

Catalogue no. 11-622-M — No. 031  
ISSN 1705-6896  
ISBN 978-0-660-03341-9

## The Canadian Economy in Transition Series

# Unincorporated Self-employment in Canada, 1989 to 2010

by Sumaya Bahar and Huju Liu

Release date: October 8, 2015



Statistics  
Canada

Statistique  
Canada

Canada

---

## How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, [www.statcan.gc.ca](http://www.statcan.gc.ca).

You can also contact us by

email at [infostats@statcan.gc.ca](mailto:infostats@statcan.gc.ca)

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following toll-free numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-877-287-4369

### Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

## Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on [www.statcan.gc.ca](http://www.statcan.gc.ca) under “Contact us” > “Standards of service to the public.”

## Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

## Standard table symbols

The following symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- <sup>P</sup> preliminary
- <sup>r</sup> revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- <sup>E</sup> use with caution
- F too unreliable to be published
- \* significantly different from reference category ( $p < 0.05$ )

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2015

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

**An HTML version is also available.**

*Cette publication est aussi disponible en français.*

---

# Unincorporated Self-employment in Canada, 1989 to 2010

by

Sumaya Bahar and Huju Liu  
Economic Analysis Division, Statistics Canada

11-622-M No. 031

ISSN 1705-6896

ISBN 978-0-660-03341-9

## The Canadian Economy in Transition

**The Canadian Economy in Transition** is a series of analytical reports that investigate the dynamics of industrial change in the Canadian economy. This series brings together a coherent set of research reports that provide users with a wide variety of empirical perspectives on the economy's changing industrial structure. These perspectives include the dynamics of productivity, profitability, employment, output, investment, occupational structure and industrial geography. Readers are encouraged to contact the authors with comments, criticisms and suggestions.

All papers in **The Canadian Economy in Transition** series go through institutional and peer review to ensure that they conform to Statistics Canada's mandate as a government statistical agency, and adhere to generally-accepted standards of good professional practice.

The papers in the series often include results derived from multivariate analysis or other statistical techniques. It should be recognized that the results of these analyses are subject to uncertainty in the reported estimates.

The level of uncertainty will depend on several factors: the nature of the functional form used in the multivariate analysis, the type of econometric technique employed, the appropriateness of the statistical assumptions embedded in the model or technique, the comprehensiveness of the variables included in the analysis, and the accuracy of the data that are utilized. The peer-group review process ensures that the papers in the series have followed the accepted standards to minimize problems in each of these areas.



## Table of contents


|  |           |
|--|-----------|
| <b>Abstract .....</b>  | <b>5</b>  |
| <b>Executive summary .....</b>   | <b>6</b>  |
| <b>1 Introduction.....</b>   | <b>7</b>  |
| <b>2 Data and definitions: Who are the unincorporated self-employed?.....</b>              | <b>9</b>  |
| <b>3 Unincorporated self-employment overview .....</b>                                     | <b>10</b> |
| <b>4 The impact of demographic shifts on the unincorporated self-employment rate .....</b> | <b>13</b> |
| <b>5 Unincorporated self-employment categories .....</b>                                   | <b>16</b> |
| <b>6 Entry and exit .....</b>  | <b>19</b> |
| <b>7 Conclusion .....</b>  | <b>22</b> |
| <b>8 Appendix .....</b>  | <b>23</b> |
| <b>References .....</b>  | <b>25</b> |



## Abstract

Using administrative data from the Canada Revenue Agency, this study summarizes changes in the importance of the unincorporated self-employed over the period from 1989 to 2010. The aggregate unincorporated self-employment rate increased significantly during much of the 1990s, and declined after 1998. Although this post-1998 decline in self-employment was particularly large among the older age groups, the incidence of self-employment for these older cohorts remained considerably higher than for younger cohorts. Thus, over the entire study period, the aging of the population and the shift of employment to older age groups led to an increase in the aggregate self-employment rate. If these demographic changes had not occurred, the post-1998 decline in self-employment rate would have been greater than what was actually realized. Among different categories of self-employment, the self-employed in farming and fishing categories declined continuously over the past 20 years. The study also found that cyclical trends among different self-employment categories vary. The self-employed in the rental category tend to be more countercyclical, and those in the business category more procyclical. Unincorporated businesses generally have higher turnover rates (the sum of entry and exit) than the corporate sector.

**Keywords:** self-employment, demographic change, entry and exit, cyclicity



## Executive summary

Canada has a large group of unincorporated self-employed businesses that play a critical role in the early lifecycle of firms. This study presents summary statistics on the importance of a particular group of the self-employed: those whose primary source of income from employment comes from an unincorporated business.

The unincorporated self-employed measured in this study are those who file the Canada Revenue Agency's income tax return (the T1 form) and report self-employed income as the primary source of their income. The study spans the period from 1989 to 2010.

This study finds that the rate of self-employment in these unincorporated businesses increased during much of the 1990s, but declined during the post-1998 period. Although this post-1998 decline in self-employment was particularly large among the older age groups, the incidence of self-employment for these older cohorts remained considerably higher than for younger cohorts. Thus, over the entire study period, the aging of the population and the shift of employment to older age groups led to an increase in the aggregate self-employment rate. If these demographic changes had not occurred, the post-1998 decline in the self-employment rate would have been greater than what was actually realized.

Among the unincorporated self-employment categories, the fastest rate of growth between 1989 and 2010 was in the business category, followed by the rental and professional categories. Self-employment in the fishing and agriculture categories declined.

The cyclical trends of the entry to and exit from self-employment accord with a version of the push hypothesis, in that the entry to self-employment was generally higher during the 1990s when labour markets were weaker, and was lower in the late 1990s when labour markets were healthier.

The self-employment of unincorporated businesses is characterized by high annual turnover rates (the sum of entry and exit) of around 70% on average.



# 1 Introduction

Canada has a relatively large group of self-employed individuals who operate unincorporated businesses.<sup>1</sup> In 2014, there were more than 1.5 million Canadians engaged in unincorporated self-employment activities, accounting for 9% of total employment.<sup>2</sup>

The unincorporated self-employed are of interest for several reasons. This group provides a pool of entrepreneurial individuals who play a critical role in the early life cycle of firms. Davis et al. (2005) document that, in the United States during the late 1990s, the transition from non-employer firms (mostly unincorporated) to employer firms accounted for 28% of new employer firms and 20% of their revenues.<sup>3</sup>

Self-employment may also provide beneficial and satisfying activity outside the mainstream economic activities that involve paid employment. Self-employment also provides individuals with an alternative when paid employment opportunities decline during downturns in the economy.<sup>4</sup>

This study focuses on the unincorporated self-employed, those whose primary source of income comes from an unincorporated business. Unincorporated self-employment accounts for a much larger group of self-employed Canadians than incorporated self-employment, accounting for about 60% of total self-employment in 2014.<sup>5</sup> Generally, unincorporated self-employment is regarded as having lower entry and exit costs than incorporated self-employment. This facilitates opportunities for individuals across various types of unincorporated self-employment: to run their own businesses; to follow professional careers; to run farms or fishing operations; or to provide housing services to others through rental accommodation.

Most studies of self-employment have relied on survey data from the Labour Force Survey (LFS) or the Survey of Labour and Income Dynamics (SLID).<sup>6</sup> The present study uses administrative data derived from T1 individual tax forms filed by Canadians.<sup>7</sup> It covers the universe of individual tax filers, and can be used to develop consistent time series dating back to 1989. The advantages of using the administrative data instead of the LFS are: individuals can be followed over time in the administrative data, allowing for an examination of entry and exit into unincorporated self-employment; and the administrative files allow for a study of the unincorporated self-employment by income type (professional, business, farming, fishing and

---

1. See Rispoli (2009), Baldwin and Rispoli (2010), Baldwin, Leung and Rispoli (2011) for studies on the contribution of the unincorporated sector in the Canadian economy, on productivity trends in the Canadian unincorporated sector, and on a Canada–United States comparison of labour productivity in the unincorporated sector.

2. Source: Labour Force Survey (LFS) (CANSIM Table 282-0012, accessed on February 11, 2015).

3. Other studies on the transition between unincorporated and incorporated self-employed include Levine and Rubinstein (2013), Schoar (2010), and Mondragón-Vélez and Peña (2010).

4. See Aronson (1991), Casson (1991), Holmes and Schmitz (1990), Rosen (1983), and Kihlstrom and Laffont (1979) for examples of push and pull arguments.

5. Source: LFS (CANSIM Table 282-0012, accessed on February 11, 2015).


6. See, for example, Leung and Robinson (2011), LaRoche-Côté (2010), Lin, Garnett and Compton (2000), Kuhn and Schuetze (2001).

7. All statistics presented in this document are based on the T1 Historical Personal Master File. This file contains all data from individual Canadian T1 tax filers, including those who are unincorporated. The results of this study may differ from estimates produced in other studies, using different data sources and different methodologies.

rental), a categorization not available in the LFS. While it is possible to follow individuals over time and examine the unincorporated self-employed by earnings type in SLID, the number of individuals in SLID is small relative to what can be found in the administrative data. Using the universe of T1 tax filers enables the study of the dynamics of small populations in more detail. However, the administrative data are not as timely as the LFS data.

This study covers the period from 1989 to 2010. It first examines the changes in the number of unincorporated self-employed over time, and asks what percentage of total employment is unincorporated self-employed. It then examines how the tendency to create unincorporated businesses differs across age groups, and whether population aging has affected self-employment over time. It then asks whether the trends across fishing, farming, professional, rental and business categories have differed. Finally, it examines the entry and exit dynamics of individuals in unincorporated self-employment.





## 2 Data and definitions: Who are the unincorporated self-employed?

The database used in this paper is based on individual tax files (T1 files) from the Canada Revenue Agency (CRA) that span the period from 1988 to 2010. The T1 files cover all individuals in Canada who filed taxes. As such, the files provide an approximate number of unincorporated businesses.<sup>8</sup> They contain basic demographic information on each tax filer, such as age, gender, marital status, and geographic location. These files also provide detailed information on individual earnings and income, including various types of self-employment earnings (professional, business, farming, fishing, and rental), T4 paid employment earnings, and other employment earnings and income. These files enable studies of the population of the unincorporated self-employed in Canada over time.

In this paper, a person is considered to be unincorporated self-employed if she or he reports income for a given year in any of the five self-employment categories: business, professional, farming, fishing, or rental. The definition is further refined by selecting only those individuals for whom net self-employment incomes (the sum of net income from the above five categories) are positive, and are larger than earnings from paid employment during any given year.<sup>9</sup>

---

8. The number of unincorporated businesses is largely consistent with the number of unincorporated self-employed individuals as the majority of these businesses are sole proprietorships.

9. It is possible that some people own both unincorporated and incorporated businesses at the same time. However, as the paper includes only unincorporated self-employed individuals whose self-employment income is the major source of earnings, the universe of interest are all individuals for whom unincorporated self-employment is the main economic activity.



### **3 Unincorporated self-employment overview**

From 1989 to 2010, the self-employment rate, or the share of unincorporated self-employed workers in total employment,<sup>10</sup> averaged 10%, amounting to 1,715,483 unincorporated self-employed workers per year (Table 1). The rate increased from 8.4% in 1989 to a peak of 10.9% in 1998 (Chart 1 and Table 1). This period of increasing self-employment rates coincided with a period of elevated unemployment rates; over the 1989-to-1998 period, the average annual unemployment rate was 9.5%. As the unemployment rate declined in the subsequent decade, the self-employment rate declined as well, falling from its peak in 1998 to 10.1% in 2003. It remained close to that level until the end of the decade when it increased to 10.3% in 2010 as the unemployment rate rose.

---

10. This study defines total employment as individuals who report positive earnings in their annual income tax form (T1) that include earnings from employment (T4 earnings), self-employment income and other employment income.

**Table 1**  
**Number of unincorporated self-employed and unincorporated self-employment rate,**  
**Canada, 1989 to 2010**

|                       | <b>Total<br/>employment</b> | <b>Unincorporated<br/>self-employment</b> | <b>Unincorporated self-<br/>employment rate</b> | <b>Unemployment<br/>rate</b> |
|-----------------------|-----------------------------|---|---|------------------------------|
|                       | number                      |   | percent   |                              |
| 1989                  | 14,886,342                  | 1,253,251                                 | 8.4   | 7.5                          |
| 1990                  | 15,107,991                  | 1,275,997                                 | 8.5   | 8.1                          |
| 1991                  | 15,230,934                  | 1,289,131                                 | 8.5   | 10.3                         |
| 1992                  | 14,811,621                  | 1,354,724                                 | 9.2   | 11.2                         |
| 1993                  | 14,778,081                  | 1,429,147                                 | 9.7   | 11.4                         |
| 1994                  | 14,975,552                  | 1,523,023                                 | 10.2  | 10.4                         |
| 1995                  | 15,200,903                  | 1,584,271                                 | 10.4  | 9.5                          |
| 1996                  | 15,444,650                  | 1,661,205                                 | 10.8  | 9.6                          |
| 1997                  | 15,944,935                  | 1,742,560                                 | 10.9  | 9.1                          |
| 1998                  | 16,389,524                  | 1,787,556                                 | 10.9  | 8.3                          |
| 1999                  | 16,965,259                  | 1,812,484                                 | 10.7  | 7.6                          |
| 2000                  | 17,534,623                  | 1,818,757                                 | 10.4  | 6.8                          |
| 2001                  | 17,876,523                  | 1,834,968                                 | 10.3  | 7.2                          |
| 2002                  | 18,020,742                  | 1,844,769                                 | 10.2  | 7.7                          |
| 2003                  | 18,478,410                  | 1,873,082                                 | 10.1  | 7.6                          |
| 2004                  | 18,689,067                  | 1,880,239                                 | 10.1  | 7.2                          |
| 2005                  | 18,889,743                  | 1,917,719                                 | 10.2  | 6.8                          |
| 2006                  | 19,021,639                  | 1,921,756                                 | 10.1  | 6.3                          |
| 2007                  | 19,465,433                  | 1,972,510                                 | 10.1  | 6.0                          |
| 2008                  | 19,726,554                  | 1,977,448                                 | 10.0  | 6.1                          |
| 2009                  | 19,475,125                  | 1,971,929                                 | 10.1  | 8.3                          |
| 2010                  | 19,598,520                  | 2,014,098                                 | 10.3  | 8.1                          |
| <b>Annual average</b> | <b>17,114,190</b>           | <b>1,715,483</b>                          | <b>10.0</b>                                     | <b>8.2</b>                   |

**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

**Chart 1**  
**Unincorporated self-employment rate, Canada, 1989 to 2010**

percent



**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

## 4 The impact of demographic shifts on the unincorporated self-employment rate

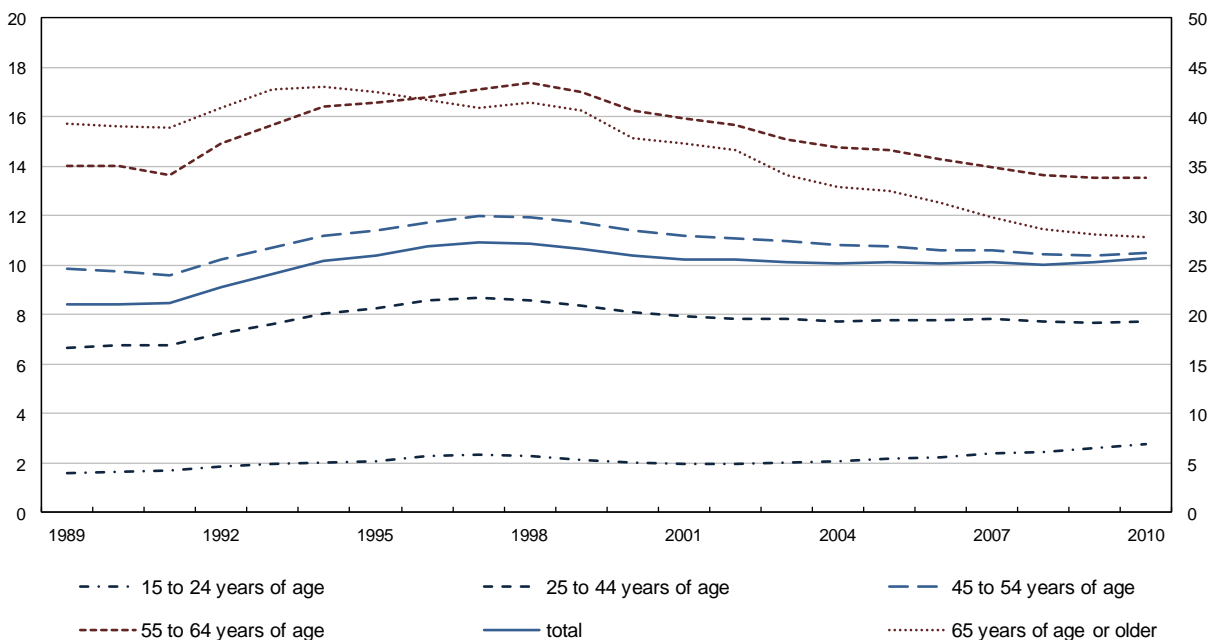
As noted in the previous section, the aggregate self-employment rate is calculated by dividing the number of self-employed individuals by total employment (the number of people who report either self-employment or employment income). This rate increased by 2.5 percentage points and declined gradually thereafter.

The age-group-specific self-employment rates shared similar upward movements from 1989 to 1998 and then downward trends post 1998 (Chart 2). Most age groups, with the exception of the youngest group, showed a decline. However, the older groups (55 to 64 and 65 or older) had a much larger decline after 1998 than other age groups. Nevertheless, the level of the self-employment rate of the older cohorts remained higher, in some cases significantly higher, than that of the younger cohorts.

**Chart 2**  
Within-age-group unincorporated self-employment rate, Canada, 1989 to 2010

self-employment rate, all age groups except 65 or older (percent)

self-employment rate, 65 or older (percent)

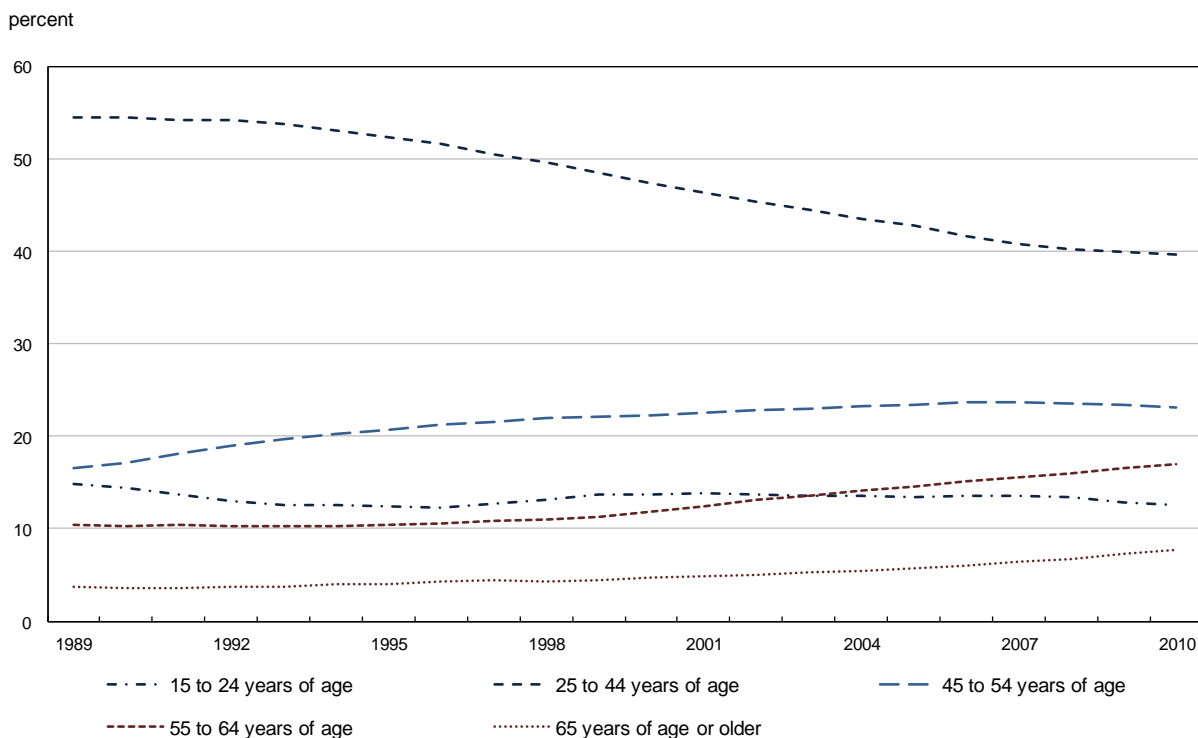


Source: Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

At the same time, the employment share of the older groups (aged 45 to 54, aged 55 to 64, and 65 or older) in total employment has increased, while that of younger groups has fallen (Chart 3). Between 1989 and 1998, the employment share of individuals aged 45 to 54 exhibited

the largest increase, rising 5.4 percentage points from 16.6% to 21.9%. It was the oldest age groups, those aged 55 to 64, and 65 or older, that showed the next greatest increases. Between 1998 and 2010, the employment share of those aged 55 to 64, and 65 or older, rose 6.0 percentage points and 3.3 percentage points, respectively. All the while, over nearly the entire period of study, the fraction of employment accounted for by those aged 25 to 44 fell. In 1989, 54.5% of total employment was composed of those aged 25 to 44. By 2010, only 39.7% of total employment was accounted for by those aged 25 to 44, a decline of 14.8 percentage points.

**Chart 3**  
Age group composition of total employment, Canada, 1989 to 2010



**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

Since older age groups tend to have higher self-employment rates, the increasing share of older age groups in total employment will tend to cause the aggregate self-employment rate to rise. This is because the aggregate self-employment rate is just a weighted average of the self-employment rates of the different cohorts. To ascertain the impact of changing demographics, the change in the aggregate self-employment rate is decomposed into the part due to changes in the within-age-group self-employment rates and the part due to changes in the age-group composition of total employment. The former holds the age-group composition fixed, and the latter holds the within-age-group self-employment rates fixed. This disentangles what is happening to the growth or decline in self-employment within age groups and the shift of employment towards those groups which have a higher rate of self-employment.

Let  $S_t$  be the aggregate self-employment rate at time  $t$ ;  $S_t^i$  the self-employment rate for each age group  $i$  at time  $t$ ; and  $\lambda_t^i$  the employment share of age group  $i$  at time  $t$ . The change in aggregate self-employment rate between any two time periods,  $t$  and  $t-k$ , can be mathematically represented by the following equation:

$$\begin{aligned}
S_t - S_{t-k} &= \sum_{i=1}^5 \lambda_t^i S_t^i - \sum_{i=1}^5 \lambda_{t-k}^i S_{t-k}^i \\
&= \sum_{i=1}^5 \frac{(\lambda_t^i + \lambda_{t-k}^i)}{2} (S_t^i - S_{t-k}^i) + \sum_{i=1}^5 \frac{(S_t^i + S_{t-k}^i)}{2} (\lambda_t^i - \lambda_{t-k}^i).
\end{aligned}
\tag{1}$$

The first component of the right-hand side of the equation represents the change that results from the within-age-group changes in self-employment rates, keeping the employment share of each group constant at the average of  $t$  and  $t-k$ . The second component represents the change due to the shift in the demographic composition (the change in the employment share of each age group), keeping the self-employment rate within each age group constant at the average of  $t$  and  $t-k$ . Table 2 shows the results of this decomposition for two sub-periods, 1989 to 1998 and 1998 to 2010.

**Table 2**  
**Decomposition of the change in the aggregate unincorporated self-employment rate, Canada, 1989 to 2010**

|              | Change in<br>aggregate self-employment<br>rate | Change in<br>within-age-group self-<br>employment rate<br>number | Change in age-<br>group composition |
|--------------|--|--|-------------------------------------|
| 1989 to 1998 | 0.025  | 0.019  | 0.005                               |
| 1998 to 2010 | -0.006   | -0.020   | 0.014                               |

**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

Over the 1989-to-1998 period, the self-employment rate increased in all age groups (Chart 2). At the same time, the aging of the population shifted employment to older age groups (Chart 3). As a result, the 2.5-percentage-point increase in the aggregate self-employment rate came from both a 1.9-percentage-point increase, due to the within-age-group component, and a 0.5-percentage-point increase that was due to a shift in the share of total employment to older age groups (Table 2). This means that the changes in the within-age-group self-employment rates contributed the most (78%) to the increase in aggregate self-employment rate, and the change in age-group composition contributed the rest (22%).

In the post-1998 period, the aggregate self-employment rate declined slightly by 0.6 percentage points (Table 2), from 10.9% in 1998 to 10.3% in 2010 (Table 1). The slight decline in the aggregate self-employment rate was a result of offsetting impacts of two underlying components, the decline in the self-employment rates in most age groups and the shift of employment to older cohorts. The within-age-group component contributed to a decline of 2.0 percentage points. Thus, if there were no changes in the age-group composition over the 1998-to-2010 period, the decline in the age-group-specific self-employment rates would have largely offset the 2.5-percentage-point increase in the aggregate self-employment rate observed in the 1989-to-1998 period. However, the effect of demographic change only increased after 1998. The change in age-group composition contributed to an increase of 1.4 percentage points in the aggregate self-employment rate after 1998, compared to a 0.5-percentage-point contribution in the 1989-to-1998 period. Thus, the ongoing change in demographic trends masks the size of the turnaround in self-employment rates after 1998.



## 5 Unincorporated self-employment categories

The CRA lists five categories of unincorporated self-employed: business, professional, farming, fishing and rental. The business category comprises those who sell a product and provide a service for a profit. Business income includes sales or fees. The professional category includes members of an officially recognized profession with a governing body (e.g., engineer, health professional, lawyer, and accountant). The farming category includes those who earn income as a sole-proprietor farmer or as a participant in a farm partnership. The fishing category includes those who earn their income as a sole-proprietor fisher or as a fisher in a fishing partnership. The rental category includes those who earn income from renting houses, apartments, rooms, spaces in an office building, and other real or movable property. An individual also falls into this category if he or she earns rental income by renting space and providing basic services, including heat, light, parking, and laundry facilities. If tenants receive additional services (e.g., cleaning, security, and meals), then this rental operation may be classified in the business category, rather than in the rental category.<sup>11</sup>

The relative importance of the unincorporated self-employed in total employment is expected to respond to changes in the relative advantage of self-employment over paid employment, the advantage of being unincorporated relative to being incorporated and the performance of those sectors where self-employment is particularly important.

Over the period studied, changes occurred in different sectors, specifically in those where the self-employed are particularly important. For example, there has been a steady decline in employment in the farming and fishing sectors. The decrease in the farming sector is due to a decline in the number of smaller farms and the emergence of large farming operations. Kamhi and Leung (2005) find that about 38% of the decline in self-employment, in the early 2000s, can be attributed to the decline in the agriculture industry.

Incorporated businesses have a number of advantages over unincorporated businesses, including the limited liability of shareholders, the unlimited life span of corporation, and a greater ability to raise capital. Meanwhile, the corporation tax rate in Canada was reduced in the 2000s, which may encourage the transition from unincorporated businesses to corporations.

From 1989 to 2010, the business category had the fastest annual growth rate among the unincorporated self-employment sectors at 3.5%, followed by the rental category at 2.6% (Table 3). The professional sector had a 1.3% annual growth rate over the full period, but has generally declined since 2000. In contrast, over the full period, the farming and fishing sectors declined by about 2% and 3% annually on average, respectively.

---

11. See CRA income tax guides T4002, T4003, T4004, and T4036 for details.



**Table 3**  
**Annual growth rate of unincorporated self-employment, by sector, 1989 to 2010**

|                       | <b>Business</b> | <b>Farming</b> | <b>Professional</b> | <b>Rental</b> | <b>Fishing</b> |
|-----------------------|-----------------|----------------|---------------------|---------------|----------------|
|                       |                 |                | percent             |               |                |
| 1989                  | 4.1             | -2.3           | 3.4                 | 0.3           | -4.9           |
| 1990                  | 4.9             | -7.0           | 5.0                 | 0.1           | -7.9           |
| 1991                  | 0.5             | -1.9           | 1.8                 | 5.7           | -2.5           |
| 1992                  | 5.9             | -1.0           | 3.5                 | 9.0           | 7.9            |
| 1993                  | 6.3             | 2.0            | 4.0                 | 8.5           | -3.8           |
| 1994                  | 8.5             | 0.7            | 4.4                 | 7.7           | 0.9            |
| 1995                  | 5.8             | -0.1           | 5.4                 | 1.4           | -3.6           |
| 1996                  | 7.4             | -0.2           | 2.0                 | 3.6           | -5.0           |
| 1997                  | 7.2             | -0.6           | 2.8                 | 4.0           | -8.6           |
| 1998                  | 4.2             | -3.5           | 1.8                 | 2.6           | -8.9           |
| 1999                  | 2.1             | -2.6           | 1.1                 | 1.2           | 5.5            |
| 2000                  | 1.0             | -0.7           | -0.2                | -1.0          | 0.4            |
| 2001                  | 1.1             | 1.0            | -1.0                | 1.4           | -0.6           |
| 2002                  | 0.5             | -4.0           | 0.1                 | 3.6           | 0.9            |
| 2003                  | 3.8             | -9.0           | 0.8                 | 0.0           | -0.5           |
| 2004                  | 1.4             | -3.1           | -0.6                | -0.7          | -3.0           |
| 2005                  | 3.9             | -0.2           | -1.2                | -1.1          | -8.2           |
| 2006                  | 1.8             | -5.8           | -1.3                | -1.4          | -6.7           |
| 2007                  | 4.4             | 2.1            | -1.7                | -1.1          | -1.1           |
| 2008                  | 0.5             | -1.2           | -0.6                | 1.2           | -7.3           |
| 2009                  | -1.5            | -2.6           | -1.9                | 7.7           | -7.4           |
| 2010                  | 2.2             | -0.8           | 0.4                 | 4.1           | 1.7            |
| <b>Annual average</b> | <b>3.5</b>      | <b>-1.8</b>    | <b>1.3</b>          | <b>2.6</b>    | <b>-2.8</b>    |

**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

In level terms, between 1989 and 2010, there were on average an additional 31,095 self-employed individuals in the business category each year (Table 4). This was followed by the rental sector, which had an additional 6,520 unincorporated self-employed individuals each year over the same period. The professional sector came after, with recorded average gains of 2,249 each year. In contrast, during the same period, the self-employed in the farming and fishing sectors fell by 3,293 and 849 each year on average, respectively.

**Table 4****Annual increase in the unincorporated self-employed, by sector, 1989 to 2010**

|                       | <b>Business</b> | <b>Farming</b> | <b>Professional</b> | <b>Rental</b> | <b>Fishing</b> |
|-----------------------|-----------------|----------------|---------------------|---------------|----------------|
|                       |                 |                | number              |               |                |
| 1989                  | 25,806          | -4,815         | 5,297               | 642           | -1,889         |
| 1990                  | 31,823          | -14,478        | 8,133               | 174           | -2,906         |
| 1991                  | 3,238           | -3,582         | 3,117               | 11,196        | -835           |
| 1992                  | 40,165          | -1,968         | 6,004               | 18,766        | 2,626          |
| 1993                  | 45,593          | 3,662          | 7,163               | 19,367        | -1,362         |
| 1994                  | 65,089          | 1,384          | 8,156               | 18,932        | 315            |
| 1995                  | 48,370          | -102           | 10,619              | 3,596         | -1,235         |
| 1996                  | 65,303          | -466           | 4,168               | 9,609         | -1,680         |
| 1997                  | 68,009          | -1,076         | 5,930               | 11,210        | -2,718         |
| 1998                  | 42,757          | -6,655         | 3,973               | 7,514         | -2,593         |
| 1999                  | 22,434          | -4,848         | 2,424               | 3,469         | 1,449          |
| 2000                  | 10,895          | -1,264         | -446                | -3,019        | 107            |
| 2001                  | 12,379          | 1,840          | -2,122              | 4,267         | -153           |
| 2002                  | 5,576           | -7,144         | 124                 | 10,998        | 247            |
| 2003                  | 42,192          | -15,564        | 1,812               | 18            | -145           |
| 2004                  | 16,195          | -4,833         | -1,347              | -2,031        | -827           |
| 2005                  | 46,183          | -263           | -2,706              | -3,511        | -2,223         |
| 2006                  | 21,600          | -8,772         | -2,834              | -4,289        | -1,668         |
| 2007                  | 54,943          | 3,059          | -3,547              | -3,435        | -266           |
| 2008                  | 6,271           | -1,796         | -1,291              | 3,437         | -1,683         |
| 2009                  | -19,428         | -3,688         | -4,073              | 23,236        | -1,566         |
| 2010                  | 28,707          | -1,075         | 913                 | 13,293        | 331            |
| <b>Annual average</b> | <b>31,095</b>   | <b>-3,293</b>  | <b>2,249</b>        | <b>6,520</b>  | <b>-849</b>    |

**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

The specific response to economic cycles also varies across self-employment categories. During the recession in the early 1990s, the number of self-employed people engaged in rental activities increased in the range of 6% to 9%, and, during the 2008/2009 recession, this number increased by about 8% (Table 3). Participation in this category appears to be countercyclical; when general economic conditions and labour markets deteriorated, self-employment in rental and leasing activities increased. In contrast, self-employment in the business category appears to be procyclical. When overall business activity declined, the growth in the self-employment in the business category also slowed, as was observed during the 1991/1992 recession, the early 2000s, and the 2008/2009 recession.



## 6 Entry and exit

Data on the entry and exit of the newly unincorporated self-employed also provide insights into the nature of the dynamics of self-employed businesses. These data provide information on the size of the group of self-employed who are experimenting with a new business. And, as such, these data are sometimes interpreted as a measure of the amount of entrepreneurship. On the other hand, exit rates reflect the failure of established self-employed entrepreneurs—which usually occurs as a result of competitive dynamics and other factors. The extent of entry to and exit from unincorporated self-employment can provide a benchmark that can be used to compare the intensity of the process in this sector, as opposed to the sector of employers and corporations for which extensive data are available.<sup>12</sup>

Following Lin, Yates and Picot (1999), entries consist of income-tax filers who report earnings from self-employment in one year, but not the previous year. Exits occur when the income tax filer reports earnings from self-employment in one year, but not the next. The self-employment rate is the number of self-employed calculated as a percentage of total employment (all tax filers with positive earnings). The entry and exit rates are the number of entries and exits calculated as a fraction of total self-employment.

During the 1989-to-2010 period, there were major flows, both into and out of unincorporated self-employment. Between 1989 and 2010, an average of over half a million Canadians became self-employed every year by starting their own business ventures.<sup>13</sup> This amounted to 36% of the unincorporated self-employed population. On the other hand, during this same period, almost half a million unincorporated self-employed workers discontinued their businesses every year—accounting for 33% of those with unincorporated businesses. These entry and exit rates are substantially higher than those for employer firms reported by Ciobanu and Wang (2012). Between 2000 and 2008, similarly defined Canadian-firm entry rates for employer firms (both corporate and unincorporated with employees) averaged 10.8%, while exit rates averaged 9.0%.

Overall, between 1989 and 2010, the gross flows into and out of unincorporated self-employment averaged 1.2 million per year, amounting to 70% of the total unincorporated self-employed population. During the same period, entries outnumbered exits every year, with the unincorporated self-employment sector gaining an average of 53,369 individuals per year (Table 5).

Many studies in the literature have examined the cyclical nature of self-employment, and in particular, the movement of self-employment with relation to unemployment rates. However, there is little consistent evidence of this cyclicity of self-employment across countries. The cyclicity of self-employment is often described as originating from push factors or pull factors.

---

12. There are other factors that may affect self-employment entry and exit, but are not related to Schumpeterian creative destruction. They include: 1) Some professions are self-employed by their nature (doctors, lawyers, etc.). 2) Some individuals are “pushed” into self-employment due to lack of other employment opportunities. 3) Older self-employed individuals simply retire (Uppal 2011).

13. To the extent that individuals may have started more than one business, the actual number of businesses started would have been larger. And, if existing entrepreneurs start another business, the overall figure would be even larger.

**Table 5**  
**Unincorporated self-employment entry and exit flows, Canada, 1989 to 2010**

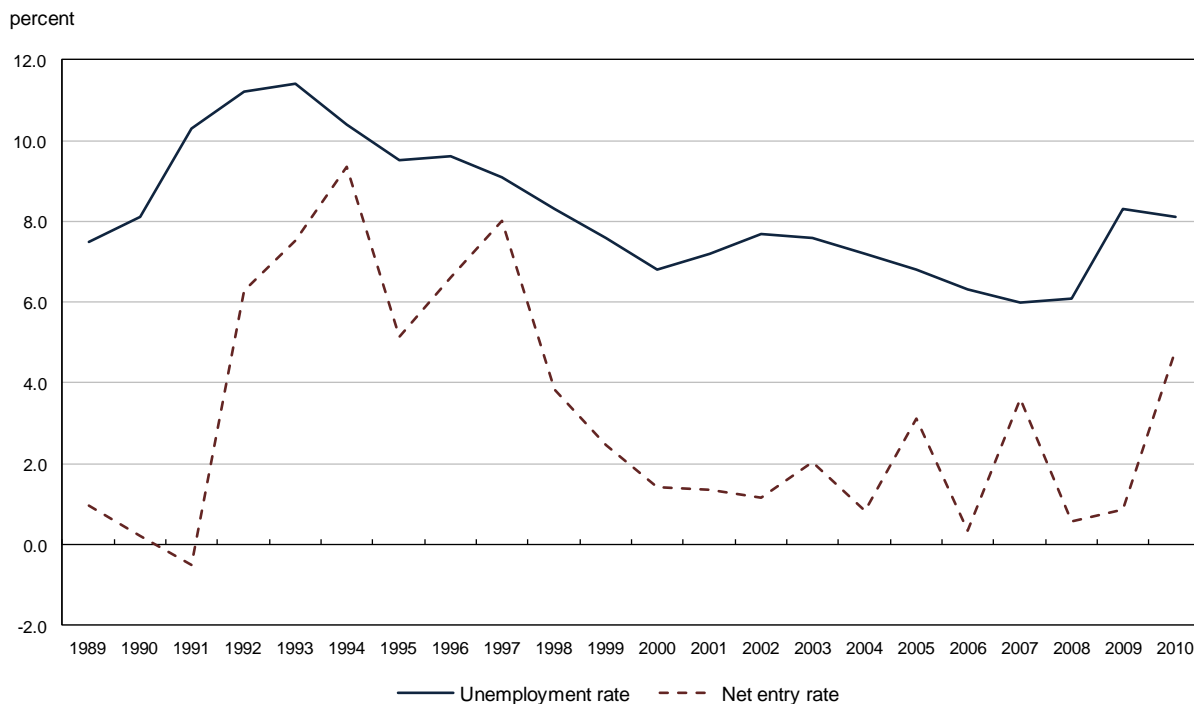
|                | Unincorporated self-employment | Entry          | Entry rate<br>(column 2 divided by column 1) | Exit           | Exit rate<br>(column 4 divided by column 1) | Gross flow<br>(column 2 plus column 4) | Gross flow rate<br>(column 6 divided by column 1) | Net flow<br>(column 2 minus column 4) | Net flow rate<br>(column 8 divided by column 1) |
|----------------|--------------------------------|----------------|--|----------------|---|--|---|---------------------------------------|---|
|                | Column 1                       | Column 2       | Column 3                                     | Column 4       | Column 5                                    | Column 6                               | Column 7  | Column 8                              | Column 9  |
|                | number                         | number         | percent                                      | number         | percent                                     | number                                 | percent   | number                                | percent   |
| <b>Year</b>    |                                |                |  |                |   |  |   |                                       |   |
| 1989           | 1,253,251                      | 467,995        | 37.3   | 456,072        | 36.4  | 924,067                                | 73.7  | 11,923                                | 1.0   |
| 1990           | 1,275,997                      | 475,329        | 37.3   | 472,917        | 37.1  | 948,246                                | 74.3  | 2,412                                 | 0.2   |
| 1991           | 1,289,131                      | 466,777        | 36.2   | 473,290        | 36.7  | 940,067                                | 72.9  | -6,513                                | -0.5  |
| 1992           | 1,354,724                      | 520,132        | 38.4   | 435,145        | 32.1  | 955,277                                | 70.5  | 84,987                                | 6.3   |
| 1993           | 1,429,147                      | 549,445        | 38.4   | 442,030        | 30.9  | 991,475                                | 69.4  | 107,415                               | 7.5   |
| 1994           | 1,523,023                      | 602,576        | 39.6   | 460,038        | 30.2  | 1,062,614                              | 69.8  | 142,538                               | 9.4   |
| 1995           | 1,584,271                      | 592,353        | 37.4   | 510,687        | 32.2  | 1,103,040                              | 69.6  | 81,666                                | 5.2   |
| 1996           | 1,661,205                      | 618,871        | 37.3   | 509,233        | 30.7  | 1,128,104                              | 67.9  | 109,638                               | 6.6   |
| 1997           | 1,742,560                      | 663,727        | 38.1   | 524,331        | 30.1  | 1,188,058                              | 68.2  | 139,396                               | 8.0   |
| 1998           | 1,787,556                      | 642,515        | 35.9   | 574,101        | 32.1  | 1,216,616                              | 68.1  | 68,414                                | 3.8   |
| 1999           | 1,812,484                      | 625,509        | 34.5   | 580,822        | 32.0  | 1,206,331                              | 66.6  | 44,687                                | 2.5   |
| 2000           | 1,818,757                      | 618,813        | 34.0   | 592,896        | 32.6  | 1,211,709                              | 66.6  | 25,917                                | 1.4   |
| 2001           | 1,834,968                      | 617,560        | 33.7   | 593,036        | 32.3  | 1,210,596                              | 66.0  | 24,524                                | 1.3   |
| 2002           | 1,844,769                      | 616,136        | 33.4   | 595,128        | 32.3  | 1,211,264                              | 65.7  | 21,008                                | 1.1   |
| 2003           | 1,873,082                      | 647,462        | 34.6   | 609,365        | 32.5  | 1,256,827                              | 67.1  | 38,097                                | 2.0   |
| 2004           | 1,880,239                      | 639,566        | 34.0   | 623,758        | 33.2  | 1,263,324                              | 67.2  | 15,808                                | 0.8   |
| 2005           | 1,917,719                      | 691,439        | 36.1   | 631,887        | 32.9  | 1,323,326                              | 69.0  | 59,552                                | 3.1   |
| 2006           | 1,921,756                      | 672,385        | 35.0   | 665,625        | 34.6  | 1,338,010                              | 69.6  | 6,760                                 | 0.4   |
| 2007           | 1,972,510                      | 741,686        | 37.6   | 670,823        | 34.0  | 1,412,509                              | 71.6  | 70,863                                | 3.6   |
| 2008           | 1,977,448                      | 705,182        | 35.7   | 694,067        | 35.1  | 1,399,249                              | 70.8  | 11,115                                | 0.6   |
| 2009           | 1,971,929                      | 707,920        | 35.9   | 690,843        | 35.0  | 1,398,763                              | 70.9  | 17,077                                | 0.9   |
| 2010           | 2,014,098                      | 779,880        | 38.7   | 683,050        | 33.9  | 1,462,930                              | 72.6  | 96,830                                | 4.8   |
| <b>Average</b> | <b>1,715,483</b>               | <b>621,057</b> | <b>36.3</b>                                  | <b>567,688</b> | <b>33.1</b>                                 | <b>1,188,746</b>                       | <b>69.5</b>                                       | <b>53,369</b>                         | <b>3.2</b>                                      |

Source: Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.


Push factors cause entry to self-employment because of lack of satisfactory paid employment, while pull factors are related to new, more profitable opportunities in self-employment. For some countries, such as the United Kingdom, Germany, Norway and Sweden, higher unemployment increases self-employment (push factors predominate) (Blanchflower, 2000). For others, such as Austria, Denmark, and Finland, the unemployment rate negatively affects self-employment (pull factors predominate). Lin, Garnett and Compton. (2000) report that, in Canada, from the 1980s to the 1990s, unemployment had no impact on entry to self-employment, but had a negative impact on exit.

Chart 4 presents the trajectory of the net entry rate of unincorporated self-employment and the unemployment rate for Canada over the period studied. The push hypothesis argues that self-employment and entry into self-employment increase when business conditions deteriorate (when the unemployment rate increases), and vice versa. There are also fewer exits from self-employment when the unemployment rate is high, as the chance of finding alternative paid employment opportunities declines. These imply that the net entry rate (the difference between the entry and exit rates) increases when the unemployment rate is high and decreases when the unemployment rate is low. The patterns exhibited in Chart 4 are generally consistent with the push hypothesis. The net entry rate was higher in the early 1990s when unemployment was high and generally declined over the decade as labour market conditions improved. With the exception of 2005 and 2007, the net entry rate remained low in the 2000s when the unemployment rate was relatively low. More recently in 2010, the rise of the net entry rate coincided with a return to higher unemployment after the last recession. Over the entire 1989-to-2010 period, the correlation between the net entry rate and the unemployment rate is 0.63. The correlation between the entry rate and the unemployment rate is 0.60 and the correlation between the exit rate and the unemployment rate is -0.37, both consistent with the push hypothesis.

**Chart 4**  
**Net entry rate of unincorporated self-employment and unemployment rate, Canada, 1989 to 2010**



**Sources:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010, and Labour Force Survey.



## 7 Conclusion

This study focuses on self-employed individuals who operate unincorporated businesses and derive the primary source of labour income from self-employment activities. This study finds that the rate of self-employment in these unincorporated businesses increased during much of the 1990s, but declined during the post-1998 period. Demographic changes mask the size of the post-1998 decline. When these changes are accounted for, the decline in self-employment rate increases.

There are large differences in participation in unincorporated self-employment across age groups. Those between the ages of 55 and 64 are more than twice as likely to have an unincorporated enterprise as those between the ages of 25 and 44. Moreover, the post-1998 decline in the incidence of self-employment was particularly large in the older age groups. This is significant if this group provides the group of entrepreneurs that society relies on to nurture firms through their early life cycle. But it could also simply indicate that the older age cohorts are more sensitive to labour market conditions and, because of a lifetime of accumulated experience and human capital, have greater opportunities in alternate paid vocations. In this case, the improved post-1998 labour market conditions allowed them to find greater opportunities in paid employment.

The long-term cycle that saw an increase in the rate of unincorporated self-employment and its subsequent decline accords with a version of the push hypothesis: self-employment was generally higher in the decade of the 1990s, when labour markets were weaker, and fell in the late 1990s, when labour markets improved. In the early to mid-1990s, entry to self-employment far exceeded exits when unemployment was high, but was more or less the same in the post-1998 period when labour markets strengthened. The weaker labour markets of the 1990s were associated with more individuals experimenting with new businesses. There were also fewer existing businesses that were dissolved, perhaps because the opportunities for paid employment elsewhere were less attractive. Interestingly, entry and exit were more balanced during the subsequent decade as exit rates gradually increased.

The self-employment of unincorporated businesses exhibits higher turnover rates (the sum of entry and exit) than firms with employment. The annual turnover rates (the sum of entry and exit) for the latter were around 20% in the early part of the post-2000 period, but were around 70% for the unincorporated businesses examined here.

## 8 Appendix

**Table 6**  
**Total employment by age group, Canada, 1989 to 2010**

| Year | Age group |           |           |           |             |
|------|-----------|-----------|-----------|-----------|-------------|
|      | 15 to 24  | 25 to 44  | 45 to 54  | 55 to 64  | 65 or older |
|      |           |           | number    |           |             |
| 1989 | 2,206,439 | 8,111,927 | 2,463,069 | 1,552,756 | 545,510     |
| 1990 | 2,183,590 | 8,231,628 | 2,595,313 | 1,545,420 | 545,375     |
| 1991 | 2,078,118 | 8,253,494 | 2,759,010 | 1,580,950 | 553,262     |
| 1992 | 1,916,305 | 8,017,905 | 2,805,828 | 1,515,001 | 551,157     |
| 1993 | 1,855,517 | 7,945,630 | 2,903,555 | 1,511,109 | 556,934     |
| 1994 | 1,870,587 | 7,943,829 | 3,023,454 | 1,540,599 | 591,180     |
| 1995 | 1,883,219 | 7,964,170 | 3,149,028 | 1,580,611 | 617,052     |
| 1996 | 1,898,774 | 7,968,903 | 3,272,072 | 1,641,547 | 654,578     |
| 1997 | 2,027,099 | 8,057,817 | 3,428,919 | 1,722,503 | 696,499     |
| 1998 | 2,142,665 | 8,130,454 | 3,589,304 | 1,798,008 | 714,541     |
| 1999 | 2,315,285 | 8,212,875 | 3,756,964 | 1,916,414 | 746,995     |
| 2000 | 2,409,894 | 8,299,790 | 3,903,286 | 2,084,721 | 818,302     |
| 2001 | 2,484,383 | 8,273,837 | 4,014,369 | 2,225,029 | 860,390     |
| 2002 | 2,477,229 | 8,170,291 | 4,102,158 | 2,355,849 | 896,393     |
| 2003 | 2,506,217 | 8,219,811 | 4,249,243 | 2,516,629 | 969,111     |
| 2004 | 2,523,919 | 8,134,760 | 4,340,102 | 2,643,509 | 1,022,708   |
| 2005 | 2,537,328 | 8,082,256 | 4,429,345 | 2,752,388 | 1,072,214   |
| 2006 | 2,565,136 | 7,912,385 | 4,504,492 | 2,874,624 | 1,148,685   |
| 2007 | 2,625,553 | 7,935,653 | 4,600,839 | 3,035,481 | 1,251,107   |
| 2008 | 2,636,943 | 7,937,905 | 4,645,756 | 3,156,875 | 1,333,393   |
| 2009 | 2,498,610 | 7,763,319 | 4,561,709 | 3,230,292 | 1,407,143   |
| 2010 | 2,465,443 | 7,775,933 | 4,519,598 | 3,315,857 | 1,508,534   |


**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.

**Table 7**  
**Unincorporated self-employment by age group, Canada, 1989 to 2010**

| Year | Age group |          |          |          |             |
|------|-----------|----------|----------|----------|-------------|
|      | 15 to 24  | 25 to 44 | 45 to 54 | 55 to 64 | 65 or older |
|      | number    |          |          |          |             |
| 1989 | 35,475    | 541,660  | 243,028  | 217,908  | 214,441     |
| 1990 | 35,840    | 556,510  | 253,696  | 216,515  | 212,604     |
| 1991 | 34,919    | 557,399  | 265,016  | 215,913  | 215,129     |
| 1992 | 35,377    | 580,115  | 286,866  | 225,918  | 225,708     |
| 1993 | 36,541    | 605,425  | 310,813  | 237,021  | 238,422     |
| 1994 | 38,195    | 638,100  | 338,456  | 253,110  | 254,096     |
| 1995 | 39,343    | 659,674  | 359,516  | 261,853  | 262,677     |
| 1996 | 43,552    | 683,178  | 384,223  | 275,990  | 272,740     |
| 1997 | 48,130    | 701,174  | 410,839  | 295,130  | 285,382     |
| 1998 | 49,079    | 699,319  | 428,769  | 312,516  | 295,649     |
| 1999 | 49,639    | 689,333  | 441,411  | 326,010  | 303,688     |
| 2000 | 49,081    | 672,491  | 445,745  | 338,775  | 310,185     |
| 2001 | 49,219    | 657,551  | 450,025  | 355,171  | 320,616     |
| 2002 | 49,173    | 641,035  | 455,058  | 368,593  | 328,599     |
| 2003 | 50,833    | 643,600  | 465,748  | 380,376  | 330,350     |
| 2004 | 52,728    | 629,186  | 468,978  | 390,056  | 336,480     |
| 2005 | 55,860    | 629,917  | 477,779  | 403,417  | 348,555     |
| 2006 | 57,226    | 615,413  | 477,542  | 409,942  | 359,518     |
| 2007 | 62,425    | 623,932  | 487,623  | 423,534  | 372,947     |
| 2008 | 63,949    | 613,618  | 484,432  | 430,986  | 382,575     |
| 2009 | 65,687    | 596,785  | 474,502  | 437,444  | 395,880     |
| 2010 | 67,996    | 601,560  | 474,333  | 448,430  | 420,237     |

**Source:** Statistics Canada, authors' calculations based on data from the T1 Historical Personal Master File, 1988 to 2010.





## References

- Aronson, R.L. 1991. *Self-Employment: A Labor Market Perspective*. Ithaca, N.Y.: ILR Press.
- Baldwin, J., L. Bain, R. Dupuy, and G. Gellatly. 2000. *Failure rates for new Canadian firms: new perspectives on entry and exit*. Statistics Canada Catalogue no. 61-526-X. Ottawa: Statistics Canada.
- Baldwin, J., D. Leung and L. Rispoli. 2011. *Labour Productivity of Unincorporated Sole Proprietorships and Partnerships: Impact on the Canada-United States Productivity Gap*. Economic Analysis Research Paper Series, no. 071. Statistics Canada Catalogue no. 11F0027M. Ottawa: Statistics Canada.
- Baldwin, J., and L. Rispoli. 2010. *Productivity Trends of Unincorporated Enterprises in the Canadian Economy, 1987 to 2005*. The Canadian Productivity Review, no. 28. Statistics Canada Catalogue no. 15-206-X. Ottawa: Statistics Canada.
- Blanchflower, D. 2000. "Self-Employment in OECD Countries." *Labour Economics* 7 (5): 471–505.
- Casson, M., 1991. *The Entrepreneur: An Economic Theory (Modern Revivals in Economics)*. Worcester: Billing and Sons Ltd.
- Ciobanu, O., and W. Wang. 2012. *Firm Dynamics: Firm Entry and Exit in Canada, 2000 to 2008*. The Canadian Economy in Transition, no. 22. Statistics Canada Catalogue no. 11-622-M. Ottawa: Statistics Canada.
- Davis, S., J. Haltiwanger, R. Jarmin, C. Krizan, J. Miranda, A. Nucci, and K. Sandusky. 2005. *Measuring the dynamics of young and small businesses, integrating the employer and nonemployer universes*. National Bureau of Economic Research Working Paper Series, no. 13226. Cambridge, Massachusetts: National Bureau of Economic Research.
- Holmes, T.J., and J.A. Schmitz. 1990. "A Theory of Entrepreneurship and Its Application to the Study of Business Transfers." *Journal of Political Economy* 98 (2): 265–294.
- Kamhi, N., and D. Leung. 2005. "Recent Developments in Self-employment in Canada." Bank of Canada Working Paper, 2005-8. Ottawa: Bank of Canada.
- Kihlstrom, R.E., and J.J. Laffont. 1979. "A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion." *Journal of Political Economy* 87 (4): 719–748.
- Kuhn, P., and H. Schuetze. 2001. "Self-Employment Dynamics and Self-Employment Trends: A Study of Canadian Men and Women, 1982–1998." *Canadian Journal of Economics* 34 (3): 760–784.
- LaRochelle-Côté, S. 2010. "Self-employment in the downturn." *Perspectives on Labour and Income* 11 (3): 5–13. Statistics Canada Catalogue no. 75-001-X.

- Leung, D., and C. Robinson. 2011. *The dynamics of male self-employment in Canada: comparing the 1990s to the 2000s*. Economic Analysis Research Paper Series, no. 73. Statistics Canada Catalogue no. 11F0027M. Ottawa: Statistics Canada.
- Levine, R., and Y. Rubinstein. 2013. *Smart and illicit: Who becomes an entrepreneur and does it pay?* National Bureau of Economic Research Working Paper Series, no. 19276. Cambridge, Massachusetts: National Bureau of Economic Research.
- Lin, Z., P. Garnett, and J. Compton. 2000. "The entry and exit dynamics of self-employment in Canada." *Small Business Economics* 15 (2): 105–125.
- Lin, Z., J. Yates and G. Picot. 1999. *Rising Self-employment in the Midst of High Unemployment: An Empirical Analysis of Recent Developments in Canada*. Analytical Studies Branch Research Papers Series, no. 133. Statistics Canada Catalogue no. 11F0019M. Ottawa: Statistics Canada.
- Mondragón-Velez, C., and X. Peña. 2010. "Business ownership and self-employment in developing economies: the Colombian case." *International Differences in Entrepreneurship*, ed. J. Lerner and A. Schoar, p. 89–127. National Bureau of Economic Research. Chicago: University of Chicago Press.
- Rispoli, L. 2009. *Measuring the Contribution of the Unincorporated Sector in the Canadian Economy, 1997 to 2002*. Insights on the Canadian Economy, no. 23. Statistics Canada Catalogue no. 11-624-M. Ottawa: Statistics Canada.
- Rosen, S. 1983. "Economics and Entrepreneurs." In *Entrepreneurship*, ed. J. Ronen, p. 301–310. Lexington, Massachusetts: Lexington Books.
- Schoar, A. 2010. "The divide between Subsistence and Transformational Entrepreneurship." In *Innovation Policy and the Economy*, ed. J. Lerner and S. Stern, p. 57–81. National Bureau of Economic Research. Chicago: University of Chicago Press.
- Uppal, S. 2011. "Seniors' Self-employment." *Perspective on Labour and Income* 23 (1): 3–14. Statistics Canada Catalogue no. 75-001-X.