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Measuring Business Creation in Canada and the United States

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Executive Summary

This study examines business creation in Canada and the United States. Business creation refers to the process of starting a new enterprise and is an important aspect of entrepreneurship. Economic research outlined in this study reveals that business creation not only represents the commercialization of ideas, but also indicates dynamism—the degree to which new businesses replace old ones—in an economy. The process of new business creation increases competition and, thus, can help explain changes in productivity, innovation, and economic growth.

Business creation can be measured in different ways. One way is to measure the creation of new firms, or business “births.” This measure has the advantage of focusing only on new ideas being brought into the market. Another way to measure business creation is to compare business births to business “deaths”—the number of firms that go out of business each year. Births minus deaths, or “net” business creation, indicates the extent to which there are more businesses being created than destroyed. This measure has the advantage of capturing the dynamic element of business creation. Both measures are used throughout this study.

This study contains several important findings. First, it shows that most business creation—measured in terms of both business births and net business creation—occurs in the smallest firms. In 2004, 97.6% of total business births and 95.9% of net business creation in Canada occurred in firms with 1-9 employees.

Indeed, the rate of business creation generally decreases as the size of the firm increases. On a national (Canadian) basis, the average rate of business births from 2002 to 2004 (the latest year for which data is available) for firms with five or fewer employees was 15.2%, 4.3% for firms with 5-9 employees, 2.9% for firms with 10-19 employees, and 2.2% or less for each of the five remaining firm size groups (20-49, 50-99, 100-249, 250-499, and 500 or more employees). The breakdown of net business creation by firm size revealed a similar pattern. The net business creation rate ranged from 2.0% for firms with five or fewer employees to 0% for firms with 500 or more employees.

Second, this study found that business creation varied across industrial sectors. From a Canadian perspective, the construction, professional services, and other service sectors were particularly important drivers—in terms of numbers and rates of growth—of both business births and net business creation from 2002 to 2004. The retail, waste management, and remedial service sectors were also significant drivers, but to a lesser extent. Business creation patterns across the industrial sectors were generally the same among the Canadian provinces.

Third, this study found that business creation varied considerably among the 10 Canadian provinces and 50 US states.^[1] Business births ranged from a high of 22.9% (births as a percentage of existing firms) in Nevada to a low of 11.4% in North Dakota. The Canadian provinces performed moderately well. With 16.6%, Newfoundland was the highest-ranked province, at 9th out of all 60 provinces and states. With only 11.9%, Quebec was ranked 54th overall—the lowest of any

¹ In order to compare Canadian and US data, data from 2002 to 2003 (the latest year for which US data is available) is used. When Canadian data is analysed separately, data from 2002 to 2004 is used.

Canadian province. Alberta and British Columbia ranked high in terms of their business birth rates, ranking 2nd and 3rd among the Canadian provinces.

In terms of net business creation (births less deaths as a percentage of existing firms), Nevada again ranked first with 5.2%. The highest ranked Canadian province was Alberta (11th) at 2.4%. Besides Alberta, only Ontario (21st) and British Columbia (24th) ranked among the top half of the 60 jurisdictions. The Atlantic provinces (New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland) and Saskatchewan occupied the bottom five rankings out of all 60 provinces and states. In general, the US states outperformed Canadian provinces in terms of net business creation.

Overall, Canadian provinces performed moderately well in terms of business births but had significantly lower rates of net business creation than the US states. In fact, several provinces, particularly those in Atlantic Canada, had the lowest rates of net business creation of the 10 Canadian provinces and 50 US states. While this information demonstrates rather poor performance, it should help us begin to understand why Canadian provinces are less entrepreneurial than their US counterparts.

Introduction

Entrepreneurship has become a key area of public policy.^[2] Governments at all levels are instituting policies that encourage entrepreneurial activity—particularly, policies that are aimed at supporting small businesses.^[3] There is also a large and growing body of research on small and entrepreneurial businesses that examines how they grow and to what extent they contribute to job creation, innovation, and, ultimately, economic prosperity. However, despite the growing attention to and the number of policies relating to entrepreneurship, there is still little measurement of entrepreneurial activity itself. In order to assess the effectiveness of public policies regarding entrepreneurship, we first need to measure entrepreneurial activity.

This study aims to help fill that void by presenting information on a critical measure of entrepreneurial activity: business creation. Business creation refers to the process of starting a new enterprise. Specifically, it is defined as the creation of any new business (incorporated or unincorporated) in any given year that did not exist in the previous year and has a payroll above zero. To the authors' knowledge, this is the only study that presents information on business creation for the Canadian provinces based on business size and by industry, and compares business creation among the provinces to that among the US states.

This study is organized into three sections. The first section briefly discusses why business creation is important. The second section addresses the measurement of business creation and presents business creation statistics for Canada by firm size and industry. This section also includes a comparison of business creation among the 10 Canadian provinces and 50 US states. The third section provides some concluding comments.

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- 2 A review of the literature associated with entrepreneurship indicates that there is no consensus on a precise definition of entrepreneurship. However, there are several important conceptual frameworks. See Godin and Clemens (forthcoming) for a discussion of these frameworks.
 - 3 Thank you to the anonymous reviewer who pointed out that governments are increasingly recognizing the difference between policies specifically for entrepreneurship and those for small businesses. While they may often overlap, they are different conceptually.

1 The Importance of Business Creation

Business creation is the process of starting a new enterprise. A new enterprise is a business with a payroll above zero that was created in any given year and did not exist in the previous year. The creation of a new enterprise is generally referred to as a business “birth,” while the closing of an existing business is referred to as a business “death.”

Starting a new business represents one of the primary ways in which entrepreneurs bring new ideas into the market. When entrepreneurs have a new product, idea, or service they would like to sell to consumers, they typically start a business. In other words, business creation represents the commercialization of ideas (Acs, 2006).[4]

The process of business creation increases competition, innovation, and productivity. Joseph Schumpeter (1942) described the process of new business creation as “creative destruction,” whereby new businesses replace (or destroy) existing firms that are no longer competitive.[5] He argued that new firms are able to replace existing firms because they bring new ideas, innovations, products, or processes to consumers.[6] This evolution of new business creation helps to increase economic growth.

A growing body of empirical research supports the idea that business creation has a positive effect on economic growth. For example, Zoltan Acs (2006) examined how business creation related to economic growth. He measured business birth rates and patterns of economic growth in 394 Labour Market Areas (LMAs)—a major city and the surrounding counties—in the United States from 1991 to 1998. Acs concluded that “higher rates of entrepreneurial activity [birth rates] were strongly associated with faster growth of local economies” (2006: 222).[7] [8]

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- 4 Specifically, business creation rates measure the link between knowledge creation and the commercialization of such knowledge (Acs, 2006). That is, business creation rates measure the extent to which people perceive an entrepreneurial opportunity and act to bring that opportunity to fruition.
 - 5 As Enrico Santarelli and Marco Vivarelli (2006) explain, new firm formation is not a “pure” measure of creative destruction. In addition to innovative entrepreneurs, new firms are also founded by passive followers, over-optimistic gamblers, and by people who were previously unemployed. Put differently, some new firms are created in response to factors other than entrepreneurial impulse.
 - 6 The process of business creation, or creative destruction, does not necessarily mean that only new firms are responsible for increases in jobs, innovation, productivity, and economic growth. As John Baldwin and his colleagues (2000) explain, over time a significant amount of market share tends to shift from existing firms that are in decline to those that are growing. However, new firms entering the market (or the threat of their possible entry) create the competitive pressure that stimulates innovation in the first place. The process of new firms entering the market brings innovation and new products to consumers and, as a result, it is a critical source of discipline for existing firms.
 - 7 Acs (2006) also performed a statistical analysis of factors that contribute to rates of business births in a particular area. Factors that contribute to higher rates include population growth, income growth, the number of area residents with college education, and the extent of sector specialization. Factors that contribute to lower rates include average firm size (the larger the average number of employees at a firm, the lower the birth rate) and the number of area residents without a high school diploma. The number of proprietors in the region and unemployment rates did not have a statistically significant effect on business birth rates.
 - 8 Thank you to the anonymous reviewer who pointed out that while there is a positive relationship between business creation and economic growth, the current research does not convincingly reveal which

More recently, Rui Baptista and Miguel Torres Preto (2007) examined business creation in Portugal from 1983 to 2000. They found that the process of business creation positively affects job creation and economic growth. According to the authors, “the findings from this study confirm the previous contention [Fritsch and Mueller, 2004; Baptista *et al.*, 2007] that new business formation contributes to economic growth not just directly through the jobs created by start-ups, but also by bringing about improvements to overall regional competitiveness” (2007: 15).

There has also been a substantial amount of research on business creation specific to Canada. Most of this research originates with Dr. John Baldwin and his team at Statistics Canada. Baldwin (1999) examined business creation in Canada in the manufacturing sector from 1972 to 1986 and in the goods and services sectors from 1984 to 1986. He concluded that business births are an important stimulus to the economy and “an inherent part of the dynamic competitive process that leads some firms to grow and others to decline” (1999: 45).^[9] In other words, new firms bring innovation to consumers and simultaneously put competitive pressure on existing firms to do the same.^[10] Both aspects of business creation serve to increase productivity and economic growth. Thus, as Schumpeter theorized, “entrants drive out firms that cannot keep up” (1942: 45).

Baldwin also found that the dynamic process of entrants bringing new innovations into the market occurs in a wide array of industries. The high profile sectors that are typically thought of as innovators, such as biotechnology and electronics, do experience a significant amount of new firm entry. However, other lower profile sectors experience a significant amount of entry and innovation as well. Baldwin explains that “while there is no doubt that firms in the electronic industries are innovative, it is also the case that firms elsewhere have developed the capacities that are needed for innovation in their particular industries” (1999: 46). Thus, while their innovations may not be as dramatic as a new drug or consumer electronic, new firms in all industries place competitive pressure on existing firms and push older firms out of the way by bringing new innovative processes or products into the market.

A study by Sri Kanagarajah (2006) of Statistics Canada provided a portrait of business births and deaths in Canada from 1991 to 2003, but divided businesses into large groups of sectors based on their degree of technical knowledge. The study presented business birth and death rates as a percentage of existing firms for each province and for some basic firm-size groups, but did not present both sets of data together. As a result, few conclusions can be drawn about regional performance. Nonetheless, the study included several interesting findings. From 1991 to 2003, birth rates in Canada outpaced death rates, except in 1995.^[11] The highest birth rate was

causes the other to grow.

- 9 The entry of small firms is particularly important as they tend to produce the greatest growth in productivity.
- 10 Baldwin (1999) also found that there is a tendency to understate the role of business entry because it is difficult to measure and is primarily a small-firm phenomenon. As a result, entry is sometimes viewed as a peripheral issue, but a more in-depth look at entry reveals that this is not the case. Another reason entry tends to be understated is because there are so many business failures. These failures sometimes, when they are looked at on a net basis, mask the amount of turnover in the economy.
- 11 This could mean that Canada’s older companies are doing well (surviving), given the fact most new businesses fail within their first five years. Studying the period 1984 to 1994, Baldwin *et al.* (2000) found that a new business has 36.0% likelihood of surviving past its fifth year. Thank you to the anonymous reviewer who pointed out this (and all) survival rate should be read with caution as it does not distinguish between

15.4% in 1996 and 1997, while the lowest was 13.3% in 2002. The highest death rate was 15.2% in 1995, while the lowest was 12.2% in 2002.

Overall, business creation is an important measure of entrepreneurship and, more broadly, the degree of dynamism—the degree to which new businesses replace existing ones—in an economy. In the context of entrepreneurship, the number of business births and deaths represents the number of attempts to bring new ideas into the market. Thus, more business creation means more entrepreneurial activity. The process of business creation puts competitive pressure on existing firms and contributes to the destruction of older businesses that are no longer competitive. Consequently, regions that have higher rates of business creation tend to produce greater innovation, higher productivity, and, as a result, greater economic growth.

businesses that fail for financial or management reasons and those that decide to terminate voluntarily. However, the number of voluntary terminations is expected to be quite small compared to the number of failed businesses.

2 An Empirical Examination of Business Creation

Business creation can be measured in a number of different ways. One way is to measure the creation of new firms, or the number of business births. This measure has the advantage of focusing only on new ideas being brought into the market because business birth rates measure the extent to which new knowledge is being commercialized (Acs, 2006). However, measuring only business births does not capture the amount of business turnover. In other words, measuring births does not capture the dynamic element of business creation. In order to measure the turnover process, at least in part, business births need to be compared to business deaths—the number of firms that go out of business each year. Births minus deaths—the “net” business creation—indicates the extent to which there are more businesses being created than destroyed.^[12] Both measures of business creation—business births and net business creation—are analyzed below.

Business Births

Business births refers to the number of new businesses created in one year that did not exist in the previous year. Recall that a new business is defined as a business created in any given year that did not exist in the previous year, which has a payroll above zero. We would expect birth rates to be higher among smaller firms rather than larger firms because the nature of starting and developing a new enterprise usually means entrepreneurs start a business with few resources. As such, most new entrants into the market are expected to be small. In fact, from 2002 to 2004 (the latest year for which Canadian data is available), the average number of births of firms with 1-9 employees represented 97.5% of all business births in Canada.

Business Births in Canadian Provinces

In this study, the average number of business births is measured as a percentage of the total number of businesses existing in a particular province in a given year (table 1). This relative measure incorporates the size of each province, enabling us to compare rates of business creation among the provinces.

The average rate of business births from 2002 to 2004 ranged from 15.7% in Newfoundland to 10.7% in Quebec.^[13] Alberta (14.5%) and British Columbia (14.1%) had the 2nd and 3rd

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- 12 Net business creation does not indicate the quality of businesses being created nor does it indicate how dynamic each jurisdiction is overall. For instance, two jurisdictions could have similar birth rates while having different deaths rates, which would result in different rates of net business creation. But net business creation does not show, for example, whether one new innovative firm replacing 25 old non-innovative firms is any more or less dynamic than one new average firm replacing another average firm.
- 13 The source of Canadian data, the Longitudinal Employment Analysis Program (LEAP), uses a firm rather than an establishment as its base measure of business births. An establishment refers to one physical location of business, whereas a firm refers to one or more establishments under common ownership. Using a firm as a base measure creates a measurement problem because many new businesses—that is, establishments—could be created, but will not be recorded in the LEAP database. In effect, using the firm definition masks a potentially significant amount of business creation. As such, results could be skewed in favour of smaller

Table 1: Average Number and Rate of Business Births by Province, 2002-2004

Province	Number	Total Births as a Percentage of Total Firms
British Columbia	26,267	14.1
Alberta	23,832	14.5
Saskatchewan	5,595	12.5
Manitoba	5,290	12.7
Ontario	51,873	13.1
Quebec	27,758	10.7
New Brunswick	3,989	12.7
Nova Scotia	4,476	12.3
Prince Edward Island	1,127	13.7
Newfoundland	3,613	15.7

Source: Statistics Canada (2007); calculations by authors.

highest rates of births. The Canadian average was 12.3%. However, the actual number of births varied considerably across provinces. The average number of births from 2002 to 2004 ranged from 51,873 in Ontario (37.1% of total births) to 1,127 in Prince Edward Island (0.8% of total births). This means that an increase or decrease in the number of births in smaller provinces (such as those in Atlantic Canada) could generate significant swings in birth rates over time. For this reason, both the number and the rate of births should be considered when attempting to gauge entrepreneurship. As such, provinces such as British Columbia and Alberta, which have high rates and numbers of births relative to the other provinces, could be considered more entrepreneurial in this one aspect of entrepreneurship.

Business Births in Canadian Provinces by Firm Size

From 2002 to 2004, smaller firms had higher birth rates than larger firms on average (table 2). In fact, the rate of business births generally decreased as the size of the firm increased. Businesses with five or fewer employees had the highest rate of business births overall (15.2%) by a considerable margin. Not surprisingly, the three provinces with the highest total birth rate—Newfoundland, Alberta, and British Columbia—also had the highest rate of business births within this firm size group. The next group of firms, those with 5-9 employees, had an overall business birth rate of 4.3%, ranging from 3.6% in Quebec to 5.8% in Prince Edward Island. On a national basis, the following six firm size groups had business birth rates of 2.9%, 2.2%, 1.4%, 1.0%, 1.0%, and 0.6%, respectively. Other than Prince Edward Island and Newfoundland, which had large firm (500 or more employees) business creation rates of 4.2% and 3.1%, the rates of business births for large firms were less than 1.0% lower in the other provinces.¹⁴ However, these results should be read with caution as

jurisdictions. For instance, if an existing firm in Ontario could open three new establishments while one firm is created in Newfoundland, only the new business in Newfoundland would be recorded by LEAP.

14 Large firm births are difficult to interpret. Since it is unlikely that a firm will start with more than 500 employees, other factors may explain, in part, large firm birth rates. For instance, one very large firm could

Table 2: Average Business Births as a Percentage of Total Firms in each Firm Size Category, 2002-2004*

Size	BC	AB	SK	MN	ON	QB	NB	NS	PEI	NF	Can
All Sizes	14.1	14.5	12.5	12.7	13.1	10.7	12.7	12.3	13.7	15.7	12.3
1-5	17.2	17.2	15.0	16.2	16.4	13.6	15.6	15.2	16.4	18.5	15.2
5-9	4.7	4.6	5.1	4.8	4.8	3.6	4.7	4.2	5.8	5.0	4.3
10-19	3.1	3.2	3.1	3.3	3.2	2.5	3.1	3.4	3.9	4.0	2.9
20-49	2.3	2.5	1.9	2.3	2.4	1.9	2.3	2.2	2.3	2.9	2.2
50-99	1.3	1.7	1.9	1.4	1.6	1.4	1.5	1.5	1.8	2.7	1.4
100-249	1.0	1.2	1.3	0.9	1.3	0.9	1.2	1.7	0.0	1.9	1.0
250-499	1.2	0.8	1.6	1.1	1.1	1.1	1.7	2.5	0.0	2.5	1.0
500+	0.7	0.6	0.0	0.3	0.5	0.7	0.6	0.5	4.2	3.1	0.6

*Note: This means the total number of births in each firm size category are measured as a percentage of total firms in the same category.

Source: Statistics Canada (2007); calculations by authors.

the low number of large firms in these two provinces means that birth rates could be quite volatile over time. For example, since Prince Edward Island had an average of only eight large firms from 2002 to 2004, experiencing just one or two births could have a significant impact on its birth rate. Similarly, a province that experienced zero large firm births would have a birth rate of 0%. In either case, small jurisdictions could experience substantial volatility in birth rates by firm size.

Business Births in Canadian Provinces by Industrial Sector

This section presents business births in the Canadian provinces by industrial sectors (table 3). In total, there are 20 industrial sectors based on the North American Industrial Classification System.^[15] From a national perspective, four sectors—Construction; Professional, Scientific and Technical Services; Other Services (except public administration); and, Unclassified^[16]—were particularly important drivers of business births from 2002 to 2004, in terms of numbers of births. Both the Retail Trade sector, the Administration and Support sector, and the Waste Management and Remedial Services sector were also significant, but to a lesser extent. The three provinces with the highest overall rates of net business births—Newfoundland, Alberta, and British Columbia—had fairly similar patterns in terms of which sectors were driving growth. However, the provinces were differentiated slightly by exceptionally high growth in one or two other sectors. In British Columbia and Alberta, the Mining and Oil and Gas Extraction sector showed high

split into two firms and relocate to another jurisdiction. Or a large firm may be government sponsored or subsidized so that it could start with a large number of workers (for example, a private-public partnership construction project).

15 The North American Industrial Classification System (NAICS) actually has 21 industries at the two-digit (highest level of aggregation) level. In this analysis, the public administration sector is excluded.

16 The Unclassified sector refers to businesses that cannot be included in any other industry category or to business whose specification is unknown.

Table 3: Average Business Births, Number and Percentage, by Province and Industrial Sector, 2002-2004

	British Columbia		Alberta		Saskatchewan		Manitoba		Ontario	
	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms
Agriculture, Forestry, Fishing and Hunting	1,140	11.7	963	11.1	1,075	11.6	550	12.9	1,197	9.5
Mining And Oil and Gas Extraction	199	19.3	802	14.2	126	13.4	30	18.3	112	16.1
Utilities	18	14.5	22	11.1	4	16.3	2	7.4	40	12.4
Construction	3,376	17.1	3,285	16.7	506	13.3	557	14.1	5,760	13.9
Manufacturing	954	9.9	653	10.2	164	10.4	195	9.0	1,899	7.6
Wholesale Trade	1,236	11.2	772	10.2	185	9.1	224	8.8	2,239	9.3
Retail Trade	2,253	12.7	1,609	12.1	422	9.7	442	10.3	4,925	11.6
Transportation and Warehousing	1,231	14.5	1,252	14.8	319	14.3	306	14.3	1,807	14.2
Information and Cultural Industries	361	13.8	188	13.7	37	11.3	58	12.3	692	13.3
Finance and Insurance Sector	751	13.3	582	12.6	128	9.0	167	10.7	1,487	11.7
Real Estate, Rental, and Leasing	1,170	13.8	1,044	15.6	166	13.3	168	11.8	1,837	12.2
Professional, Scientific, and Technical Services	3,139	14.4	4,063	15.5	443	16.0	425	14.2	7,372	14.4
Management of Companies and Enterprises	480	13.3	412	13.4	181	13.4	134	13.7	835	13.5
Admin. and Support, Waste Mgt. and Remedial Services	1,320	14.4	1,202	16.3	208	14.1	260	14.5	2,579	13.5
Educational Services	324	14.4	224	13.6	44	9.2	50	10.1	560	12.7
Health Care and Social Assistance	1,160	8.3	889	8.9	313	12.0	310	9.5	2,223	7.9
Arts, Entertainment, and Recreation	416	12.8	264	12.2	87	11.6	88	11.2	764	12.5
Accommodation and Food Service	1,772	14.1	1,276	14.5	405	14.3	358	13.2	3,776	14.2
Other Services (Except Public Administration)	3,194	15.0	2,761	14.4	473	10.4	477	10.1	6,508	13.1
Unclassified Sectors	1,774	48.7	1,568	47.4	310	45.9	491	50.0	5,258	45.5
Total	26,267	14.1	23,832	14.5	5,595	12.5	5,290	12.7	51,873	13.1

Table 3: Average Business Births, Number and Percentage, by Province and Industrial Sector, 2002-2004 (cont'd)

	Quebec		New Brunswick		Nova Scotia		Prince Edward Island		Newfoundland	
	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms
Agriculture, Forestry, Fishing and Hunting	1,288	8.4	359	9.6	387	9.1	160	9.9	117	14.6
Mining And Oil and Gas Extraction	41	10.3	11	11.7	19	16.2	3	26.7	16	14.9
Utilities	11	9.0	2	11.3	5	15.6	1	20.6	3	17.1
Construction	2,812	10.8	469	13.3	568	13.8	115	13.6	359	15.8
Manufacturing	1,366	7.3	174	10.6	177	8.8	56	13.1	124	13.8
Wholesale Trade	1,330	8.3	172	11.0	170	8.3	46	13.5	100	10.6
Retail Trade	2,738	8.9	373	10.5	376	9.5	107	12.8	291	10.0
Transportation and Warehousing	1,550	11.2	245	13.4	176	12.1	38	11.7	139	13.7
Information and Cultural Industries	423	12.0	46	17.6	52	14.1	9	12.9	33	19.0
Finance and Insurance Sector	542	8.6	75	10.4	87	10.7	24	13.2	45	13.3
Real Estate, Rental, and Leasing	900	10.7	118	14.2	128	12.4	38	15.5	79	14.1
Professional, Scientific, and Technical Services	3,051	12.1	259	13.4	358	14.0	63	15.8	196	16.4
Management of Companies and Enterprises	273	11.0	38	13.3	42	12.8	13	10.9	31	16.3
Admin. and Support, Waste Mgt. and Remedial Services	1,508	12.3	175	14.3	208	14.0	54	18.0	130	16.3
Educational Services	240	9.7	45	11.8	47	13.0	14	12.3	33	14.9
Health Care and Social Assistance	1,370	7.7	252	10.0	261	9.7	56	12.1	339	13.3
Arts, Entertainment, and Recreation	559	10.9	96	13.3	96	12.9	31	15.3	80	16.2
Accommodation and Food Service	2,447	12.1	278	13.4	260	11.7	89	16.0	241	15.1
Other Services (Except Public Administration)	2,744	9.5	424	11.4	490	10.8	126	12.5	994	18.2
Unclassified Sectors	2,564	47.8	379	53.3	568	50.3	84	46.4	263	53.3
Total	27,758	10.7	3,989	12.7	4,476	12.3	1,127	13.7	3,613	15.7

Source: Statistics Canada (2007); calculations by authors.

growth. In Newfoundland, the Utilities sector, Information and Cultural Industries sector, and the Arts, Entertainment, and Recreation sector had high birth rates. However, results for Newfoundland should be interpreted with caution as the actual number of births is quite small; since the province had few firms to begin with relative to other provinces, its birth rates appear high.

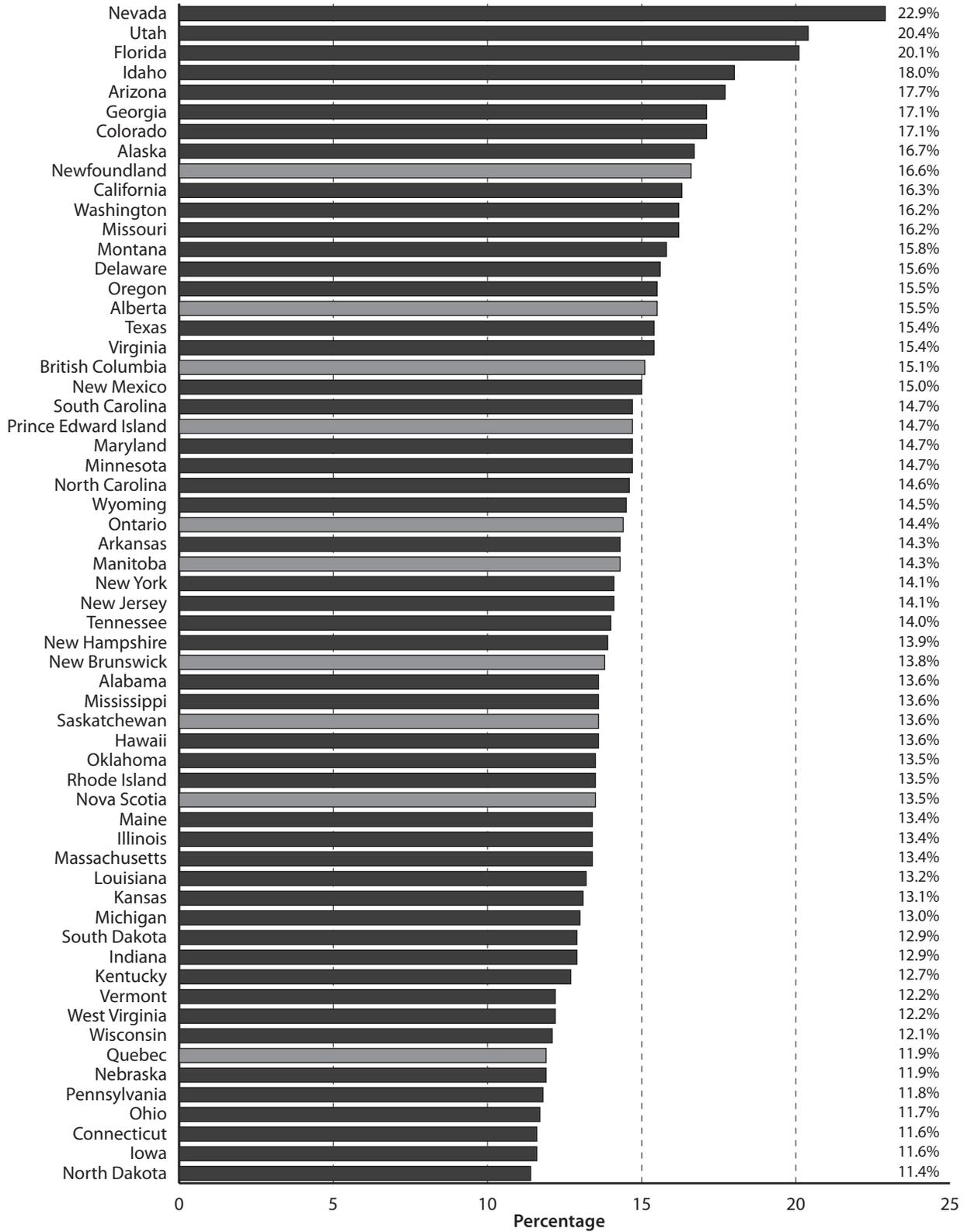
Business Births in the Canadian Provinces and US States

The information presented thus far provides an overview of business births in Canada, but how do Canadian provinces compare to US states in terms of this measure of entrepreneurship? To answer this question, it is helpful to focus the analysis on smaller firms. Small firms are widely recognized by the government and business people as being entrepreneurial. In fact, governments of all levels are rushing to implement policies that are designed to encourage entrepreneurship by supporting small businesses. In addition, a large body of research shows small businesses contribute significantly to the dynamic and growth-enhancing activities we associate with entrepreneurship, such as job creation, innovation, and economic growth (Appendix A provides a review of the research on small firms and entrepreneurship).

In this study, the measurement of small business births in the Canadian provinces and the US states is limited to businesses with 1-9 employees.^[17] ^[18] The data used is from 2002 to 2003, the latest year for which US data is available. The average business birth rates for small businesses (1-9 employees) in the Canadian provinces and US states are shown in figure 1.^[19]

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- 17 In order to measure and compare business creation in the Canadian provinces and US states, the number of firms has been limited to those having 1-9 employees. There are three reasons for using the 1-9 definition. First, and most importantly, most of the entrepreneurial activity in this context—business creation—occurs in firms with 1-9 employees. Thus, in general, including larger firms in the measurement of business creation will not change the rankings. Second, the US data measures births and deaths by establishment, not by firm. An establishment is a single physical location of business whereas a firm consists of one or more establishments under common ownership. As there are very few multiple-establishment firms with 1-9 employees—less than 1.0% of multiple-establishment firms—firms and establishments can be used interchangeably. This limits any difficulties resulting from definition differences. Third, including firms larger than those with 1-9 employees distorts the business formation rate because the total number of firms (which is used to compare business formations across different sized jurisdictions) varies more in the United States than in Canada. Specifically, the difference between the number of firms with 1-9 employees and 1-19 employees was 7.4% in Canada and 17.4% in the United States on average from 2002 to 2003, the latest year for which data is available (Statistics Canada, 2007; United States Census Bureau, 2007). This means using the total number of firms with 1-19 employees as a way to compare business births across regions would make it seem that the United States had lower birth rates, when in fact the lower business birth rate could be driven by the fact that the United States has more firms surviving into the larger group size. To keep the comparison between the US states and Canadian provinces as accurate as possible, this potential bias towards Canadian provinces was removed by focusing only on businesses with 1-9 employees.
- 18 The Organisation for Economic Co-operation and Development [OECD] has noted that the LEAP data from Statistics Canada includes a few statistical problems such as the inclusion of mergers and non-employer firms (see Ahmad, 2006). Some “creation,” therefore, could simply be one large firm splitting into two firms. As a result, Statistics Canada has recently adopted the harmonized definitions developed by the OECD and Eurostat. The LEAP data should be more accurate when it is released next year.
- 19 There is a difference in how Canadian and US birth and death data is collected. In Canada, the number of firms and number of births and deaths are organized by calendar year. That is, the number of births and

Figure 1: Average Business Births as a Percentage of Total Firms with 1-9 Employees, 2002-2003*



*Note: Data from 2002 to 2003 is used because it is the latest year for which US data is available.
 Source: Statistics Canada (2007); US Census Bureau (2007); calculations by authors.

Nevada had the highest rate of business births (22.9%) out of the 10 Canadian provinces and 50 US states, followed by Utah (20.4%) and Florida (20.1%). Nine of the top-10 ranked jurisdictions were US states. The highest-ranked Canadian province, Newfoundland (9th), had a rate of 16.6%. The remaining nine Canadian provinces were distributed throughout the rankings. Alberta, British Columbia, Prince Edward Island, Ontario, and Manitoba were in the top-half of the rankings, while New Brunswick, Saskatchewan, Nova Scotia, and Quebec were in the bottom half. On average, US states had a slightly higher rate of business births than Canadian provinces.^[20] The US national average of business births from 2002 to 2003 was 14.9%, while in Canada it was 13.3%.

Net Business Creation

Net business creation measures the total number of firms created (births) minus the number of firms that went out of business (deaths) each year, divided by the total number of firms. To enable comparison across provinces, the net number of businesses created in a province is compared to the total number of businesses existing in that province in a particular year.^[21] Similar to business births, new entrants and failures are expected to have few employees; consequently, net business creation will be concentrated among the smallest firms. In fact, from 2002 to 2004 (the latest year for which Canadian data is available) the average net business creation of firms with 1-9 employees represented 98.1% of total net business creation Canada wide.

Net Business Creation in Canadian Provinces

From 2002 to 2004, Alberta had the highest rate of net business creation overall (2.6%), followed by British Columbia (2.4%) and Ontario (2.2%) (table 4). Manitoba, Newfoundland, Quebec, Nova Scotia, and Saskatchewan had significantly lower rates of net business creation, ranging from 0.0%-1.0%. Prince Edward Island ranked last with a rate of -0.4%. New Brunswick (-0.1%) was the only other province to record a negative average net rate of business creation. This means that more firms went out of business than were created in Prince Edward Island and New Brunswick.

deaths during a calendar year are compared with the number of firms at the beginning of each year. In the United States, the number of establishments is organized by calendar year (same as Canada); however, the number of births and deaths are measured from the end of the first quarter of the base year to the end of the first quarter of the following year.

- 20 Only a 2002 to 2003 average was used to compare Canadian provinces and US states because data for that year is the latest available from US sources. The Canadian data, which is available for 2004, reveals that most provinces experienced significant positive growth from 2003 to 2004, meaning their average rate of business births increased. For example, Newfoundland, Alberta, and British Columbia—the provinces with the highest average birth rates from 2002 to 2003—experienced birth rates of 18.2%, 16.9%, and 17.1%, respectively, in 2004.
- 21 Net business creation is a relatively new measure of entrepreneurship. As such, there has been little empirical study from other researchers on the nature and implications of this measure. It is not known, for example, what the optimal amount of net business creation is in terms of economic growth, nor do we know how factors such as industrial structure impact differences in net business creation rates across jurisdictions. These aspects are opportunities for future research.

Table 4: Average and Rate of Net Business Creation by Province, 2002-2004

Province	Average	Rate of Net Business Creation (%)
British Columbia	4,477	2.4
Alberta	4,322	2.6
Saskatchewan	-5	0.0
Manitoba	415	1.0
Ontario	8,807	2.2
Quebec	1,840	0.7
New Brunswick	-16	-0.1
Nova Scotia	83	0.2
Prince Edward Island	-31	-0.4
Newfoundland	178	0.8

Source: Statistics Canada (2007); calculations by authors.

Table 5: Average Net Business Creation as a Percentage of Total Firms in each Firm Size Category, 2002-2004*

Size	BC	AB	SK	MN	ON	QB	NB	NS	PEI	NF	Can
All Sizes	2.4	2.6	0.0	1.0	2.2	0.7	-0.1	0.2	-0.4	0.8	1.7
1-5	2.9	3.1	-0.2	1.2	2.7	0.9	-0.2	0.1	-0.8	0.7	2.0
5-9	1.0	1.0	1.3	0.6	1.1	0.2	0.7	0.7	1.5	1.1	0.9
10-19	0.5	0.6	0.9	0.5	0.4	-0.1	0.2	0.9	1.0	1.0	0.4
20-49	0.3	0.3	-0.1	0.5	0.3	0.0	0.5	0.2	0.9	1.4	0.3
50-99	0.0	0.2	0.0	-0.1	0.0	-0.1	0.3	-0.2	0.5	1.4	0.0
100-249	-0.2	-0.2	-0.2	-0.2	0.0	-0.3	-0.2	0.6	-1.0	0.1	-0.2
250-499	0.2	0.0	-0.1	0.3	0.0	-0.7	0.5	1.6	0.0	-0.3	-0.4
500+	-0.1	0.1	-2.0	0.0	-0.2	0.3	0.0	-0.9	4.2	3.1	0.0

*Note: The number of births minus deaths in each firm size category is measured as a percentage of total firms in the same category.

Source: Statistics Canada (2007); calculations by authors.

Net Business Creation in Canadian Provinces by Firm Size

When firm size was taken into account, smaller businesses tended to have greater rates of net business creation than larger firms (table 5). In fact, the rate of business creation generally decreased as the size of the firm increased. Businesses with five or fewer employees maintained the highest rate of business creation overall (2.0%). Not surprisingly, the three provinces with the highest overall rates of net business creation (Alberta, British Columbia, and Ontario) also had the highest rates of net business creation within this firm size group. Firms with 5-9 employees had an overall net business creation rate of 0.9%. All provinces except Quebec, Manitoba, New Brunswick, and Nova Scotia had overall business creation rates of 1.0% or higher for this firm size group. Apart from Prince Edward Island and Newfoundland, which had large firm (500 or more employees) business creation rates of 4.2% and 3.1%, the rates of creation for large firms were rather small across Canada, and were even negative in British Columbia, Saskatchewan, Ontario, and Nova Scotia.

Business Creation in Canadian Provinces by Industrial Sector

This section presents net business creation in the Canadian provinces by industrial sectors (table 6, pp. 20-21). In total, there are 20 industrial sectors based on the North American Industrial Classification System.^[22] From a national perspective, the Construction; Professional, Scientific, and Technical Services; and, Other Services (except public administration) sectors were particularly important drivers of overall business creation from 2002 to 2004.^[23] The Retail Trade and the Unclassified sectors were also significant, but to a lesser extent.^[24] Almost every province had a negative rate of net business creation in three sectors: Agriculture, Forestry, Fishing and Hunting; Manufacturing; and, Management of Companies and Enterprises.^[25]

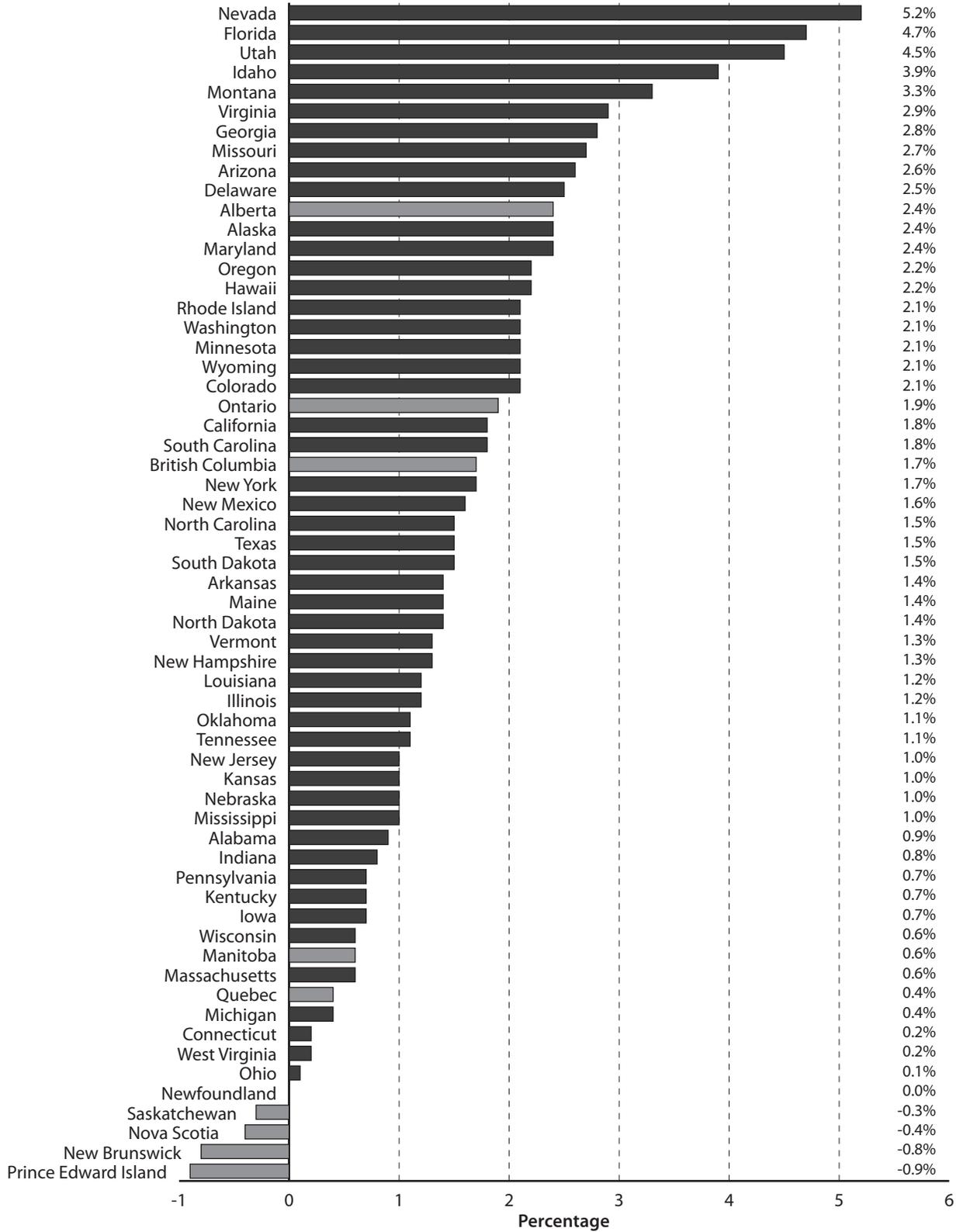
Business Creation in the Canadian Provinces and US States

Similar to the section on business births, the information presented thus far provides an overview of net business creation in Canada but does not provide an international context. This section measures small firm net business creation in Canadian provinces and US states. A 2002 to 2003 average was used to compare the Canadian provinces and US states because data for that year is the latest available from US sources. As before, small firms are defined as those with 1-9 employees.

From 2002 to 2003, Nevada had the highest rate of average net business creation (5.2%) out of the 10 Canadian provinces and 50 US states, followed by Florida (4.7%) and Utah (4.5%) (figure 2). All 10 of the top-ranked jurisdictions were US states. The highest ranked Canadian province, Alberta (11th), had an average net business creation rate of 2.4%. Besides Alberta, only Ontario (21st) and British Columbia (24th) ranked in the top half of all jurisdictions. Manitoba ranked 49th, while the remaining six provinces ranked 51st or lower. In fact, the Atlantic provinces (Newfoundland, Nova Scotia, New Brunswick, and Prince Edward Island) and Saskatchewan occupied the bottom five rankings of the 60 jurisdictions. Prince Edward Island had the distinction of ranking last with an average net business creation rate of -0.9%. Overall, the US states far outperformed the Canadian provinces in terms of net business creation.^[26]

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- 22 The North American Industrial Classification System (NAICS) actually has 21 industries at the two-digit level (highest level of aggregation). In this analysis, the public administration sector is excluded.
- 23 Alberta, British Columbia, and Ontario, the provinces with the highest overall rate of net business creation, had fairly similar patterns in terms of which sectors were driving growth. All three had high growth rates compared to other provinces in several sectors: Mining and Oil and Gas Extraction; Construction; Real Estate and Rental and Leasing; Professional, Scientific and Technical Services; Educational Services; and, Other Services.
- 24 The Unclassified sector refers to businesses that cannot be included in any other industry category or to businesses whose specification is unknown.
- 25 Newfoundland had a negative average net business creation rate in the Agriculture, Forestry, Fishing and Hunting sector and the Manufacturing sector, but had a positive rate in the Management of Companies and Enterprises sector.
- 26 The Canadian data, which is available for 2004, reveals that most provinces had significant positive growth from 2003 to 2004, meaning their average rate of business creation increased. For example, British Columbia, Alberta, and Ontario had net business creation rates of 4.3%, 3.6%, and 3.6%, respectively, in 2004.

Figure 2: Average Net Business Creation as a Percentage of Total Firms with 1-9 Employees, 2002-2003*



*Note: Data from 2002 to 2003 is used because it is the latest year for which US data is available.
 Source: Statistics Canada (2007); US Census Bureau (2007); calculations by authors.

Table 6: Average Net Business Creation, Number and Percentage, by Province and Industrial Sector, 2002-2004

	British Columbia		Alberta		Saskatchewan		Manitoba		Ontario	
	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms
Agriculture, Forestry, Fishing and Hunting	-88	-0.9	-159	-1.8	-322	-3.5	-33	-0.8	-157	-1.2
Mining And Oil and Gas Extraction	61	5.7	200	3.5	20	2.1	7	4.3	17	2.3
Utilities	3	2.1	2	0.8	1	4.9	-1	-2.8	-5	-1.1
Construction	963	4.8	892	4.5	36	0.9	54	1.4	1231	3.0
Manufacturing	-42	-0.4	-28	-0.4	-12	-0.8	-14	-0.6	-199	-0.8
Wholesale Trade	61	0.5	2	0.0	-18	-0.9	-23	-0.9	32	0.1
Retail Trade	333	1.9	195	1.5	-5	-0.1	-12	-0.3	296	0.7
Transportation and Warehousing	114	1.3	148	1.7	5	0.2	-21	-1.0	290	2.3
Information and Cultural Industries	18	0.7	1	0.1	-5	-1.4	1	0.1	44	0.8
Finance and Insurance Sector	52	0.9	28	0.6	-14	-1.0	-10	-0.6	102	0.8
Real Estate, Rental, and Leasing	276	3.2	221	3.3	1	0.0	1	0.1	333	2.2
Professional, Scientific, and Technical Services	517	2.4	996	3.8	83	3.0	55	1.8	1337	2.6
Management of Companies and Enterprises	-61	-1.7	-47	-1.5	-2	-0.1	-5	-0.5	-88	-1.4
Admin. and Support, Waste Mgt. and Remedial Services	173	1.9	244	3.3	24	1.6	32	1.8	410	2.1
Educational Services	82	3.6	29	1.7	3	0.6	5	1.0	133	3.0
Health Care and Social Assistance	178	1.3	150	1.5	36	1.4	40	1.2	391	1.4
Arts, Entertainment, and Recreation	62	1.9	22	1.0	5	0.7	8	1.0	145	2.4
Accommodation and Food Service	178	1.4	120	1.4	7	0.2	-9	-0.3	213	0.8
Other Services (Except Public Administration)	563	2.6	343	1.8	-5	-0.1	9	0.2	1228	2.5
Unclassified Sectors	1,035	28.0	963	27.9	156	22.3	333	32.3	3,053	25.1
Total	4,477	2.4	4,322	2.6	-5	0.0	415	1.0	8,807	2.2

Table 6: Average Net Business Creation, Number and Percentage, by Province and Industrial Sector, 2002-2004 (cont'd)

	Quebec		New Brunswick		Nova Scotia		Prince Edward Island		Newfoundland	
	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms	Number	Percentage of Firms
Agriculture, Forestry, Fishing and Hunting	-134	-0.9	-75	-2.0	-53	-1.2	-29	-1.8	-1	-0.1
Mining And Oil and Gas Extraction	-1	-0.2	-1	-0.6	3	2.3	-1	-4.3	-2	-1.7
Utilities	-2	-1.6	0	0.0	2	6.7	0	0.0	1	6.0
Construction	598	2.3	-12	-0.4	56	1.3	14	1.6	35	1.5
Manufacturing	-289	-1.6	-44	-2.7	-56	-2.8	-10	-2.4	-9	-1.0
Wholesale Trade	-55	-0.3	-5	-0.3	-54	-2.6	-1	-0.4	2	0.2
Retail Trade	-138	-0.4	-42	-1.2	-69	-1.7	-7	-0.8	-40	-1.4
Transportation and Warehousing	41	0.3	-26	-1.4	-23	-1.6	-3	-0.9	-6	-0.6
Information and Cultural Industries	-15	-0.4	1	0.4	-5	-1.3	-4	-5.9	4	2.2
Finance and Insurance Sector	-140	-2.2	-6	-0.9	-11	-1.4	2	0.9	3	0.8
Real Estate, Rental, and Leasing	99	1.2	12	1.4	11	1.1	5	2.1	2	0.3
Professional, Scientific, and Technical Services	118	0.5	-3	-0.2	36	1.4	10	2.4	32	2.6
Management of Companies and Enterprises	-74	-2.9	-1	-0.5	-6	-1.7	-5	-4.0	2	1.0
Admin. and Support, Waste Mgt. and Remedial Services	61	0.5	16	1.2	0	0.0	0	0.1	12	1.5
Educational Services	20	0.8	-3	-0.7	-5	-1.2	0	-0.1	-4	-1.8
Health Care and Social Assistance	187	1.0	1	0.0	25	0.9	-4	-0.9	-40	-1.5
Arts, Entertainment, and Recreation	81	1.6	3	0.4	15	2.0	-3	-1.3	22	4.4
Accommodation and Food Service	-12	-0.1	-13	-0.6	-28	-1.3	-3	-0.5	19	1.2
Other Services (Except Public Administration)	-25	-0.1	-74	-2.0	-105	-2.3	-29	-2.9	-9	-0.2
Unclassified Sectors	1520	28.4	256	36.0	349	31.9	37	21.1	154	29.5
Total	<u>1840</u>	<u>0.7</u>	<u>-16</u>	<u>-0.1</u>	<u>83</u>	<u>0.2</u>	<u>-31</u>	<u>-0.4</u>	<u>178</u>	<u>0.8</u>

Source: Statistics Canada (2007); calculations by authors.

Conclusion

Business creation is one of the most important measures of entrepreneurial activity. It not only represents the commercialization of ideas, but it also indicates dynamism—the degree to which new firms replace old firms—in an economy. The commercialization of ideas and the dynamic element of new business creation increases competition and, consequently, can help explain changes in productivity, innovation, and economic growth. Most business creation occurs among the smallest businesses—those with 1-9 employees. Within Canada, Alberta and British Columbia recorded both the highest birth rates and the highest net business creation. Their growth was largely fueled by strong business creation in the construction, professional and scientific, and service sectors. On average, Canadian provinces performed moderately well compared to US states in terms of business births. However, Canadian provinces had significantly lower rates of net business creation than US states. In fact, several provinces, particularly those in Atlantic Canada, had the lowest rates of net business creation out of all 60 jurisdictions. While this information demonstrates rather poor performance, it should help us begin to understand why Canadian provinces are not as entrepreneurial as their US counterparts.

Appendix A: The Importance of Measuring Small Business Creation

There are a number of reasons why it is important to measure small business creation. A wealth of research shows that small businesses contribute significantly to the dynamic and growth-enhancing activities we associate with entrepreneurship such as job creation, innovation, and economic growth. In terms of dynamic activity, for example, John Baldwin (1995) found that new small firms that are better able to sense consumer requirements are constantly replacing other small firms that are less able to do so. An earlier study by Baldwin *et al.* (1994) revealed that small firms can react to changing market conditions faster than larger firms, and, as a result, excel in their ability to provide quality and flexibility of service. In other words, small firms are better able to react to entrepreneurial opportunities than large firms.

In terms of job creation, small entrepreneurial firms have been shown to create a disproportionate number of jobs. In a seminal study, David Birch (1979) examined small firms in the United States from 1969 to 1976. He found that firms with fewer than 20 employees generated 66.0% of all new US jobs. He also found that firms with 100 employees or less created 82.0% of all new jobs.

Another study by Garnett Picot and his colleagues at Statistics Canada (1994) examined about 760,000 firms in Canada from 1978 to 1992 to see whether small firms created more jobs than large firms. The authors found that small firms were a net creator of jobs. Specifically, they found the net growth rate of employment decreases as the size of the firm increases.^[27] They also found that small firms had more job creation (and destruction) and accounted for a larger share of the employment increase overall during that time period.

These findings have been buttressed by research from the United States (Davidsson *et al.*, 1998) and the United Kingdom (Hart and Oulton, 1996), the conclusion of which was that small firms are the net creator of jobs. Additional research has found that the share of job creation in small firms has been increasing over time. Zoltan Acs and David Audretsch (1993) concluded that, in the 1980s, there was a distinct and consistent shift away from employment in large firms and towards small firms in every major Western economy (Parker, 2005). Furthermore, in a seminal study titled *Fostering Entrepreneurship*, the Organisation for Economic Co-operation and Development (1998) concluded there is “general agreement” that the share of jobs accounted for by small firms has increased since the early 1970s in most developed economies.

In addition to job creation, research also shows that small firms are engines of innovation.^[28] For example, a study by Acs and Audretsch (1988) in the *American Economic Review* examined innovation in large and small firms. The authors defined a small firm as having fewer than 500 employees and a large firm as having more than 500 employees. The authors found innovations-per-employee is 6.6 times greater in small firms than large firms, but small firms were only 43.0% more innovative than large firms overall. Acs and Audretsch found that “the greater

27 More accurately, the growth rate of (net) employment decreases as the size of the firm increases, no matter which firm size categories are used.

28 William Baumol (2002) suggested that large firms tend to be associated with the more “routinized” type of innovations while smaller firms tend to be associated with the more radical innovations.

extent to which an industry is composed of large firms, the greater will be the innovative activity, but that increased innovative activity will tend to emanate more from the small firms than from the large firms" (1988: 687). The authors concluded that in industries composed predominantly of large firms, the existing small firms must innovate to remain viable.

Finally, there is a wealth of research examining small firms and economic growth. Simon Parker (2005) provided an extensive review of this research and concluded that new and smaller enterprises tend to have systematically higher growth rates than average. Parker also reported that industries with higher rates of entry by small firms have above average rates of productivity, growth, and innovation.

References

- Acs, Zoltan (2006). "Start-ups and Entry Barriers: Small and Medium-Sized Firms Population Dynamics." In M. Casson, B. Yeung, A. Basu, and N. Wadeson (eds.), *The Oxford Handbook of Entrepreneurship*. (Oxford University Press): 194-224.
- Acs, Zoltan, and David Audretsch (1988). "Innovation in Large and Small Firms: An Empirical Analysis." *American Economic Review* 78: 678-690.
- Acs, Zoltan, and David Audretsch (1993). *Small Firms and Entrepreneurship: An East-West Perspective*. Cambridge University Press.
- Ahmad, Nadim (2006). *A Proposed Framework for Business Demography Statistics*. Working Paper. Statistics Directorate, Organisation for Economic Co-operation and Development.
- Baldwin, John (1995). *The Dynamics of Industrial Competition*. Cambridge University Press.
- Baldwin, John (1999). *A Portrait of Entrants and Exits*. Statistics Canada.
- Baldwin, John, Lin Bian, Richard Dupuy, and Guy Gellatly (2000). *Failure Rates for New Canadian Firms: New Perspectives on Entry and Exit*. Statistics Canada.
- Baldwin, John, W. Chandler, C. Le, and T. Papailiadis (1994). *Strategies for Success: A Profile of Small and Medium-Sized Enterprises in Canada*. Statistics Canada.
- Baptista, Rui, and Miguel Torres Preto (2006). *Entrepreneurship and Industrial Re-Structuring: What Kinds of Start-ups Matter Most for Job Creation?* Max Planck Institute of Economics. <<http://ssrn.com/abstract=899204>>.
- Baptista, Rui, Vítor Escária, and Paulo Madruga (2007). "Entrepreneurship, Regional Development and Job Creation: The Case of Portugal." *Small Business Economics* (May 30): 49-58. <<http://www.springerlink.com/content/p6145q28423j686n/>>.
- Baumol, William (2002). *The Free-Market Innovation Machine*. Princeton University Press.
- Birch, David (1979). *The Job Generation Process*. MIT Programme on Neighborhood and Regional Change.
- Davidsson, P., L. Lindmark, and C. Olofsson (1998). "The Extent of Over-Estimation of Small Firm Job Creation—An Empirical Examination of the Regression Bias." *Small Business Economics* 11: 87-100.
- Fritsch, M., and P. Mueller (2004). "The Effects of New Business Formation on Regional Development Over Time." *Regional Studies* 38: 961-975.
- Godin, Keith, and Jason Clemens (forthcoming). *Measuring Entrepreneurship: Conceptual Frameworks and Potential Indicators*. The Fraser Institute.
- Hart, P., and N. Oulton (1996). "Growth and Size of Firms." *Economic Journal* 106: 1242-1252.
- Kanagarajah, Sri (2006). *Business Dynamics in Canada 2003*. Statistics Canada.
- Organisation for Economic Co-operation and Development [OECD] (1998). *Fostering Entrepreneurship*. Organisation for Economic Co-operation and Development.
- Parker, Simon (2005). "The Economics of Entrepreneurship: What We Know and What We Don't." *Foundations and Trends in Entrepreneurship* 1, 1: 1-54.
- Picot, G., J. Baldwin, and R. Dupuy (1994). *Have Small Firms Created a Disproportionate Share of New Jobs in Canada? A Reassessment of the Facts*. Statistics Canada, Micro-Economic Studies and Analysis Division No. 71.

- Santarelli, Enrico, and Marco Vivarelli (2006). *Entrepreneurship and the Process of Firms' Entry, Survival and Growth*. IZA Discussion Paper No. 2475. Forschungsinstitut zur Zukunft der Arbeit [Institute for the Study of Labor].
- Schumpeter, Joseph (1942). *Capitalism, Socialism and Democracy*. Harper & Row Publishers.
- Statistics Canada (2007). "The Fraser Institute 2007 Report. Employment Dynamics—Cohort 2002-2004: Business Firms and Employment for Canada by Industry Division, Employment Size and Life Status." Custom data tabulation from the Longitudinal Employment Analysis Program (LEAP) for The Fraser Institute. Delivered July 17, 2007.
- United States Census Bureau (2007). *Statistics of U.S. Businesses*. <<http://www.census.gov/csd/susb/susb-dyn.htm>>. Accessed July 16, 2007.

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