The pioneering work of Birch (1989) demonstrated that employment growth in the United States was predominately created by small firms. As a result, attention has concentrated on the growth potential of small firms and since the mid-1990s, the federal government’s small business policy framework has focused on ensuring that the business environment is conducive to small business growth and enhancing competitiveness in the economy. However, basic information and analysis on Canadian growth firms has generally been lacking, concentrated only in certain sectors or based on small select samples of growth firms.

This project grew out of the need for data to objectively analyze firm growth in order to support policy development. The multi-year project involved several partners, including Statistics Canada, the National Research Council’s Industrial Research Assistance Program and the Government of Ontario. This profile on growth firms summarizes and highlights the work of Industry Canada’s Small Business Policy Branch. Details on each of the four phases of the project appear under Summary of Work.

The disproportionate contribution to job creation by hyper and strong growth firms indicates the economic significance of these businesses and has caught the attention of researchers and policy-makers around the world. Studying these firms brings valuable insights into what makes them successful and the barriers they face, and will help policy-makers provide advice on how to further encourage growth firms.

**Definitions**

**Hyper Growth Firms:** those with at least 150 percent growth in employment over 4 years;

**Strong Growth Firms:** those with between 50 and 150 percent growth in employment over 4 years;

**Slow Growth Firms:** those with positive growth in employment of less than 50 percent over 4 years;

**Declining Firms:** those with negative employment growth over 4 years.

**Summary of Key Findings**

- Growth firms are defined as having at least 50 percent growth in employment over a 4-year period.
- Growth firms are very important to the Canadian economy; hyper growth firms accounted for 4 percent of continuing businesses between 1993 and 2003, but were responsible for 45 percent of net jobs created by continuing firms.
- Although small businesses accounted for nearly 80 percent of net job creation between 1993 and 2003, high growth was found in all firm sizes.
- Growth did not appear to be disproportionately concentrated in any particular industry or region. Furthermore, high growth firms were not concentrated in high-tech or high-knowledge industries.
- Tracing growth over the medium term suggests that there is a risk trade-off between growth and survival; hyper growth firms had a lower survival rate than businesses with lower employment growth.
- Among micro firms (firms with fewer than five employees), strong growth firms had the highest survival rates. For all other firm sizes, slow growth firms had the highest survival rates.
- Firms that use strategies such as exporting can achieve much higher growth than firms that do not employ such strategies.
### Summary of Work

**Phase I**
- Covers 1985 to 1999 (Standard Industrial Classification (SIC) industrial coding)
- Sensitivity testing on triage period
- Examined different periods of the business cycle

**Phase II**
- Covers 1985 to 2000 (SIC industrial coding)
- Examined growth by firm age
- Examined different cohorts of start-ups

**Phase III**
- Covers 1993 to 2002 (North American Industrial Classification System (NAICS) industrial coding)
- Examined the job creation performance of exporters

**Phase IV**
- Covers 1993 to 2003 (NAICS industrial coding)
- Examined growth by firm age
- Examined firm survival and survival by growth groups
- Examined the ability of firms to maintain their level of growth

### Data and Methodology

This project uses a firm-level, longitudinal universe database known as the *Longitudinal Employment Analysis Program* (LEAP). It includes all employer firms in Canada and can track individual firms or employees from year-to-year. Each phase of this project covered a different time period, but the majority of results reported here cover the 1993 to 2003 period. Results for firm age cover the period from 1999 to 2003 because the first part of the observation period was used to construct the firm age variable. Finally, export results cover 1993 to 2002 because of data availability.

Regardless of the time period examined, the methodology used was consistent. Firms in the private sector were selected by removing those that operate in public administration, health and education sectors, along with Canada Post. Results for these public industries are generally not reported; however, they are used as a point of reference in the examination of firm survival. Private sector firms were then triaged into one of the four growth groups based on their employment growth over the first 4 years of the observation period. All businesses were tracked to the end of the period to measure their employment growth over the medium term. Results are broken down by firm size, growth group, region and industry and, in some cases, the results are compared across subsections of the observation period.

The employment unit used in this work is called an Individual Labour Unit (ILU). An ILU is assigned to each person who receives a T4 slip. If an employee receives more than one ILU, their “unit” is distributed among their employers in proportion to the wages paid by each employer.

Aspects of this work take advantage of the ability to link data files together — the Exporter Registry was linked to LEAP to examine job creation by exporters and to see whether exporters were more likely to be high growth firms. File linkage is a complex process that involves matching business numbers in both databases and merging the records. This process cannot match all records perfectly, however, because of incomplete records and different data collecting/reporting schemes in different databases, so additional attempts are made by matching business names and addresses. The success rate of matching the LEAP database and the Exporter Registry was approximately 65 percent, but there are several reasons why businesses may not match. Firstly, exporters can be employer or non-employer businesses, whereas LEAP only contains records on employer businesses. Secondly, businesses may be registered differently in each database and some businesses may have complex operational structures that report exports in different legal entities than their payroll accounts.
A Small Number of Firms Create a Huge Number of Jobs

The 1990s were a period of growth for the Canadian economy; approximately 2 million jobs were created between 1993 and 2003. Half of this job creation was the net result of firms entering and exiting the marketplace; the other half resulted from the growth of businesses that operated over the full period. There were 800,000 employer firms in 1993 and by 2003 this number had grown to 893,000. Of these firms, 410,000 operated continuously, while 583,000 entered the market and 490,000 exited.

Results show that continuing businesses created 966,000 net jobs between 1993 and 2003, which is very similar to net job creation by hyper and strong growth firms. Net employment gains by slow growth firms were offset by losses in declining firms (Figure 1). More remarkable was the contribution of growth firms: the 52,800 high growth firms (hyper and strong growth firms combined) created 997,000 net jobs, while the 128,000 slow growth firms created 791,000 net jobs and the 129,000 declining firms shed 822,000 net jobs. Clearly, there is tremendous leverage in terms of job creation by these relatively few hyper and strong growth firms. Consequently, encouraging and developing these growth firms will have a significant impact on the performance of the Canadian economy.
Small businesses were very important for job creation over this period. Although small and medium-sized businesses have accounted for approximately 48 and 16 percent, respectively, of employment in recent years, they were responsible for all of the job creation between 1993 and 2003. Small businesses created 747,000 net jobs and medium-sized firms created 263,000 net jobs over this period, while large businesses shed 44,000 jobs. As seen in Figure 2, however, hyper and strong growth is not limited to small firms. Medium-sized and large hyper and strong growth firms created approximately 40 percent of all net jobs created by hyper and strong growth firms.

High growth firms are found in all regions
Examining the location of hyper and strong growth firms reveals that they were evenly distributed across Canada’s regions. Figure 3 shows that between 1993 and 2002, hyper and strong growth firms accounted for between 16 and 18 percent of continuing businesses in each region. However, the role that these firms played in job creation varied slightly by region.

In Quebec, Ontario and the Prairie provinces, hyper and strong growth firms were responsible for between 50 and 60 percent of all net jobs created between 1993 and 2002. Hyper and strong growth firms had a much more significant role in the Atlantic provinces and in British Columbia. In these two regions, there was very little job creation over the period examined so high growth firms became much more important for job creation because of the high number of jobs lost in declining firms.
No One Industry Appears to be Predisposed to Growth

Hyper and strong growth firms appear to have a fairly even distribution across all industries. Of the 70 industries examined, the top eight in terms of net job creation by hyper and strong growth firms accounted for half of net job creation by these two growth categories and the top 23 industries accounted for 80 percent. Although this appears to suggest that employment creation by hyper and strong growth firms was concentrated in certain industries, all of this job creation was proportional to each industry’s share of businesses in the population. In short, growth is everywhere.

To examine this in more detail, a ratio was computed to determine the concentration, by industry, of job creation by hyper and strong growth firms. The ratio divides the share of net jobs created by hyper and strong growth firms in each industry by each industry’s share of hyper and strong growth firms. For example, the industry with the highest ratio was transportation equipment industries, with a ratio of 5.4. In other words, the share of jobs created by high growth firms operating in transportation equipment industries was 5.4 times more than the industry’s share of firms in the economy. This indicates a high level of growth in this industry, but this result should be tempered by the size of the industry — there were only 261 high growth firms operating in transportation equipment industries. The top 20 of the 70 industries examined are listed in Table 1.

Table 1
Ratio of the Share of Jobs Created to the Share of Hyper and Strong Growth Firms within the Industry, Canada, 1993–2003

<table>
<thead>
<tr>
<th>Rank</th>
<th>Industry</th>
<th>No. of Hyper and Strong Growth Firms</th>
<th>Share of Jobs Created to Share of Firms</th>
<th>Knowledge Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transportation Equipment Industries</td>
<td>261</td>
<td>5.4</td>
<td>Low</td>
</tr>
<tr>
<td>2</td>
<td>Other Service Industries</td>
<td>38</td>
<td>4.7</td>
<td>Medium</td>
</tr>
<tr>
<td>3</td>
<td>Rubber Products Industries</td>
<td>285</td>
<td>3.7</td>
<td>Medium</td>
</tr>
<tr>
<td>4</td>
<td>Shoe, Fabric and Yarn Stores</td>
<td>656</td>
<td>3.3</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>Beverage Products Industry</td>
<td>27</td>
<td>2.8</td>
<td>Low</td>
</tr>
<tr>
<td>6</td>
<td>Food Industries</td>
<td>414</td>
<td>2.8</td>
<td>Low</td>
</tr>
<tr>
<td>7</td>
<td>Amusement and Recreational Service Industries</td>
<td>1150</td>
<td>2.5</td>
<td>Medium</td>
</tr>
<tr>
<td>8</td>
<td>Metal, Hardware, Plumbing, Heating and Building Supplies</td>
<td>947</td>
<td>2.2</td>
<td>Medium</td>
</tr>
<tr>
<td>9</td>
<td>Furniture and Fixture Industries</td>
<td>395</td>
<td>2.2</td>
<td>Low</td>
</tr>
<tr>
<td>10</td>
<td>Oil and Gas Industry</td>
<td>86</td>
<td>2.1</td>
<td>Medium</td>
</tr>
<tr>
<td>11</td>
<td>Non-Metallic Mineral Products</td>
<td>160</td>
<td>2.1</td>
<td>Medium</td>
</tr>
<tr>
<td>12</td>
<td>Publishing and Printing Industries</td>
<td>637</td>
<td>1.9</td>
<td>Medium</td>
</tr>
<tr>
<td>13</td>
<td>Mineral Extraction Services</td>
<td>369</td>
<td>1.7</td>
<td>Medium</td>
</tr>
<tr>
<td>14</td>
<td>Machinery Industry</td>
<td>729</td>
<td>1.7</td>
<td>High</td>
</tr>
<tr>
<td>15</td>
<td>Clothing Industry</td>
<td>183</td>
<td>1.7</td>
<td>Low</td>
</tr>
<tr>
<td>16</td>
<td>Wood Industries</td>
<td>317</td>
<td>1.6</td>
<td>Low</td>
</tr>
<tr>
<td>17</td>
<td>Department Stores and General Merchandise Stores</td>
<td>1397</td>
<td>1.3</td>
<td>Low</td>
</tr>
<tr>
<td>18</td>
<td>Fabricated Metal Products</td>
<td>1072</td>
<td>1.3</td>
<td>Medium</td>
</tr>
<tr>
<td>19</td>
<td>Accommodation Service Industry</td>
<td>2585</td>
<td>1.3</td>
<td>Low</td>
</tr>
<tr>
<td>20</td>
<td>Machinery Equipment and Supplies Wholesale</td>
<td>1130</td>
<td>1.3</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Contrary to popular belief, high growth firms are not concentrated in high-tech sectors. The top 20 industries listed in Table 1 were assigned a knowledge level\(^1\) that confirmed that high growth can be found anywhere, not solely in high-knowledge companies. Only one of the top 20 industries was deemed to be high knowledge, whereas 10 were medium knowledge and nine were low knowledge. The lone high-knowledge industry among the top 20 was the machinery industry, which ranked fourteenth.

**Young Firms Lead the Way in Job Creation**

Figure 4 shows the distribution of all firms in 1999 and the distribution of job creation between 1999 and 2003, by firm age. The LEAP database does not contain a firm age variable so one was created by subtracting the year of entry from 1999. Therefore, the years between 1991 and 1999 were used to create the firm age variable and job creation was measured over the last 4 years. Those firms that were in operation in the first year of the file (1991) were designated as “8 years or older.”

This analysis revealed that the bulk of jobs were created by firms in their first or second year of business (i.e. firm age 0 or 1), but that job creation was still strong for those firms in their third to eighth year of operation. Those firms that were 8 years or older, however, shed jobs as a group.

Job creation for firms in Canada appears to be quite different from that for firms in the United States. Figure 5 shows the distribution of job creation between 1995 and 1996 by firm age in 1996. According to Acs (2005), all net job creation in the United States comes from businesses in their first or second year of operation. Although the time periods are different for the Canadian and American data, they do suggest that, overall, Canadian business growth is more prolonged over the first 7 years of operation, whereas in the United States there would appear to be more churning taking place.

Survival rates were lowest in medium-sized firms and goods producers. Survival rates for the 1993 to 2003 period are shown by firm size in Figure 6. One third of businesses survived for 5 years and only one quarter were still operating after 9 years. Survival rates for the first year of operation were an anomaly relative to other years because micro and other small firms had higher survival rates than large businesses. This may be explained by the very small number of large businesses in Canada and perhaps due to the unusually large number of large businesses that ceased operating because of the recession from 1990 to 1992.

Survival was also examined by sector, region and growth groups. Among the broad industry sectors analyzed (goods producers, service providers and public sector), firms that operated in the public sector (as defined earlier under Data and Methodology) had the highest survival rates as more than half operated for at least 5 years. Businesses operating in goods-producing industries had lower survival rates over the first 5 years compared with those operating in service industries; after 5 years, however, there was no marked difference. The difference in survival rates between goods-producing and service industries over the early stages of a firm may be explained by the level of capital investment required to operate a goods-producing business. These investments may place a strain on cash flow and increase the initial chances of business failure.

Survival rates varied by province and tended to reflect the general economic health of each region. For example, firms in Atlantic Canada had significantly lower survival rates than all other regions in Canada. Only one quarter of firms in that region survived 5 years, whereas nearly 40 percent of firms in Quebec, Ontario, Alberta and British Columbia survived at least 5 years. Those operating in Saskatchewan and Manitoba also had lower survival rates than the average — only 32 percent of businesses operating in these provinces survived for at least 5 years.
Survival rates were also examined by growth category, but a slightly different methodology was employed. In order to assign firms to a growth category, they had to survive the first 4 years to be included in the triage period.

Strong growth firms had the highest survival rates, with nearly 70 percent of these businesses still operating 6 years after the triage period (Figure 7). Slow growth firms had a survival rate of 67 percent after the same period and hyper growth firms had a survival rate of 64 percent. Not surprisingly, declining firms had the lowest survival rate, with 59 percent still operating 6 years after the triage period. The overall average for all groups was 64 percent.

Hyper growth firms had a slightly lower survival rate than strong growth and slow growth firms, suggesting that there are risks involved in pursuing extremely high levels of growth. However, the potential returns from high growth business strategies can justify the risk.

Survival rates by growth category were also examined by firm size. Results showed that survival rates increased with firm size in all growth categories, regardless of the length of time examined. The proportion of large firms that were still operating 6 years after the triage period was 25 percentage points higher than that of micro firms. This gap between small and large businesses was greatest among slow growth and declining businesses.

Note that Figures 6 and 7 are not comparable because they illustrate survival rates for two different samples. Figure 6 illustrates survival rates for firms starting in year 0, whereas Figure 7 illustrates survival rates for firms starting in year 5. In other words, Figure 7 shows survival rates for firms that have already survived an initial 4-year period that was used to assign the firms to a growth category.
ARE FIRMS ABLE TO MAINTAIN THEIR GROWTH PATH?

To get a better idea of firms’ growth path, a second triage was conducted at the end of the 1993–2003 observation period to examine growth rates over two subperiods (the first four years versus the last four years). Figure 8 shows the distribution of firms at the beginning of the period (first triage) along the horizontal axis, while the vertical bars indicate in which growth category firms ended up at the end of the period (second triage).

As expected, very few firms were able to maintain high levels of growth over the entire 1993 to 2003 period. Of the 13 500 hyper growth firms in the first four years, only 4 percent were hyper growth firms at the end of the period, while 12 percent were categorized as strong growth firms. It is also important to note that some firms that were in the slow growth or declining firm categories in the first four years were able to improve their business’ performance and become hyper or strong growth firms. This suggests that the “hockey stick” model of growth (i.e. slow growth during the early stages of a firm’s life cycle, followed by a sudden takeoff of very high growth) likely does not apply to all firms. Instead, firms appear to reinvent themselves with innovation to achieve high levels of growth, which is consistent with the notion of product life cycles. Such a model of behaviour is consistent with a world envisioned by Joseph Schumpeter in which there is both job creation and destruction as firms leapfrog each other through innovation and development of new markets.

When the distribution of firms at the beginning of the period versus the end of the period was analyzed for each region of Canada, the results were similar to those illustrated in Figure 8 for each region except Alberta and British Columbia. In these two provinces, more hyper and strong growth firms were able to maintain high levels of growth over the 10-year period, reflecting very strong economic growth in this part of the country.
**How Does Growth Change Over the Business Cycle?**

The first phase of this growth firms project examined the 1985–1999 period and divided it into three subperiods (1985–1990, 1990–1993 and 1993–1999) to examine how growth groups fared over different segments of the business cycle. The three subperiods were selected based on fluctuations in the business cycle — the first and last subperiods were periods of economic growth, whereas the middle subperiod was a recessionary period. As with the rest of this project, firms were assigned to a growth category based on the first four years of the observation period (1985–1989).

As seen in Figure 9, hyper and strong growth firms weathered the recession (1990–1993) the best. The pre-recession annual growth rate of hyper growth firms was 34 percent, slowing to -0.5 percent during the recession and 2.8 percent after the recession. Similarly, strong growth firms grew at an annual rate of 13 percent during the first subperiod, declined by 1 percent during the recession and grew 2.1 percent annually over the final subperiod. Slow growth firms grew at an annual rate of 3.3 percent during the first subperiod and then declined at an annual rate of 1.4 percent during the recession. After the recession, slow growth firms had very minimal growth of 0.2 percent per year. Declining firms experienced a reduction in their rate of decline during the recession. Over the initial subperiod, declining firms shed jobs at an annual rate of 5 percent, whereas the rate of job destruction was 3.2 percent per year during the recession. After the recession, declining firms shed jobs at an annual rate of 0.6 percent.
How Effective are Strategies Such as Exporting at Helping Firms Achieve Growth?

Businesses can use different strategies to achieve their goals and exporting is one that has the potential to rapidly increase a firm’s sales and propel it to high levels of growth. This notion was tested by linking the Exporter Registry to the LEAP database to measure job creation by exporters relative to non-exporters between 1993 and 2002.³

Figure 10 shows the number of exporters and non-exporters that operated continuously between 1993 and 2002 and their job creation during that period. There were 307,000 non-exporters and they created 541,000 jobs, while the 18,000 exporters created 473,000 jobs. High growth exporters were even more impressive job creators. There were 4,400 hyper and strong growth exporters that created 363,000 jobs. Clearly, exporters created a disproportionate number of jobs — they accounted for 5.5 percent of firms, but created 47 percent of jobs.

In addition to being extraordinary job creators, exporters were more likely to be hyper or strong growth firms (Figure 11). In the smaller firm size categories, exporters were more than twice as likely to be hyper or strong growth firms; nearly half of micro firms that exported were hyper or strong growth firms.

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³ Data were matched across the Exporter Registry (which covers only goods exporters) and LEAP files for the year 2002. This matching, together with the survival condition, identified smaller numbers of exporters (18,000) than non-exporters (307,000) that operated continuously between 1993 and 2002.
DISCUSSION AND CONCLUSION

Growth firms research has demonstrated that, overall, the Canadian economy is a dynamic economy with a great deal of churning taking place. It is a Schumpeterian world of embracing change and moving forward. There is much adjustment in the small and medium-sized enterprise sector that goes largely unnoticed.

Among firms that operated continuously throughout the period studied, results demonstrate that a very small proportion of firms are responsible for the bulk of job creation in our economy. Moreover, this growth was found to be spread across all regions of the country and in all sectors of the economy. Small businesses were responsible for more than three quarters of the jobs created by continuing businesses; however, hyper and strong growth was not limited to small businesses.

Firms that pursue extremely high growth seem to have a higher risk of exiting the marketplace than strong and slow growth firms. However, the potential returns from high growth business strategies can justify the risk.

Measuring growth over multiple periods provided some insight into the growth path that firms follow. The process by which firms grow appears to be more complex than it is usually perceived to be. Very few firms were able to maintain very high growth over an extended period of time, but analysis revealed that a number of firms that were not growing in the 1993–1997 period were able to achieve very high levels of growth in the 1999–2003 period. This suggests that factors such as product cycles and innovation have important impacts on the growth patterns of firms, whereby they may fall behind but then reinvent themselves to leapfrog ahead of competitors, who in turn will go through the same reinvention/innovation process.

Work to date has served to increase our understanding of firm growth, but there remain many dimensions to examine further. Future work will aim to add a revenue variable to examine high growth defined on both a revenue and employment basis and thereby measure the economic impact of high growth businesses in terms of wealth. In addition, work is planned to examine innovative behaviour and its impact on firm growth.

Data Caveats

The employment unit used in these studies is known as an Individual Labour Unit (ILU), which is the best available employment unit for this type of study. However, it does have some drawbacks. Specifically, it is unable to differentiate between full-time and part-time, or seasonal, workers. In other words, it does not capture the amount of hours worked. Furthermore, the ILU cannot identify those individuals that work for non-employer businesses or owner–operators in employer firms unless they are on their own payroll. Therefore, a significant portion of self-employed business operators may not be recognized in these data.

A second caveat is warranted regarding the definition of growth. This series of studies defines growth as changes in employment, but growth can also be thought of in terms of revenue. A revenue variable is not available in the LEAP database, so there is currently no way to compare growth on a revenue basis with growth on an employment basis.

Another question often raised in the context of this project is the handling of mergers. The LEAP database treats mergers and acquisitions on a case-by-case basis, but it is believed that “false” births and deaths that occur when mergers or acquisitions take place have been removed. The principle method for detecting “false” births and deaths is tracking pools of employees’ social insurance numbers. If a large number of employees who appear in an exiting firm also appear in a new entrant, further investigation is undertaken and these cases are usually deemed to be a “false” birth or death and are corrected. Statistics Canada then rewrites the history of the two companies in the LEAP database and treats them as if they were always one company. Other methods used to detect “false” births and deaths involve name and address matching.
REFERENCES


