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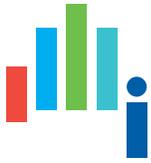
# Self-Employment at Older Ages in Canada

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**Cahier de recherche**  
**Working paper**  
Février / February 2020





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Dépôt légal : Bibliothèque et Archives nationales du Québec et Bibliothèque et Archives Canada, 2020. ISSN 2563-0008



# Self-Employment at Older Ages in Canada

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February 2020

## Abstract

This paper examines the work motivations and incentives of employees and self-employed workers near retirement age. We use a sample of Canadians 50 years and older taken from LISA, the Longitudinal and International Study of Adult. Results are as follows. Poverty is associated positively with the transition from employment to self-employment after 50. Optimism appears to explain in part why employees decide to do the switch. For respondents who were self-employed at least once between 50 and 64 years old, it appears that having had prior self-employment experience does not reduce significantly the probability of being poor after 65.

**JEL Classification :** E24, E32, J14, J20, L26

**Keywords:** self-employment, elderly, retirement, Canada, poverty

**Mots clés :** travail autonome, aînés, retraite, Canada, pauvreté

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Email:fonseca.raquel@uqam.ca. This research is also part of the program of the Research Chair in Intergenerational Economics. Errors are our own.

†Some analyses reported in this paper were conducted at the Quebec Interuniversity Centre for Social Statistics (QICSS), which is part of the CRDCN. The services and activities provided by the QICSS are made possible by the financial or in-kind support of the SSHRC, CIHR, the CFI, Statistics Canada, FRQSC and the Quebec universities. The views expressed in this paper are those of the authors, and not necessarily those of the CRDCN or its partners.

# 1 Introduction

Throughout the rich world, older adults remain healthier and live longer than before. They also work for longer. In this regard, the self-employed are a particularly interesting case because they have been known for years to stretch their working lives until later than their employee counterpart. Some of them are even ex-employees who did the switch at a time when their colleagues were retiring. Why?

Answering this question is crucial, especially in a context where pressures are mounting in many countries to prolong working lives to better support a growing number of retirees. Around the world, many governments are enacting or considering policy changes to push workers to work longer, or at least to prevent them from leaving the workforce earlier than they otherwise would, but the success of such policies rest on the good understanding of demand- and supply-side factors affecting work continuation decisions. Yet, our understanding of worker's motivations or incentives to keep working is still limited. We do not know much, for one, about factors that workers take into consideration when they choose to enter self-employment at older ages. Neither do we know very well the factors self-employed workers take into consideration when they choose to work for longer than their employee counterparts.

One factor may be the work-hour rigidity of employment: certain firms, especially those using team production or facing high fixed costs of employment, impose on their workers a schedule or restrict hours of work, which make it difficult for older workers to realize their desired trajectory from work to retirement. Studying this question, Blau and Shvydko (2011) finds evidence suggesting that, indeed, older workers with a desire for short or flexible hours of work are attracted to firms who use flexible technology and care only about total hours of labor input, but not hours of work per worker. Considering such results, it may be possible that certain older workers also choose self-employment because of the flexibility it allows.

Health might be another answer. Zissimopoulos and Karoly (2007A), for instance, find that work-limiting health conditions increase the likelihood of an employed worker moving to self-employment at older ages. But on the other hand, it is also true that a health problem may reduce one's ability to run a business. And the research does indeed lend some credence to this idea. Cahill et al. (2013), for example, find for the U.S. that a better health affected positively the probability of switching. In Britain, Parker and Rougier (2007) find that individuals aged 55 to 69 in poor health are significantly less likely to choose a spell of self-employment, while Harris et al. (2016) finds a negative relationship between ill health and self-employment participation in Australia. Yet other analyses like that of Fuchs (1982) fail to find a significant relationship.

If we now consider poverty, it becomes clearer that self-employment at older ages may not always be a choice. The literature provides hints that this may indeed be the case. In Canada, for example, the working poor are more likely to be self-employed (Fleury and Fortin, 2004). Evidence from the US (Moulton and Scott, 2016) also shows that job loss is strongly associated with entry into self-employment at older ages, particularly with less desirable forms of self-employment. But the link between poverty and self-employment has been little pursued, especially for workers of older ages.

To better understand the incentives behind self-employment and labour force continuation at older ages, this article provides a detailed analysis of self-employment among retiring Canadian workers of 50 years and older. To do so, we use data from LISA, the Longitudinal and International Study of Adult, covering the years 2001-2014. First, we construct hazard models to better understand the determinants of transitions from employment to self-employment. Second, we look at the factors affecting the probability of transition from from employment to self-employment after 65.

We find that poverty is found to be associated positively with the transition from employment to self-employment after 50. The hypothesis made to explain this observation — that those who do the transition are more likely to be optimistic, compared to those

who do not — appears to hold as we find that employees who tend not to see themselves as “a person who worries a lot”, our measure of optimism, are significantly more likely to do the switch. Self-employment experience in the decade prior appears to increase annual earnings only for those who are self-employed. Finally, for respondents who were self-employed at least once between 50 and 64 years old, it appears that having had prior self-employment experience does not reduce significantly the probability of being poor after 65. In other words, even if starting a new self-employment venture late in one working life might be considered more risky for those who do not have self-employment experience, it appears that having self-employment experience does not change significantly the probability to be poor after 65 for those who start a self-employment venture between 50 and 64.

The paper is structured as follows. First, we briefly review the literature to present the conceptual framework. Then, Section 3 describes the data and methodology as well as a few chosen stylized facts about self-employment in the Canadian workforce. Section 4 presents the results and discuss the findings. Section 5 discusses limitations and introduces new research directions. Section 6 concludes.

## 2 Conceptual Framework

It is now well established that the self-employed usually retire at an older age than their employee counterpart and that self-employment rates rise with age. Many articles confirm these findings or reach similar conclusions (Ameriks et al., 2018, Bruce et al., 2000, Cahill et al., 2006, 2007, Fuchs, 1982, Giandrea et al., 2008, Hipple, 2004, Quinn, 1980, Quinn and Kozy, 1996, Ramnath et al., 2016).

The observation that self-employment rates increase with age may be explained by the fact that self-employment is often used by workers as a bridge in their transition to complete retirement as it allows them to adjust more easily their hours and effort. (Burkhauser and

Quinn, 1990, Quinn, 1980, Ruhm, 1995). And although authors like Cahill et al. (2015) find that the self-employed are less likely than employees to have left the labor force at any age, and are also much more likely to be able to reduce their hours on their career job, Parker and Rougier (2007) find that only the long-term self-employed retire significantly later than employees.

That workers use self-employment to ease their way into retirement would appear unsurprising in view of studies such as Ameriks et al. (2018), who find that older workers express a strong willingness to work, even if they have been retired for many years, a willingness that is even stronger if the job offers a flexible choice of hours worked. The paper further finds that for many workers, labor force participation around the normative time of retirement, and even after retirement age, is limited more by a lack of acceptable job opportunities or low expectations about finding them than by unwillingness to work longer.

Yet, in contrast to this literature suggesting that employees switch into self-employment later in life as a way to ease into retirement, Parker and Rougier (2007) find that British workers who switch into self-employment later in life do not resemble affluent employees downsizing to enjoy a gentle transition to full retirement – in other words, they do not appear to be mostly attempts to use self-employment as a bridge job to complete retirement. Rather, the authors find that they tend to be marginal workers with unstable job histories and limited means, some of whom apparently turn to self-employment as a last resort before finally retiring.

Furthermore, most studies on self-employment find that self-employment is generally positively associated with poverty, a finding that holds true in different countries. Fleury and Fortin (2004), for instance, show that in 2001 nearly 41 percent of the studied low-income workers in Canada stated having had at least one period of self-employment during the year, while only 13 percent of workers who did not have a low income that year stated they had been self-employed. In the U.S., Bauman (1987) shows that the self-employment

rate for persons in poverty who worked full time is twice that of the self-employment rate for the total full-time working population. The self-employed are also at a financial disadvantage once they exit the labor market. Knoef et al. (2016), using Dutch data, shows that the self-employed have below average income replacement rates during retirement. Based on this research, we make the following hypothesis:

**Hypothesis 1:** Older workers who are poor are more likely to switch into self-employment

Now, research has also shown that the self-employed suffer an earnings penalty relative to employees. Hamilton (2000), for instance, comparing median earnings profiles between the two work types, shows that jobs in paid employment offer both higher initial earnings and greater earnings growth than self-employment. The author calculates that after 10 years in business, median entrepreneurial earnings are 35 percent less than the predicted alternative wage on a paid job of the same duration, regardless of the self-employment earnings measure used. Many other articles find an earnings penalty for the self-employed, compared to employees, whether the data concerns the U.S. (Evans and Jovanovic, 1989), the UK (Rees and Shah, 1986), Europe (Millan et al., 2013) or Canada (Lin et al., 2000). Why, then, would workers decide to switch into self-employment as a way out of poverty when the evidence appears to show that the self-employed actually earn less, on average, than employees? To answer this question, we explore the following hypothesis:

**Hypothesis 2:** Older poor employees who do the transition into self-employment are more optimistic compared to employees who persist in employment.

### 3 Data and Methodology

The data are drawn from the Longitudinal and International Study of Adults (LISA), a Canadian longitudinal social survey sponsored by Employment and Social Development Canada (ESDC) and administered by Statistics Canada. For 1983 to 2014, LISA contains rich administrative data from income tax returns. It allows us to track and quantify precisely a respondent's financial life, from their work and retirement income sources to the transfers they received and the amount of tax they paid. Socio-economic and demographic information such as educational attainment, geographical location, health, retirement planning and evaluation, age, immigrant status and labour market characteristics come from data collected during the years 2012 and 2014. Each of those two waves contain close to 32 000 respondents. The first wave provides information on about 16 000 households, while the second wave provides information on 11 000 households. We use the years 2001-2014, except when otherwise noted, as certain key variables are only available for those years. Further details will be given in the section introducing our variables.

In total, the sample contains 485 389 observations. For the regression analyses, we have restricted the sample to respondent 50 years and older who are working, that is those with income greater than zero, unless otherwise mentioned. Keeping only those, the sample drops to 131 346 observations. All dollar values are expressed in 2011 constant dollars. We drop self-employed workers with farming or fishing income for all years as well as all workers in the agricultural industry for the years during which we can identify them. i.e. 2012 and 2014.

#### 3.1 Stylized Facts

The self-employed in our sample are 47.79 years old on average, while the employees are 45.94 years old. Note that the variables' definitions are introduced in section 3.4. Table 1 shows that the self-employed make an increasingly larger part of the total workforce

as age increases, until 70. The self-employment rate for those 20-29, for instance, is 3.98 percent while it is 7.68 percent for those aged 60-69. After 70, the rate drops to 3.07 percent.

Among the self-employed only, older workers are more likely to have employees than younger ones. Only 14.49 percent of the 20-29 self-employed, for example, have employees, while for those 60-69 the proportion is 26.11 percent on average.

Table 1 also shows that there are generally more poor among the self-employed than among the employed, even though the numbers somewhat converge at around retirement time. For example, among workers 30-39, 7.80 percent of the employed are in a poor household (using LIM thresholds; see section 4.1 for more details on the LIM poverty measure) while 15.90 percent of the self-employed are in a similar situation, while among workers 60-69, 7.66 percent of the employed are in a poor household while 6.48 percent of the self-employed are in a similar situation. Low-income cut-offs show similar trends.

Looking more specifically at workers of 50 years and older, we find that the self-employed tend to be male and in couple more often than employees. Results can be found in Table 2. The self-employed are also overrepresented in the excellent and very good health category, and underrepresented in the good health category. The self-employed are less likely than employees to receive Old age security, Canada/Quebec pension plan income, GIS or spousal allowance, and pension or superannuation income. They are about as likely to receive RRSP income.

In terms of income after tax, the self-employed earn a little bit more than the employees: \$38 283 compared to \$37 880. In the case of total income, which includes market income, government transfers and pension income, the situation is similar. On average, for 2012 and 2014, the employees had an annual income of \$45 452 compared to \$47 869 for the self-employed. Dividing the self-employed in two categories, those with employees and those without, it becomes apparent that having employees is associated with a higher

income. The self-employed who had employees in 2012 and 2014 had an average annual income before taxes of \$72 364 compared to \$42 894 for those without employees. The self-employed are also seen to be in a low income household more often than the employed (8.63 percent versus 7.03 percent). As a group, the self-employed get 74.27 percent of their self-employment income from a business income source, 17.96 percent of it from a professional income source, and 7.76 percent from commissions. And while only 26.69 percent of the employees over 50 are working part-time, 45.87 percent of the self-employed declare doing so.

Table 2 also shows that there are fewer self-employed workers planning their retirement (73.48 percent) than there are employees doing the same (79.49 percent). This does not appear to mean that the self-employed workers are badly prepared for retirement. Although no wealth variable is available in our dataset, we can see that the self-employed are confident that their lives will be comfortable in retirement. More specifically, 61.83 percent of the self-employed indicate that their planned retirement income will be adequate or more than adequate to maintain their standard of living, compared to 62.34 percent among the employees.

Employed and self-employed workers also plan to finance their retirement spending in very different ways. For instance, 28.13 percent of the employees indicate that occupational or workplace pension plan benefits will be their primary source of income in retirement, while only 7.28 percent of the self-employed answer similarly. On the other hand, the self-employed are more likely to respond that they plan on drawing an income from their own (or their partner's) business as a primary source of retirement income (4.63 percent) than their employees counterparts (2.90 percent). They are also more likely to say they will rely on personal retirement savings plan benefits like an RRSP or a RSP (33.89 percent compared to 21.54 percent)

## 3.2 Income Composition

Figures 1-6 show the composition of the the income for the employees and self-employed aged 50 and older by poverty status, income quintile and age group for 2014.

One first thing to notice is that, in all three tables, the self-employed earn employment income. This can be explained by the construction of the self-employment variable, which classifies workers accoring to which employment type represents the largest part of their income.

Figure 1 shows self-employment income represents a similar part of total income both for the the poor self-employed and non poor self-employed. Government transfers, on the other hand, represent a much higher fraction of the poor self-employed, as expected. More specifically, governement transfers represent 19.54 percent of the poor self-employed's income while it represents 1.07 percent of the non poor self-employed's income. Perhaps because they accumulated less of it during their working years, the poor self-employed's pension is relatively lower (6.85 percent) than that of their non poor counterpart (21.43 percent) Their investment income is also relatively lower at 0.91 percent compared to 7.02 percent.

In Figure 2, we show the same income decomposition, but this time for the poor and non poor employees. The results are similar to those for the self-employed. Government transfers, for instance, represent a higher fraction of the poor employees' income compared to the non poors' (59.44 percent compared to 2.18 percent), although the poor employees' government transfers represent a higher fraction of their total income than the poor self-employed's transfers do theirs (59.44 percent compared to 19.54 percent). In contrast to the self-employed, the employees on the whole get a lower fraction of their total income from working income. The non poor employees, for instance, get 57.65 percent of their total income from employment income while the non poor self-employed get 67.46 percent of their total income from self-employment. For the poor workers, the dif-

ference is even more marked. The poor employed get 9.89 percent of their total income from employment income while the self-employed get 69.41 percent of their total income from self-employment income. As for the fraction of total income represented by pension income, it is more similar for the non poor employees and the poor employees (respectively 28.75 percent compared to 24.04 percent) than it is for the non poor self-employed compared to the poor self-employed (21.43 percent compared to 6.85 percent).

Let us now turn to the income composition by income quintile. Figure 3 shows the results for the self-employed while Figure 4 shows the results for the employed.

Contrarily to self-employed workers in the three middle quintiles, the self-employed in the first and fifth (highest) quintiles earn on average relatively more self-employment income. Perhaps workers in those two quintiles are those respectively affected more by push and pull factors. Government transfers represent a decreasing proportion of income as one goes up the quintiles, going from 7.61 percent to 0.04 percent. Inversely, the proportion of total income represented by pension income goes up with each quintile, from 13.52 percent in the first quintile to 30.97 percent in the fourth quintile, and then drops back down again to 17.43 percent.

For the employees, employment income represents an increasing fraction of total income as one goes up the quintiles, going from 12.56 percent in the first to 69.86 percent in the fifth. Government transfers are decreasing, from 21.01 percent to 0.08 percent, as well as pension income, from 56.01 percent to 16.34 percent.

The next two figures, Figure 5 and Figure 6, respectively show income composition by age for the self-employed and the employees. As expected, self-employment income goes down as self-employed workers go through the process of retiring. While it represents 86.38 percent of total income at age 50-54, it only represents 20.23 percent of total income after 70. We observe the same phenomenon with employees.

Pension income, on the other hand, goes up for the self-employed from 0.61 percent to

61.38 percent, while investment income also goes up, from 7.14 percent to 15.50 percent. For the employed, pension income increases from 1.43 percent to 72.72 percent, while investment income increases from 5.81 percent to 12.18 percent.

### 3.3 Models

The rest of this paper will look at self-employment dynamics by exploiting LISA's administrative data. More precisely, we will examine how poverty history affects occupational choice by modeling: self-employment choice given that one has been working in the past period; and transitions from employment to self-employment. Because LISA's poverty status variable exists only for the period 2001-2014, this analysis will be limited to those years.

### 3.4 Self-employment dynamics

In this part, we examine self-employment dynamics by exploiting LISA's administrative data. This allows us to study how poverty history affects occupational choice over a wide range of periods, thus controlling for effects that might be related to the economic cycle. This analysis covers the years 2001-2014.

First, we evaluate the probability to do the switch between employment and self-employment between time  $t$  and time  $t + 1$ . We model those transitions using a hazard function  $h(t)$  indicating the probability of leaving employment at time  $t$ , given that the individual has survived for at least  $t$  periods. Here is the baseline model:

$$h(t) = Pr(T = t | T \geq t) = Pr(\gamma_0 + \sum_{k=1}^K \gamma_k X_{k,it} + \varepsilon_{it} > 0) \quad (1)$$

where  $X_{k,it}$  regroups the following socioeconomic variables and control variables: age group, sex, marital status, education, investment income, after tax income quintile,

provinces, year.

Self-employed status is determined as follows: the self-employed are those respondent whose self-employment income, if they have one, exceeds their employment income. The employed are those whose employment income exceeds or equals their self-employment income. This is the definition we employ for the rest of the article.

Our investment income variable is equal to the sum of rental income, dividends income, and income from interest and investments. We linearize investment income using the transformation  $\log(\text{InvestmentIncome} + 1)$ . Doing so, we keep only positive and zero values. The marital status variable identifies those who are married or in a common law partnership as being in couple, and single otherwise. The education variable has four levels, indicating the highest level of schooling completed: no diploma; high school; college; university. The province control variable regroups the provinces as follows: atlantic provinces; Quebec, Ontario, Prairies and British Columbia.

Because the education variable is available only for the years 2012 and 2014, we attribute each respondent's education level in 2012 to all previous years going back to 2001. Considering that the respondents in our sample are more than 50 years old, and that people generally complete their scholary when they are younger than 25, we believe this is reasonable. We do the same for the province variable.

To determine a respondent's poverty status we use the low income measure (LIM). The LIM is a poverty measure that corresponds to a fixed percentage (50 percent) of median adjusted household income. Adjustment for household sizes reflects the fact that a household's needs increase as the number of members increases, although not necessarily proportionally. LISA contains a LIM variable indicating whether a respondent is in a low income family according to the after tax low-income measure. This is the variable we use. Because it available only from 2001 onwards, we restrict our sample to those years. The income used to establish the poverty status is the total income, which includes

the taxfiler’s income from taxable as well as non-taxable sources, but excludes provincial and federal taxes and includes the Quebec abatement. That the poverty status is established by comparing the total income (without excluding, for instance, the dividend income) to the LIM threshold is convenient for our purposes as the self-employed often have income from many sources including employment income, self-employment income, dividend income and rental income.

We then test two specifications in which we remove the after tax income quintile. In the first of those two models, we control for poverty, and in the second, we control for poverty as well as optimism. The variable we use for optimism is a subquestion of the big five personality test. The question, rated on a seven-point likert scale, asks respondents whether they see themselves as a person “who worries a lot”.

We also evaluate the probability to be self-employed in  $t + 1$  given that the respondent has been working in  $t$ :

$$P(SE_{it+1} = 1) = f(\beta_0 + \beta_1 X'_{it} + \beta_2 SE_{it} * LIM_{it} + \epsilon_i) \quad (2)$$

This model includes all the socioeconomic variables used in the previous baseline model, except for the after tax income quintile variable, which is excluded, and includes an interaction variable between poverty status and occupational choice ( $SE_{it} * LIM_{it}$ ).

Finally, we build a model to estimate the probability of transition from employment to self-employment, as earlier, but this time concentrating only on those over 65. The

baseline model is as follows:

$$h(t) = Pr((T = t|T \geq t) = Pr((\gamma_0 + \gamma_1 SE5064_{it} + \sum_{k=1}^K \gamma_k X_{k,it} + \varepsilon_{it} > 0) \quad (3)$$

Here,  $X_{k,it}$  still contains the socio-economics variables. The variable  $SE5064_{it}$  captures whether the respondent was self-employed between 50 and 64. It takes a value of zero if the respondent has never been self-employed between 50 and 64 years old, and takes a value of one if the respondent has been self-employed at least one year during this period. We also estimate two more specifications. The first one adds a variable to take into account the respondent's poverty history. This variable is built like the self-employment history variable. The second model adds an interaction variable between self-employment history between 50-64 and poverty history during the same ages.

### 3.5 Earnings profile

This third part looks at workers' earnings in order to understand how they are affected by occupational choice. We proceed similarly to Hamilton (2000), who looks at differences in the hourly earnings distributions of self-employed workers and paid employees, but we focus on total annual earnings.

We use an OLS regression and we model the effect of socio-economic variables (age, sex, marital status, education, investment income) as well as self-employment history (number of years spent in self-employment in the preceding decade) on logged annual total earnings. Year and province controls are also included. We include only respondents of 50 years old or more.

We repeat the models for five sub samples: employed workers, self-employed workers,

switchers (from employment to self-employment), poor self-employed, non-poor self-employed. The sample contains the years 1992-2015, except for the last two regressions, where we restrict the sample to the years for which the poverty variable is available.

We then build a model to estimate the probability of being poor after 65:

$$P(LIM_{it} = 1) = f(\beta_0 + \beta_1 X'_{it} + \beta_2 SENV_{it} + \epsilon_i) \quad (4)$$

As earlier,  $X_{k,it}$  contains the socio-economic variables.  $LIM_{it}$  is the low income measure indicator introduced in the previous subsection. The sample here is restricted to those older than 65.

The variable  $SENV_{it}$  captures a respondent's self-employment history between the ages 50-64. It takes a value of 0 if the respondent has been self-employed at least once during those ages and has also been self-employed at least once in the 15 years prior. It takes a value of 1 if the respondent has been self-employed at least once during those ages but had not been self-employed during any of the preceding 15 years. Doing so, we try to see if starting a new self-employment venture in the years leading up to retirement makes one more likely to be poor after 65 compared to having started one's venture earlier in one's career. We also run a specification with an interaction variable between current wealth and the self-employment history variable that was just presented.

For robustness, we repeat the analysis with two self-employment variables: the first variable is the same we use elsewhere, that is, we define the self-employed as being those workers who have more self-employment income than employment income; the second one defines as self-employed those workers who have more than zero self-employment income.

## 4 Results and Discussion

### 4.1 Self-employment dynamics

In this section, we look at self-employment dynamics for the period 2001-2014.

Let us examine the results from the first regression estimating the probability of switching from employment, in  $t$ , to self-employment in  $t + 1$ .

The results, shown in the column (1) of Table 4, indicate that employees with higher after tax income are less likely than their nonpoor colleagues to be self-employed one year later. More specifically, compared to earning an income that puts one in the first income quintile, earning an income that puts one in the second to fifth income quintile progressively reduces the probability of doing the switch between employment and self-employment. Being in the fifth income quintile, for instance, reduces the probability to do the switch by 1.5 percentage points.

Woman are also significantly less likely to do the switch, while respondents in couple as well as those with more education show the opposite tendency. Finally, age is a significant factor as well, as a transition is more likely for those between the ages of 55 and 59, compared to those between the ages of 50 and 54, but less likely after the age of 70.

The model shown in column (3) of Table 4 then estimates a similar model, but substitutes the income variable with the poverty indicator described earlier. The results of those regressions similarly indicate that being poor has a positive effect on the probability of doing the switch. More precisely, being in a low income family increases one's probability to do the switch by 1.2 pp. The effects of the other variables in the model remain mostly unchanged.

To get a better sense of the effect of poverty on occupational choice, model (2) in Table 4 shows the results of a regression estimating the probability of being self-employed in

$t + 1$  conditional on having been working in  $t$ . This allows us to see not only that, once more, poor employees are more likely than non-poor employees to become self-employed, but also that the poor self-employed are more likely than the non-poor self-employed to remain in self-employment.

The last model of Table 4, that in column (4), tests the effect of optimism on the probability to do the switch. Results show that not only does poverty remain a significant factor prompting transitions from employment to self-employment, but optimism appears to positively impact the probability of transition as well.

The final models look at the probability of transition between employment and self-employment after the age of 65. Looking at the results in Table 5 for the baseline model, in the column (1), we find that having a history of self-employment between 50 and 64 years old increases the probability of making a transition from employment to self-employment after 65. In the second specification, in column (2), we then add a variable to control for the respondents' poverty history. We find that, even though having a history of poverty does not have a significant impact on the probability of transition to self-employment after 65, the positive effect of self-employment history on the probability of making the switch remains. In the third specification, in column (3), we interact the variables indicating self-employment history and poverty history. The results indicate that, compared to those who have neither been poor nor self-employed between 50 and 64, only those who have self-employment experience yet were never poor have a significantly higher probability (5 percent significance or best) of doing the switch from employment to self-employment after 65. This evidence is consistent with the idea that many who switch to self-employment towards the end of their career, at the time when many workers retire, do it by choice, possibly because the work itself is a source of utility. For those, self-employment appears to be a choice, not a necessity. That only those without poverty history but with self-employment experience have a significantly higher probability of doing the switch further suggests that being familiar with self-employment makes one

more likely to choose self-employment later on.

## 4.2 Earnings profile and poverty

This third and last section looks at OLS regressions on total annual earnings as well as models estimating the probability of being poor after 65.

Looking at the results of the OLS regressions on earnings in Table 6, it appears that experience in self-employment only increases annual earnings for those who are self-employed, whether taken as a group or separated into two sub-samples (poor and non-poor). It must be noted however that the results for the poor self-employed are not significant, possibly due to the small size of the sample ( $n=211$ ). For employed workers as well as switchers (from employment to self-employment), results show that more self-employment experience only decreases annual earnings. More specifically, it appears that self-employment experience reduces earnings more strongly for employed workers who switch into self-employment than for employed workers.

The next models, shown in Table 7, estimate the probability of being poor after 65 in order to see how it is affected by having started a self-employment venture with or without prior experience in the years leading up to retirement. Results shown in column (1) indicate that respondents who were self-employed at least once between 50 and 64 years old, but who had not been self-employed in the preceding decade, were not significantly more or less likely to be poor after 65 than respondents who had also been self-employed at least one time between 50-64, but who did have some self-employment experience in the prior 10 years. In other words, even if starting a new self-employment venture late in one's working life might be considered risky a priori for someone who does not have self-employment experience, it does not appear to make one more likely to be poor later on when compared to the experimented worker who did start a venture. This result is interesting because self-employment sometimes requires capital expenditures, which is not the case

with regular employment, thus putting a part of the worker's retirement income at risk if his venture were to fail. Although self-employment experience might presumably reduce the risk of self-employment venture failure, it appears that self-employment experience does not reduce the risk to be poor after 65 for those who start a new venture between 50 and 64 years old.

We then interact capital income with the variable indicating whether one's self-employment was preceded with prior self-experience or not. The results in column (2) indicate that contemporary capital income reduces the likelihood of being poor after 65 for those self-employed between 50-64, whether or not they had prior self-employment experience. It should be noted, however, that current wealth decreases the probability of being poor more for those whose venture was new than for those who had been self-employed in the past.

## 5 Limitations and Future Research Directions

The limit of our methodology is that income underreporting is more common for self-employment income than for employment income (Benedek and Lelkes, 2011, Feldman and Slemrod, 2007, Hurst et al., 2014). While this could lead to overestimating poverty among the self-employed, compared to the employed, other research shows that income underreporting is not very much more present among the self-employed. Dunbar and Chunling (2015), for instance, find that the relative incidence of under-reporting the self-employed is roughly 10 to 20 per cent higher than for the employed workers, which is similar to the relative magnitudes obtained by Schuetze (2002).

Self-employed workers' business arrangements also allows them different opportunities to define their income so as to minimise taxation, an option that employed workers do not have. The incorporated self-employed have the possibility of accumulating liquidities in their company instead of paying themselves (either in salaries or dividends) all the money

they have earned from their business. As found by De Nard et al. (2007) self-employed business owners often leave an important portion of their wealth in their businesses. The funds can then be used, among other things, for reinvestment purposes, for debt servicing or as a contingency fund. In other words, the total income received by the incorporated self-employed can sometimes be lower than the total income they have earned from their businesses. Also, the self-employed can sometimes finance their household consumption with their business venture (Bradbury, 1997), such as cars, phones, and computers. Hence, it is not unlikely that our chosen method might overestimate somewhat the number of poor self-employed workers Bradbury (1997), Sevä and Larsson (2015). However, this possibility most likely remains negligible as Larochelle-Côté and Uppal (2011), using expenditure and consumption data, found that at equal income levels, household spending differed little in Canada between paid workers and the self-employed. It should also be reminded, as noted by Hamilton (2000), that employed workers sometimes have access to fringe benefits that self-employed workers typically do not have such as dental care, fitness center access, meals or cafeteria discounts. Those benefits are not accounted as income for the employed, which might contribute to overestimate somewhat the number of poor employed workers. It is not impossible that those fringe benefits may be roughly equal to the benefits derived by the self-employed (and unaccounted as income) from their business arrangements, which might explain why Larochelle-Côté and Uppal (2011) finds similar spending at equal income levels for both the employed and the self-employed.

## 6 Conclusion

To summarize the results, our analyses have shown that poverty significantly prompts year-on-year transitions from employment to self-employment, and that, even though the literature has shown that employees can expect to earn more than the self-employed. The hypothesis we made to explain this observation is that those who do the transition are

more likely to be optimistic, compared to those who do not. Our results appear to give credence to this hypothesis: we find that employees who tend not to see themselves as “a person who worries a lot” - our measure of optimism - are significantly more likely to do the switch.

Our results also show that self-employment experience does not reduce the risk to be poor after 65 for those who start a new venture between 50 and 64 years old, and that, compared to those who have neither been poor nor self-employed between 50 and 64, only those who have self-employment experience yet were never poor have a significantly higher probability of doing the switch from employment to self-employment after 65.

Finally, again looking at workers over 50, self-employment experience in the decade prior appears to increase annual earnings only for those who are self-employed.

In terms of policy, what these analyses show, as the literature has already suggested for workers of all ages, is that older self-employed workers are a heterogeneous group, and that not all those who make the switch from employment to self-employment appear to do so by preference for this type of work, but rather seem to be pushed by their economic circumstances. To be more specific, although self-employment is often touted as a stepping stone to retirement, it may not always be that those who do the switch while approaching retirement do so in order to take advantage of the flexibility often associated with independent work. When drafting policy, policymakers should keep in mind this reality, as otherwise, for instance, the implementation of new work incentives might prove fruitless. Furthermore, those results indicate that more work is necessary to better understand the motivations behind the transitions from one employment type to another, especially at older ages.

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# Figures

Figure 1: Income sources in 2014 for the 50+ self-employed , by poverty status

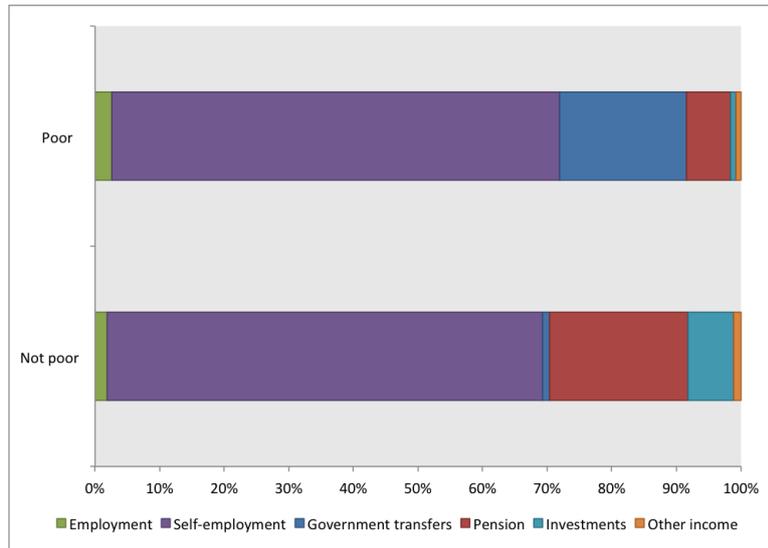


Figure 2: Income sources in 2014 for the 50+ employees, by poverty status

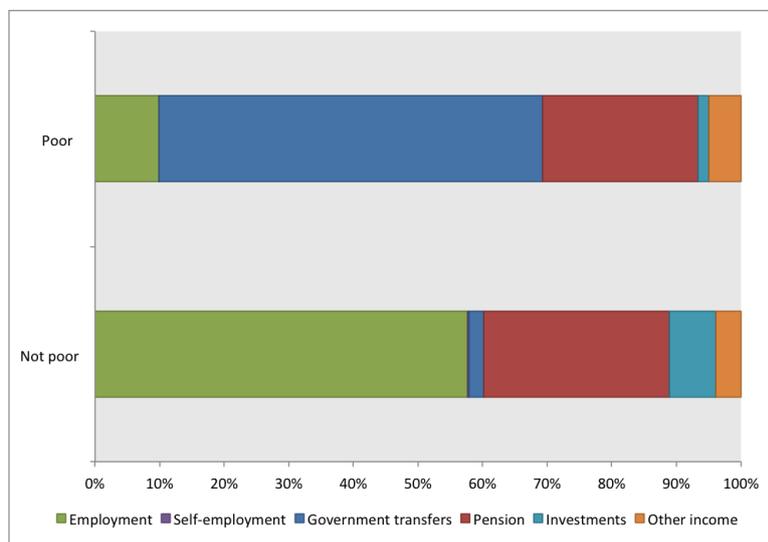


Figure 3: Income sources in 2014 for the 50+ self-employed, by income quintile

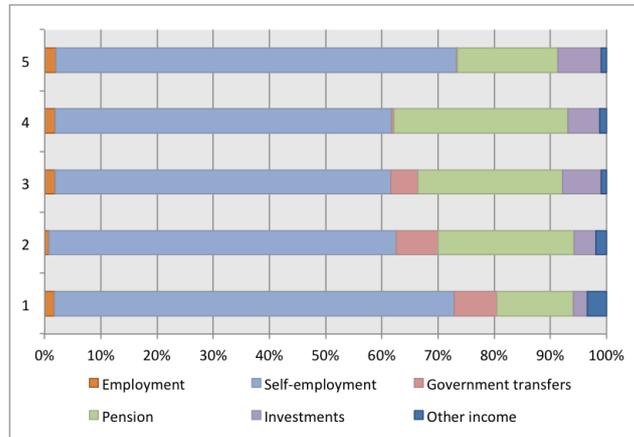


Figure 4: Income sources in 2014 for the 50+ employees, by income quintile

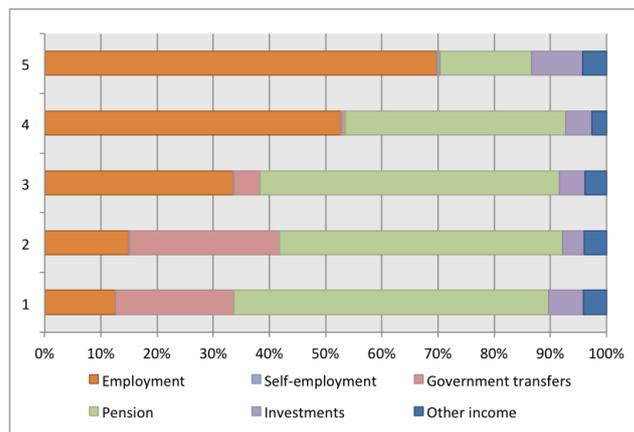


Figure 5: Income sources in 2014 for the 50+ self-employed, by age group

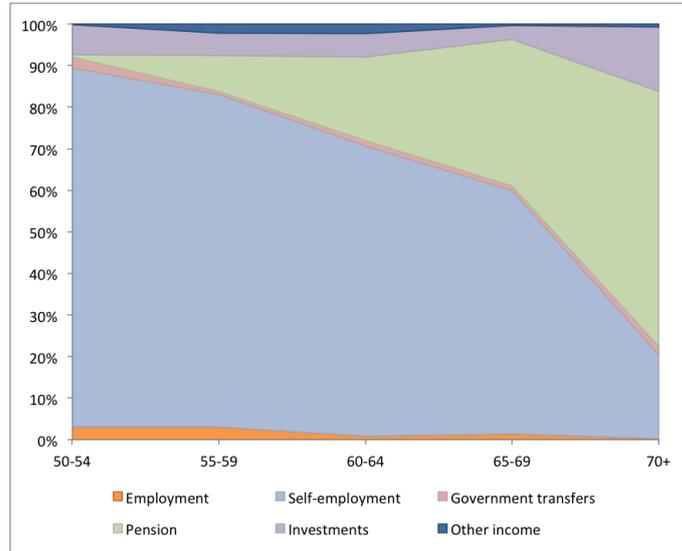
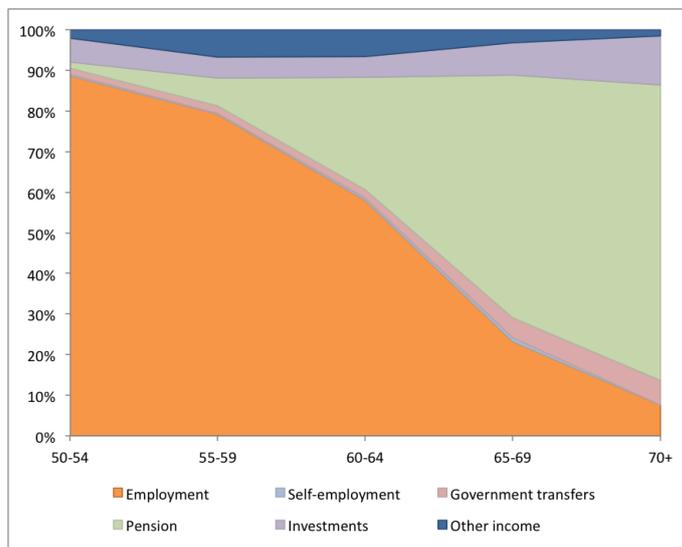


Figure 6: Income sources in 2014 for the 50+ employees, by age group



## Tables

Table 1: Characteristics of the labour force by age, 2012 and 2014

	SE rate	Have employees? (Only SE)	LIM poverty rate		LICO poverty rate	
			Employee	Self- employed	Employee	Self- employed
20-29	3,98%	14,49%	14,09%	13,93%	16,21%	21,66%
30-39	6,69%	17,71%	7,80%	15,90%	8,35%	15,19%
40-49	6,41%	28,50%	7,27%	18,95%	7,13%	17,27%
50-59	7,84%	25,23%	8,78%	12,32%	7,97%	15,30%
60-69	7,68%	26,11%	7,66%	6,48%	7,58%	08,04%
70+	3,07%	25,92%	*	*	*	*

\*Frequencies too low to comply with Statistics Canada's confidentiality requirements

Weighted data.

Source: Authors' calculations.

Table 2: Characteristics of workers 50 and older, 2012 and 2014

	Employee	Self-employed
Male	45.46%	57.85%
In couple	67.63%	77.56%
Health		
Excellent or very good	50.97%	63.29%
Good	31.17%	26.07%
Fair or poor	17.86%	10.64%
After-tax income quintile		
1 (Low)	10.41%	16.35%
2	21.62%	26.86%
3	20.98%	20.41%
4	21.24%	11.47%
5 (High)	25.75%	24.90%
Income presence (if retired partly or completely)		
Canada/Quebec pension plan	51.82%	36.62%
Old age security	40.98%	25.58%
GIS or spousal allowance	14.71%	5.11%
Pension and superannuation	34.36%	21.80%
RRSP	9.14%	9.68%
Total income before taxes		
All workers	\$45 452.77	\$47 869.79
Self-employed w/o employees		\$42 894.89
Self-employed w employees		\$72 364.11
Part-time (<35h/w)	26.69%	45.87%
Main source of self-employment income		
Business net income		74.27%
Professional net income		17.96%
Commission net income		7.76%
Part of a low income family	7.03%	8.63%
Is planning retirement (himself or through employer's PP)? <sup>1</sup>	79.49%	73.48%
Planned ret. income: adequate to maintain standard of living? <sup>1</sup>		
More than adequate	6.92%	5.66%
Adequate	55.42%	56.17%
Barely adequate	25.25%	22.29%
Inadequate	8.49%	9.96%
Very inadequate	3.91%	5.92%
Primary source of income in retirement? <sup>1</sup>		
Canada Pension Plan / Quebec pension plan	21.97%	25.51%
OAS+GIS	9.58%	10.85%
Occupational or workplace pension plan benefits	28.13%	7.28%
Personal retirement savings plan benefits (RRSP, RSP)	21.54%	33.89%
Retirement Income Funds (incl. RRIF, LRIF, Life Income Funds)	5.14%	6.49%
Inheritance or rely on financial support from my family	1.42%	2.80%
Draw an income from your own (or your partner's) business	2.90%	4.63%
Earnings from employment in retirement	3.70%	4.67%
Other source (including medical or disability payments)	5.62%	3.86%

<sup>1</sup> Only for 2014;  
Weighted data.  
Source: Authors' calculations.

Table 3: Respondents 50 and older by self-declared retirement status, 2012 and 2014

	50-59	60-69	70+	Total	SE income (Only if SE inc. >0)	
					Mean	Median
Completely retired	10.70%	55.80%	90.62%	46.07%	\$6208.27	\$2873.00
Partly retired	7.26%	16.30%	5.64%	9.62%	\$13363.21	\$6706.55
Not retired	82.04%	27.90%	3.74%	44.32%	\$33215.90	\$11499.67
Total	100 %	100 %	100 %	100 %		

Weighted data.

Source: Authors' calculations.

Table 4: Results

	(1)	(2)	(3)	(4)
	SE <sub>t+1</sub>	SE <sub>t+1</sub>	SE <sub>t+1</sub>	SE <sub>t+1</sub>
E*NPoor		0.000 (.)		
E*Poor		0.311*** (0.07)		
SE*NPoor		3.368*** (0.05)		
SE*Poor		3.407*** (0.13)		
50-54	---	---	---	---
55-59	0.002* (0.00)	0.065* (0.04)	0.003** (0.00)	0.004** (0.00)
60-64	0.000 (0.00)	0.006 (0.04)	0.000 (0.00)	0.001 (0.00)
65-69	-0.000 (0.00)	-0.055 (0.06)	0.000 (0.00)	0.001 (0.00)
70+	-0.006*** (0.00)	-0.328*** (0.06)	-0.005*** (0.00)	-0.005*** (0.00)
Female	-0.004*** (0.00)	-0.162*** (0.03)	-0.002** (0.00)	-0.002 (0.00)
In couple	0.002** (0.00)	0.141*** (0.04)	0.005*** (0.00)	0.004*** (0.00)
No diploma	---	---	---	---
High school	0.002* (0.00)	0.095* (0.05)	0.001 (0.00)	0.001 (0.00)
College	0.002* (0.00)	0.143*** (0.05)	0.001 (0.00)	0.002* (0.00)
University	0.011*** (0.00)	0.325*** (0.05)	0.009*** (0.00)	0.011*** (0.00)
Af. tax income - Qt 1 (low)	---	---	---	---
Af. tax income - Qt 2	-0.006** (0.00)			
Af. tax income - Qt 3	-0.012*** (0.00)			
Af. tax income - Qt 4	-0.014*** (0.00)			
Af. tax income - Qt 5 (high)	-0.015*** (0.00)			
lcapin	0.000** (0.00)	-0.002 (0.01)	0.000 (0.00)	0.000 (0.00)
Poor			0.012*** (0.00)	0.011*** (0.00)
Does not worry a lot				0.001** (0.00)
Province controls	Yes	Yes	Yes	Yes
Year controls	Yes	Yes	Yes	Yes
N	66078	63690	68165	60691

Note 1 - Weighted data.

Note 2 - Coefficients are marginal effects, except for model (2).

Note 3 - Sample includes only those 50 and older.

Note 4 - Abbreviations: E:Employed; SE:Self-employed; NPoor:Not poor; Af. tax income - Qt: After tax income - Quintile; lcapin: log capital income.

Note 5 - Significance: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Source: Authors' calculations.

Model (1), (3), (4): Probability of being self-employed at time t+1 conditional on having been employed at time t, 2001-2014

Model (2): Probability of being self-employed in t+1 conditional on working in t, 2001-2014

Table 5: Probability of transition from employment to self-employment after 65, 2001-2014

	(1)	(1)	(3)
	SE	SE	SE
SE between 50-64	0.013*** (0.00)	0.021*** (0.01)	
Poor	0.004 (0.00)	0.005 (0.01)	0.214 (0.26)
Poor between 50-64		-0.004 (0.00)	
65-69	0.000 (.)	0.000 (.)	0.000 (.)
70+	-0.007*** (0.00)	-0.008*** (0.00)	-0.414*** (0.16)
Male	0.000 (.)	0.000 (.)	0.000 (.)
Female	-0.003 (0.00)	-0.004 (0.00)	-0.169 (0.12)
Single	0.000 (.)	0.000 (.)	0.000 (.)
In couple	0.002 (0.00)	0.004 (0.00)	0.201 (0.14)
No diploma	0.000 (.)	0.000 (.)	0.000 (.)
High school	0.002 (0.00)	0.004 (0.00)	0.228 (0.18)
College	0.001 (0.00)	0.001 (0.00)	0.050 (0.21)
University	0.008*** (0.00)	0.015*** (0.01)	0.559*** (0.19)
lcapin	-0.000 (0.00)	-0.000 (0.00)	-0.005 (0.02)
SE5064=0 × Poor5064=0			0.000 (.)
SE5064=0 × Poor5064=1			-0.191 (0.25)
SE5064=1 × Poor5064=0			0.627*** (0.15)
SE5064=1 × Poor5064=1			0.407* (0.25)
Constant			-2.362*** (0.40)
Province controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
N	16367	7787	7787

Note 1 - Weighted data.

Note 2 - Coefficients shown are marginal effects for model (1) and (2).

Note 3 - Abbreviations: lcapin:log capital income; SE5064: self-employed between 50-64 years old; Poor5064:Poor between 50-64 years old

Note 4 - Significance: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Source: Authors' calculations.

Table 6: Earnings profile: regression on total annual earnings for respondents 50 and older, 2001-2014

	W	SE	W->SE	SE+Poor	SE+NPoor
50-54	_____	_____	_____	_____	_____
55-59	-0.154*** (0.02)	-0.074 (0.05)	0.078 (0.17)	0.192 (0.17)	-0.086 (0.06)
60-64	-0.324*** (0.02)	-0.117 (0.08)	0.121 (0.22)	0.163 (0.16)	-0.171** (0.08)
65-69	-0.225*** (0.02)	0.117 (0.09)	0.591*** (0.18)	0.317 (0.22)	0.037 (0.10)
70+	-0.240*** (0.03)	0.128 (0.12)	0.450** (0.19)	0.347 (0.21)	0.017 (0.12)
Female	-0.674*** (0.03)	-0.630*** (0.09)	-0.976*** (0.14)	0.029 (0.13)	-0.663*** (0.09)
In couple	-0.202*** (0.03)	-0.210 (0.13)	-0.429*** (0.16)	0.045 (0.13)	-0.336** (0.14)
No diploma	_____	_____	_____	_____	_____
High school	0.318*** (0.03)	0.333*** (0.09)	0.055 (0.18)	-0.030 (0.13)	0.301*** (0.09)
College	0.575*** (0.04)	0.492*** (0.11)	0.411* (0.22)	0.043 (0.19)	0.419*** (0.11)
University	0.899*** (0.04)	1.185*** (0.12)	0.863*** (0.17)	-0.091 (0.15)	1.130*** (0.11)
lcapin	0.047*** (0.00)	0.057*** (0.01)	0.090*** (0.02)	-0.003 (0.02)	0.057*** (0.01)
Nb of years in SE	-0.052*** (0.01)	0.027*** (0.01)	-0.060*** (0.02)	0.011 (0.01)	0.027*** (0.01)
Year controls	Yes	Yes	Yes	Yes	Yes
Province controls	Yes	Yes	Yes	Yes	Yes
N	75346	4470	483	211	3813

Note 1 - Weighted data.

Note 2 - Coefficients shown are marginal effects.

Note 3 - Abbreviations: lcapin:log capital income

Note 4 - Significance: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Source: Authors' calculations.

Table 7: Probability of being poor after 65, 2001-2014

	(1)	(2)
	Poor	Poor
New venture (50-64)	-0.008 (0.01)	
New venture=0 × lcapin		-0.093** (0.05)
New venture=1 × lcapin		-0.153*** (0.05)
65-69	0.000 (.)	0.000 (.)
70+	-0.012* (0.01)	-0.471* (0.28)
Male	0.000 (.)	0.000 (.)
Female	-0.024*** (0.01)	-1.046*** (0.34)
Single	0.000 (.)	0.000 (.)
In couple	-0.071*** (0.03)	-1.494*** (0.31)
No diploma	0.000 (.)	0.000 (.)
High school	-0.002 (0.01)	-0.077 (0.35)
College	-0.007 (0.01)	-0.207 (0.43)
University	-0.025*** (0.01)	-1.396*** (0.51)
lcapin	-0.003** (0.00)	
Constant		1.192 (0.87)
Province controls	Yes	Yes
Year controls	Yes	Yes
N	848	848

Note 1 - Weighted data.

Note 2 - Coefficients shown are marginal effects for model (1).

Note 3 - Abbreviations: lcapin:log capital income

Note 4 - Significance: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Source: Authors' calculations.

# Appendix A

## **Pensions and the Self-Employed**

This section aims at giving an overview of the institutional pensions plans and formulas that apply for the self-employed in Canada.

Canada's retirement income system is based on three tiers: the first one is the Old Age Security Program, a pays-as-you-go public and universal basic pension/supplement aimed at poverty reduction; the second one is the Canada/Quebec Pension Plans, which are partially funded mandatory earnings-related defined benefits plans aimed at providing basic retirement income; the third tier is constituted of private pensions and savings. This overview will only look at the two first tiers, i.e., the public plans.

### **Old Age Security**

Canada's Old Age Security (OAS) program – which include the Old Age Security pension, the Guaranteed Income Supplement, the Allowance and the Allowance for the Survivor – is offered, with the same benefits, irrespective of whether the claimant has a history of self-employment or not. In other word, most Canadians can qualify regardless of their employment history, as it is not a determining factor.

### **Canada/Quebec Pension Plans**

The Canada Pension Plan (CPP) operates in every province and territory except Québec. The Province of Quebec administers its own program, the Quebec Pension Plan (QPP), for workers in Quebec (Employment and Canada, 2016).

The CPP is a contributory plan, meaning that all costs are covered by the financial contributions that employees, employers, and self-employed workers pay, and from revenue earned on CPP investments. Most workers in Canada aged 18 and over who earn more than the minimum amount (\$3,500 per year) must contribute to the CPP. The employee and the employer each pay half of the contributions. The self-employed pay both portions.

The amount contributed is based on employment earnings. For the self-employed, contributions are based on net business income after expenses. Contributions are not made on the basis of any other type of income, such as investment earnings.

Workers make contributions only on their annual earnings between a minimum and a maximum amount, called pensionable earnings. The minimum amount is \$3500. The maximum amount is adjusted each January, based on increases in the average wage. In 2018, for example, the maximum amount is \$55 900 (of Canada, 2018). The contribution rate on these pensionable earnings is 9.9%, split equally between the employee and the employer. The self-employed pay the full 9.9%. The maximum contribution for employers and employees in 2016, for example, is \$2593.80 each. The maximum contribution for the self-employed is \$5,187.60. For the most up-to-date amounts, visit our Web site.

The QPP works very similarly to the CPP. The minimum and maximum pensionable earnings, for instance, are the same. The contribution, on the other hand, is higher for the QPP: 10.80% for the self-employed or 5.4% for both employers and employees (of Québec, 2018). The maximum contributions are also higher: \$2829.60 for employers and employees, or \$5659.20 for the self-employed.

On their federal tax return, the self-employed can claim a tax deduction for half their CPP/QPP contribution (line 23 of Schedule 8 in the federal income tax form for Québec residents, and line 24 in the form for rest of Canada).

In terms of benefits, the amount received of Canada Pension Plan (CPP) retirement pension is based on how much a worker has contributed and how long he has been making contributions to the CPP at the time he becomes eligible. It is not affected by self-employment status.