

this shortcoming in the Canadian context and assesses the nature of the relationship between immigration and innovation at graduated levels (individual, business, national, global).

American researchers have begun to quantify the contributions of immigrants to innovation. One study found that 25 per cent of engineering and technology companies that started up between 1995 and 2005 had at least one immigrant as a key founder.<sup>9</sup> The companies grossed \$52 billion in sales and employed 450,000 people in 2006.<sup>10</sup> Immigrants are also disproportionately represented among U.S. winners of the Nobel Prize, receiving 26 per cent of the prizes awarded to Americans between 1990 and 2000, even though they accounted for approximately 12 per cent of the population at that time.<sup>11</sup>

A recent Conference Board of Canada report made a strong case for immigrants as valuable assets for businesses.<sup>12</sup> The study noted that immigrants:

- ♦ are more likely to be university educated than their Canadian-born counterparts;

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4 Gurría, “Making Innovation Strategy Succeed in a Globalised World.”

5 Wolfe, *21st Century Cities in Canada*, 15.

6 Jermyn, “The Business Case for Hiring Skilled Immigrants.”

7 Kholmogorova and others, “Immigration Rules to be Eased.”

8 Kholmogorova, “Skolkovo Bringing Changes to Immigration Laws.”

9 Wadhwa and others, *America’s New Immigrant Entrepreneurs*, 11.

10 Ibid.

11 Peri, “Higher Education, Innovation and Growth,” 64.

12 Kukushkin and Watt, *Immigrant-Friendly Businesses*, 6–7.

- ♦ can be a source of new and expanded business opportunities, because their knowledge of diverse networks has the potential to expand a company's customer base and increase business opportunities at home and abroad; and
- ♦ bring new perspectives to challenges and issues, in that they can draw upon different knowledge, experiences, and approaches utilized elsewhere.

## RESEARCH OBJECTIVES AND METHODOLOGY

This report examines the contribution of immigrants to innovation. The report takes a comprehensive approach to understanding and quantifying the relationship between immigration and innovation. It does this by examining the relationship in several different ways at graduated levels—individually, in businesses, nationally, and globally. National and global datasets were analyzed and a survey of employers and immigrant employees was conducted.

The report is designed to help Canadian government officials and business leaders, as well as cities and communities, recognize the potential value of immigration to

innovation performance. It assesses the contributions that immigration has made to Canadian society to date, and provides Canadian leaders with insight into how they can better foster and capitalize on the innovative potential of new Canadians.

The objectives of the report are to:

- ♦ assess the level of success individual immigrants have in achieving results as innovators;
- ♦ demonstrate the value new Canadians offer to Canadian businesses, and determine how Canadian businesses can best foster and promote innovation among immigrant talent;
- ♦ understand the relationship between immigration and innovation at the national and global levels, thereby highlighting the importance for Canada of harnessing the innovative capacities of new Canadians and protecting Canada's reputation as a destination of choice; and
- ♦ understand how immigrants can build an enhanced strategy for global competitiveness through their knowledge of foreign markets and networks, their capacity to interact in multiple languages and cultures, and their diverse perspectives.

## CHAPTER 2

# The Innovative Achievements of Individual Immigrants

### Chapter Summary

- ♦ The personal qualities that initially motivate individuals to voluntarily immigrate are also linked to increased innovation.
- ♦ Immigrants hold more elite research positions at Canadian universities per capita than non-immigrants.
- ♦ Immigrants to Canada contribute to “soft innovation”—they win proportionally more awards in the arts than non-immigrants.

**E**conomic considerations have long been understood to stimulate voluntary migration. The relative economic differences between the North and South help to explain much of the flow of immigrants from South to North. But why doesn't everyone with the means and opportunity, who is living in a comparatively poor or unstable economy, emigrate? Are there personal characteristics that drive some individuals to uproot themselves while others remain behind? This chapter outlines the personal qualities of immigrants that predispose individuals to immigrate. It also presents evidence that immigrants are contributing to innovation on an individual basis. Specifically, the chapter looks at the innovative achievements of immigrants in diverse sectors, including science and technology and the arts.

Research has identified two of the underlying motives that are common among people who intend to migrate: achievement and power.<sup>1</sup> Those same qualities that predispose individuals to migrate may also lead them to be more innovative.

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**Research has identified two of the underlying motives common among people who intend to migrate: achievement and power.**

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### ACHIEVEMENT

In comparison with those who plan to remain in their country of origin, individuals who intend to migrate demonstrate a higher level of achievement motivation.<sup>2</sup> The achievement motive is a persistent drive to exceed one's own standards of excellence. Consequently, “achievers” may be more likely to begin to feel restless in their environment if, for whatever reasons (e.g., political, security, social, or economic concerns), they are unable to pursue their goals. Notably, the achievement motive has also been linked to innovation.<sup>3</sup> Host countries stand to benefit from accepting immigrants who are by nature driven to achieve and push the boundaries of innovation.

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1 Boneva and others, “Achievement, Power, and Affiliation Motives as Clues to (E)migration Desires.”

2 Boneva and Frieze, “Toward a Concept of a Migrant Personality,” 483.

3 McClelland, *Human Motivation*, 249–51.

## POWER

Individuals who intend to migrate are more interested in having power<sup>4</sup> and influence.<sup>5</sup> The power motive is often manifested as a drive to impress others and to receive personal recognition for accomplishments.<sup>6</sup> People with high power motivation also tend to be dissatisfied with themselves and their situation, and that dissatisfaction can lead them to push their own boundaries—with potentially beneficial results.<sup>7</sup> Not surprisingly, individuals who are power-oriented are more willing to take risks to reach their goals. Immigration is a risky process; individuals who are willing to take that risk may also be more likely to take other kinds of risks. The personality traits that drive people to immigrate can also help them to be successful in their new country. As new challenges present themselves, immigrants—heavy with power motivation—are able to draw on their inherent willingness to try new things.

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**People with high power motivation tend to be dissatisfied with their situation, which can lead them to push their own boundaries—with potentially beneficial results.**

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Openness to new experiences is critical for both immigration and innovation. The ability to challenge established views is essential for innovation. People from different places who have had different experiences bring diverse perspectives to an issue. That diversity of perspectives and a willingness to share unique views are vital to avoiding “groupthink.” Groupthink occurs when a group becomes so cohesive and concerned with finding a common consensus that dissenting views are suppressed.<sup>8</sup> While cohesion and teamwork are important, analytic activities

such as assessing risks and making decisions yield far better results when a variety of perspectives are carefully considered, and teams that are heterogeneous in their skills and experience fare the best. Groups that are too close-knit are at a disadvantage in these situations. Excessively seeking consensus at the expense of considering opposing viewpoints tends to stifle innovation.

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**People from different places who have had different experiences bring diverse perspectives to an issue.**

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For example, at a meeting of the Royal Astronomical Society in England in 1935, the views of the elite were challenged by a young immigrant scientist from India—Subrahmanyan Chandrasekhar.<sup>9</sup> He presented his theory of the “black hole,” which went against established views of how stars die. With little evidence to contradict him, the British scientists engaged in groupthink and patently rejected his ideas. Chandrasekhar eventually left England and established himself in the United States. Forty-eight years after that fateful lecture in England, astrophysicists finally caught up with Chandrasekhar, and he was awarded the Nobel Prize for physics.<sup>10</sup> The inability of the members of the Royal Astronomical Society to entertain knowledge and evidence that would challenge the way they thought delayed progress in physics and cost them a remarkable talent. Similarly, businesses that fail to create an environment in which immigrants and others can challenge prevailing thought are at risk of stagnating and losing their talent.

There is a great deal of evidence to suggest that achievements like Chandrasekhar’s are not unique among immigrants. Particularly in the United States, where immigration has become a contentious issue, studies have quantified the contributions of immigrants to innovation. In a 2006 study commissioned by the National Venture Capital Association in the U.S., it was noted that in the previous 15 years, immigrants had started 25 per cent (n=88) of the country’s public venture-backed companies, many of which are considered to be

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4 Social psychologists distinguish between personal power and social power. Individuals high on personal power want to be in control and take charge of a situation. This type of power is critical for entrepreneurs who are building their enterprises. Individuals high in social power are more concerned with using their influence to help others. Social power is critical for organizational effectiveness over the long term. (See McClelland, *Power: The Inner Experience*, 257–59).

The research presented in this report on immigrants and the power motive did not distinguish between personal and social power.

5 Boneva and Frieze, “Toward a Concept of a Migrant Personality,” 483.

6 Ibid., 482.

7 McClelland, *Power: The Inner Experience*, 12.

8 Myers and Spencer, *Social Psychology*, 276.

9 Leadbeater, *The Difference Dividend*, 4.

10 Ibid.

among the most innovative companies in the United States.<sup>11</sup> By comparison, in those years, immigrants comprised between 6.7 and 8.7 per cent of the population.<sup>12</sup> According to the study, the publicly traded, immigrant-funded, venture-backed companies had a market capitalization of over \$500 billion and employed more than 400,000 people globally

Immigrants' innovation is also evident in the data on patent applications. (See Chart 1.) In the United States, immigrants account for 24 per cent of all U.S. patents.<sup>13</sup> An estimated increase of 1 per cent in college-graduate immigrants in the population would be associated with an increase of 6 per cent in patents per capita. Overall, immigrants are twice as likely as their native-born counterparts to own a patent. However, the increased likelihood of patenting is entirely accounted for by the greater propensity of immigrants to have a science or engineering educational background.<sup>14</sup> While this indicates that immigrants are not inherently more talented than native-born Americans, the end result is still a net benefit for every U.S. resident, since they are more likely to profit from the innovation and commercialization of a product in the U.S. than they would from one created abroad.<sup>15</sup>

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**An estimated increase of 1 per cent in college-graduate immigrants in the population would be associated with an increase of 6 per cent in patents per capita.**

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This study, combined with the study of publicly traded venture-backed companies, would suggest that not only do immigrants contribute to the economy and innovation in their new country, they also create more job opportunities for residents of that country. Overall, skilled immigrants have made the U.S. more competitive, more profitable, and more innovative.

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11 Anderson and Platzer, *American Made*, 11.

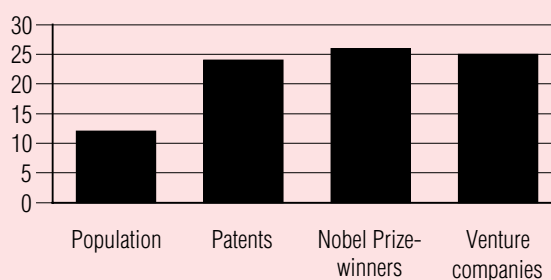
12 Ibid., 12

13 Hunt and Gauthier-Loiselle, *How Much Does Immigration Boost Innovation?* 4.

14 Ibid., 21.

15 Ibid.

**Chart 1**  
Individual Immigrant Achievements, U.S.  
(per cent attributable to immigrants)



Sources: Anderson and Platzer; Peri; Hunt and Gauthier-Loiselle.

## CANADIAN RESEARCHERS AND INNOVATION

As part of Canada's strategy to increase innovation, the Government of Canada created the Canada Research Chairs program in 2000 to establish 2,000 research professorships.<sup>16</sup> The purpose of this program is to make Canada a world leader in research and development. With an annual investment of \$300 million, the program aims to attract and retain the best talent from around the world. As of September 2009, there were 1,796 Research Chairs, of whom 551 (30.7 per cent) were recruited internationally.<sup>17</sup> Almost half of the international recruits were Canadian expatriates. Thus, the program provides many exceptional Canadians with the opportunity to return to conduct research in Canada. However, additional research was needed to determine how many of the Research Chairs were, at one point, immigrants to Canada. (See box "Conference Board Study of Canada Research Chairs.")

Our analysis indicates that *at least* 35 per cent of all Chairs are foreign born. Notably, if we analyze the proportion of foreign-born Chairs across each discipline, the Natural Sciences and Engineering Research Council funds proportionately more immigrants (40 per cent) than either the Canadian Institute for Health Research (33 per cent) or the Social Sciences and Humanities Research Council (26 per cent). Considering that foreign-born individuals

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16 Canada Research Chairs, "About Us."

17 Canada Research Chairs, "Statistics."



### Conference Board Study of Canada Research Chairs

The Conference Board of Canada sent out an e-mail to all 1,796 Canada Research Chairs—and 676 individuals, or 37.8 per cent, responded. Of those who responded, 54.3 per cent were born outside of Canada. However, it is possible that immigrants disproportionately responded to the e-mail. This could have happened for a number of reasons. First, immigrants may have found the questions in the e-mail personally relevant, and as a consequence, they responded at a higher rate. Alternatively, or even concurrently, Canadian citizens may have thought the e-mail was not relevant to them, and as a result, they may have been less motivated to respond.

In order to ensure that we were not overstating the prevalence of immigrants in research positions, we combined the results we obtained through the e-mail asking Chairs about their immigration status with information provided on them by the Government of Canada. The government collected information on the immigration status (e.g., Canadian, permanent resident) of each Chair at the time they took up their appointment. The government's information does not distinguish between Canadian citizens who were born in Canada and those who were born elsewhere but who subsequently become citizens; however from the responses to our e-mail, we were able to contribute to making that distinction. The two sources of information were combined to obtain the results contained in this report.

comprise 19.8 per cent of the population,<sup>18</sup> immigrants are clearly disproportionately represented among this important group of elite researchers in Canada.

While the long-term success of this initiative may not be apparent for several years to come, the annual review suggests there is already evidence that the program is helping Canadian universities—and, by extension, Canada—in several ways.<sup>19</sup> First, it is increasing recruitment and retention of top researchers, bringing the most accomplished researchers from around the world to Canada to conduct their research. Second, it has been instrumental in the generation and application of new knowledge. The Chairs are instrumental in developing new collaborations that have strengthened research at the

### Innovative Immigrants in Canada

There are many individual success stories of innovative immigrants in Canada. Some of Canada's most successful and well-known businesses were started by immigrants. Some examples:

- ♦ **K.Y. Ho** immigrated to Canada from China in 1984. In 1985, he started the graphics company ATI with two other immigrants from Hong Kong. By the end of their first year, the company had pulled in \$10 million in revenue. In 2007, ATI was acquired by AMD in a deal valued at \$5.4 billion.
- ♦ **Mike Lazaridis** came to Canada from Turkey in 1966. He is the founder and co-CEO of Research In Motion (RIM), which created and manufactures the BlackBerry.
- ♦ **Peter Munk** moved to Canada from Hungary in the 1940s. He is the chairman and founder of Barrick Gold, the world's largest gold-mining corporation.
- ♦ **Frank Stronach** immigrated to Canada from Austria in 1954. He founded Magna International, an international automotive parts company with revenues reported at \$23.7 billion in 2008.

In addition to starting successful businesses that employ thousands of Canadians, immigrants have also contributed to innovation in the form of inventions and scientific advancements. Some examples of successful immigrant inventors and scientists:

- ♦ **Mona El-Tahan** immigrated to Canada from Egypt in 1975. As an engineer, she developed a model to predict iceberg drift. Her iceberg management system, which is known as the El-Tahan Model, is currently used by ships and offshore rigs.
- ♦ **Dr. Stella Melo** immigrated to Canada from Brazil in 1996. She is an atmospheric physicist who has developed equipment and models to study the conditions of the atmosphere. The data she collects can be used for weather forecasting and to examine the long-term effects that human behaviour is having on the planet.
- ♦ **Dr. Wilder Penfield** immigrated to Canada from the United States in 1928. As a neurosurgeon he is best known for his groundbreaking work on epilepsy. He pioneered a technique in which he performed brain surgery while patients were still awake and able to describe how they felt when different parts of their brain were stimulated. With this technique, he was able to create a functional map of the brain.

Sources: firingsquad.com; The Canadian Encyclopedia; Molson Coors Canada; Barrick Gold Corporation; Magna International; Memorial University; Inventive Women; McGill University.

18 Statistics Canada, *Immigration in Canada: A Portrait of the Foreign-Born Population, 2006 Census*.

19 Canada Research Chairs, *Year in Review 2007–2008*, 11–15.

university and generated new approaches that are relevant across contexts. Finally, the Chairs have improved the training of students and other personnel. Having the most accomplished researchers from around the world to train the next generation of researchers will ensure quality education and training of our future workforce.

Even among the Chairs who are not immigrants, many noted that their international experience and contacts have informed and enriched their research. In an increasingly globalized world, a broader perspective is essential to innovation. By bringing these diverse perspectives to Canadian universities, Canada is helping to ensure that the country remains on the leading edge of research development and innovation now and into the future.

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**Having the most accomplished researchers from around the world to train the next generation of researchers will ensure quality education and training of our future workforce.**

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## INNOVATION IN THE ARTS

The term “innovation” has traditionally been restricted to describing developments in products or processes. However, in the most recent edition of the OECD’s *Oslo Manual* (a definitive guide on collecting and interpreting innovation data), the definition of innovation was expanded to include marketing and organizational innovation.<sup>20</sup> These forms of innovation capture “non-technological” or “service sector” innovation. Even so, the National Endowment for Science, Technology, and the Arts (NESTA) in the United Kingdom has argued that the OECD’s definition does not go far enough. NESTA has advocated for the measurement of “soft innovation,” which it defines as “innovation in goods and services that primarily impacts upon sensory perception, aesthetic appeal, or intellectual appeal, rather than functional performance.”<sup>21</sup> This definition allows for the recognition of innovation in such areas as books, music, films, architecture, or clothing, to name a few.

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20 OECD, *Oslo Manual*, 47–52.

21 NESTA. *Soft Innovation*, 21.

While economists typically overlook these areas when discussing innovation, the impact of these “soft innovators” on the economy is substantial. For instance, the film *Avatar*—written, directed, and co-produced by Canadian James Cameron—became the world’s highest-grossing movie ever with total box office sales of more than \$2.75 billion worldwide, as of September 1, 2010.<sup>22</sup> A recent Conference Board of Canada report demonstrated the value of arts to the Canadian economy.<sup>23</sup> The report estimated that, in 2007, the culture sector was worth \$84.6 billion, or 7.4 per cent of the total real GDP, and directly or indirectly employed 1.1 million people.

## DO IMMIGRANTS CONTRIBUTE TO INNOVATION IN THE ARTS?

On the surface one might expect that immigrants would have a harder time breaking into the arts and culture sector. It has been suggested that immigrants are disproportionately represented in science and technology because that type of knowledge lends itself better to transferring between countries.<sup>24</sup> This tendency is compounded by the fact that Canada’s current immigrant selection criteria under the Federal Skilled Worker category favour science and technology professionals. In addition, immigrants are not expected to fare as well in occupations that require sophisticated language use, particularly if English is not their first language. To test these expectations, rates at which immigrants and non-immigrants were recognized for achievement in literature and the performing arts were compared.

Literary prizes are a good proxy measure for innovation in the arts, since prizes are generally awarded to those who have pushed the boundaries of excellence. The Scotiabank Giller Prize is the largest cash prize offered for literature in Canada.<sup>25</sup> To be eligible for the prize, an author must have published a book in English and must be a Canadian citizen or permanent resident. The first Giller Prize was awarded in 1994 to M.J. Vassanji for his volume *The Book of Secrets*. Tellingly, the

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22 Box Office Mojo, “All Time Box Office.”

23 The Conference Board of Canada, *Valuing Culture*, 22.

24 Hunt and Gauthier-Loiselle, *How Much Does Immigration Boost Innovation?* 2.

25 Scotiabank Giller Prize, “Information on the Prize.”



first winner was an Indian who was born in Kenya and raised in Tanzania before immigrating to Canada in 1978. In the history of the Scotiabank Giller Prize, immigrants to Canada are disproportionately represented among the finalists and winners of this prize. As of 2009, 23 per cent of the finalists<sup>26</sup> and 29 per cent of the winners were born outside of Canada. This compares with 20 per cent of the population who were foreign born as of 2006.<sup>27</sup> While the prize is clearly beneficial to the recipients, it also has an impact on the consumption of literature by the general public. It is estimated that as of 2009 the prize had been directly responsible for 3.5 million book sales, worth \$90 million, in Canada alone.<sup>28</sup> Thus, the peer recognition provided by this award raises the profile of the authors and their books, thereby increasing sales among the general public. Consequently, the innovation of immigrants in literature is enriching Canadian society, both culturally and economically.

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**Government institutions, businesses, and cities have the opportunity to be instrumental in fostering immigrant talent.**

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With respect to the performing arts, since 1992 Canada has recognized achievements with the Governor General's Performing Arts Awards. The stated goal of the awards is to honour artists "who have made an indelible contribution to Canada's cultural life."<sup>29</sup> To be eligible, an artist must be a Canadian citizen or a permanent resident. Recipients are nominated by the general public, although the final selection is made by juries and the members of the Governor General's Performing Arts Awards Foundation Board. To date, 31 of the 133 recipients—or 23.3 per cent—were born outside Canada. Here, too, immigrants are disproportionately recognized for their profound contributions to Canadian culture. (See Chart 2.)

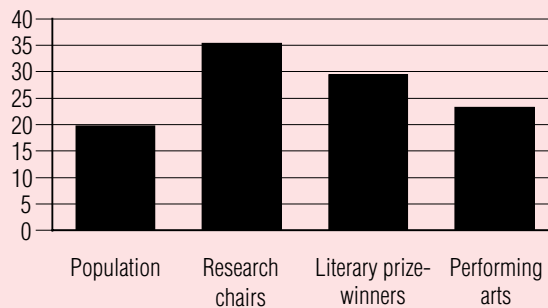
26 Ann-Marie MacDonald, a two-time nominee, was actually born in Germany—but on a Canadian Air Force base. As such, she is not considered "foreign born."

27 Statistics Canada, *Immigration in Canada: A Portrait of the Foreign-Born Population, 2006 Census*.

28 Elana Rabinovitch, Executive Director, the Scotiabank Giller Prize. E-mail message to Michelle Downie, November 18, 2009.

29 Governor General Performing Arts Awards Foundation, "The Awards."

**Chart 2**  
Individual Immigrant Achievements, Canada  
(per cent attributable to immigrants)



Sources: Statistics Canada; The Conference Board of Canada.

Thus, in research, science and technology, literature, and the arts, immigrants are making a substantial contribution to Canadian society as individual innovators. The drive and motivation that propelled them to immigrate is further propelling them to succeed in their chosen fields. Furthermore, their status as newcomers to Canada may uniquely position them to be able to challenge the status quo. They bring fresh thinking and ideas that have contributed to their personal achievements and presented additional opportunities for native Canadians. While this chapter highlights the individual achievements of immigrants, it is important to recognize that even so-called "individual" achievements do not occur in a vacuum. Canada Research Chairs work in academic institutions across Canada; they obtained their position because they were nominated by an eligible university. Universities with outstanding researchers gain more funding and are able to attract high-quality students. Authors and artists are also dependent on publishers and producers.

Thus, in all cases there is some form of a reciprocal relationship involved. Government institutions, businesses, and cities alike all have the opportunity to be instrumental in fostering immigrant talent—by doing so, they also increase their own competitiveness and performance.

## CHAPTER 3

# Immigrants as Innovators in Organizations

### Chapter Summary

- ♦ It is clear that diversity—including cultural diversity—can benefit Canadian organizations in terms of innovation and creativity.
- ♦ A survey of employers and immigrant employees uncovers the areas in which immigrants are perceived as making the greatest contributions to innovation.
- ♦ The survey also outlines the conditions under which immigrants are more likely to be innovative.
- ♦ Recommendations are provided on how Canadian organizations can increase the innovative capacities of their immigrant employees (e.g., hiring immigrants at every level of an organization).

**I**mmigrants make up an increasing proportion of Canada's workforce. By 2011, all of Canada's net labour force growth is expected to come from immigration.<sup>1</sup> The influx of immigrants is part of a wider trend of diversification of Canadian businesses. Increasingly, new entrants into the workforce are more likely to be women, visible minorities, and/or immigrants.

This chapter reviews earlier research on the value of diversity for organizational performance and presents new research based on a Conference Board survey of employers and immigrant employees. The preliminary results of the survey provide a means of assessing the innovative contributions of immigrants to Canadian businesses.<sup>2</sup>

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**Research indicates that ethnically diverse workgroups generate better ideas when brainstorming.**

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In a review of the literature on the effects of diversity (e.g., ethnicity, gender, tenure with an organization) in organizational groups, leadership and management experts Frances Milliken and Luis Martins concluded that diversity can be a double-edged sword.<sup>3</sup> Depending on the performance of management, workplace diversity has the potential to increase creativity and innovation, or it can lead to lower employee satisfaction and increased turnover. On the subject of cultural diversity in particular, Milliken and Martins cite research indicating that ethnically diverse workgroups are more cooperative and generate better quality ideas during a brainstorming task.<sup>4</sup>

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1 Statistics Canada, "Study: Canada's Immigrant Labour Market."

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2 The Conference Board is in the initial stages of a follow-up study to this research. The new research will assess the return on investment of hiring immigrants. The working title is *Reaping the Rewards: The Return on Investment of Hiring Skilled Immigrants*.

3 Milliken and Martins, "Searching for Common Threads," 403.

4 Ibid., 406.

Diversity also has economic implications for organizations.<sup>5</sup> In a study of more than 1,000 U.S. organizations, the American Management Association found that companies with culturally diverse senior managers reported a significantly higher net increase in gross sales revenue (20 per cent increase) compared with those that did not have culturally diverse senior managers (13 per cent increase).<sup>6</sup> PepsiCo is one company that has benefited from diversity. Former CEO Steve Reinemund estimated that 20 per cent of the company's growth came from diversity and inclusion initiatives.<sup>7</sup>

However, if poorly managed, cultural diversity has been found to be associated with less commitment to the organization and increased absenteeism among all employees.<sup>8</sup> The challenge for employers is to know how to effectively manage a diverse workforce so as to reap the benefits that diversity brings.

The Conference Board of Canada conducted surveys of employers and immigrant employees to determine what effects immigrants are having on Canadian businesses. The purpose of the surveys was to understand the extent to which immigrants are contributing to innovation in Canadian businesses—from the employers' and the immigrant employees' perspectives. Additional consideration was given to the qualities of employers that foster innovation.

## EMPLOYER SURVEY

A total of 103 employers who currently employ immigrants participated in the survey. Table 1 describes some key characteristics of the employer respondents and their organizations. (For a more detailed description of the sample, methodology, and results see Appendix A.)

**Table 1**  
Key Characteristics of Employer Survey Participants  
(per cent of respondents\*; n=103)

|   |    |
|---|----|
| Average age (years)   | 48 |
| <b>Gender</b>   |    |
| Female  | 56 |
| Male  | 44 |
| Average number of years working at their current organization (years) | 13 |
| <b>Industry</b>   |    |
| Government  | 21 |
| Finance, insurance, and real estate                                   | 12 |
| Not-for-profit  | 12 |
| Education and health  | 11 |
| Services: professional, technical, scientific                         | 8  |
| Manufacturing   | 7  |
| Communications and telecommunications                                 | 6  |
| Food, beverage, and tobacco products                                  | 4  |
| Transportation and utilities  | 4  |
| Oil and gas   | 3  |
| Retail trade  | 3  |
| Other   | 9  |
| <b>Type of business</b>   |    |
| Small (99 employees or less)  | 17 |
| Medium (100–499 employees)  | 10 |
| Large (500 employees or more)   | 73 |
| <b>Extent of the organization</b>                                     |    |
| Provincial  | 38 |
| Canada-wide   | 26 |
| North America   | 6  |
| Global  | 30 |

\*Except where noted as years

Source: The Conference Board of Canada.

Employers appear to be keenly aware that immigrants, along with other diverse workers, can be a significant source of talent from which their organizations will benefit. Specifically, when employers were asked to identify the top three reasons why their organizations have “diversity and inclusion” as priorities (see Chart 3), the most frequently identified reason was “to access a

5 Krywulak and Sisco, *The Value of Diverse Leadership*.

6 American Management Association, *Senior Management Teams: Profiles and Performance*, 37–44.

7 Millman, “Why You Need Diversity to Be Competitive,” 26.

8 Milliken and Martins, “Searching for Common Threads,” 405.

broader talent pool.” The second most popular reason was “to be an employer of choice.” Thus, there is an awareness that immigrants have the knowledge and skills to be an asset to an organization. However, in general, employers have not made a connection between hiring from a broader talent pool and the specific areas where that talent may be able to contribute. For instance, out of 11 options, innovation and access to new domestic markets ranked 7th and 8th, respectively, while access to new global markets ranked dead last. While employers may not be hiring immigrants specifically for their capacity to innovate or their knowledge of diverse markets, this does not preclude the possibility that immigrant employees are making an effective contribution in these areas once they have been hired.

their knowledge of international markets. Even among the few organizations surveyed that do have a global reach, fewer than half of these employers had asked their culturally diverse workforce about their knowledge of international markets.

Canada’s market represents approximately 2 per cent of the entire global economy. In many cases, an organization’s best opportunity to expand is by entering new markets. Organizations that hire individuals with first-hand experience of these new markets may be better positioned to recommend products and processes that are relevant to the target audience. International employees are also more likely to have the cultural competence necessary to effectively promote the organization in a new market.

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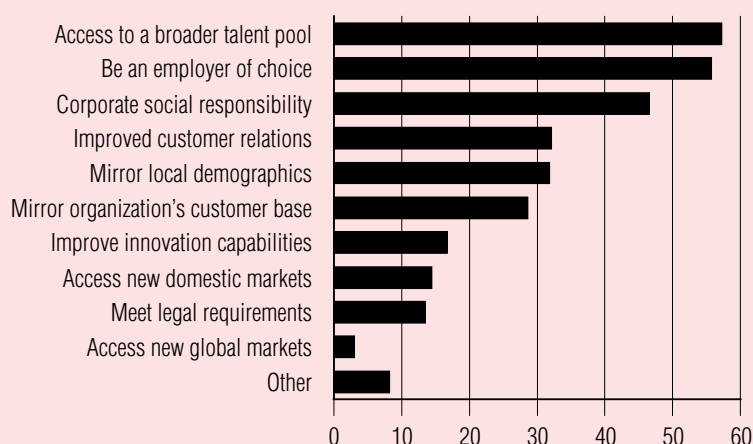
**Employers who asked immigrant employees about their knowledge of diverse local and global markets considered their immigrant employees to be more innovative.**

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Employers were specifically asked to indicate the extent to which immigrant employees had contributed to innovation in their organization within the past three years. Chart 4 shows employers’ perceptions of the contributions of immigrants to different aspects of innovation. Employers were divided into two categories: those who had asked their employees about their knowledge of diverse markets (either domestic or global), and those who had never asked their employees about such knowledge. This question was used as a proxy to distinguish between employers who appeared to be open to capitalizing on the unique experience of immigrant employees. Notably, employers who asked immigrant employees about their knowledge of diverse local and global markets considered their immigrant employees to be more innovative.

While both categories of employers did identify areas where immigrant employees are increasing innovation, employers who specifically asked their employees about their knowledge of additional markets were significantly more likely to recognize the innovative contributions of immigrant employees. There are several possible explanations for this. First, employers who asked their

**Chart 3**  
Employers’ Reasons for Investing in Diversity and Inclusion  
(per cent; n=83)



Note: Employers were asked to identify their top three reasons.  
Source: The Conference Board of Canada.

Among organizations that employ immigrants, only 33 per cent of employers had asked their employees about their knowledge of domestic ethnic markets.<sup>9</sup> Twenty-eight per cent of employers had asked their employees about

9 While these questions may appear to be more or less applicable across employment types, when employers were categorized as business, government, or non-profit, the rates at which employers answered yes to these questions were similar across categories (business—41 per cent asked [n=53]; government—41 per cent asked [n=17]; non-profit—60 per cent asked [n=10]). This provides some assurance that these were meaningful questions across employment types.

employees about knowledge of diverse markets may simply have more competent employees. The ability of their employees may have prompted the employers to delve deeper into the individuals' knowledge and connections. Alternatively, employers who are open to learning from the experience of immigrant employees may actually provide more opportunities for their employees to be innovative. Finally, those same employers may just be more apt to recognize the ways in which immigrants are contributing to innovation. In any case, whether immigrant employees are indeed more innovative or are simply more recognized for what they are doing, the net effect will likely be more satisfied employees—and satisfied employees are more likely to stay with an organization and to be better workers. Employees respond based on their perceptions of their employer. If an employer is perceived as receptive and appreciative, employees will respond in kind.

Given the opportunity, immigrant employees can help employers deal with new markets—domestically and internationally—not only through their contacts, but also through their “insider” knowledge. Immigrants are more likely to have the necessary cultural competence, as well as the requisite language capacity, to communicate effectively with clients, business partners, and regulators in their country of origin. They may also be more aware of factors that will limit or enhance the application of products or processes in a new market. (See box “Xerox Canada” on page 17 for an example.)

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**Given the opportunity, immigrant employees can help employers deal with new markets not only through their contacts, but also through their “insider” knowledge.**

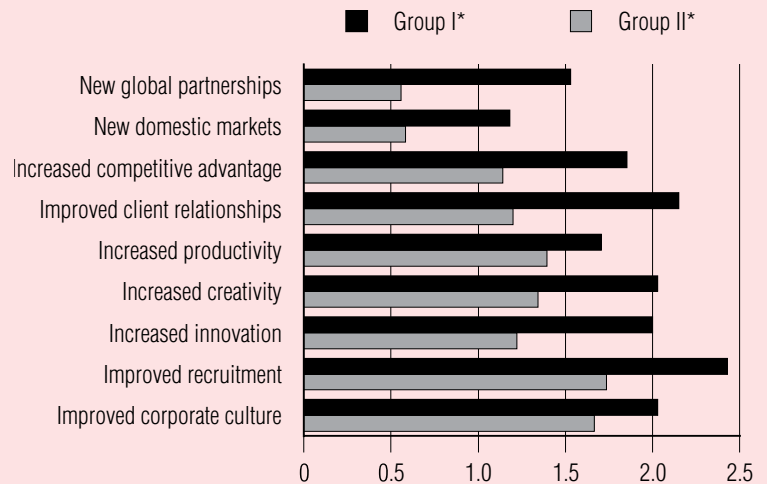
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## EMPLOYEE SURVEY

A second survey was conducted to determine immigrant employees' own estimation of the impact they were having on innovation within their organization. A total of 132 immigrant employees participated in the online employee survey. The profile of the participants is provided in Table 2. (For a more detailed description of the sample, methodology, and results, see Appendix B.)

**Chart 4**

Employers Rate the Degree to Which Immigrants Contribute to Innovation in Their Organization  
(scale, 0–4; n=80)

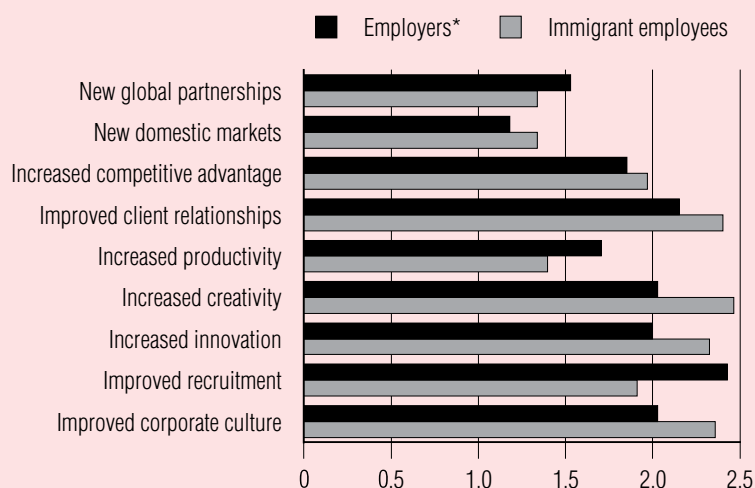


\*Employers were divided into two categories: *Group I*—those who had asked their employees about their knowledge of diverse markets (either domestic or global); and, *Group II*—those who had never asked their employees about such knowledge. Note: The above values are averages across employers. For each item, employers were asked to indicate how much immigrants had contributed to innovation in each area. The contribution were ranked as follows: 0 = “Did not contribute”; 1 = “Slightly contributed”; 2 = “Moderately contributed”; 3 = “Contributed a lot”; or 4 = “Contributed very much.” (The statistical mean differences for these ratings are presented in Appendix A.) Source: The Conference Board of Canada.

Immigrant employees were also asked to indicate how much they and other immigrants employed at their organization had increased innovation in the past three years. To contextualize immigrant employees' innovation ratings, we compared their responses with those of the employers who asked their immigrant employees about their knowledge of diverse markets, as found in the employers survey. (See Chart 5.) While employers and employees were not matched according to their organization in these studies, it is significant that across diverse workplaces, responses from the employers who had taken the time to seek input from their employees and from immigrant employees were relatively consistent in their assessments of the contributions of immigrants to innovation. This would suggest that immigrant employees are reasonably assessing their contributions to innovation. Importantly, it also lends further validity to immigrant employees' assessment of the factors that enable them to be more innovative.

**Chart 5****Immigrant Employees Rate the Degree to Which Immigrants Contribute to Innovation in Their Organization**

(scale 0-4; employees, n=134; subgroup of employers, n=35)



\*Employers who asked their immigrant employees about their knowledge of diverse markets (either domestic or global)

Note: For each item, immigrant employees and the selected employers were asked to indicate how much immigrants had contributed to innovation in each area. The contribution were ranked as follows: 0 = "Did not contribute"; 1 = "Slightly contributed"; 2 = "Moderately contributed"; 3 = "Contributed a lot"; or 4 = "Contributed very much." (The statistical mean differences for these ratings are presented in Appendix A.)

Source: The Conference Board of Canada.

Consequently, the next step was to consider the qualities of employers that promote innovation among immigrant employees. Employees were asked to rate the talent management style of their direct employer. Employees rated their employer along a continuum, ranging from "highly controlling" to "highly empowering."<sup>10</sup> An employer who is empowering will explain decisions and requests to employees (within reason), will attempt to understand the employees' perspective, and will offer the employees choices, where possible. In various settings (e.g., work, school, sports), empowering talent management is associated with increased self-initiative and better performance

10 The technical name for this type of management style is "autonomy supportive." See Deci and others, "Facilitating Internalization: The Self-Determination Perspective," 123.

**Table 2****Key Characteristics of Immigrant Employee Survey Participants**

(per cent of respondents\*; n=132)

|  |      |
|--|------|
| Average age (years)  | 41   |
| <b>Gender</b>  |      |
| Female   | 53   |
| Male   | 47   |
| Average number of years living in Canada                               | 10   |
| Per cent who speak English at home                                     | 48   |
| Per cent whose highest level of education was earned outside of Canada | 47   |
| Average number of years working at their current organization (years)  | 3.57 |
| <b>Industry</b>  |      |
| Government   | 21   |
| Finance, insurance, and real estate                                    | 12   |
| Not-for-profit   | 12   |
| Education and health   | 11   |
| Services: professional, technical, scientific                          | 8    |
| Manufacturing  | 7    |
| Communications and telecommunications                                  | 6    |
| Food, beverage, and tobacco products                                   | 4    |
| Transportation and utilities   | 4    |
| Oil and gas  | 3    |
| Retail trade   | 3    |
| Other  | 9    |
| <b>Type of business</b>  |      |
| Small (99 employees or less)   | 17   |
| Medium (100–499 employees)   | 10   |
| Large (500 employees or more)  | 73   |
| <b>Extent of the organization</b>                                      |      |
| Provincial   | 38   |
| Canada-wide  | 26   |
| North America  | 6    |
| Global   | 30   |

\*Except where noted as years

Source: The Conference Board of Canada.



and task persistence.<sup>11</sup> Controlling talent management, on the other hand, undermines motivation and performance and is associated with higher turnover.<sup>12</sup>

For immigrant employees, working for an empowering manager had a positive impact on innovation.<sup>13</sup> If an employer offered choices, explained directives, and was understanding, immigrant employees reported being more innovative. If the employer was controlling (i.e., did not offer choice or behaved dictatorially), immigrant employees indicated that they were not making as great a contribution to innovation in that organization.

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**Empowering managers had more engaged employees; employee engagement, in turn, was positively related to innovation.**

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Further analysis indicated that the relationship between empowering talent management and innovation is explained by the employees' level of engagement. Empowering talent management led to increased employee engagement, and that in turn was responsible for the increase in innovation (as illustrated in Exhibit 1).<sup>14</sup> However, a controlling style of management led to a reduction in employee engagement, which would consequently lead to a decrease in innovation. These findings indicate that employer attitudes are fundamentally related to the ability of immigrant employees to contribute to innovation.

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11 Deci and others, "On the Benefits of Giving as Well as Receiving Autonomy Support," 313.

12 Rhoades, Eisenberger, and Armeli, "Affective Commitment to the Organization," 833.

13  $r = .26, p < .01$ .

14 This finding is supported by a mediation analysis, which is described in Appendix B. Note that a mediation analysis cannot infer causation. However, statistically speaking, the effect of empowering management on innovation was completely accounted for through the mediating variable of employee engagement.

### Exhibit 1

#### The Impact of Management Style on Innovation



Source: The Conference Board of Canada.

## HOW EMPLOYERS CAN FOSTER INNOVATION

Due to the critical role that employers play in enabling innovation, several recommendations can be made based on our research and on previous research. The recommendations can help to ensure that hiring, integrating, and retaining immigrants is an effective innovation strategy for Canadian businesses.

- ♦ **Effectively manage talent**—Immigrant employees, like other employees, respond better to managers who are empowering rather than controlling. Empowering managers do three things: they understand and acknowledge their employees' perspectives, they provide a rationale when issuing directives, and they offer choices within appropriate limits. The research for this report found that empowering managers had more engaged employees. Employee engagement, in turn, was positively related to innovation. Additional research has found that employees with empowering managers received better performance evaluations<sup>15</sup> and had higher levels of psychological well-being in the workplace.<sup>16</sup> Thus, talent management is critical to employee well-being, performance, and innovation.
- ♦ **Value diversity**—If diversity is a valued characteristic in organizations, employees will begin to identify with each other, not because of what they have in

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15 Baard, Deci, and Ryan, "Intrinsic Need Satisfaction," 2061.

16 Deci and others, "Need Satisfaction, Motivation, and Well-Being in the Work Organizations of a Former Eastern Bloc Country," 939.

common, but because of their differences.<sup>17</sup> By valuing diversity, organizations increase integration and decrease turnover.

- ♦ **Hire immigrants at every level of the organization—** Employers benefit by making hiring immigrants a priority, not just at entry level positions, but at every level of the organization. Employees behave differently when they believe they have a realistic chance of being

promoted than when they think an organization is not committed to their advancement.<sup>18</sup> If employees believe their organization is committed to promoting diverse people—in particular, immigrants—they are more likely to respond positively to those in leadership positions and express more commitment to, and satisfaction with, the organization. Employees' commitment and satisfaction will have a positive impact on their performance. Alternatively, if

17 Luitjers, Can der Zee, and Otten, "Cultural Diversity in Organizations," 160–61.

18 Ely, *The Effects of Organizational Demographics*, 228.

## Steam Whistle Brewing

### COMPANY OVERVIEW

Steam Whistle Brewing is an independent microbrewery based in Toronto, Ontario.<sup>1</sup> Founded in 1998 by three former employees of the Upper Canada Brewing Company,<sup>2</sup> Steam Whistle rolled out its first bottle of pilsner in March 2000.<sup>3</sup> Since then, the company has expanded steadily. By 2009, Steam Whistle's workforce had grown to 126 employees, and annual sales had topped \$20 million.<sup>4</sup> The company has also won several notable accolades, including a gold medal in the Best Pilsner category at the Ontario Brewing Awards, the Environmental Award of Excellence in Energy Conservation at the City of Toronto's Green Toronto Awards, and two-time recognition as one of Canada's 50 Best Managed Companies.<sup>5</sup> Moreover, in September 2007, the company received the Immigrant Success Award from the Toronto Region Immigrant Employment Council.<sup>6</sup>

### THE ROLE OF IMMIGRANTS AT STEAM WHISTLE

In 2007, over half of Steam Whistle's management team were immigrants to Canada. These individuals included a "Czech brewmaster, a Sri Lankan CFO . . . a Portuguese bottling supervisor, and a Cuban quality assurance manager."<sup>7</sup>

Originally, Steam Whistle's decision to hire immigrants stemmed from its need to fill positions with specific qualifications. According to Sybil Taylor, Steam Whistle's Director of Marketing,

"We wanted a brewmaster with a master brewing degree." However, no North American institution offered such a degree. Thus, the company had to look overseas, ultimately securing a brewmaster from the Czech Republic, who had trained at the renowned Prague Institute of Chemical Technologies.

Following the successful hire, the company "saw no reason to limit hiring to candidates with only Canadian training and experience."<sup>8</sup> This soon resulted in a series of immigrant hires.

### THE IMPACT OF IMMIGRANTS AT STEAM WHISTLE

Steam Whistle reports that its immigrant employees have advanced the company's bottom-line in multiple ways. First, immigrant employees have exhibited a remarkable work ethic. In the words of Steam Whistle co-founder Greg Taylor, "New Canadians . . . take pride in their work. They're excited about the opportunities and they want to afford to live here. They're not taking anything for granted because of all the risks they've taken just to get here."<sup>9</sup>

Immigrant employees also bring new knowledge, skills, and contacts. Says Taylor, "Internationally trained workers know different suppliers, they know different techniques . . . . If you're going to [produce] a pilsner that competes internationally, you need to have people capable of bringing that to the table."<sup>10</sup> At the same time, immigrants' foreign backgrounds and perspectives allow them to better understand and relate to a diverse client base. "[Our employees are] reflective of our population here in Canada, and so we understand the marketplace."<sup>11</sup>

1 Steam Whistle Brewing, *Steam Whistle's New European Brewmaster*.

2 Steam Whistle Brewing, "Steam Whistle's Founding Story."

3 Steam Whistle Brewing, "Milestones in Steam Whistle Brewing History."

4 Chung, "Full Steam Ahead."

5 Steam Whistle Brewing, "Awards."

6 Ibid.

7 Ibid.

8 Mourtada, "Immigrant Talent Adds to Brewer's Bottom Line".

9 Ibid.

10 Ibid.

11 Ibid.

Source: The Conference Board of Canada.



employees perceive that there is a “glass ceiling” or a “sticky floor,” they will respond negatively to those in leadership positions and demonstrate lower levels of commitment to the organization. Consequently, employees’ performance will suffer in the long term.

- ♦ **Match your organization to your clientele**—Currently, almost 20 per cent of the Canadian population is foreign born.<sup>19</sup> As their purchasing power increases,

19 Statistics Canada, *Immigration in Canada: A Portrait of the Foreign-Born Population, 2006 Census*.

## Xerox Canada

### COMPANY OVERVIEW

Xerox Canada is a wholly owned subsidiary of U.S.-based Xerox Corporation.<sup>1</sup> Originally established as the Haloid Company of Canada in 1953, the company specializes in document management, offering printers, publishing systems, digital presses, copiers and fax machines, as well as related software, technical support, and consulting services.<sup>2</sup>

Xerox Canada is based in Toronto and maintains regional offices in many Canadian cities.<sup>3</sup> The company’s Canadian sites include manufacturing facilities in Mississauga and Oakville,<sup>4</sup> TeleWeb locations and Welcome Centres in St. John and Halifax,<sup>5</sup> and the Xerox Research Centre of Canada in Mississauga, which Xerox Chief Technology Officer Sophie Vandebroek describes as its “strategic materials research centre.”<sup>6</sup>

As of 2008, Xerox Canada employed over 3,800 workers.<sup>7</sup> The company also generated approximately \$1.2 billion in revenue that year, resulting in \$84 million in profits.<sup>8</sup>

### THE ROLE OF IMMIGRANTS AT XEROX CANADA

Workforce diversity is a core value and “sustained pursuit” at Xerox Canada.<sup>9</sup> According to the company, “[diversity] is Xerox. Diversity is essential to our business. Our environment. Our teams. Our products. Our history.”<sup>10</sup>

Consequently, Xerox Canada has attracted, hired, and retained a large percentage of immigrant employees. At the Xerox Research Centre of Canada alone, approximately 50 per cent of the staff are immigrants, hailing from 35 different countries.<sup>11</sup>

More specifically, 28 per cent of the staff are skilled immigrants who earned their B.Sc., M.Sc., or PhD degrees in their native countries.<sup>12</sup> This high level of diversity has garnered considerable recognition. In 2007, the Xerox Research Centre of Canada won the Canadian Immigrant Success Award in the mid-sized employer category from TRIEC (Toronto Region Immigrant Employment Council).<sup>13</sup> More recently, in 2009, Xerox Canada was named one of Canada’s Best Diversity Employers by Mediacorp Canada.<sup>14</sup>

### THE IMPACT OF IMMIGRANTS AT XEROX CANADA

Xerox Canada covers the cost of immigration lawyers and language training for many of its immigrant employees, and the company reports that the return on investment has been significant. According to Hadi Mahabadi, Vice-President and Manager of the Xerox Research Centre of Canada, workforce diversity has advanced the centre’s innovation rate. In recent years, this rate reached 120–130 patentable ideas annually—or over one patent per scientist per year.<sup>15</sup> The resulting products have included erasable paper, which made *TIME* magazine’s “Best Inventions of the Year” list in 2007.<sup>16</sup>

Furthermore, immigrant employees have provided Xerox Canada with greater insight into the needs, wants, and circumstances of peoples around the world, enabling the company to better compete in the global market. To illustrate, Mahabadi points out that “the power goes out regularly in certain parts of the world, a fact that a company might not [realize] unless a foreign worker from there was able to share that fact . . . and then [Xerox can] adjust design specifications accordingly.”<sup>17</sup> For companies, particularly small and medium-sized enterprises with limited resources, such global insights can “result in a cost-effective, worldly design and marketing process.”<sup>18</sup>

1 Xerox, “Xerox Canada History.”

2 Xerox, “About Xerox Canada.”

3 Ibid.

4 Toronto Region Immigrant Employment Council, “Xerox Canada.”

5 Xerox, “About Xerox Canada.”

6 Vandebroek, “R&D at the Xerox Research Centre of Canada.”

7 Xerox, “Xerox Canada History.”

8 Ibid.

9 Xerox, “Xerox in Canada.”

10 Xerox, “Canadian Careers.”

11 Smith, “Xerox Survey.”

12 Baranyi, “Fuelling the Fire.”

13 Xerox, “Xerox in Canada.”

14 Ibid.

15 Baranyi, “Fuelling the Fire.”

16 Ibid.

17 Smith, “Xerox Survey.”

18 Ibid.

businesses that are able to anticipate their needs and reactions to new products and services stand to profit. Employers who match the diversity of their staff to the complexity of their markets may be better positioned to meet the needs of increasingly diverse markets. Diverse staff may be better positioned to anticipate and respond to the needs of their diverse clientele.

The results of the survey research and case studies indicate that immigrants are contributing to innovation in Canadian businesses. However, the findings of this research also highlight that it is not just a matter of increasing the number of immigrants in a workplace. Effective management of a diverse workforce is clearly associated with innovation results.

Previous research has compared the performance of diverse and non-diverse teams. The outcome of that research was that diverse teams will consistently outperform non-diverse teams, unless they are poorly managed.<sup>20</sup> Canadian organizations need to bring diversity into their organization by hiring immigrants. But it does not end there. If they are truly to benefit from the innovative capacities of immigrants, organizations will need to effectively manage their talent—immigrant and non-immigrant—to ensure maximum organizational performance.

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20 McLeod, Lobel, and Cox, "Ethnic Diversity and Creativity in Small Groups," 259–61.

## CHAPTER 4

# How Immigration Expands Canadian Markets

### Chapter Summary

- ♦ Immigrants bring skills and knowledge that can help Canadian businesses reach new markets.
- ♦ Immigration rates are positively associated with trade relations in Canada. Higher immigration relates to increased imports and exports from a particular country.
- ♦ Foreign direct investment in Canada is greater from countries that are well represented in Canada through immigration.

The government has put plans in place to select skilled immigrants in response to the labour market needs of Canada. (See box “Skilled Workers and Professionals: The Human Capital Model.”) Increasingly, businesses are recognizing the benefits of hiring international talent. Gordon Nixon, president and chief executive officer of RBC, highlighted how immigrants can help to expand Canada’s economy when he said, “Newcomers to Canada bring skills, including language and cultural skills, knowledge, and networks, that can help us to reach out to emerging economic giants like China and India, as well as emerging immigrant markets at home.”<sup>1</sup> A key element of innovation is bringing new desired products to market. This chapter looks at whether

there is a relationship between immigration rates and trade levels. In other words, does immigration increase innovation by expanding Canada’s capacity to respond to global market needs?

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**Immigrants bring with them information and contacts that can facilitate trade with their native country.**

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### TRADE

The Conference Board has consistently argued that the removal of trade barriers is essential to Canada’s innovation performance.<sup>2</sup> While there is much that government can do to align regulatory standards and processes to increase trade, immigrants can also play a role. Through their knowledge and networks immigrants have the potential to make Canada more innovative in terms of new trade patterns and sources of investment. Theoretically, immigrants are thought to influence trade flows in two ways:

- ♦ Immigrants are thought to have a preference for products from their native country.
- ♦ Immigrants bring with them information and contacts that can facilitate trade with their native country.<sup>3</sup>

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1 Perkins, “Hiring Skilled Immigrants Good for the Economy.”

2 Golden, “Canada’s Innovation Conundrum.”

3 Gould, “Immigrant Links to the Home Country,” 303.

### Skilled Workers and Professionals: The Human Capital Model

The majority of immigrants accepted by Canada come in under the skilled worker category.<sup>1</sup> The purpose of the skilled workers and professionals program of Citizenship and Immigration Canada (CIC) is to selectively admit permanent residents based on their ability to be economically successful in Canada. To be eligible an applicant must meet specific criteria, such as already having an offer of employment or possessing work experience in a specified category. Once those conditions have been met, applicants are further assessed based on the human capital model. They are evaluated on six criteria and must obtain a total minimum score of 67 out of 100 to be accepted. The six criteria are as follows:

- ♦ **Education:** Points are awarded for degrees and diplomas as well as for the number of years spent in full-time studies. Maximum points are awarded for a doctorate degree and at least 17 years of full-time study. (*maximum 25 points*)
- ♦ **Ability in English and/or French:** Points are awarded for the ability to listen, speak, read, and write in either official language. (*maximum 24 points*)
- ♦ **Experience:** Points are awarded for the number of years spent in full-time employment in the applicant's stated occupation. (*maximum 21 points*)
- ♦ **Age:** Applicants between 21 and 49 years of age are awarded the maximum number of points (*maximum 10 points*).
- ♦ **Arranged employment in Canada:** Points are awarded to applicants who already have an offer of employment in Canada. (*maximum 10 points*)
- ♦ **Adaptability:** Points are awarded based on the ability of applicants and their families to adapt to life in Canada. This includes such things as previous work experience in Canada, having relatives in Canada, etc. (*maximum 10 points*)

1 There are several other categories under which immigrants, including highly skilled immigrants, can enter Canada, such as business class, investor, provincial nominees, refugees, or family class. For a complete description of permanent and temporary immigration categories, visit the CIC website at [www.cic.gc.ca/english/index.asp](http://www.cic.gc.ca/english/index.asp).

Source: Citizenship and Immigration Canada.

While the preference of immigrants for products from their native lands may lead to increased imports, the information and contacts immigrants bring to Canada can increase both imports and exports. Importantly, there is some empirical evidence bearing out the relationship between immigration and trade in the United States,<sup>4</sup> the United Kingdom,<sup>5</sup> and Canada.<sup>6</sup>

As Canada accepts increasing numbers of immigrants from a broader range of countries, new opportunities arise for commerce between Canada and the immigrants'

countries of origin. A study in the U.K. found that immigrants from non-Commonwealth countries were associated with increased trade with those countries.<sup>7</sup> In contrast, immigrants from Commonwealth countries were not associated with increased trade, possibly because those immigrants merely replicated knowledge and demand already present in the United Kingdom.<sup>8</sup>

### A U.K. study found that immigrants from non-Commonwealth countries were associated with increased trade with those countries.

Consequently, given the recent changes in the source countries of immigrants coming to Canada (i.e., the fact that the majority of immigrants are now arriving from Asia and the Middle East, as opposed to Western Europe), it is important to continue to monitor and quantify the relationship between immigration and trade. The Conference Board developed an analytical model (i.e., a gravity model) to determine the nature of this relationship. Built into the model were a number of controls to account for the many factors that have previously been found to impact trade volumes and relationships. For example, countries that are geographically close are more likely to trade with each other. Wealthier countries are also more likely to be involved in trade than are developing countries. Exhibit 2 shows all the characteristics of a country that have previously been shown to, or are expected to, influence trade. (See box "Notes on the Analysis" for a concise description of the model's methodology and analysis. For a more detailed description, including the precise statistical results, see Appendix C.)

## IMPORTS

The first model considers how immigration influences goods imported into the country. Today, Canada imports goods from 221 countries and regions.<sup>9</sup> Trade data can fluctuate significantly over a relatively short period of

4 Gould, "Immigrant Links to the Home Country," 303.

5 Girma and Yu, *The Link Between Immigration and Trade*.

6 Wagner, Head, and Ries. "Immigration and the Trade of Provinces."

7 Girma and Yu, *The Link Between Immigration and Trade*, 6.

8 Ibid., 1.

9 Industry Canada, "Canadian Trade by Industry."

time. To increase the stability of the trade values, an average of the most recent available data (2004–08) was taken. Canada imports the greatest quantity of goods from the United States, China, Mexico, Japan, and Germany. After accounting for the other factors that are known to influence trade relations (see Exhibit 2), there was a significant positive relationship between the number of immigrants from a country and the value of goods imported from that country. In other words, as the sheer number of immigrants from a particular country rises, so too does the value of goods that Canada imports from that country.

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**Canada's smallest trading partners are among some of the countries from which Canada has the fewest immigrants.**

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Importantly, the relationship between immigration and import values was independent of the wealth, geographical distance, or even language of the other country. (See Table 3.) An increase in the number of people immigrating to Canada corresponds to increased trade relations, specifically imports. The nature of the relationship between immigration and the value of imported goods is such that a 1 per cent increase in the number of immigrants living in Canada from a specific country would be associated with a 0.21 per cent increase in the value of imports. While 0.21 per cent may not sound particularly significant, to put it in real dollars, an additional 4,669 immigrants from China could translate into an increase in imports from China valued at almost \$70 million a year. Thus, if an additional 4,669 Chinese immigrants had been living in Canada between 2004 and 2008, the average annual value of imports from China during that period would have been \$70 million higher.<sup>10</sup>

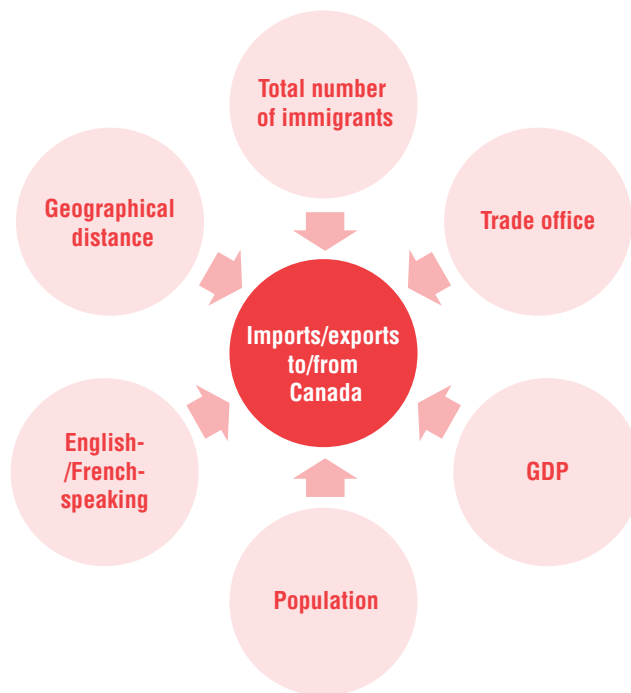
Turning to Canada's smallest trading partners, they are among some of the countries from which Canada has the fewest immigrants. As a result, one additional immigrant

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<sup>10</sup> Since the data are cross-sectional, they only allow a snapshot of the current situation—they do not allow us to anticipate what the ongoing increase in trade would be from consistently higher immigration. However, they do provide a significant indication that immigration is having a net positive effect on trade.

## Exhibit 2

### Factors Influencing Trade Between Canada and Other Countries



Source: The Conference Board of Canada.

## Notes on the Analysis

The relationships between immigration and trade (i.e., imports and exports) were tested in hierarchical regression analyses. All the variables (e.g., GDP, distance) that have been shown to, or were thought to, influence trade were entered first into the model. Immigration was entered second. This provides a stricter test of the relationship between immigration and trade. It ensures that immigration does indeed have an independent effect on trade, over and above the effect of the other known factors (e.g., GDP, distance).

For the analyses, complete data were available for 174 countries. Table 3 shows which variables were significantly related to the value of imports and exports from a given country. In order to be deemed statistically significant, the probability that the relationship was true had to be greater than 95 per cent. This is the accepted cut-off level for significance in social science research.

In interpreting the results, two things must be kept in mind. The first is that regression analyses do not allow for causation to be inferred. While we are suggesting that a logical relationship exists whereby immigration is increasing trade, it is also possible that increasing trade increases immigration rates. Longitudinal data and additional analyses are needed to confirm the exact direction of the relationship. The second is that regression analyses provide an indication of the linear trend. As such, looking at individual cases can help to illustrate a point, but the individual cases may not be representative of the entire sample and should be interpreted with caution.

**Table 3**  
Trade Model: Summary of Results  
("\*" denotes a significant impact)

| Country level factors | Imports into Canada | Exports from Canada |
|-----------------------|---------------------|---------------------|
| Trade office presence |                     | *                   |
| Geographical distance | *                   | *                   |
| GDP                   | *                   | *                   |
| Population            |                     |                     |
| English               | *                   | *                   |
| French                |                     |                     |
| Total immigrants      | *                   | *                   |

\*Note: See Appendix C for the detailed results.  
Source: The Conference Board of Canada.

from Bhutan (which approximately represents a 1 per cent increase in immigration from that country) would be associated with an annual increase in imports from that country of approximately \$50 (based on the average trade values for the years 2004 to 2008). China and Bhutan are at opposite ends of the continuum, both in terms of the number of immigrants accepted from each country and with respect to the overall value of imports from those countries. While it is useful to consider the extremes, a measure of the central tendencies of the relationship between immigration and trade may be more informative.

In comparing the median (or midpoint) of both immigration and imports, the results indicate that one additional immigrant would correspond to an annual increase in imports of \$1,284. In other words, immigrants from half of the countries from which Canada imports are associated with an increase in trade of less than \$1,284 per capita, while immigrants from the other half are associated with an increase in trade of more than \$1,284 per capita. This increase in trade is based on the average value of trade for each country between the years 2004 and 2008. Immigration is one important factor that is related to trade in Canada, while the value of that trade also varies by other factors related to an immigrant's home country. Overall, immigration is significantly related to the value

of goods Canada is importing from diverse countries. As previously mentioned, a key component of innovation is bringing desired products and services to market. This analysis demonstrates that there is a connection between immigration and imports, such that increased immigration is related to bringing additional or new products to the Canadian market.

## EXPORTS

Turning to exports, the five countries to which Canada exports the most goods, based on the most recent five-year average, are the U.S., the U.K., Japan, China, and Mexico. In considering the relationship between immigration and exports, this model also took into account the factors that are known to influence trade relations. (See Exhibit 2.) Similar to the results for imports, immigration rates were significantly associated with the value of exports. (See Table 3.) Once again, as the number of immigrants from a specific country rises, so too does the value of goods that Canada exports to that country.

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**Immigration is one important factor related to trade in Canada, while the value of that trade also varies by other factors related to an immigrant's home country.**

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In this model, the relationship between immigration and export values was also independent of the wealth, geographic distance, and language of the other country. (See Table 3.) Increased immigration corresponds to increased exports. Specifically, a 1 per cent increase in immigrants in Canada is associated with a 0.11 per cent increase in exports. In real dollars, an additional 217 immigrants from Japan could translate into an increase in annual exports to Japan of more than \$11 million, based on the average value of exports to Japan between 2004 and 2008.

Turning to Canada's smallest trading partners, they are once again the countries for which Canada has the smallest immigrant presence. As a result, if one more Cape Verdean immigrated to Canada, this would be associated with an increase in exports to Cape Verde of just over \$300. To put the results for Japan and



Cape Verde in perspective, it is once again important to consider the central tendency of the relationship between imports and exports.

The median increase in the value of goods exported to a country is \$1,086 per capita annually. In other words, immigrants from half of the countries that Canada exports to are associated with an increase in exports to their home country of less than \$1,086 per capita. Immigrants from the other half are associated with an increase in the value of exports of more than \$1,086—sometimes substantially more, based on the average trade between Canada and each country between 2004 and 2008.

**A Statistics Canada research paper found that multinational companies were 60 per cent more productive than domestic firms; they have also been found to be more innovative.**

While traditional factors—such as distance, language, and wealth—do have an impact, the research presented here (based on a sample of over 170 countries) found that immigration rates are significantly related to Canada's trade patterns. By reducing such potential trade barriers as language or lack of networks, immigrants may be increasing our access to markets abroad. Greater access to new markets is critical for innovation. It ensures that Canadian products and processes are competitive and in demand in the international market. Immigration can play a critical role in enabling Canada to meet global market needs in an innovative and responsive manner.

## FOREIGN DIRECT INVESTMENT

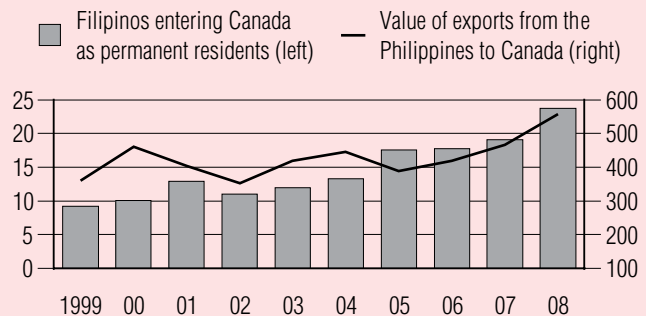
Access to markets is one way that immigrants help to make Canada more economically competitive and innovative. Foreign direct investment (FDI) is another. Attracting FDI is a priority for most governments, based on the belief that multinational corporations bring benefits.<sup>11</sup> Multinational firms are thought to bring best practices in technology and management, leading to “spillover” effects

11 Gorg and Greenaway, “Much Ado About Nothing?” 189.

### Permanent Residents and Trade With the Philippines

If we consider the impact of more recent immigration on trade, the Philippines provides an excellent example of what can happen. Between 1999 and 2008, immigration from the Philippines rose faster than from anywhere else. Over that 10-year period, the number of Filipino permanent residents entering Canada each year increased by more than 60 per cent. As the immigration rates rose, so too did the value of Canada's exports to the Philippines. Between 1999 and 2008, the value of goods exported from Canada to the Philippines increased from \$360 million in 1999 (in constant 2008 dollars) to nearly \$560 million in 2008. As can be seen in the chart, the increase in the value of exports to the Philippines coincides with increases in permanent residents from that country.

**Rise of Exports to the Philippines Mirrors Rise in Immigration**  
(permanent residents, 000s; exports, C\$ millions)



Sources: Citizenship and Immigration Canada; Industry Canada.

Note: Export values are in constant 2008 dollars, based on the Bank of Canada's inflation calculator.

Sources: Citizenship and Immigration Canada; Industry Canada.

in the local economy.<sup>12</sup> Outward FDI also has benefits for Canada, but we leave the relationship between outward FDI and immigration for future research.

There is evidence that inward FDI has been beneficial for Canada. A Conference Board of Canada report found that inward FDI increases economic opportunities, employment, and growth in Canada.<sup>13</sup> As further evidence of the benefits of multinational companies to Canada, a Statistics Canada research paper found that multinational companies

12 Ibid., 190.

13 Hodgson and Paris, *The Benefits of Foreign Direct Investment*, 4.

were 60 per cent more productive than purely domestic firms.<sup>14</sup> Multinationals have also been found to be more innovative.<sup>15</sup> Consequently, the Conference Board has consistently advocated for the reduction of barriers to foreign investment, arguing that FDI leads to increased competitive pressures that require Canadian firms to respond by being more innovative.<sup>16</sup>

Having established that inward FDI is good for productivity and innovation, the next natural question is, does immigration lead to greater FDI? A skilled workforce is one of the characteristics that appear to attract FDI.<sup>17</sup> In this respect, Canada's focus on skilled migration may promote international investments.<sup>18</sup> In a study that looked at the relationship between immigration rates and FDI in all 50 U.S. states, immigration was found to be positively associated with FDI.<sup>19</sup> Moreover, the results of that longitudinal study indicated that immigration leads FDI, and not the other way around. That is an important point: countries that accept more immigrants can expect to increase their FDI.

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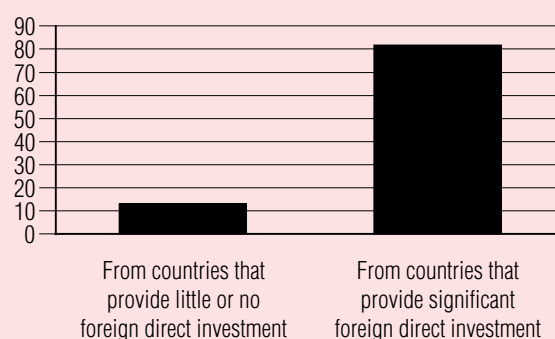
**A skilled workforce is one of the characteristics that appear to attract FDI—Canada's focus on skilled migration may promote international investments.**

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Looking at Canada's experience, the number of countries currently investing in Canada (according to data available from Statistics Canada) is relatively small.<sup>20</sup> Consequently, the types of analyses we can perform on the impacts of FDI is limited. However, when we compare countries that invest in Canada with those that do not, we find that the rates of immigration are much higher for the countries

that do invest.<sup>21</sup> (See Chart 6.) While not conclusive, as it does not take into account other factors that may influence the relationship, this suggests that there is a relationship between immigration and FDI in Canada. While we are not able to determine from this data whether immigration leads FDI or FDI leads immigration, previous research conducted in the United States has found that immigration does in fact precede FDI. The implication is that increases in immigration levels from a particular country may lead to increased FDI from that country.

**Chart 6**  
Numbers Suggest Immigrants Attract More Foreign Investment  
(annual immigration, 000s, by source category)



Sources: Statistics Canada; The Conference Board of Canada.

This chapter provided evidence that immigration is linked to innovation, particularly as it relates to economic considerations regarding trade and FDI. For a product or process to be considered innovative, it has to have a market value. The ability of immigrants to facilitate trade with diverse markets is therefore a critical innovative function. The results of these analyses demonstrated the relationship between immigration and both trade and FDI.

With respect to trade, an increase in the number of immigrants from a given country was associated with an increase in the value of goods imported to and exported from that country. Importantly, the impact of immigration

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<sup>14</sup> Baldwin and Gu, *Global Links*, 17.

<sup>15</sup> Ibid., 20.

<sup>16</sup> Golden, "Canada's Innovation Conundrum."

<sup>17</sup> Mody and Srinivasan, "Japanese and United States Firms as Foreign Investors," 792.

<sup>18</sup> UNCTAD, *Best Practices in Investment for Development*, 32.

<sup>19</sup> Foad, "FDI and Immigration."

<sup>20</sup> Foreign Affairs and International Trade Canada, *Foreign Direct Investment in Canada*.

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<sup>21</sup> A t-test confirmed that countries that invest in Canada have significantly higher numbers of immigrants currently living in Canada ( $t = 6.283$ ,  $p < 0.001$ ).



on trade was still apparent even after factors that are known to significantly influence trade relations—such as GDP and distance—were taken into account. This would suggest that the capacity of immigrants to reduce trade barriers (through their having contacts abroad, their linguistic ability, or other factors) is significantly impacting Canada’s global trade.

In terms of FDI, here, too, there is a relationship with immigration levels. Countries that invest in Canada have substantially higher numbers of immigrants living in Canada. This relationship was still evident when the wealth of the country was taken into consideration.

Canadian organizations directly benefit from the economic opportunities and employment growth that FDI provides.<sup>22</sup> Indirectly, Canadian organizations can benefit from “spillover” effects in the local economy.

The bottom line is, wherever immigrants to Canada are coming from, they appear to increase trade with their home country, and they are associated with increased FDI into Canada from their home country. Thus, immigration is directly associated with investment and economic activity that makes Canadian companies and marketplaces more innovative.

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22 Hodgson and Paris, *The Benefits of Foreign Direct Investment*, 4.

## CHAPTER 5

# Immigration and Global Innovation

### Chapter Summary

- ◆ Worldwide, countries are striving to be more innovative.
- ◆ A study of more than 100 countries found that higher levels of net migration correspond to greater innovation.
- ◆ Innovative countries tend to have higher levels of foreign direct investment.

Every country is striving to be more innovative. How are they doing? How does Canada compare? In this chapter, we assess the relationship between net migration and innovation across countries. A recent report by The Boston Consulting Group (BCG), in collaboration with the U.S. Manufacturing Institute and the National Association of Manufacturers, rated 110 countries on their innovation “inputs” (e.g., fiscal policy, innovation environment) and how well they are actually performing in key areas (e.g., business performance, public impact of innovation).<sup>1</sup> Based on those two scores, each country was given an overall score and ranking for how innovative it is. According to the report, the most innovative countries are Singapore,

South Korea, and Switzerland. The least innovative are Venezuela, Burundi, and Zimbabwe. By comparison the U.S. was ranked 8th and Canada was 14th, placing both ahead of the United Kingdom (15th), Germany (19th), France (20th), and Australia (22nd).<sup>2</sup>

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**According to the BCG report, the most innovative countries are Singapore, South Korea, and Switzerland.**

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Thus far, this report has demonstrated that immigration is related to innovation in Canada. But if the diverse perspectives that immigrants bring increases innovation, then the relationship between immigration and innovation should not be limited to Canada—it should be evident across other countries, too. To determine if this is the case, BCG’s innovation ratings were related to net migration<sup>3</sup> rates worldwide. According to the CIA’s *World Factbook*, developed countries with the highest rates of net migration include Luxembourg, Australia, and Singapore.<sup>4</sup>

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<sup>1</sup> Andrew, DeRocco, and Taylor, *The Innovation Imperative in Manufacturing*.

<sup>2</sup> Ibid., 25.

<sup>3</sup> While, strictly speaking, net migration rates may not be the best indicator of the immigration rate, they were the most complete data available. When the analyses were repeated using the immigration rate, the results were similar (although the sample size limited the analyses).

<sup>4</sup> Central Intelligence Agency, “Country Comparison: Net Migration Rate.”

When net migration rates were compared with innovation scores there was a significant positive relationship between net migration and innovation.<sup>5</sup> In other words, countries with higher net migration are more innovative. One possible explanation for this relationship is that migrants are likely drawn toward wealthier countries, and wealthier countries are in turn more innovative due to their economic advantage, rather than to any “immigrant advantage.” However, taking the wealth of each country into account, net migration and innovation were still significantly positively related.<sup>6</sup> The data and scores showed that, regardless of their relative wealth, countries with higher rates of net migration are more innovative.

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**Countries with higher net migration are more innovative, and innovative countries have higher levels of FDI.**

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There is an added value for innovative countries. Further analysis found that innovation is associated with foreign direct investment.<sup>7</sup> In fact, there is a link between net migration and FDI because of the mediating role that innovation plays. Countries with higher net migration are more innovative, and innovative countries have higher levels of FDI.<sup>8</sup> (See Exhibit 3.) Framed in the opposite direction, countries with lower net migration are less innovative and subsequently attract lower levels of FDI.<sup>9</sup>

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5 The correlation between innovation and net migration was  $r = 0.45$ ,  $p < 0.001$ ,  $n=100$ .

6 The correlation was very slightly reduced, but still significant— $pr = 0.42$ ,  $p < 0.001$ ,  $n=97$ .

7 The correlation was  $r = 0.67$ ,  $p < 0.001$ ,  $N = 108$ . If we control for GDP the correlation is still significant— $pr = 0.62$ ,  $p < 0.001$ ,  $n=105$ .

8 A mediation analysis supported this result. The correlation between immigration and FDI ( $r = .32$ ,  $p < .001$ ) was non-significant when innovation was controlled for ( $pr = -.06$ , ns). However, the data are cross-sectional, which means we cannot infer causation. Still, the data clearly show that the pattern exists; a longitudinal analysis is needed to confirm it.

9 While it is possible that a variable not included in the model accounts for the relationship between immigration and innovation and FDI, one of the most likely variables to impact the relationship would be country wealth. GDP was controlled for and did not impact either the relationship between immigration and innovation or between innovation and FDI.

### Innovation in Africa

According to BCG’s innovation report, South Africa—ranked 34th globally—is the most innovative country in Africa. That places South Africa ahead of such countries as Italy and India. In comparison, the lowest-ranked African country was Zimbabwe, which placed dead last among the 110 countries ranked. South Africa and Zimbabwe share a common border and are similar in other ways. However, Nelson Mandela and Robert Mugabe—arguably the most pivotal leaders in their respective country’s recent history—took decidedly different approaches to managing diversity. Following the end of apartheid and white rule in South Africa, Mandela became the country’s first president elected by universal suffrage. At the time, there were fears among many non-black South Africans that his presidency would be problematic for them. Those fears were slowly but steadily allayed as Mandela continually emphasized that his vision was to build an *inclusive* South Africa. Mandela leveraged the talents of diverse groups within society to support collaborative approaches to challenges that would stimulate economic growth as well as social stability for blacks, whites, Indians, and others.

In Zimbabwe, Robert Mugabe was the first president elected after the country gained independence. His vision was not one of a united Zimbabwe. Mugabe felt that Zimbabwe belonged solely to black Africans. He ordered the appropriation of land from white farmers, the majority of whom were eventually driven out of Zimbabwe. The properties were handed over to black Zimbabweans—many of whom did not have, and were not provided with opportunities to obtain, the necessary training and expertise to cultivate the land and develop the economy.

Mandela and Mugabe are polar opposites in how they view human capital resources in their respective country. No doubt, the policy of inclusion in South Africa and the policy of exclusion in Zimbabwe have contributed to their current situations and levels of innovation. In the recent past, Zimbabwe has suffered through a cholera epidemic and terrible election violence; and it continues to struggle with soaring inflation and rampant unemployment. At the same time, South Africa, while not without its challenges, successfully hosted the World Cup of soccer in 2010 and is touted by Export Development Canada as one of the hottest export markets.<sup>1</sup>

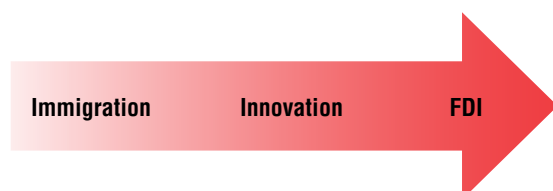
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1 Export Development Canada, *Exports Products and Services Guide*.

Source: The Conference Board of Canada.

### **Exhibit 3**

#### **A Pathway to Increasing FDI**



Source: The Conference Board of Canada.

The result of our research using national level data suggests that one strategy countries can adopt to become more innovative is to welcome more immigrants. Using data from countries as diverse as the United States, Ireland, Namibia, Peru, Indonesia, and Russia, we found a relationship between net migration and innovation. Moreover, we demonstrated that innovation has implications for FDI.

The message is clear: immigration is good for innovation and good for the economy.

## CHAPTER 6

# Challenges for Immigrants Entering the Workforce

### Chapter Summary

- ♦ While many immigrants are making significant positive contributions to Canadian society, many other immigrants face systemic barriers that limit their capacity to fully integrate into Canadian workplaces.
- ♦ The most commonly identified barriers include lack of Canadian work experience, lack of recognition for international education and experience, lack of workplace integration and diversity programs, and discrimination.
- ♦ In order for all immigrants to have the opportunity to fully contribute to the Canadian economy and society, governments, municipalities, and businesses must work together to help overcome these barriers.

While we have presented evidence to demonstrate the innovative capacities of immigrants and the positive contributions they are making to Canadian society and businesses, unfortunately not all immigrants are living up to their potential. Canada is successfully attracting more skilled immigrants than ever before in its history. However, there remain systemic barriers that are limiting the contributions of immigrants. If Canada is to continue to benefit from

the talents of those who immigrate, then governments (i.e., federal, provincial, and municipal), regulators, and businesses must effectively address the systemic barriers immigrants are facing.

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**Lack of Canadian work experience was listed by immigrants as the number one barrier to finding employment in Canada.**

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In 2009, The Conference Board of Canada published *Immigrant-Friendly Businesses: Effective Practices for Attracting, Integrating, and Retaining Immigrants in Canadian Workplaces*.<sup>1</sup> The report included a thorough examination of the systemic barriers to the integration of immigrants into Canadian workplaces. Some of the most common challenges identified were:

- ♦ **Lack of Canadian work experience**—This was listed by immigrants participating in Canada's Longitudinal Survey of Immigrants in Canada (LSIC) as the number one barrier to finding employment in Canada.<sup>2</sup> Canadian employers value international experience less than they do Canadian experience.<sup>3</sup> This places many immigrants in a Catch-22. They are seen as not having the necessary experience to qualify for a

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1 Kukushkin and Watt, *Immigrant-Friendly Businesses*.

2 Statistics Canada, *Longitudinal Survey of Immigrants to Canada*, 33–34.

3 Oreopoulos, *Why Do Skilled Immigrants Struggle in the Labor Market?* 17.

high-level position; yet, that same experience over-qualifies them for entry-level positions, since the employer fears the applicant is simply looking for experience before quickly moving on to a higher-level job elsewhere.<sup>4</sup>

- ♦ **Recognition of international qualifications and experience**—This was listed as the second most serious challenge for immigrants in their job search.<sup>5</sup> Employers also recognized this as a significant barrier. In the Conference Board's 2005 Diversity Survey, among organizations that indicated that they have barriers to hiring internationally educated and trained professionals, the inability to properly evaluate international credentials and work experience was the most commonly cited barrier.<sup>6</sup>
- ♦ **Language barriers**—Language is a significant barrier to labour market integration for many newcomers to Canada. In the LSIC, 69 per cent of immigrants who could not speak English or French stated that this was their greatest obstacle to finding employment.<sup>7</sup> Immigrants who are not able to communicate effectively, regardless of their qualifications, are at a severe disadvantage when attempting to enter the labour market.
- ♦ **Lack of workplace integration and diversity programs**—In Ontario (the province that receives the highest proportion of immigrants in Canada), only 12 per cent of businesses provide their staff with periodic diversity training.<sup>8</sup> Diversity training is essential to ensure that all staff (those who do the hiring, as well as potential colleagues) have the sensitivity necessary to recognize potential biases and treat all workers fairly.
- ♦ **Discrimination**—Discrimination is an issue in Canada. A study conducted by researchers at the University of British Columbia found that the exact same resumés elicited different responses from potential employers, depending on the name at the top of

that resumé.<sup>9</sup> If the job applicant had an “English-sounding name,” they were 40 per cent more likely to receive a call-back than if the job applicant had a Chinese, Pakistani, or Indian name. Discrimination prevents potentially highly skilled, innovative immigrants from getting their feet in the door.

The systemic barriers that prevent immigrants from fully integrating into the Canadian workforce come with a high price. The Conference Board of Canada estimated that the cost of not recognizing the credentials and skills of Canadians, notably immigrants, is between \$4.1 billion and \$5.9 billion annually.<sup>10</sup> For immigrants the systemic barriers translate into lower wages, with recent immigrants earning, on average, \$5.04 less per hour than Canadian-born employees.<sup>11</sup> It can also mean reduced hours, with 41 per cent of recent immigrants reporting that they work part-time involuntarily, compared with 30 per cent of Canadian-born employees.<sup>12</sup>

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**Diversity training is essential to ensure that all staff have the sensitivity necessary to recognize potential biases and treat all workers fairly.**

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The inability to find suitable employment is likely to be particularly frustrating for immigrants who have been admitted to Canada based on their education and skills. They may feel that they have been lured to Canada under false pretences—when the credentials and experience that enabled them to be admitted into Canada in the first place are not good enough to find them gainful employment. The failure of the Canadian labour market to capitalize on the skills and talents of immigrants means that Canada's economic immigration policy amounts to hoarding, wherein immigrants are kept on the sidelines of the labour market while their knowledge and expertise

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4 Liu, “A Descriptive Study of Employers’ Attitudes and Practices,” 8.

5 Statistics Canada, *Longitudinal Survey of Immigrants to Canada*, 33–34.

6 Cowan, Huggett, and Parris, *Report on Diversity*, 17–18.

7 Statistics Canada, *Longitudinal Survey of Immigrants to Canada*, 34.

8 Balthazard and Mongodin, *Corporate Diversity Assessment 2007*, 11.

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9 Oreopoulos, *Why Do Skilled Immigrants Struggle in the Labor Market?* 1.

10 Bloom and Grant, *Brain Gain*, 1.

11 Gilmore, “The 2008 Canadian Immigrant Labour Market,” 10.

12 Ibid., 15.

atrophy.<sup>13</sup> However, the old adage “use it or lose it” applies to Canada, too. As discussed in Chapter 1, if immigrants do not feel sufficiently challenged in their work environment, they may choose to move on to somewhere that they will be.

To ensure that Canada is able to retain skilled immigrants, there are a number of things that governments and businesses can do.

## FEDERAL GOVERNMENT

The issue of credential recognition was first identified as a challenge by federal government researchers in the 1950s.<sup>14</sup> Since that time there have been dramatic changes in the source countries of immigrants, and that has further compounded the difficulty of credential recognition. With an impending labour shortage, the government has stepped up efforts in this area. In 2009, the government released a pan-Canadian credential recognition framework that is intended to aid in the recognition of the qualifications of internationally educated professionals. The new framework represents a public commitment to ensuring that immigrants attempting to enter regulated professions will “receive clear information as early as possible in the immigration process, fair treatment during the assessment process, and prompt communication of recognition decisions.”<sup>15</sup>

Canada is not the only country facing this challenge. The United Nations Educational, Scientific, and Cultural Organization has been convening expert group panels to determine best practices in the recognition of international education.<sup>16</sup> Included in these best practices are an emphasis on pre-arrival information provision, screening, and examination. While Canada has stepped up its efforts to ensure immigrants can begin the credential recognition process pre-arrival,<sup>17</sup> it may be advantageous to adopt Australia’s approach.

Australia requires all economic immigrants to be pre-screened for recognition of their international education prior to being admitted to Australia. In the past, Canada and Australia have had similar immigration patterns and roughly similar outcomes. However, since 1999, when Australia implemented this new policy of pre-immigration educational assessment, immigrants in Australia have fared better than those arriving in Canada. In a comparative study of labour market outcomes for degree-qualified migrants to Canada and Australia, study author Lesleyanne Hawthorne concluded that “compared to their counterparts in Canada, far greater proportions of new immigrants in Australia secure positions fast, gain professional or managerial status, earn high salaries, and use their credentials to work. In the process, unprecedented numbers are avoiding labour market displacement typically associated with select birthplace, language, age, and gender groups.”<sup>18</sup> While the pan-Canadian agreement is a very good start, in time it may be wise to follow in Australia’s footsteps. Such a policy of pre-arrival assessment would be beneficial, both to immigrants and to Canada, as it would allow for improved economic outcomes and job satisfaction while preventing skills wastage.<sup>19</sup>

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**In 2009, the government released a pan-Canadian credential recognition framework to aid in the recognition of the qualifications of internationally educated professionals.**

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As a final point on the matter of recognition of international education attainment, it is important to keep in mind that this is an issue that can involve public safety. Regulatory bodies have an obligation to ensure that individual practitioners meet the necessary standards. This is particularly challenging given the enormous diversity of current immigrants and the relative variability of the quality of particular educational institutions (as shown by the Shanghai Jiao Tong University ranking system—a comprehensive and respected ranking of the top 500 universities in the world). Regulatory bodies cannot possibly be familiar with every institution that offers a particular program, nor can they be expected to state with

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13 Bassett, “Human Capital Accumulation,” 2.

14 Richmond, “Immigration Policy and Research in Canada,” 117.

15 Forum of Labour Market Ministers, *A Pan-Canadian Framework*, 4.

16 Hawthorne, *Migration and Education*, 2.

17 Forum of Labour Market Ministers, *A Pan-Canadian Framework*, 11.

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18 Hawthorne, “The Impact of Economic Selection Policy,” 36.

19 Ibid.



confidence the quality of that program or the ability of any of its graduates. Recent moves toward competency assessments will be critical to ensuring that immigrants who meet the standards are admitted to a profession, while those who fall short have the opportunity to receive additional training to bring them up to the standards.

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**The Local Immigration Partnership program encourages communities to strategically adopt an immigration agenda to promote social and economic development for the region.**

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The challenge of credential recognition is compounded when immigrants are unaware of the process. A 2002 study by the Ontario Ministry of Training, Colleges, and Universities found that among internationally trained professionals who arrived in Canada after 1994, 42.1 per cent, or 271 individuals, had not heard of academic credential assessment services.<sup>20</sup> A further 28.8 per cent (185 respondents) opted not to go through with the credential assessment for unknown reasons, while 29.1 per cent (187 respondents) did attempt to have their credentials recognized.<sup>21</sup> For those who did have their credentials assessed, 73 per cent were recognized as having qualifications that were equivalent to those granted by Ontario universities.<sup>22</sup> Thus, while recognition of international education can be a significant barrier for immigrants and the receiving country, it isn't insurmountable. If the innovative capacities of immigrants are to be completely recognized, in most cases recognition of their knowledge and skills must take place first.

## CITIES AND COMMUNITIES

Most immigrants settle in large cities. However, smaller communities are beginning to recognize the value of attracting immigrants and, as a result, are doing more to market themselves to immigrants. A report by the Conference Board on “immigrant-friendly communities”

provides an in-depth analysis of what communities can do to attract immigrants.<sup>23</sup> Many of the recommendations provided in the report apply to small and large communities alike. Specifically, the following key components to attracting and retaining immigrants were identified:

- ♦ Immigration needs to be a part of a community's long-term economic development strategy.
- ♦ There must be concerted action on the part of community stakeholders in the attraction, settlement, integration, and retention of immigrants.
- ♦ Local immigration efforts are more likely to be successful when a “critical mass” is built; immigrants want to settle in culturally diverse communities where they can be near members of their own ethnic community.

One promising initiative that is currently under way in Ontario is the Local Immigration Partnership (LIP). The purpose of LIP is to facilitate the successful integration of newcomers into communities throughout Ontario. The program encourages communities to strategically adopt an immigration agenda to promote social and economic development for the region. Both the federal and the provincial governments have partnered to finance this program that is implemented at a local level. By engaging the regions, each region can individually determine its needs and how immigration can best meet its specific needs. Communities large and small stand to benefit from the innovative capacities of immigrants. By adopting immigrant-friendly policies, communities may gain an advantage that will enable them to become more innovative.

## BUSINESSES

Statistics Canada projects that, by 2011, all of the country's net labour force growth will come from immigration.<sup>24</sup> As the Canadian workforce becomes more diverse, organizations will have to adapt or risk falling behind. Fortunately, there are a number of businesses that have demonstrated the enormous benefits that can be gained by being “immigrant-friendly.” Immigrants have increased

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20 Ontario Ministry of Training, *The Facts Are In!* 76.

21 Ibid.

22 Ibid., 23.

23 For a more detailed discussion of these recommendations, see Kukushkin, *Immigrant-Friendly Communities*.

24 Statistics Canada, “Study: Canada's Immigrant Labour Market.”



the innovative capacities of businesses as diverse as Xerox Canada and Steam Whistle Brewing.<sup>25</sup> (See case studies in Chapter 3.) Any business can benefit from the innovative capacities of immigrants if it creates the right environment. For example, the Conference Board report on immigrant-friendly businesses provides best practices that businesses can follow to attract and retain talented immigrants.<sup>26</sup> The report recommends that businesses do the following:

- ♦ Expand recruitment methods.
- ♦ Implement culturally sensitive recruitment and screening practices.
- ♦ Assist immigrants' integration in the workplace.
- ♦ Recognize international education and experience.
- ♦ Build a culturally inclusive organization.

By adopting practices that allow for the hiring and retention of immigrant workers, businesses can best position themselves to make use of immigrants' knowledge of diverse markets, language abilities, and other unique talents.

Canada has benefited from the innovative capacities of immigrants. At the same time, many other immigrants may have had their talent stifled by some of the systemic barriers outlined in this chapter. If Canada is to continue to attract and retain talented immigrants, governments, communities, and businesses must act.

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25 Kukushkin and Watt, *Immigrant-Friendly Businesses*, 7, 8, 46.

26 For a detailed discussion of these recommendations see Kukushkin and Watt, *Immigrant-Friendly Businesses*, 46–49.

## CHAPTER 7

# Conclusion: Increasing Innovation in Canada Through Immigration

### Chapter Summary

- ♦ At every level of analysis, immigrants are associated with increased innovation in Canada.
- ♦ The government should continue to develop and promote pre-arrival services that enable immigrants to begin contributing to the Canadian economy and society more quickly upon arrival.
- ♦ Businesses will benefit from adopting strategies to increase the integration of immigrants into their labour force.
- ♦ Immigrants are disproportionately represented in prestigious research positions.
- ♦ Immigrants are disproportionately winning esteemed awards in literature and the arts.
- ♦ Immigrants are recognized as contributing to innovation in Canadian businesses.
- ♦ Immigration rates impact trade relations between Canada and the country of origin—specifically, a 1 per cent increase in the number of immigrants to Canada would increase the value of imports into the country by 0.21 per cent and the value of exports by 0.11 per cent.
- ♦ Countries that are a source of FDI in Canada also have a higher immigrant presence in Canada.
- ♦ With a sample of over 100 countries, higher net migration was associated with increased innovation. Globally, there is a relationship between net migration and innovation.

Innovation is expected to become increasingly important to the Canadian economy. In the past, Canada has relied on its wealth of natural resources; however, these resources are finite. If Canada is to maintain its high standard of living in the knowledge-based economy, innovation will be critical.<sup>1</sup> This report has demonstrated that immigration can play a significant role in increasing Canada's innovative capacities.

These findings echo research that is being conducted in the United States and Europe regarding the contributions of immigrants wherever they land. The results of this report indicate that immigrants are having an impact on innovation at every level we examined:

Thus, in a variety of important ways, the research strongly suggests that immigrants are having a significant effect on innovation in Canada.

There are numerous implications for various stakeholders that can be drawn from this research. With respect to the federal government, the research contained in this report makes the case that Canada should continue to accept immigrants from all over the world. In our increasingly globalized economy, having representatives from around the globe who call Canada home can offer Canadian businesses an economic advantage. However, simply

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1 Coad and Dimick, *Conflicting Forces for Canadian Prosperity*, 2.

bringing in more immigrants is not sufficient to ensure that Canada will become more innovative. As the government opens the door to more immigrants, it must also continue to support proven, targeted strategies that promote integration and lead to the social and economic success of immigrants.

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**If CIIP is to meet its objective of helping with labour market integration, it will be important to make its services available to all categories of immigrants.**

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The government has taken positive steps in this regard. In particular (as noted in Chapter 6), the government of Canada is doing more to expedite the assessment and recognition of international qualifications. It has also expanded pre-arrival services. In 2007, the government initiated a pilot project, the Canadian Immigration Integration Project (CIIP). The objective of CIIP is to prepare selected economic immigrants (and their spouses) for the Canadian labour market. In 2009, the mandate was extended to those who immigrate to Canada under the Provincial Nominee Program. The selected immigrants are given labour market information and a customized action plan and are put in contact with the appropriate Canadian organizations (e.g., regulatory bodies, language-training services).<sup>2</sup> Currently there are CIIP offices in the Philippines, India, and China. A new office will open in England in 2011. These four offices will be accessible to over 70 per cent of immigrants from around the world who are selected under the Federal Skilled Worker Program.<sup>3</sup>

Unfortunately, CIIP is not yet accessible to all categories of immigrants. Substantial numbers of immigrants enter Canada under family reunification criteria or as refugees. If CIIP is to meet its objective of helping with labour market integration, it will be important to make its services available to all categories. In this respect, it is a very positive sign that the program's mandate has

already been extended to provincial nominees. Canada stands to benefit from having all immigrants, regardless of the category under which they enter, effectively integrated into the labour market. Any efforts that further this objective are desirable.

The take-away message for businesses is that they can benefit more than they realize by hiring immigrants. Businesses that effectively integrate and retain immigrant talent stand to benefit the most. As demonstrated in this report, immigrants are a source of diverse knowledge and experience that can increase innovation. Hiring immigrants is also another way in which businesses can diversify their workforce. Workplace diversity is, in turn, linked to innovation. By having a healthy mix of employees—newcomers and Canadian-born, men and women, able-bodied and disabled—businesses can better meet the needs of their increasingly diverse clientele.

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**Offering paid internships can be a low-risk way to determine the fit between immigrant employees and an organization before providing a long-term commitment.**

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Canada's workforce is aging. Statistics Canada estimates that 20 per cent of workers will be between the ages of 55 and 64 by 2016.<sup>4</sup> As many Canadian-born workers leave the labour force, immigrants' participation in the labour market is expected to grow. While many businesses may still be concerned about the risks inherent in hiring someone whose qualifications and experience are less familiar to them, there are ways to allay that risk:

- ♦ **Connect with immigrant-serving organizations**—Many of these organizations have pre-screened immigrants to find those that are guaranteed to be job-ready. Businesses that avail themselves of these services can save time and receive assurance that the individuals' qualifications meet the requirements.
- ♦ **Offer paid internships**—These can be a low-risk way to determine the fit between immigrant employees and an organization before providing a long-term commitment.

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2 Canadian Immigration Integration Project, "Meeting Canada's Skills Needs."

3 Citizenship and Immigration Canada, *Government of Canada to Fund Expanded Overseas Foreign Credential Recognition Services*.

4 Statistics Canada, *Portrait of the Canadian Population in 2006*, 12.

- ♦ **Create an environment that is accepting of diversity—** Creating a welcoming environment ensures that *all* employees feel valued and are able to contribute to their fullest. This can be achieved in part by offering relevant and ongoing diversity training. It also requires a commitment to diversity from leadership at every level of the organization. Diversity initiatives need to be continuously monitored and accounted for.
- ♦ **Be patient—**Diverse teams may take time to come together. Employers need to be patient and, at times, flexible if they are to see the benefits that immigrants can bring to their workplace.

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**Creating a welcoming environment ensures that *all* employees feel valued and are able to contribute to their fullest.**

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Throughout its history, Canada has benefited from the innovative capacities of immigrants. It was immigration that helped build this nation. This report highlights that immigrants are continuing to make significant contributions to innovation. Immigrants are being recognized for their individual achievements and for their contributions to organizations. They are also increasing innovation in Canada by facilitating trade with their native country. Moreover, the ability of immigrants to influence innovation does not appear to be limited to Canada. The data presented in this report indicate that globally there is an association between immigration and innovation.

Not surprisingly the competition for skilled immigrants is increasing—and not just from the traditional countries, such as the U.K., the U.S., and Australia. The global recession of 2008–09 marked a shift in immigration trends. For perhaps the first time in its history, the U.S. began to experience what some are calling a “reverse brain drain.”<sup>5</sup> With the economic rise of countries such as China and India, many talented immigrants are returning home to take advantage of opportunities in their native country. And skilled immigrants have more choices than ever when it comes to deciding where to locate. Like Russia, Chile is devising policies to build its own “Silicon Valley.”<sup>6</sup> With its attractive incentives, including start-up funds and government reimbursements for some training costs, Chile could become a desirable location for the world’s most skilled workers.<sup>7</sup> While Canada is still considered a destination of choice by many,<sup>8</sup> failure to act now would threaten that status.

The recommendations in this report can help ensure that Canada remains a competitive destination of choice and continues to enjoy the benefits that come with welcoming innovative immigrants from all over the world—benefits that are more essential than ever to our national competitiveness and well-being.

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5 Wadhwa, “Beware the Reverse Brain Drain to India and China.”

6 Haynes, “Chile Aims to Be Silicon Valley Incubator.”

7 Wadhwa, “Chile Wants Your Poor.”

8 Joe Friesen, “The World Would Love to Be Canadian.”

## APPENDIX A

# Employer Survey Methodology and Results

### METHODOLOGY

Employers/managers were invited via e-mail or links that were posted on company newsletters or websites to participate in an online survey. Participants provided basic demographic information, along with their ratings of the extent to which immigrant employees had contributed to innovation at their organization in the previous three years. Ratings ranged from “0” (for “not at all”) to “4” (for “very much”). (See Appendix B for more detail on the innovation measure.)

### PARTICIPANTS

A total of 103 respondents (45 males and 58 females) from organizations that currently employ immigrants participated in the survey. The average age of the participants was 47.51 (SD = 8.75). Participants had been working at their current organization for an average of 13.13 years (SD = 10.00).

### RESULTS

The following table presents the mean differences on the innovation ratings when employers were divided into two groups—those who asked immigrant employees about their knowledge of diverse markets, and those who did not.

On each innovation dimension, with the exception of productivity, employers who asked their immigrant employees about their knowledge of diverse markets rated the employees as more innovative. There are several possible explanations for this difference. One is that the employers who asked may simply have more competent employees. Alternatively, these employers may have provided their employees with more opportunities to be innovative in general. Or perhaps the kind of employer who will ask employees for input is more keenly aware of their contributions. Additional research is needed to understand the exact reason behind these differences in ratings.

**Table 1****Differences in Employer Ratings of Innovation**(SD = standard deviation; *t* = t-test value; *df* = degrees of freedom; *p* = probability value)

|                                 | Asked |      | Did not ask |      | <i>t</i> | <i>df</i> | <i>p</i> |
|---------------------------------|-------|------|-------------|------|----------|-----------|----------|
|                                 | Mean  | SD   | Mean        | SD   |          |           |          |
| New global partnerships         | 1.53  | 1.19 | 0.56        | 0.98 | -3.93    | 75        | 0.001    |
| New domestic markets            | 1.18  | 1.13 | 0.58        | 0.91 | -2.57    | 74        | 0.01     |
| Increased competitive advantage | 1.85  | 1.21 | 1.14        | 1.01 | -2.82    | 75        | 0.006    |
| Improved client relationships   | 2.15  | 0.94 | 1.20        | 1.18 | -3.83    | 76        | 0.001    |
| Increased productivity          | 1.71  | 1.22 | 1.40        | 1.05 | -1.20    | 75        | 0.23     |
| Increased creativity            | 2.03  | 1.04 | 1.34        | 0.99 | -3.00    | 77        | 0.004    |
| Increased innovation            | 2.00  | 1.06 | 1.22        | 1.02 | -3.33    | 78        | 0.001    |
| Improved recruitment            | 2.43  | 0.98 | 1.73        | 1.07 | -2.98    | 78        | 0.004    |
| Improved corporate culture      | 2.03  | 0.92 | 1.67        | 1.09 | -1.58    | 78        | 0.12     |

Source: The Conference Board of Canada.

## APPENDIX B

# Immigrant Employee Survey Methodology and Results

## METHODOLOGY

Immigrant employees were invited via e-mail or links that were posted on company newsletters or websites to participate in an online survey. Participants provided basic demographic information and ratings on the following scales.

- ♦ **Innovation**—Immigrant employees were asked to rate the extent to which they and other immigrant employees had contributed to various dimensions of innovation<sup>1</sup> (e.g., increased creativity, new domestic markets, increased productivity) at their organization in the previous three years. Ratings ranged from “0” (for “not at all”) to “4” (for “very much”). The items were identical to those used in the employer/manager survey.
- ♦ **Employee engagement**—This 10-item measure was a shortened and slightly modified version of the Utrecht Work Engagement Scale.<sup>2</sup> The scale measures the extent to which employees are actively engaged in their work. Engagement is considered to be the opposite of “burnout.” Cronbach’s alpha for the scale was 0.88.

- ♦ **Empowering Management**—Termed “autonomy support” in social science research, the shortened six-item scale was used by participants to rate the management style of their most direct supervisor.<sup>3</sup> Cronbach’s alpha for this scale was 0.96.

## PARTICIPANTS

A total of 132 immigrant employees (61 males, 70 females, 1 not specified) participated in the online survey. Participants were on average 40.63 years old (SD = 10.18) and had been working at their current organization for 3.57 years (SD = 4.54). On average they had been living in Canada for 9.59 years (SD = 9.79). Forty-eight per cent of participants spoke English at home, 4 per cent spoke French, and the remaining 48 per cent spoke another language at home.

## RESULTS

### MEAN DIFFERENCES

Immigrant employees’ innovation ratings were compared with those of the employers who had asked their employees about the employees’ knowledge of diverse markets. It should be noted that the samples of employees and employers are completely independent. The mean differences are presented in Table 1.

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1 Note: The items used in this measure were compared against the dimensions of innovation in the OECD’s *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, Third Edition*. While the items were adapted to be appropriate to our target audience, they were informed by the substantive work done by the OECD.

2 Schaufeli and Bakker, *Utrecht Work Engagement Scale*.

3 Baard, Deci, and Ryan, “Intrinsic Need Satisfaction.”



**Table 1**

Mean Differences in Innovation Ratings by Employees and by Employers\*

(SD = standard deviation; *t* = t-test value; *df* = degrees of freedom; *p* = probability value)

|                                 | Employees |      | Employers* |      | <i>t</i> | <i>df</i> | <i>p</i> |
|---------------------------------|-----------|------|------------|------|----------|-----------|----------|
|                                 | Mean      | SD   | Mean       | SD   |          |           |          |
| New global partnerships         | 1.34      | 1.30 | 1.53       | 1.19 | 0.75     | 132       | 0.46     |
| New domestic markets            | 1.34      | 1.23 | 1.18       | 1.13 | -0.64    | 129       | 0.52     |
| Increased competitive advantage | 1.97      | 1.17 | 1.85       | 1.21 | -0.50    | 133       | 0.62     |
| Improved client relationships   | 2.40      | 1.11 | 2.15       | 0.94 | -1.18    | 130       | 0.24     |
| Increased productivity          | 2.38      | 1.14 | 1.71       | 1.22 | -2.93    | 131       | 0.004    |
| Increased creativity            | 2.47      | 1.06 | 2.03       | 1.04 | -2.13    | 136       | 0.04     |
| Increased innovation            | 2.33      | 1.05 | 2.00       | 1.06 | -1.58    | 134       | 0.12     |
| Improved recruitment            | 1.91      | 1.18 | 2.43       | 0.98 | 2.32     | 134       | 0.02     |
| Improved corporate culture      | 2.35      | 1.07 | 2.03       | 0.92 | -1.64    | 136       | 0.10     |

\*Employers included in this analysis were those who had asked their employees about their knowledge of diverse markets.  
Source: The Conference Board of Canada.

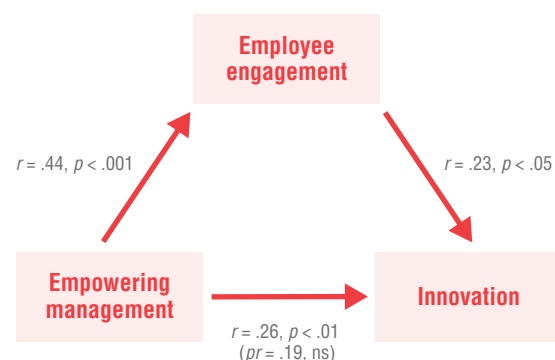
Immigrant employees and “employers who asked” differed on only three dimensions (“increased productivity,” “increased creativity,” and “improved recruitment”). Immigrant employees rated their contributions to productivity and creativity higher on average than did employers. Employers rated the capacity of immigrant employees to improve their recruitment higher than did the employees.

### MEDIATION ANALYSIS

A mediation analysis tested the relationships between empowering management, employee engagement, and innovation. Innovation was taken as an aggregate score of each of the employees’ ratings. As illustrated in Exhibit 1, the conditions for full mediation were met.<sup>4</sup> The relationship between empowering management and innovation was reduced to non-significance once employee engagement was accounted for.

**Exhibit 1**

Mediation Analysis of Empowering Management, Employee Engagement, and Innovation



Source: The Conference Board of Canada.

4 Baron and Kenny, “The Moderator–Mediator Variable.”

## APPENDIX C

# Imports and Exports Regression Analysis

### METHODOLOGY

To examine the relationship between immigration and trade, a modified gravity model was created. A gravity model of trade specifies that trade between two countries is a function of the distance between the two countries and their relative wealth, or GDP. For these analyses, we extended this model (based on previous research). The model now includes:

- ♦ the size of the source country's economy;
- ♦ the distance between Canada and the source country;
- ♦ a variable to account for whether Canada has a trade office in the source country;
- ♦ a variable to account for whether English is commonly spoken in the source country;
- ♦ a variable to account for whether French is commonly spoken in the source country;
- ♦ the population of the source country; and
- ♦ the total number of immigrants from the source country currently living in Canada.

The analyses were conducted across countries. Economic and population data were averaged over a five-year period (2004–08) to provide a more stable estimate, particularly with respect to trade, which can fluctuate dramatically from one year to the next.

The equations for imports and exports took the following form:

$$\begin{aligned} \log(\text{IMPORTS}_i \text{ or } \text{EXPORTS}_i) = & \text{CONSTANT} \\ & + B_1 * \log(\text{GDP}_i) + B_2 * \log(\text{DISTANCE}_i) \\ & + B_3 * \log(\text{POPULATION}) + B_4 * \text{TRADE OFFICE} \\ & \text{DUMMY VARIABLE}_i + B_5 * \text{ENGLISH DUMMY} \\ & \text{VARIABLE}_i + B_6 * \text{FRENCH DUMMY VARIABLE}_i \\ & + B_7 * \log(\text{IMMIGRANTS}_i) \end{aligned}$$

The dependent variable (i.e., imports or exports) for each country—"i"—was a function of the seven independent variables. The "betas" represent the estimated coefficients for each variable. In other words, they are an indicator of the strength of the relationship between a particular independent variable and the dependent variables. The sign of the beta (i.e., "+" or "-") indicates the direction of the relationship. If the beta is positive when the independent variable increases, the dependent variables also increase. For example, countries with higher GDP are expected to trade more with Canada. If the beta is negative, then decreasing the independent variables will be associated with increases in the dependent variables. Also, countries that are closer to Canada are more likely to trade with Canada—that is, as the distance between Canada and another country decreases, the value of trade is predicted to increase.

The "dummy variables" refer to the presence or absence of a particular variable. In this model, there are three dummy variables. Countries with a trade office are coded as "1," countries without are coded as "zero." Countries that speak English received a 1, while those that didn't

were scored as zero. Similarly, countries that speak French received a 1, while those that didn't were scored as zero. Trade offices and a common language were expected to be positively associated with trade.

## DATA

The data used to conduct the present analyses came from several sources:

- ♦ **Imports/exports by country**—Data were obtained from Industry Canada's website. Data are available for over 200 countries and can be broken down by product or industry.
- ♦ **GDP by country**—Data were taken from the World Bank's website. The site provides key development statistics for over 200 countries. Many of the indicators date back to 1960.
- ♦ **Population by country**—These data were also obtained from the World Bank's website.
- ♦ **Trade office**—Information on trade offices was obtained from the Foreign Affairs and International Trade Canada website. The website provides an alphabetical listing of all of Canada's trade offices throughout the world.
- ♦ **Distance**—The distance between Canada and the other countries was calculated using the website [www.timeanddate.com](http://www.timeanddate.com)'s "Distance Calculator." For the purposes of these analyses, the distance was calculated with either Halifax or Vancouver as the arrival point in Canada, depending on which one was closer to the destination. With respect to the source country, the closest port was used. If the country is landlocked, its capital was used. The exception to this is the United States. Since the majority of trade with the U.S. takes place via land border crossings, the distance between Ottawa and Washington, D.C., was used. Timeanddate.com calculates the theoretical air distance between two locations. While this does not account for the exact distance a ship would travel (since it doesn't take into account the need to navigate around land masses), it does provide a consistent approximation for how distance can influence trade.
- ♦ **Language**—The dummy variables for English and French language were based on the listing in *Ethnologue: Languages of the World*. Countries

were designated as English- or French-speaking if a large proportion of the population speaks French or English, or if French or English are listed as an official language for the country.

- ♦ **Immigrants**—The total number of immigrants from each country was obtained from data from the 2006 Census. The census report lists the total number of people from each country currently living in Canada. Canada currently has immigrants from over 200 countries.

## RESULTS

**Table 1**  
Statistical Results of the Regression Analysis  
Predicting the Value of Imports and Exports  
(coefficient)

|                       | Imports     | Exports     |
|-----------------------|-------------|-------------|
| <b>Step 1</b>         |             |             |
| Constant              | -4.86       | 2.90        |
|                       | <i>3.23</i> | <i>1.51</i> |
| Trade office dummy    | 0.13        | 0.52**      |
|                       | <i>0.36</i> | <i>0.17</i> |
| Geographical distance | -0.73*      | -0.94***    |
|                       | <i>0.31</i> | <i>0.14</i> |
| GDP                   | 1.26***     | 0.95***     |
|                       | <i>0.10</i> | <i>0.05</i> |
| Population            | -0.09       | -0.01       |
|                       | <i>0.11</i> | <i>0.05</i> |
| English dummy         | 0.57*       | 0.73***     |
|                       | <i>0.28</i> | <i>0.13</i> |
| French dummy          | -0.86**     | 0.04        |
|                       | <i>0.34</i> | <i>0.16</i> |
| <b>Step 2</b>         |             |             |
| Total immigrants      | 0.21*       | 0.11**      |
|                       | <i>0.09</i> | <i>0.04</i> |
| <b>Adj. R-squared</b> | 0.77        | 0.91        |

\*significant at the 5 per cent level

\*\*significant at the 1 per cent level

\*\*\*significant at the 0.1 per cent level

Note: Data covered 174 countries.

Italics indicate standard error.

Source: The Conference Board of Canada.

## APPENDIX D

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