

The Self-Employment Dynamics of Men and Women in Canada: 1982-1995

Peter J. Kuhn and Herb J. Schuetze
McMaster University
1280 Main St. West, Hamilton, Ontario
Phone: (905) 525-9140
Fax: (905) 521-8232
E-mail: pjkuhn@McMaster.CA
schuethj@McMaster.CA

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(1) Introduction

Between 1982 and 1995 the number of self-employed Canadians rose dramatically. Over 300 thousand more Canadians between the ages of 25 and 54 reported that they were self-employed¹ in non-primary industries over this period-- a 70 percent increase, compared to a 45 percent increase in paid employment. This relatively strong rate of job creation has drawn increased attention among labour market researchers both in Canada and abroad, who have considered macroeconomic conditions, tax policy, demographic and industrial structure among its possible causes (e.g. Lin, Yates and Picot 1998a and Schuetze 1998). Because these studies focus on the *stock* of self-employed individuals, however, they tell us little about changes in the process by which people become, or cease to be, self-employed over this period. This information about process, or flows, might however contain important clues regarding the underlying causes of these secular changes.

A few researchers have examined the flows between self-employment and other labour force states using US data (e.g. Evans and Leighton 1989, Meyer 1990 and Alba-Ramirez 1991), but these studies stop short of attempting to explain secular increases in self-employment over time. Canadian research has been somewhat hampered because of a lack of longitudinal data on labour market activity.²

¹The rate of non-primary self-employment is the fraction of individuals employed in non-primary industries who are self-employed in their main job in unincorporated businesses only. Primary industries consist of agriculture, forestry, fisheries and mining.

²A recent paper by Lin, Yates, and Picot 1998b is the one exception that we are aware of.

In the current paper we overcome the lack of Canadian longitudinal data by employing a rarely utilized source of information on dynamic behaviour contained in a series of Surveys of Consumer Finances for the survey years 1982 to 1995. These data files contain standard labour force data for the week prior to the survey as well as supplemental data on the previous year's work experience and income. As a result, we are able to observe individuals in contiguous years, giving us a 2-year panel for each individual. We focus on Canadians aged 25 to 54 and deal with men and women separately. Individuals in this age group are less likely to be affected by secular increases in school attendance and a tendency to retire earlier; trends which play an important role for other groups.

Taking a similar approach to Blanchflower and Freeman (1994), we use the data files to analyze changes in the process of selection into self-employment over time in the context of a Markov process among three labour force states: employment in the wage-and-salary sector (E), self-employment (S), and not employed (N). Because the number of transitions between self-employment and the other two states from one year to the next is small the data are pooled across two periods. The two periods pertain approximately to the 1980's and 1990's, respectively. From the transition matrices we determine steady-state rates of self-employment for the 1980's and 1990's, separately, for men and women. We decompose changes in these steady-state rates of self-employment by allowing single elements of the transition matrix to change.

Our main findings are as follows. First, as we might expect, the steady-state rate of self-employment has increased for both women and men; though by more for women. However, perhaps surprisingly, the process by which these rates have increased is quite different. It appears that between the 1980's and 1990's a larger fraction of men entered non-employment. Because

non-employed men are more likely than employed men to become self-employed, the steady-state rate of male self-employment rose. Thus, for Canadian men, increases in self employment are closely tied to a deterioration in overall labour market conditions, constituting, for some, a kind of "employment of last resort". In contrast, the steady-state rate of self-employment among women has risen primarily because of decreased exit from self-employment to the other two states, and (of somewhat less importance) a rise in entry into self-employment. For women, then, the increase in self employment is associated with *improved* overall labour market outcomes, perhaps because an increase in their skills and experience contributed to a higher survival rate of their businesses. In our view, this finding --that, because of different changes in the underlying transition patterns, self employment can rise in both improving and deteriorating labour markets-- sheds interesting new light on the debate regarding the effects of the business cycle on self-employment rates, and highlights the need to look at underlying dynamics in that debate. It also highlights the need to take what many non-economists would call a "gendered" perspective on self employment, as these underlying processes are very different for women and men.

The remainder of this paper is organized as follows. Section (2) describes the data. In section (3) we examine the characteristics of entrants and those exiting self-employment and compare these to the population as a whole. Section (4) describes estimates of the transition probabilities and steady-state rates of self-employment based on these estimates. Decompositions of the steady-state rates of self-employment are performed in section (5) and section (6) expands on the findings of section 5 by looking at the quality of new self-employment jobs. Section (7) concludes.

(2) Data

As mentioned, we draw the 2-year panel data used in this paper from a series of microdata files from Canada for the years 1982 to 1995. The microdata files are taken from the Canadian Surveys of Consumer Finances (SCF) which are conducted in April of each year and contain standard labour force data for approximately 75 thousand individuals per year for the week prior to the survey as well as supplemental data on the previous year's work experience and income. All samples are restricted to individuals aged 25 to 54. The individual data files are pooled to create 4 separate data files-- 2 data files for 1980's (one for men and one for women) and 2 data files for the 1990's. The first period includes the 1982-1989 surveys-- 104 thousand observations on men in one data set and 118 thousand observations on women in the second data set. The second period includes the 1990-1995 surveys-- 118 thousand men and 132 thousand women. Both of these periods roughly include a relative "trough" in the business cycle as well as a relative "peak". Overall, however, employment prospects in the 1990's in Canada were somewhat worse than the 1980's. The average unemployment rate among Canadians aged 25 to 54 in the 1980's was about 10 percent versus 10.5 percent in the 1990's.

These data provide a number of advantages over previous research using Canadian data. First, they enable us to estimate annual gross flows between labour force states-- allowing a distinction to be made between the stock of self-employed individuals and the flows into/out-of self-employment. In addition, because the surveys are highly consistent in sampling design and questionnaire structure over many years, we are able to examine changes in these flows over time to evaluate the causes of secular changes in self-employment. Finally, the surveys allow us to observe characteristics of individuals who enter into or exit from self-employment.

There are a number of distinctions between the variables used here to identify an individual's labour force state in the previous year and that which distinguishes his or her labour force state in the week prior to the survey. For the week prior to the survey, the respondent is asked to report whether or not he or she was employed. If the individual was employed, he or she was asked whether in their "main job" he/she was self-employed or employed in the wage and salary sector. Using this information we assign each individual to one of three states: "employed" (but not self-employed) (E), "self-employed" (S), or "not employed" (N).³

For the calendar year prior to the survey, no direct question about self employment in one's "main job" is asked. Instead, we have data on the number of weeks worked in the year, plus information on the amount and source of income in that year, and use this to impute whether the individual was self-employed or a wage and salary earner in his/her "main job". For most of the individuals in our sample, assigning them a labour market status on the basis of this information is straightforward: most respondents either worked the full year or not at all, and had only one source of labour market income: wage and salary earnings or self-employment income. For part-year workers and those with multiple sources of labour market income, we proceed as follows. First, we assign to each individual a probability of working (being either "employed" or "self-employed") equal to the number of weeks worked divided by 52. Second, we allocate these weeks of work to self employment or wage-and-salary employment according to the relative amounts of income earned from each. Thus each part-year worker, and each individual with

³We did some preliminary work using a four-state model that distinguished unemployment from nonparticipation. After some experimentation, we concluded that the extra insight provided by such a model was not warranted by the very substantial increase in complexity. (Moving to a four-state model yields a sixteen-element, rather than a nine-element transition matrix, with some of its elements –due to small sample sizes-- quite imprecisely measured.)

multiple earned income sources, contributes more than one observation to our data, with the weights assigned to each observation given by our estimate of the probability they were in the corresponding labour market state in a randomly selected week during the previous year.

Clearly, there are some potential problems with the above approach. For example, in some instances self-employment income is negative. While this should still be interpreted as time in self-employment, it probably takes less time to lose money than to earn money. We address this problem by recasting negative self-employment income as its absolute value times some fraction.⁴ A second issue is how to apply the notion of a “main job” to the previous year’s activity. For example, according to the above procedure, an individual who, throughout the entire year, worked both part-time in the self-employment sector and full-time in the wage and salary sector would be designated as self-employed in their “main job” for some fraction of the previous year. We address this problem by utilizing the fact that the two-year panels overlap, and forcing self-employment rates by either of our two measures for the same year to be consistent. The details of this procedure are provided in Appendix A; again however it is worth noting that our results here are not sensitive to the method used.⁵ A final issue is seasonality: one week in April (the survey week) may not be representative of an entire year. This, like the two preceding issues, seems much more likely to affect the level of self-employment transition rates at a point in time, than changes over time, which are our main interest in this paper.

⁴The results reported here use 1/4, but –because negative incomes are relatively rare-- the results are highly insensitive to the value used. For Instance, in the 1994 survey only 491 of the over 34 thousand individuals reporting earned income had negative self-employment earnings.

⁵This is essentially due to the rarity of individuals with both self-employment and other employment income. For instance, in 1994 only 1604 individuals of the over 34 thousand individuals reporting earned income had both forms of income. Thus, for example, when we replicate our analysis by simply dropping persons with both wage-and-salary and self-employment income, the results are essentially unchanged. This is shown in Appendix B.

(3) Characteristics

Table 1 gives the characteristics of new self-employment entrants, leavers and for the population as a whole for men and women separately for the two periods examined here. The top section of the table shows the probability of observing new entrants in wage-and-salary work or not employed in the year prior to the survey-- the "source" of new entrants, the "destination" of those who leave self-employment and the distribution for the survey week of the population as a whole across the two labour force states. The remainder of the table gives the fraction in each cell across demographic categories.

While most entrants worked in the wage and salary sector in the year prior to entering self-employment, relative to the total population, entrants were more likely to be non-employed. This was particularly true of men entering self-employment. The fraction of men who were not employed prior to entering self-employment was 9 percentage points higher than the population average in the 1980's and grew to 12 percentage points in the 1990's. Somewhat interesting, however, were the trends in the relative sources of men and women entering self-employment. A larger fraction of men entering self-employment in the 1990's came from non-employment relative to the 1980's-- 32 percent in the 1990's versus 25 percent in the 1980's. The opposite was true of women entering self-employment. The fraction of women entering self-employment from non-employment actually fell by 3 percentage points between the 1980's and 1990's. Finally, most men and women leaving self-employment re-enter into wage and salary employment. Likely because of a decline in labour market conditions in the 1990's, however, they were more likely in the 1990's to enter non-employment than in the 1980's.

By demographic characteristics it appears that most Canadians entering self-employment are married, have no children, are Canadian born and tend to be younger than the population as a whole. Despite this generalization there are a number of interesting differences between the characteristics of the men and women entering self-employment as well as changes in these characteristics over time. For instance, relative to the overall population, the self-employment sector attracted more highly educated women while men entering self-employment tended to be less educated. Also, the data on the number of children present suggest that the presence of children, regardless of age, is associated with self-employment entry for women but not for men. Women entering self-employment were more likely than the population as a whole to have children while the opposite was true of men entering self-employment.

(4) Transition Estimates

Table 2 reports matrices of transition probabilities among self-employment, wage-and-salary employment, and nonemployment, for both periods of our data and for men and women separately. Elements of these 3x3 matrices p_{ij} give the empirical probabilities that an individual in state i in the year preceding the survey is in state j during the survey week. Table 2 also reports the ergodic distribution of individuals across these three states under the assumption the transitions among the labour force states are governed by a Markov process, i.e. that there is no state dependence-- each p_{ij} depends only on the current state and not on history. This ergodic distribution is calculated as the eigenvector associated with the unit eigenvalue such that:

$$\mathbf{P}(s)\mathbf{q}(s)=\mathbf{q}(s) \quad (1)$$

By definition, $q(s)$ must sum to one. Therefore, $q(s)$ is normalized to sum to one. Finally, Table 2 also reports a steady-state rate of self-employment for each transition matrix, which is simply the proportion of time an individual spends in self-employment over the proportion of time spent in all forms of employment, as implied by the ergodic distribution across states.

Interestingly, the estimated steady-state rates of self-employment in table 2 approximate the actual period average self-employment rates quite well-- differing by less than one percentage point in all cases. As one might expect, the steady-state rates of self-employment rose for both men and women between the 1980's and 1990's. In other words, Canadian men and women spent more of their working time, on average, in self-employment in the 1990's than in the 1980's. Also as one might expect, the increase was more dramatic among women than men. The steady-state rate of self-employment rose by 2.4 percentage points or 56 percent among women between the two periods as compared to 1 percentage point or 10 percent among men.

A number of observations with regard to the estimated transition matrices warrant mention here. In general, the proportion of men who are employed in the self-employment sector and remain in that sector (SS) is larger in comparison to women. In addition, a larger fraction of women are not employed and remain there compared to men-- nearly 81 percent of women who were not employed in the previous year remained not employed compared to 63 percent of men in the 1980's and 70 percent of men in the 1990's. Trends in exit and entry rates in self-employment also varied greatly between men and women. Exit rates (SN and SE) among men either rose slightly or remained stable while these same rates fell for women. Further, the self-employment retention rate (SS) rose significantly for women and remained stable for men. At the same time, entry rates into self-employment (ES and NS) remained stable for both men and women.

There is also evidence that employment opportunities outside of the self-employment sector had a larger impact on men than women. For instance, the proportion of men who remained employed in the wage and salary sector (EE) fell between the 1980's and 1990's as did the proportion of males who exited non-employment for employment in the wage and salary sector (NE). In comparison, these proportions actually rose slightly among women. In addition, exit from the wage and salary sector to non-employment (EN) and the retention rate among those not employed (NN) rose substantially among men but fell for women.

(5) Decompositions

In this section we determine the process that led to the rise in the steady-state self-employment rates among Canadian men and women. In particular, we are interested in determining which changes in the elements or group of elements in the transition matrices can account for the secular rise in self-employment. The elements or groups of elements we examine are as follows. We start with the obvious potential determinants: changes in entry rates to, and exit rates from, self-employment. Next, we examine changes in labour market opportunities outside of the self-employment sector as these can also have profound effects on self-employment rates. Here, we look at the durations and the transition rate between employment in the wage and salary sector and non-employment.

The decompositions are carried out as follows. We allow the particular elements of interest in the transition matrix pertaining to the 1980's to take on the probability value in the relevant 1990's transition matrix. By definition, each of the columns of the transition matrix must sum to one. Therefore, one cannot simply change one element in any given column and still

maintain this requirement. Our approach when a single element in a column was to be changed to the 1990's probability, was to change that element to the 1990's level but maintain the ratio of the other two probabilities in that column.⁶ The ergodic distributions resulting from the newly formed transition matrix and the associated steady-state self-employment rate were then calculated. The fraction of the overall change in the steady-state rate of self-employment attributable to the change in any element(s) of the transition matrix is then estimated as the difference between the steady-state rate associated with the newly formed transition matrix and the rate for the 1980's, divided by the total predicted change between the two periods (i.e. when all the elements of the matrix are changed to the 1990's level). These estimates are presented in Table 3 for all individuals and are duplicated in appendix table A2 for individuals with only one of self-employment or wage and salary income in the previous year.

It appears that, for Canadian males, changes in the probabilities of entering and exiting self-employment directly from/to the other two labour force states had little impact on the secular rise in the steady-state rate of self-employment. In fact, Table 3 suggests that if the only changes in the transition matrix between the 1980's and 1990's had been the probabilities of exiting and entering self-employment, the steady-state rate of self-employment would have declined. Both a decline in the entry rate and an increase in the exit rate contribute to this hypothetical decline. Instead, the factors which appear to have played the largest role in the sectoral rise in male self-employment rates are those elements which determine whether an individual is employed in the wage and salary sector or not employed at all. For instance, the rise in the probability of exiting

⁶While not ideal this method seems preferable to changing the entire column to the new (1990's) level. Changing various combinations of elements, in our view, provides more insights into the various possible causal mechanisms at work.

the wage and salary sector into non-employment and the decline in the probability of entering the wage and salary sector from non-employment account for 183 percent of the increase in the steady-state rate of self-employment between the two periods. Also, allowing the retention rate in wage and salary work and non-employment to adjust to the 1990's level accounts for 190 percent of the rise.

There are two mechanisms by which the transition rates between these other two labour force states affects the rate of self-employment. The first results from an increase in the number of individuals who are self-employed. An increased flow of individuals into non-employment raises the rate of self-employment because the probability of entering self-employment from non-employment is greater than the probability of entering self-employment from the wage and salary sector. A second mechanism results directly from a decrease in the number of individuals employed in the wage and salary sector. If entry and exit from self-employment are constant-- i.e. the self-employed are insulated against labour market shocks-- but wage and salary workers exit into non-employment this will increase the fraction of the self-employed in total employment. In order to establish the relative magnitudes of these two mechanisms we estimate the fraction of the total change in the steady-state rate of self-employment, net of the negative effects from direct entry and exit⁷, that is due to the increase in the fraction of time spent in self-employment and that which is due to the decrease in time spent in wage and salary employment. The estimates suggest that nearly 60 percent of the increase is due to increased time in self-employment (the first mechanism) while the remaining 40 percent is due to decreased time in wage and salary

⁷For this analysis we allowed only changes in the ergodic distribution that result from changing the flows between wage and salary employed and not employed to their 1990's level. This allowed us to isolate the two mechanisms described above from the negative effects of direct entry and exit on time spent in self-employment.

employment.

The explanation for the rise in steady-state self-employment among women is more straightforward. For women increased entry and decreased exit from self-employment are the two most important causes for the secular rise in self-employment. Together, entry and exit account for 112 percent of the rise in the steady-state rate of self-employment between the two periods for women. Nearly all of that 112 percent rise can be attributed to a decline in exits from self-employment combined with an increase in the duration of self-employment. Surprisingly, unlike for men, changing transition patterns between the wage-and-salary sector and nonemployment had almost no effect on the steady-state self-employment rate for women. In fact, Table 3 suggests that the steady-state rate of self-employment would have fallen somewhat if only the transition probabilities between E and N had changed. This is likely the result of the increase in labour force participation experienced by women over this period.

(6) Job Characteristics of Newly Self-Employed

A number of researchers have suggested that the rise in self-employment in Canada is, in part, attributable to new opportunities opened up by technology that makes self-employment more feasible than it once was.⁸ In contrast, we have argued that, at least for Canadian men, one of the main causes for the rise in self-employment is a declining wage and salary sector. If Canada's new male self-employment is in fact such "employment of last resort", one might expect the quality of new self-employment jobs in the 1990's to deteriorate. In this section we examine the

⁸See, for example, Farber (1997) which uses US data and Gauthier and Roy (1997) which uses Canadian data.

measures of the “quality” of self-employment opportunities at our disposal to see whether this is indeed the case.

Table 4 compares the distributions of newly self-employed men and women to those with longer job tenures in self-employment across job attributes for the two periods. Both men and women who are self-employed are increasingly “own-account”, in other words without paid help, a change which might reflect both changes in technology favourable to that kind of self-employment, or declines in the quality of new self-employment opportunities.⁹ More interestingly, however, the increase in own account self-employment experienced over this period among men is significantly larger than the increase among women. In addition, the increase in own account self-employment among men is greater for the more recently self-employed-- those with tenures of 1 year or less-- than for those with longer job tenures in the self-employment sector. The fraction of more recently self-employed men who are own account increased by more than 12 percentage points between the 1980's and 1990's compared to a 4 percentage point increase for women with all tenures. Trends in own-account self-employment are therefore consistent with the notion that declining market opportunities played a larger role in men’s increasing self-employment than in women’s.

A second job “quality” measure, usual hours worked per week, also suggests that the nature of self-employment among men is changing. There was a substantial increase in the fraction of men working fewer than 30 hours per week and a decline in the fraction working more than 30 hours between the 1980's and 1990's. At the same time, a larger fraction of self-employed women were working more than 40 hours and fewer were working less than 20 hours. This is

⁹These findings support those found in Gauthier and Roy (1997).

also consistent with the notion that declining market opportunities played a larger role in men's increasing self-employment than in women's.

Table 5 reports average weekly wages for short and longer tenure men and women in both the self-employment and wage and salary sectors for the 1980's and 1990's. For men, both self-employed and wage and salary earner's wages have declined between the two periods, but the decline in self-employment wages, particularly for the more recently self-employed, was substantially larger than the same decline in the wage and salary sector. This is starkly contrasted by a comparatively large increase in weekly wages among self-employed women relative to women earning a wage and salary. This evidence suggests that as employment opportunities worsened between the two decades men were pushed into self-employment as a last resort.¹⁰ On the other hand, the quality of self-employment opportunities for women has increased.

(7) Conclusions

The evidence presented here clearly shows that the process of selection into self-employment which has led to a secular increase in Canadian self-employment between the 1980's and 1990's is significantly different for men and women. Declining opportunities in wage and salary employment between the two periods has had a large impact on male self employment rates and virtually no impact on women's. In contrast, most of the secular rise in self-employment among women came as a result of declining exit rates from self-employment or increased

¹⁰Our evidence for men is also strongly inconsistent with the notion that increased self-employment consists to a substantial of voluntary "contracting out" of jobs to the same individuals who once did the same job in the wage-and-salary sector. In such situations, one might expect wages to *increase* to compensate for the loss in fringe benefits such as dental and pension plans.

duration. This may be the result of an increase in labour market experience among women in general, and an increase in self-employment experience, in particular.

The fact that, due to divergent changes in the underlying transition processes, self-employment rates rose both in improving (women's) and deteriorating (men's) labour markets, highlights two main lessons that emerge from this paper. One is that analyses of the effects of macroeconomic conditions factors on self-employment rates would do well to look at the dynamics of entry and exit rates in addition to only the stock of self-employed persons. The other is the importance of looking at men and women separately: superficially similar trends may have very different causes for men than for women.

Table 1
Characteristics of Self-Employment Entrants and Leavers

	Entrants				Leavers				Total Population			
	Men		Women		Men		Women		Men		Women	
	80's	90's	80's	90's	80's	90's	80's	90's	80's	90's	80's	90's
Source/Destination (%)												
Wage & Sal	75.2	68.0	61.4	64.0	74.3	70.6	68.4	62.6	84.5	79.9	62.2	67.4
Not Employ	24.8	32.0	38.6	36.0	25.7	29.4	31.6	37.4	15.5	20.1	37.8	32.6
Age (%)												
25-34	41.6	39.6	43.2	39.0	42.5	37.0	41.3	36.8	42.0	38.6	42.5	38.4
35-44	34.9	39.2	37.3	38.7	35.4	36.7	36.4	38.5	33.9	35.8	33.6	36.1
45-54	23.6	21.3	19.6	22.3	22.2	26.3	22.3	24.7	24.1	25.6	23.9	25.5
Education (%)												
8yrs or less	13.8	5.4	9.0	4.1	11.9	6.5	9.2	6.2	12.8	7.6	12.5	7.4
9-10 yrs	17.0	13.5	14.7	9.2	13.7	13.8	14.5	13.1	13.9	12.4	14.0	11.0
11-13 yrs	29.1	38.9	33.0	37.6	28.4	35.6	35.6	38.3	31.7	39.1	36.2	39.4
some post	8.9	9.2	10.1	9.4	10.3	8.6	9.3	8.7	9.2	8.1	8.4	8.5
post-second	14.1	13.9	15.9	20.3	19.0	16.2	15.2	16.4	14.3	14.3	15.9	18.7
university	17.1	19.1	17.4	19.5	21.6	19.3	16.2	17.3	18.1	18.5	13.0	15.0
Marital Status (%)												
single	17.4	24.9	8.4	10.5	17.1	19.3	9.6	11.8	17.0	21.1	12.1	14.1
married	74.5	65.7	81.3	78.6	74.4	73.2	76.7	77.7	77.3	72.4	76.9	74.6
div/wid/sep	8.0	9.5	10.3	10.9	8.5	7.5	13.7	10.5	5.7	6.5	11.0	11.4
Number of Young Children (aged <7) (%)												
none	74.2	75.4	67.0	67.1	71.9	70.8	72.4	66.7	73.3	75.1	73.5	73.4
one	15.8	13.5	19.0	19.2	16.8	17.9	15.6	22.0	16.7	15.1	16.9	16.5
two	8.6	9.8	11.8	10.6	9.5	9.1	10.1	10.0	8.7	8.3	8.3	8.5
three +	1.4	1.2	2.2	3.2	1.9	2.3	1.9	1.3	1.4	1.5	1.3	1.6
Number of Older Children (aged 7-17) (%)												
none	61.0	71.9	47.2	59.8	60.8	65.9	50.1	54.6	61.3	67.4	55.2	61.4
one	19.8	13.8	23.8	20.5	19.3	17.1	21.6	20.7	18.4	16.3	22.1	20.0
two	13.5	10.5	20.3	15.0	15.3	13.0	20.1	17.6	15.0	12.6	16.8	14.4
three +	5.7	3.9	8.7	4.7	4.7	4.0	8.3	7.1	5.3	3.7	5.9	4.2

Years Since Immigration (%)												
0 yrs	78.2	81.5	82.6	82.9	83.9	78.3	80.7	83.7	80.2	81.2	81.2	81.4
1-5 yrs	2.9	5.6	2.1	3.8	1.4	5.7	2.0	3.6	2.8	4.4	2.6	4.4
6-10 yrs	2.9	0.4	2.7	1.8	3.1	1.8	4.0	1.2	2.7	1.3	2.7	1.2
11-20 yrs	5.6	4.6	4.8	3.0	5.4	6.3	5.0	3.8	5.8	4.6	5.6	4.8
21-50 yrs	10.5	8.0	7.8	8.5	6.3	7.9	8.3	7.8	8.5	8.4	7.9	8.1
1. All values calculated using SCF data files 2. Some columns may not sum to 1 because of rounding error.												

Table 2
Estimated Transition Matrices, Ergodic Distributions and Steady-State Rates of
Self-Employment: 1980's v.s. 1990's, males and females

Men

<u>Probability Matrix 1980's</u>				<u>Probability Matrix 1990's</u>			
E	S	N		E	S	N	
0.9184	0.1487	0.3121	E	0.9002	0.1489	0.2608	E
0.0116	0.8180	0.0338	S	0.0103	0.8121	0.0357	S
0.0701	0.0332	0.6541	N	0.0895	0.0390	0.7035	N
<u>Ergodic Distribution 1980's</u>				<u>Ergodic Distribution 1990's</u>			
E	0.7602			E	0.6983		
S	0.0783			S	0.0802		
N	0.1615			N	0.2215		
Steady-State Self-Employment Rate = 0.0933				Steady-State Self-Employment Rate = 0.1031			
Change in Steady-State Self-Employment Rate 1990's-1980's = 0.0097							

Women

<u>Probability Matrix 1980's</u>				<u>Probability Matrix 1990's</u>			
E	S	N		E	S	N	
0.8984	0.2695	0.1708	E	0.9043	0.1589	0.1778	E
0.0089	0.6482	0.0127	S	0.0087	0.7790	0.0146	S
0.0927	0.0823	0.8164	N	0.0869	0.0621	0.8076	N
<u>Ergodic Distribution 1980's</u>				<u>Ergodic Distribution 1990's</u>			
E	0.6372			E	0.6470		
S	0.0282			S	0.0458		
N	0.3346			N	0.3072		
Steady-State Self-Employment Rate = 0.0424				Steady-State Self-Employment Rate = 0.0661			
Change in Steady-State Self-Employment Rate 1990's-1980's = 0.0237							

Table 3
Decomposition of Change in the Canadian Steady-State Rate of Self-Employment 1990's-1980's:
Men and Women, Separately

	Men				Women			
Elements Changed	S-S Rate 1980's	S-S Rate 1990's	Change S-S Rate	Percent Explained	S-S Rate 1980's	S-S Rate 1990's	Change S-S Rate	Percent Explained
All Elements	0.0933	0.1031	0.0097	100	0.0424	0.0661	0.0237	100
S-E Entry and Exit (ES,SE,NS,SN)	0.0933	0.0868	-0.0065	-66	0.0424	0.0690	0.0266	112
S-E Entry (ES,NS)	0.0933	0.0892	-0.0041	-42	0.0424	0.0443	0.0019	8
S-E Exit (SN,SE,SS*)	0.0933	0.0908	-0.0025	-26	0.0424	0.0661	0.0237	100
S-E Duration (SS)	0.0933	0.0906	-0.0027	-28	0.0424	0.0659	0.0235	99
W&S-Non-Employ Transitions (EN,NE)	0.0933	0.1112	0.0179	183	0.0424	0.0408	-0.0016	-7
W&S Non-Employ Duration (EE,NN)	0.0933	0.1118	0.0185	190	0.0424	0.0400	-0.0024	-10
All W&S Non (EN, NE,EE,NN,ES*,NS*)	0.0933	0.1058	0.0125	128	0.0424	0.0424	0.0000	0

1. For a description of how the values are calculated refer to the text.
2. * denotes elements that took on their 1990 value because of requirement to sum to one.

Table 4
 Job Characteristics of Self-Employment Entrants: 1980's v.s. 1990's,
 Men and Women, Separately

	Men				Women			
	1980's		1990's		1980's		1990's	
Year's Self-Employed	Less than 1 year	More than 1 year	Less than 1 year	More than 1 year	Less than 1 year	More than 1 year	Less than 1 year	More than 1 year
Self-Employment Type								
Own Account	70.69	57.11	82.81	64.43	79.25	70.16	84.28	74.81
With Paid Help	29.31	42.89	17.19	35.57	20.75	29.84	15.72	25.19
Usual Hours Worked Per Week								
Less than 20	9.32	12.14	12.37	15.56	38.28	42.38	35.04	35.73
20-30 hours	7.76	5.33	10.41	7.05	12.07	9.70	15.30	12.83
31-40 hours	39.10	32.47	35.74	31.55	25.20	21.95	23.55	24.91
41+ hours	43.81	50.06	41.48	45.84	24.45	25.98	26.12	26.53
Industry								
Man. durables	1.64	1.65	2.21	1.86	3.36	2.22	4.35	2.32
Man. non-dur	3.08	2.52	2.46	4.19	0.23	0.84	0.11	0.58
Construction	24.06	21.24	24.38	27.39	0.83	1.44	1.32	1.95
Transp./Comm.	11.05	11.22	9.93	9.53	1.21	2.07	2.21	1.72
Whole Trade	5.89	4.44	4.52	5.14	1.99	1.92	1.67	2.46
Retail Trade	19.54	18.85	13.75	14.81	28.40	26.04	26.11	20.96
Fin/Ins/Real	5.47	3.78	6.09	6.00	2.91	3.16	6.46	4.72
Services	29.28	36.31	36.66	37.12	61.08	62.32	57.77	65.29

Table 5
Average Real Weekly Wages of Recently Self-Employed
1980's v.s. 1990's, Men and Women, Separately (1994 dollars)

	Men			Women		
	1980's	1990's	Percentage Change	1980's	1990's	Percentage Change
Self-Employed 1-5 years	561.16	511.28	-0.09	249.01	306.34	0.23
Self-Employed More than 5 years	660.59	644.19	-0.02	275.08	325.82	0.18
Wage and Salary 1-5 years	728.90	707.04	-0.03	434.97	464.67	0.07
Wage and Salary More than 5 years	831.84	824.55	-0.01	499.41	526.45	0.05

* Self-employment wages were calculated as reported net annual income from non-farm self-employment divided by weeks worked in the previous year. Those with negative net self-employment income were included. Similar results were obtained when those with negative net self-employment income were dropped from the sample.

* Wages for wage-and-salary earners were calculated by dividing annual reported income from wages and salaries by weeks worked.

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Appendix A: Defining the “main job” in the pre-survey year

The two-year panels overlap. So, for any given year (say 1994) we observe information for the entire year for one sample of individuals (the 1995 survey) and for the week prior to the survey for a second sample (the 1994 survey). Because both samples are random draws from the entire population the expected average characteristics of the samples should be the same. Therefore, we rank individuals based on the fraction of income from wages and salaries (f_i) in the first sample. Based on this ranking we partition the sample such that the probability of self-employment in any week of that survey year is equal to the rate in the week prior to the survey in April of that same year. In other words, we select an f_i^* such that: $\frac{\sum_{f_i < f_i^*} \beta_i w_i}{\sum_i \beta_i w_i}$ equals the rate of self-employment in the second sample (where w_i is the sample weight, and N is the total number of weeks worked divided by 52). We then assign individuals' time in employment as "self-employed" if their fraction of income from wage and salaries is less than the cutoff value (replace $f_i = 0$ if $f_i < f_i^*$) and as "wage-and-salary" time if the fraction is above the cutoff ($f_i = 1$ if $f_i > f_i^*$). Then the probability of being self-employed in any week for an individual is $f_i(1 - f_i)$. We lose the first year of data because of the matching process.

Appendix B: Results From Restricted Sample

Appendix Table 1
Estimated Transition Matrices, Ergodic Distributions and Steady-State Rates of
Self-Employment Men and Women with One Source of Earned Income

Men

Probability Matrix 1980's				Probability Matrix 1990's			
E	S	N		E	S	N	
0.9245	0.0623	0.3082	E	0.9012	0.0379	0.2573	E
0.0062	0.9070	0.0296	S	0.0058	0.9266	0.0324	S
0.0693	0.0307	0.6622	N	0.0930	0.0355	0.7103	N
Ergodic Distribution 1980's				Ergodic Distribution 1990's			
E	0.7387			E	0.6316		
S	0.1007			S	0.1477		
N	0.1606			N	0.2208		
Steady-State Self-Employment Rate = 0.1199				Steady-State Self-Employment Rate = 0.1895			
Change in Steady-State Self-Employment Rate 1990's-1980's = 0.0696							

Women

Probability Matrix 1980's				Probability Matrix 1990's			
E	S	N		E	S	N	
0.8794	0.1299	0.1678	E	0.8904	0.0615	0.1743	E
0.0040	0.7613	0.0117	S	0.0044	0.8712	0.0133	S
0.1066	0.1088	0.8205	N	0.1052	0.0673	0.8124	N
Ergodic Distribution 1980's				Ergodic Distribution 1990's			
E	0.5780			E	0.5913		
S	0.0289			S	0.0567		
N	0.3930			N	0.3519		
Steady-State Self-Employment Rate = 0.0476				Steady-State Self-Employment Rate = 0.0875			
Change in Steady-State Self-Employment Rate 1990's-1980's = 0.0399							

Appendix Table 2
Decomposition of Change in the Canadian Steady-State Rate of Self-Employment 1990's-1980's
 Restricted Sample: Men and Women with One Source of Earned Income

	Men				Women			
Elements Changed	S-S Rate 1980's	S-S Rate 1990's	Change S-S Rate	Percent Explained	S-S Rate 1980's	S-S Rate 1990's	Change S-S Rate	Percent Explained
All Elements	0.1199	0.1895	0.0696	100	0.0476	0.0875	0.0399	100
S-E Entry and Exit (ES,SE,NS,SN)	0.1199	0.1509	0.0310	45	0.0476	0.0951	0.0475	119
S-E Entry (ES,NS)	0.1199	0.1215	0.0016	2	0.0476	0.0534	0.0058	14
S-E Exit (SN,SE,SS*)	0.1199	0.1489	0.0290	42	0.0476	0.0852	0.0376	94
S-E Duration (SS)	0.1199	0.1471	0.0272	39	0.0476	0.0849	0.0373	93
W&S-Non-Employ Transitions (EN,NE)	0.1199	0.1538	0.0339	49	0.0476	0.0437	-0.0039	-10
W&S Non-Employ Duration (EE,NN)	0.1199	0.1513	0.0314	45	0.0476	0.0435	-0.0041	-10
All W&S Non (EN, NE,EE,NN,ES*,NS*)	0.1199	0.1535	0.0336	48	0.0476	0.0489	0.0013	3

1. For a description of how the values are calculated refer to the text.
2. * denotes elements that took on their 1990 value because of requirement to sum to one.