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Setting up Shop
Self-Employment among Canadian College and University Graduates
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Le travail indépendant chez les diplômés des collèges et universités au Canada
Establecerse como independiente
Auto-empleo de los graduados de colegios y universidades canadienses

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Article abstract

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Setting up Shop

Self-Employment among Canadian College and University Graduates

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This article reports the results of an empirical analysis of self-employment among recent college and university graduates using the National Graduates Survey databases. It finds that self-employment rates two years after graduation, calculated by year of graduation (1982, 1986, 1990 and 1995) and level of education, ranged from 6.5 percent to 7.8 percent for men, and from 3.2 percent to 5.2 percent for women. Five years after graduation, the rates had increased, ranging from 9.9 percent to 11.1 percent for men, and from 5.3 percent to 6.7 percent for women. The evidence regarding employment rates, job satisfaction, the job-education skill match and earnings (the latter including the estimation of both cross-sectional and fixed effects models) suggests that self-employment is generally associated with enhanced labour market outcomes—that is, the result of "pull" factors. Policy implications are discussed.

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Labour markets have been changing in some very important ways in the last two decades. Although most employed Canadians still hold only one full-time permanent paid job, an increasing portion of the labour force can be found in "non-standard" types of work, such as part-time employment, temporary or contract work arrangements, self-employment, or multiple job holding (Krahn 1995). There has, in particular, been substantial growth in the number of Canadians who are self-employed. As a result, in 2001, the self-employed accounted for 15.3 percent of all workers, up from 12.8 percent in 1981 (Labour Force Survey data).

Being self-employed—as opposed to being a paid worker—could be for one of two broad reasons: not being able to find suitable employment of the more conventional status, or preferring the self-employment status for personal reasons or due to any short-term monetary benefits and/or enhanced longer-term career opportunities which might accrue. One important question is the following: are individuals pushed toward self-employment because of the unavailability of paid work, or are they pulled into self-employment because of its comparative advantages?

This article contributes to our understanding of the self-employment phenomenon by documenting and analyzing the patterns of self-employment among four recent cohorts of Canadian post-secondary (college and university) graduates in the five years following graduation using data from the National Graduates Surveys (NGS).[1] Graduates are a particularly interesting group to study in terms of self-employment. First, thanks to their positioning at the margin (entry point) of the labour market, they presumably reflect recent trends and better portend other changes to come than do the more general population of workers. Second, if new generations of younger workers are facing a general decline in labour market opportunities in the form of being forced into more non-standard work, policy measures—preventative, remedial, or compensatory—may be warranted.

The article begins with an empirical documentation of the incidence of self-employment (levels, patterns and trends) among graduates, broken down by their level of education (college, bachelor's, master's and doctorate), sex and year of graduation. It then analyses various outcomes of the self-employed versus paid workers in order to address the issue of whether self-employment tends to be the preferred employment option for those who enter it, the result of a lack of suitable "conventional" employment opportunities, or some combination of the two. The analysis makes

1. In the National Graduate Surveys, a self-employed worker is defined as "a person who works directly for himself or herself. The self-employed may or may not have a business, a farm or a professional practice."

use of a variety of analytical approaches, ranging from simple tables and relatively standard cross-sectional econometric models to a fuller exploitation of the longitudinal structure of the first three (full) NGS cohorts to compare stayers and movers.

Two general conclusions may be drawn from the analysis. First, the incidence of self-employment was relatively stable for the first three cohorts of graduates covered in the analysis (those who completed their studies in 1982, 1986, and 1990), the overall rates ranging from 6.5 percent to 11.1 percent among male graduates and from 3.2 to 6.7 percent for females. Rates then tended to be higher—but only moderately so and only for some groups—among graduates of the most recent cohort (those who graduated in 1995). There is some evidence of an upward trend in self-employment among recent post-secondary graduates but not a particularly strong one, and only since the mid-1990s.

Second, the evidence generally points to self-employment as being a relatively attractive job status. This is seen in a number of ways. At the aggregate level, for every cohort the rates of self-employment rise from the first interview following graduation (after two years) to the second (after five years), an interval over which job opportunities generally improve significantly for graduates. At the individual level, comparisons of earnings, the job-education skill match and job satisfaction offer little evidence that the self-employment status is generally characterized by less favourable outcomes, and indicate it is particularly marked by generally higher (not lower) overall levels of job satisfaction. Finally, both conventional cross-sectional earnings models and difference equations which control for fixed effects with which job status might be correlated (such as ability and ambition) point to self-employment being a higher-paying (and therefore more attractive) job status than the conventional paid worker situation.

The article is laid out in a straightforward fashion: the next section provides a review of the existing empirical evidence and economic theory; the third section offers a description of the National Graduates Surveys databases and the samples used in the analysis; the presentation of the empirical findings then follows; and the concluding section summarizes the major findings and their implications.

THE CONTEXT, EMPIRICAL EVIDENCE AND ECONOMIC THEORY

The Labour Market Context

The Canadian labour market changed in many ways over the last two decades. First, on the supply-side, the number of less educated workers

decreased, while the supply of highly educated workers grew dramatically. This increase in educational attainment had two particular dimensions: increased educational attainment for women relative to men, and higher educational attainment for experienced workers (aged 45 to 54) relative to youth (25 to 34). The age structure of the labour force also changed; workers of the 1990s were more experienced than those of previous decades. Overall, these changes translated into a workforce with substantially increased levels of human capital as conventionally measured by labour economists.

A second set of important changes pertains to the demand side of the labour market. Forces associated with trade and technology contributed to the transition toward a knowledge-based economy. There was also a weakening of aggregate demand. The annual average growth rate of the gross domestic product was almost 3 percent in the 1980s (1980–1989), but only 1.8 percent over the 1990s (1990–1998). The weakness of GDP growth contributed to sluggish employment growth which in turn could have affected other outcomes such as self-employment.

At the institutional level, changes in the Employment Insurance program, modifications of the social assistance system and the introduction of new programs such as the Canadian Child Benefit System also influenced the labour market in the 1990s. Finally, on the firm side, businesses changed the way they manage their workforces. Terms such as technological change, rationalization, high performance workplaces and innovation in work organization are now common in our vocabulary. However, our understanding of their effects on the labour market is far from complete.[2]

Trends in Self-Employment

During the same period, non-standard work in general was becoming more common (Krahn 1995); included in this, self-employment increased while paid employment expanded only weakly.[3] In 1997,[4] nearly 2.5 million Canadian workers reported being self-employed, compared to over 1.2 million in 1976. Over this period, the growth in self-employment averaged 3.5 percent per annum compared to 1.4 percent for paid employment. Indeed, the rate of growth in self-employment growth accelerated from 2.4 percent per year in the 1980s to 4.1 percent during the first eight years of the 1990s. In comparison, growth in paid employment slowed from an average rate of 1.9 percent in the 1980s to 0.2 percent in the 1990s.

2. See Picot and Heisz (2000) for further discussion of these recent labour market changes.

3. See Lin, Yates and Picot (1999) and Gauthier and Roy (1997) for trends in self-employment.

4. We will focus on numbers up to 1997 since our data from the NGS cover 1984 to 1997.

Canada stands out as one of the OECD countries with the greatest growth in self-employment relative to paid employment over the last decade (OECD 2000).

Self-employment has tended to be more prevalent among men than women; for example, in 1996, 20 percent of men were self-employed, compared to 12.5 percent for women. Self-employed workers also tend to be older than paid employees: only 25 percent of the self-employed are under the age of 35, even though this age group represents 45 percent of all employees. The probability of being self-employed increases with age, probably at least partly because it takes time to build the experience, resources and skills to own a business (Cohen 1998). Finally, there is generally a greater incidence of self-employment among those with both low and high education: in 1996, self-employment rates were above average for both those with less than grade 11 and those with graduate degrees (Statistics Canada 1997).

The Theory and Evidence

The increase in self-employment has motivated numerous explorations both of a theoretical and of an empirical nature.[5] Empirical analyses of the determinants of self-employment focus not only on "traditional" variables such as education, experience, age and family background, but also on other factors such as "entrepreneurial drive" (Evans and Leighton 1989), liquidity constraints (Evans and Jovanovic 1989; Blanchflower and Oswald 1990,1998; Dunn and Holtz-Eakin 2000) and intergenerational links (Dunn and Holtz-Eakin 2000).

Rees and Shah (1986) propose, as an extension of the two-sector model of labour supply (Killingsworth 1983), a theory based on an individual's choice between self-employment and paid employment. Their model predicts that an individual will choose the work with the highest expected returns. A self-employed worker would earn more in his own business than as a paid wage earner and vice versa.

The theoretical underpinnings concerning the determinants of flows to self-employment are divided in two: recession-push and entrepreneurial-pull (Holmes and Schmitz 1990). Recession-push theories assume that self-employed workers do not have distinct qualities that differentiate them from paid workers and are pushed toward self-employment because of the lack of opportunities in the paid labour market. Evans and Leighton (1989) find that lower end workers (i.e., unemployed and lower-paid wage workers

5. See Blanchflower and Meyer (1991) and Lee (1999) for a thorough literature review on self-employment.

and men who have frequently changed jobs) were more likely to enter self-employment while Alba-Ramirez (1994) found in the case of Spain and the U.S. an increasing probability of becoming self-employed with the duration of unemployment.

In contrast, the entrepreneurial-pull theory considers entrepreneurs to be those individuals possessing the abilities and skills to perform in a self-employment job, implying that there should be no significant positive relation between self-employment and unemployment. In fact, this relation could even be negative; because of the higher risk associated with self-employment as compared to paid work, periods of recession and high unemployment may discourage individuals from setting up shop. Empirical evidence supporting this theory includes Blanchflower and Oswald (1998), who report that the local unemployment rate has a negative impact on the probability of being self-employed, and Lin, Yates and Picot (1999) who find a small but statistically significant negative relationship between self-employment and employment at the aggregate level. Taylor (1996) suggests that self-employment is a more attractive proposition when there is a safety net of paid employment available in case of failure rather than being a response to high unemployment levels per se.

Other evidence is more conflicting or otherwise supports both theories. Parker (1996) finds evidence in favour of both the "push" and the "pull" hypotheses depending on the optimal balance between income growth in self-employment and hired employment. Interestingly, Kuhn and Schuetze (1999) report that the "push" theory applies for men while the "pull" theory holds for women. While both men's and women's self-employment rates increased during the last two decades, declining opportunities in paid employment had a strong impact on men's rates and virtually no impact on women's. Simpson and Sproule (1998) arrive at the opposite conclusion.

Some studies on self-employment have used data on young adults (e.g., Evans and Jovanovic 1989; Blanchflower and Meyer 1991; Blanchflower and Oswald 1990, 1998; Dunn and Holtz-Eakin 2000). To our knowledge, however, only Dolton and Makepeace (1990) use data on recent graduates (1980 UK graduates six and a half years into their careers). Using a Heckman (1979) two-step procedure to control for selection, they find that the difference between the predicted earnings in self-employment and paid employment plays no role in the decision of entering self-employment; the decision depends solely on personal and social factors. Policy aimed at increasing its returns may, therefore, not encourage growth in self-employment among graduates.

The NGS data do not allow us to explicitly test the "push" and "pull" theories. However, the measures of earnings, job satisfaction and overall

job evaluation that are included in the NGS permit the analysis of the self-employment status at the individual level in a novel way. These measures then allow us to offer an overall judgment of whether individuals are typically pushed or pulled into self-employment based on the general desirability and benefits of being self-employed or being in paid employment.

THE DATA

The National Graduates Surveys

The National Graduates Surveys databases employed in this research represent those who successfully completed Canadian post-secondary programs in 1982, 1986, 1990 and 1995. For each cohort, information was gathered during interviews carried out two and five years after graduation (at time of writing, only the first interview data was available for the final set of graduates).

These databases, developed by Statistics Canada in partnership with Human Resources Development Canada (HRDC), are well suited to this analysis for a number of reasons. First, the NGS files represent large samples of the target population, each survey including approximately 30,000 college and university graduates. This facilitates the sort of detailed analysis of post-graduation experiences that general survey database (such as the Survey of Consumer Finances, General Social Survey or Survey of Labour Income Dynamics) cannot support, while the representative nature of the databases allows the results to be generalized to the population of graduates at large.[6]

Second, the longitudinal element of the NGS surveys, deriving from the two interviews conducted for each cohort, facilitates a dynamic tracking of the school-to-work transition precisely situated as of these two points in time, while also covering a relatively extended period after leaving school.

Third, the availability of data for four different cohorts permits the more enduring patterns to be separated from those which have been shifting over what is generally thought to have been a period of important labour market changes, especially for younger workers.

6. The NGS databases are based on a stratified sampling scheme (by province, level of education and field of study). All results reported below reflect the appropriate sample weights. The databases also include trade and vocational school graduates, but these individuals are not included in the present analysis because the structure of their educational experiences and post-graduation outcomes is quite different, as is the organisation of the data (different questions, *etc.*).

Finally, the NGS files contain numerous measures of labour market outcomes, including employment status, the job-education skill match, job satisfaction and earnings, thus facilitating a multi-dimensional analysis of the school-to-work transition and early job outcomes in the context of the self-employment job status, while also providing a reasonable set of control variables to include in the econometric models employed.

NGS response rates are generally quite high for a survey of this type, ranging from 74 percent to 85 percent for the first interview and (except for one outlier), with 81 percent to 93 percent of these individuals captured again a second time. Furthermore, these rates effectively represent lower bounds of the "true" response rates relevant to the underlying domain of interest.[7]

Selection of the Working Samples

This analysis focuses on a relatively tightly defined group of graduates who were moving into the labour market after having completed their studies. Graduates who obtained an additional degree (*i.e.*, subsequent to the one received in 1982, 1986, 1990, or 1995 representing the basis of inclusion into the samples) and part-time workers who cited school as the reason for their only partial involvement in the labour market are excluded from the analysis. This was done on the grounds that many such graduates no longer belonged to the original education group (*e.g.*, bachelor's graduates became master's graduates) and had in any event been mixing school and work in a way likely to affect the labour market outcomes upon which this analysis is focused.[8]

Other part-time workers (i.e., non-students) are included in the analysis, thus lending it a broad labour market base. The few individuals who were other than paid workers (family workers, volunteers, *etc.*) were deleted, as were full-time workers with unreasonably low earnings levels (under $5,000 measured on an annual basis), thus selecting out those with only very marginal attachment to the labour force. Finally, observations were dropped on a variable-by-variable basis where the required information was missing.

7. The response rates look better when eliminate those individuals living out of the country, those who turned out to have not actually graduated in the indicated year, those who graduated with multiple degrees, and those otherwise deemed not to be in the relevant sample domain. See Finnie (1999a, 2001).

8. Analysis of the 1982 cohort, for which enrolment status as of the interview dates is given in the NGS files (which is not the case for the later cohorts), reveals that most of the part-time workers eliminated by the second part of the restriction were in fact full-time students and, conversely, that most full-time students were eliminated by this condition, precisely as desired.

For the tracking of outcomes at the aggregate level as of two and five years following graduation, these criteria were applied to each interview's observations independently in each period. Where individual-level dynamics are analyzed, individuals had to meet the criteria in both years.

CONSTRUCTION OF THE VARIABLES USED IN THE ANALYSIS

Earnings

For the first three cohorts, the earnings measure is based on the question: "Working your usual number of hours, approximately what would be your annual earnings before taxes and deductions at that job?" Values were converted into 1997 constant dollars and capped at the $147,702 value that represents the lowest cap employed across the various interviews. For 1997, the measure is based on three questions which asked the individual: (i) to identify the easiest way to report his or her earnings (yearly, monthly, weekly, hourly, or some other basis), (ii) to give the actual before tax earnings on the indicated basis, and (iii) to report the usual hours of work at the job (the average of the last four weeks if it varies). These results were then used to construct annual totals ($1997, capped). The measure is, then, constructed in a consistent fashion across the first six periods, but is not directly comparable between these and the last period due to the changed construction of the variable in that year.

The Job-Education Skill Match

For the first three cohorts (1982, 1986, and 1990 graduates), the job-education skill match measure is based on the question: "Do you use any of the skills acquired through the education program in your job?" To reduce the associated categorical responses to simple scalar indices, for the 1982 and 1986 cohorts the available responses of "no" and "yes" were assigned values of 0 and 100 respectively, while for the 1990 cohort, the values of 0 ("not at all"), 33 1/3 ("very little"), 66 2/3 ("to some extent"), or 100 ("to a great extent") were assigned. For the very last cohort (1995 graduates), the underlying question was: "How closely is your current (main) job related to your degree, certificate, diploma?" with values of 0 ("not related at all"), 50 ("somewhat related"), and 100 ("closely related") assigned. The tables report the mean value of these scores, with higher values indicating a closer job-education skill match. Given these constructions, the measure should be consistent across the first four periods (the two interviews for each of the first two cohorts), for the next two periods (the third cohort), but not between these two different sets or between either

of these and the final data point (1997), although the relevant question was, unfortunately, not actually asked of the self-employed in the latter year, nor in 1984.

Overall Job Satisfaction

The overall job satisfaction measure is based on the question "Considering all aspects of your job, how satisfied are you with it?" The response options were similar in all years: "very satisfied," "satisfied," "dissatisfied," "very dissatisfied" in the 1986 and 1990 survey years (1988/91 and 1992/95), except that the last two options differed very slightly for the first cohort: "not satisfied," "not at all satisfied". The responses were assigned values from 0 to 100 in the same manner as the job-education skill match variable described above, and the table reports the mean values of these scores, with higher values indicating greater job satisfaction. Again, the relevant question was not asked of the self-employed in 1984 or 1997.

THE EMPIRICAL FINDINGS

The Incidence of Self-Employment

Table 1 shows that for the first three cohorts, the self-employment rates for graduates at all education levels taken together (college, bachelor's, master's, doctorate) range from 6.5 percent to 7.8 percent for males, and from 3.2 to 5.2 percent for females two years after graduation.[9] Five years out, these rates vary from 9.9 percent to 11.1 percent for males and from 5.3 to 6.7 percent for females. Interestingly, the rates rise almost uniformly from two to five years following graduation. This is an important and potentially telling dynamic in a context where employment opportunities have been found to generally improve significantly over this period, with sharp declines in unemployment and movements from part-time work to employment and full-time time positions and substantial increases in earnings levels (Finnie 1999a, 2001). At this aggregate level, then, the evidence supports the "pull" hypothesis: individuals appear to be drawn towards self-employment when they face improved labour market opportunities.

Along gender lines, rates are generally higher for male graduates than female graduates except at the doctorate level, where the opposite holds in all but one period. The higher incidence of self-employment among doctoral women is consistent with their having (relatively) enhanced employment opportunities relative to women with less education.

9. See Finnie (1999b) for discussion of the absolute number of graduates in each cohort.

TABLE 1

Self-Employment Rates

	1982 Cohort				*1986 Cohort*				*1990 Cohort*				*1995 Cohort*	
	1984		*1987*		*1988*		*1991*		*1992*		*1995*		*1997*	
	%		%		%		%		%		%		%	
ALL														
Male	6.7	(9927)	9.9	(8666)	6.7	(11078)	10.0	(10191)	6.5	(9804)	11.1	(8135)	7.8	(11788)
Female	3.3	(9801)	5.3	(8509)	3.2	(11396)	5.6	(10290)	3.9	(10413)	6.7	(8864)	5.2	(12357)
COLLEGE														
Male	5.1	(3821)	7.4	(3288)	4.9	(4372)	8.2	(3763)	4.5	(2938)	8.5	(2443)	7.8	(4238)
Female	2.4	(4721)	3.5	(3989)	2.1	(4893)	3.6	(4190)	2.7	(3498)	5.2	(2948)	5.2	(4275)
BACHELOR'S														
Male	7.8	(3299)	11.7	(2891)	7.5	(3757)	10.9	(3634)	7.5	(3403)	12.7	(2839)	7.2	(4148)
Female	3.7	(3341)	6.5	(3007)	3.5	(4264)	6.2	(4035)	4.2	(4027)	7.2	(3475)	5.7	(4973)
MASTER'S														
Male	6.7	(2358)	8.9	(2099)	8.3	(2307)	11.4	(2225)	6.9	(2518)	9.8	(2091)	12.0	(2315)
Female	4.8	(1556)	6.8	(1359)	6.7	(1915)	8.7	(1770)	6.2	(2391)	8.4	(2023)	9.7	(2546)
DOCTORATE														
Male	4.7	(449)	6.3	(388)	6.0	(642)	6.6	(569)	8.8	(945)	9.7	(762)	6.9	(1087)
Female	6.5	(183)	5.9	(154)	13.2	(324)	14.2	(295)	9.0	(497)	11.6	(418)	13.3	(563)

Notes: 1. The samples exclude those who obtained a new diploma by the relevant interview, those who did not have a job, and those who were working part-time due to school. Those with annual earnings lower than $5000 (in 1997 constant dollars) and those who were other than regular paid workers (family workers, volunteers, ...) were also excluded.
2. Sample size shown in parentheses.

Apart from doctoral women, there is—interestingly—no clear pattern(s) in self-employment rates by level of study.

In terms of movements over time, the rates show no discernible trend at all across the first three cohorts of graduates, including those who entered the labour market during the prolonged recession of the early 1990s. For all male graduates taken together, the incidence of self-employment subsequently increased slightly for the most recent (1995) cohort, but with quite mixed patterns by specific education level (higher rates at the college and master's level, lower for bachelor's and doctoral graduates). Among the most recent cohort of female graduates, however, there were greater and more uniform increases. This latter dynamic could be due to a number of factors, such as increased government support for entrepreneurship,[10] different skills being learned at school, or a change in attitudes. The NGS data do not, unfortunately, permit us to differentiate among these factors.

By field of study (results not shown here),[11] rates of self-employment tend to be highest among health graduates (including doctors) at the three university levels, reflecting the employment status which is quite standard for these graduates. Applied science graduates are also characterized by relatively high rates in certain years, but the tendency is generally weaker and the results appear to be more subject to the random fluctuations which would be expected for these (and other) smaller groups of graduates. The majority of the self-employed are, in any event, made up of the social sciences and humanities group which generally dominates the population of graduates at all levels.

Along regional lines (again not shown here),[12] Atlantic Canada is characterized by typically lower rates of self-employment than elsewhere in the country, while the higher-than-average jurisdictions tend to vary by year and education group—the western province (Alberta, and British Columbia and the Northwest Territories) having the highest rates in some years, Quebec and Ontario in others. These results are generally consistent with the "pull" hypothesis: rates are lowest in the Atlantic Provinces where employment opportunities are generally the weakest in the country;

10. During the 1990s, governments have introduced programs to foster entrepreneurship among young people in Canada. The Youth Internship Program (HRDC) and Self-employment Assistance Program (HRDC) are good examples. See Human Resources Development Canada (1999) for programs focused on youth in general, including those encouraging entrepreneurship.

11. See Finnie, Laporte and Rivard (2002: Table 2).

12. *Ibid*.

if self-employment were typically the "employment status of last resort," one would presumably expect higher, not lower, rates there.[13]

Mean Earnings

One way to evaluate the self-employment status relative to paid employment is to compare earnings levels. This is done on a cross-sectional basis by sex and level of education in Table 2. It is worth repeating here that the earnings measure (in constant 1997 dollars) available in the first six NGS databases (1984 through 1995) represents what the individual reported he or she would earn on an annual basis were the current job to last the whole year, regardless of the *actual* number of weeks worked, whereas for the final interview (1997), individuals were asked to report their rate of pay in the manner they preferred (hourly, daily, weekly, *etc.*), along with the usual hours of work, from which an annual measure was constructed (see section "Construction of the Variables Used in the Analysis"). While the two measures are conceptually similar and might even be expected to give comparable amounts, the distributions are quite different, suggesting they are significantly different in practice. This means that direct comparisons of the earlier periods with the last one should be made with caution.

These earnings measures are also somewhat ambiguous with respect to self-employed workers because no instructions were provided as to how gross versus net amounts should be reported, although one could probably assume that expenses were typically deducted, thus making their reported earnings comparable to those of paid workers (as desired). A further issue is that the potential tax advantages available to the self-employed might lead to an under-reporting of their final (net) earnings relative to paid workers (i.e., expenses might be overstated and net income commensurately understated). Conversely, paid workers are likely to have greater benefit levels that are not captured in the earnings measure, leading to a bias in the opposite direction. Also, since self-employment tends to be more volatile than paid work, with periods of non-working between contracts, an earnings projection over the entire year for those currently working might well overestimate self-employment earnings relative to paid work.

Regardless of these potential issues, the results show that the earnings levels of the self-employed are generally, although not uniformly, higher

13. Throughout this discussion, it should be kept in mind that post-secondary graduates are generally a privileged group in terms of employment opportunities relative to those with lower levels of education (Finnie 1999a), and that the "push-pull" effects discussed here might operate differently for workers with lower levels of education.

TABLE 2

Mean Earnings by Type of Worker

	1982 Cohort				*1986 Cohort*				*1990 Cohort*				*1995 Cohort*	
	1984		*1987*		*1988*		*1991*		*1992*		*1995*		*1997*	
	P $	*S* $	*P* $	*S* $	*P* $	*S* $	*P* $	*S* $	*P* $	*S* $	*P* $	*S* $	*P* $	*S* $
ALL														
Male	36600	54000	43700	68900	36600	57400	43000	60600	36300	47200	43000	53900	31300	34200
	(72)	(748)	(80)	(711)	(68)	(744)	(66)	(597)	(71)	(626)	(78)	(534)	(76)	(439)
Female	31200	34000	35300	50600	32400	45500	36900	48200	33300	45300	37400	44300	26300	29000
	(58)	(659)	(59)	(854)	(57)	(1011)	(53)	(751)	(60)	(822)	(59)	(608)	(59)	(450)
COLLEGE														
Male	30200	41100	36940	50300	30700	46100	36900	49300	30600	31000	36500	35200	26300	28200
	(90)	(1268)	(103)	(1089)	(87)	(1160)	(82)	(1098)	(90)	(878)	(100)	(647)	(103)	(651)
Female	25700	28200	28800	44700	26900	27900	30200	31600	27900	34600	30600	29200	20600	19300
	(69)	(946)	(67)	(1676)	(77)	(1109)	(66)	(894)	(88)	(1686)	(75)	(628)	(72)	(512)
BACHELOR'S														
Male	37300	57000	45000	74700	37500	59400	44000	61900	36100	48200	43100	57900	31900	33300
	(92)	(936)	(106)	(920)	(89)	(1005)	(86)	(761)	(88)	(753)	(97)	(679)	(100)	(509)
Female	33700	34100	38300	52900	34200	50600	39500	51600	34200	45900	39000	47300	27500	28600
	(77)	(810)	(76)	(1058)	(72)	(1416)	(65)	(966)	(73)	(1000)	(73)	(785)	(75)	(487)

Notes: 1. *P* indicates paid-workers and *S* self-employed workers.
2. Sample includes individuals working full-time for reasonable earnings (see text for further details).
3. Standard errors shown in parentheses.
4. Details on the earnings measure are provided in the section entitled "Construction of the Variables Used in the Analysis."

than those of paid workers, and in many cases the differences are quite large. This finding holds at all education levels.[14]

Table 2b shows similar advantages for the self-employed when we look at job status changers between the two interviews. Changing from a paid job to self-employment ("Paid-Self") typically results in an increase in earnings: that is, earnings growth (the "Mean Diff." columns) tends to be greater for these individuals than those who make the reverse switch or who remain in paid work both periods.[15]

TABLE 2B

Change in Earnings by Status ($1997)

	1982 Cohort			*1986 Cohort*			*1990 Cohort*		
	1984	*1987*	*Mean Diff.*	*1988*	*1991*	*Mean Diff.*	*1992*	*1995*	*Mean Diff.*
COLLEGE									
Paid-Paid	27900	32900	5300	28700	33600	5100	29600	33700	4000
Self-Self	43000	56900	12600	44200	57300	14000	38800	35300	–6000
Self-Paid	29100	31000	–	29200	31500	0	25300	30400	6400
Paid-Self	27100	39600	12300	30900	38100	7900	26500	32800	5900
BACHELOR'S									
Paid-Paid	36500	42300	6400	36200	41900	6400	36100	41000	5600
Self-Self	36300	59200	20200	50400	51400	6300	40000	50700	14100
Self-Paid	38800	40600	2900	36300	40700	8300	40900	38000	–5500
Paid-Self	33300	43100	11600	34200	44200	10400	36800	46200	12600
MASTER'S									
Paid-Paid	50800	55700	5100	49600	54800	6900	50600	56100	5300
Self-Self	64300	73800	8800	74700	73200	2900	65300	73700	13300
Self-Paid	55400	45700	–	59800	56600	–1800	61800	56700	–1600
Paid-Self	54700	76000	21000	57400	72300	13100	48400	56600	5400
DOCTORATE									
Paid-Paid	51400	56300	4800	49600	55300	6000	50600	56300	5800
Self-Self	–	–	–	–	70000	–	77000	76000	2200
Self-Paid	–	–	–	–	–	–	–	–	–
Paid-Self	–	–	–	–	–	–	50100	–	–

Note: Dashes indicate too few observations to report.

14. Two sets of data were tested for bachelor's graduates': first including, and then excluding doctors and lawyers, as these groups tend to have both high rates of self-employment and (especially for the former) greater earnings. This was also done for graduates at other levels, but the two different sets of results (with and without doctors and lawyers) were very similar, so only the results for the more inclusive groups are shown here. For more details, see Finnie, Laporte and Rivard (2002).

15. These comparisons of means essentially comprise a rudimentary "fixed effects" approach, the principles of which are discussed more extensively in the context of the earnings models presented below.

Thus, despite the caveats associated with the earnings measure, the findings generally again go against the notion that self-employment is a disadvantaged job status, and generally indicate the reverse, at least in the case of the recent post-secondary graduates being studied here. Furthermore, there is no clear evidence that there has been any sort of deterioration in the situation of the self-employed over time, even as their numbers have increased. All in all, these earnings patterns are more consistent with the pull hypothesis.

Job-Education Skill Match

The job-education skill match measure represents an index of the extent to which the skills learned during the education program were used in the current job (see section "Construction of the Variables Used in the Analysis").[16]

While the differences in the indices between paid and self-employed workers are generally not very large in Table 3, more than twice as many of the more significant cases (arbitrarily defined as a difference of at least three points) "favour" the self-employed over paid workers. And again there is no clear shift in this pattern over time. Furthermore, the results in Table 3b (analogous to Table 2b in the case of earnings), show a comparable set of advantages for those who move into self-employment status from a paid position in the majority of cases which can be reported. The findings thus suggest that, on average, self-employment offers at least as many opportunities (and maybe more) for individuals to employ the talents they learned in their post-secondary educational programs as paid positions. While some might find this to be the expected finding, it can still be considered as a meaningful job attribute that is at least consistent with the other findings with respect to indicating the desirability of self- versus paid employment.

Overall Job Satisfaction

The NGS databases contain information on the individuals' overall evaluation of the current job. This information is very useful, since self-employed individuals may receive non-pecuniary benefits from being their own boss that are not captured by the earnings measures.[17] The index used here, similar to that constructed for the job skills-education match, is based

16. Recall that the relevant question was not asked of the self-employed in 1984 or 1997.

17. In Blanchflower and Oswald (1998), self-employed workers reported higher levels of job satisfaction than paid employees in a context where job satisfaction is based on a question similar to the one in the NGS.

TABLE 3

Job Education-Skill Match by Type of Worker

	1982 Cohort				*1986 Cohort*				*1990 Cohort*				*1995 Cohort*	
	1984		*1987*		*1988*		*1991*		*1992*		*1995*		*1997*	
	P %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %
ALL														
Male	81	N/A	86	88	84	85[a]	87	87	71	72	70	73	65	N/A
Female	84	N/A	87	90	86	86[a]	87	85[a]	74	80	73	76	66	N/A
COLLEGE														
Male	77	N/A	82	80[a]	83	80	86	85	70	73[a]	69	70	65	N/A
Female	86	N/A	88	86[a]	88	84	88	85	77	80[a]	75	72	67	N/A
BACHELOR'S														
Male	82	N/A	86	90	83	86	86	86	69	71	69	74	64	N/A
Female	82	N/A	86	91	84	85	85	84	71	78	71	78	63	N/A
MASTER'S														
Male	90	N/A	92	94[a]	91	93[a]	93	92[a]	78	74[a]	77	76[a]	73	N/A
Female	90	N/A	93	92[a]	92	95[a]	94	94[a]	81	81[a]	80	78[a]	77	N/A
DOCTORATE														
Male	–	N/A	98	–	96	90	97	95[b]	90	90[b]	89	82[b]	84	N/A
Female	–	N/A	98	–	95	100[c]	97	100	90	94[a]	89	90[b]	86[a]	N/A

Notes: 1. *P* indicates paid-workers and *S* self-employed workers.
2. The means with no letter superscript have standard errors below 1, those with an *a* superscript have standard errors between 1 and 2, those with a *b* have standard errors between 2 and 3, and those with a *c* standard errors greater than 3.
3. Dashes indicate cells with too few observations to report.
4. N/A indicates self-employed workers were not covered by job education-skill match question during this period.
5. A detailed description of how the job education-skill match index was constructed is provided in the section entitled "Construction of the Variables Used in the Analysis."

TABLE 3b

Change in Job-Education Skill Match Index by Status

	1982 Cohort			*1986 Cohort*			*1990 Cohort*		
	1984	*1987*	*Mean Diff.*	*1988*	*1991*	*Mean Diff.*	*1992*	*1995*	*Mean Diff.*
	%	%	%	%	%	%	%	%	%
COLLEGE									
Paid-Paid	84	87	3	87	88	1	77	74	–3
Self-Self	–	–	–	87[b]	89[b]	2[b]	80[c]	79[b]	–1[b]
Self-Paid	–	–	–	80[c]	71[c]	–9[c]	75[c]	64[c]	–11[c]
Paid-Self	76[c]	81[c]	4[c]	86[b]	87[b]	0[b]	67[b]	66[b]	–1[c]
BACHELOR'S									
Paid-Paid	84	87	3	86	87	1	73	71	–1
Self-Self	–	–	–	87[b]	89[b]	2[b]	78[b]	78[b]	0[b]
Self-Paid	–	–	–	83[c]	87[c]	4[c]	72[c]	67[c]	–5[c]
Paid-Self	83[b]	93[a]	10[b]	80[b]	84[b]	4[b]	73[a]	75[a]	2[b]
MASTER'S									
Paid-Paid	87	94	3	92	94	2	81	79	–2
Self-Self	–	–	–	95[b]	94[a]	–1[b]	80[b]	81[a]	1[a]
Self-Paid	–	–	–	91[c]	88[c]	–3[c]	80[c]	76[c]	–3[c]
Paid-Self	87[c]	88[c]	1[c]	88[b]	92[b]	4[b]	69[b]	76[b]	7[b]
DOCTORATE									
Paid-Paid	95	99	3[a]	95	97	2	90	90	0
Self-Self	–	–	–	100	100	0	93[a]	91[b]	–2[a]
Self-Paid	–	–	–	–	–	–	85[c]	83[c]	–2[c]
Paid-Self	–	–	–	–	–	–	88[c]	78[c]	–10[c]

Notes: 1. The means with no letter superscript have standard errors below 1, those with an *a* superscript have standard errors between 1 and 2, those with a *b* have standard errors between 2 and 3, and those with a *c* have standard errors greater than 3.
2. *Mean diff.* refers to the mean difference between the second and first interview job education-skill match index levels.
3. Dashes indicate too few observations to report.

on individual's responses to a direct question in this regard (as described in section "Construction of the Variables Used in the Analysis"). This information is subjective, but it is again useful as an indicator of the overall quality of the jobs held by the self-employed versus paid employees.

The results shown in Table 4 suggest that overall job satisfaction has generally been greater among the self-employed than among paid employees. This pattern holds at all levels and equally for male and female

TABLE 4

Job Satisfaction Index by Type of Worker

	1982 Cohort				*1986 Cohort*				*1990 Cohort*				*1995 Cohort*	
	1984		*1987*		*1988*		*1991*		*1992*		*1995*		*1997*	
	P %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %	*P* %	*S* %
ALL														
Male	77	N/A	80	88	78	86	80	85	80	86	80	81	78	N/A
Female	77	N/A	78	86	77	85	87	85[a]	79	86	79	84	77	N/A
COLLEGE														
Male	74	N/A	78	84	77	88	79	85	79	86	78	82	77	N/A
Female	78	N/A	77	84	78	82	78	83	80	87	78	86	77	N/A
BACHELOR'S														
Male	78	N/A	80	89	78	85	80	85	79	85	78	80	79	N/A
Female	77	N/A	79	86	77	84	80	85	78	86	80	83	76	N/A
MASTER'S														
Male	81	N/A	82	90	82	86	84	86	83	86[a]	83	84	80	N/A
Female	81	N/A	81	89[a]	81	90	82	88[a]	83	86[a]	82	82	79	N/A
DOCTORATE														
Male	82	N/A	84	–	84	90	85	86[b]	85	88[a]	85	83[b]	82	N/A
Female	85	N/A	85	–	83	92	83[a]	84[b]	86	95[a]	85	87[b]	81	N/A

Notes: 1. *P* indicates paid-workers and *S* self-employed workers.

2. The means with no letter superscript have standard errors below 1, those with an *a* superscript have standard errors between 1 and 2, those with a *b* have standard errors between 2 and 3, and those with a *c* standard errors greater than 3.

3. Dashes indicate cells with too few observations to report.

4. N/A indicates self-employed workers were not covered by the job satisfaction question during this period.

5. A detailed description of how the job satisfaction index was constructed is provided in the section entitled "Construction of the Variables Used in the Analysis."

graduates. As for trends over time, the advantage of the self-employed is not as great in the 1995 data as in earlier years. There may have been a further shift in this regard in recent years; only later surveys will be able to cast additional light on this issue.[18] The "mover-stayer" results shown in Table 4b also indicate that self-employment tends to lead to greater job satisfaction: individuals moving into such positions typically show substantial increases in their overall job satisfaction relative to those who remain in paid positions both periods.

TABLE 4b

Change in Job Satisfaction Index by Status

	1982 Cohort			*1986 Cohort*			*1990 Cohort*		
	1984	*1987*	*Mean Diff.*	*1988*	*1991*	*Mean Diff.*	*1992*	*1995*	*Mean Diff.*
	%	%	%	%	%	%	%	%	%
COLLEGE									
Paid-Paid	78	78	0	78	79	0	81	78	–3
Self-Self	–	–	–	89[a]	86[a]	–3[b]	90[a]	84[a]	–6[a]
Self-Paid	–	–	–	80[b]	74[c]	–6[c]	79[c]	77[b]	–1[c]
Paid-Self	71[b]	82[a]	11[b]	76[a]	86[a]	9[a]	76[b]	84[a]	9[b]
BACHELOR'S									
Paid-Paid	78	80	2	78	80	2	81	80	–1
Self-Self	–	–	–	86[a]	85[a]	0[a]	89[a]	84[a]	–5[a]
Self-Paid	–	–	–	82[b]	83[b]	1[b]	80[b]	83[b]	2[c]
Paid-Self	73[b]	90[a]	17[b]	80[a]	85[a]	5[a]	76[a]	83[a]	7[a]
MASTER'S									
Paid-Paid	82	82	0	82	83	1	84	83	–2
Self-Self	–	–	–	89[b]	85[a]	–3[a]	88[a]	84[a]	–3[a]
Self-Paid	–	–	–	87[b]	83[b]	–4[c]	83[b]	79[c]	–4[c]
Paid-Self	74	90[a]	19[c]	79[b]	89[a]	10[b]	75[b]	82[a]	7[b]
DOCTORATE									
Paid-Paid	84[c]	85	0[a]	85	85	0	87	85	–2
Self-Self	–	–	–	92[b]	88[b]	–5[b]	95[a]	87[b]	–7[a]
Self-Paid	–	–	–	–	–	–	84[c]	81[c]	–2[c]
Paid-Self	–	–	–	–	–	–	75[c]	80[c]	5[c]

Notes: 1. The means with no letter superscript have standard errors below 1, those with an *a* superscript have standard errors between 1 and 2, those with a *b* have standard errors between 2 and 3, and those with a *c* have standard errors greater than 3.
2. *Mean diff.* refers to the mean difference between the second and first interview job satisfaction levels.
3. Dashes indicate too few observations to report.

18. We are, unfortunately, unable to make the desired comparisons for 1997 since the information was not gathered in that year.

Earnings Effects in a Regression Model Context

In section "Mean Earnings," the mean earnings measure showed somewhat mixed results but tended to imply an advantage for the self-employed over paid employees. One general problem with such simple comparisons is that employment status might be correlated with other factors which affect earnings, thus biasing the comparisons. Perhaps the self-employed tend to be in jobs with other characteristics that boost their earnings for reasons that are unrelated to the job status *per se*.

We therefore now report the results of regression models which estimate the effects of employment status on earnings while controlling for other factors: field of study, co-op type of program, age (and age squared), marital status, the presence of children, province of residence, and parental education. The results, presented in Table 5, show only the coefficient estimates (and associated *t*-statistics) on the key employment status variable, each of these coming from a separate regression.[19] The underlying dependent variable in each case is the log of annual earnings. The coefficient estimates can therefore be interpreted as the average percentage difference (approximately) in earnings for self-employed compared to paid workers.

The self-employment indicator is significantly positive in 22 of the 56 regressions, whereas it is significantly negative in just 5 cases. The remaining estimates are not significantly different from zero. The effects are, furthermore, in many cases quite large, the coefficient estimates ranging as high as .276 in the case of female doctorate graduates in 1987, and often over the .20 mark. There are also clear patterns to the findings, with almost all of the significantly negative effects occurring at the college level, and the effects generally favouring self-employed males over females.

There is, however, some evidence of a shift in the more recent periods, with, for example, just three significantly positive coefficients and an equal number of significantly negative ones in the 1995 and 1997 results. The change in the definition and construction of the earnings variable in the latter period, however, makes any comparisons or extrapolations based on those data particularly problematic.

Fixed Effects Model Estimates

While the models just presented control for individuals' observed characteristics, it is highly possible that there remain unobserved factors,

19. In total, 56 separate models were estimated, one for each sex-education group for each year.

TABLE 5

Effect of Self-Employment on Earnings, OLS Estimates

	1982 Cohort		*1986 Cohort*		*1990 Cohort*		*1995 Cohort*
	1984	*1987*	*1988*	*1991*	*1992*	*1995*	*1997*
COLLEGE							
Male	0.160**	0.225**	0.223**	0.111**	–0.004	–0.119**	–0.001
	(4.61)	(7.86)	(7.74)	(4.52)	(0.08)	(3.66)	(–0.02)
Female	0.050	0.249**	–0.097*	–0.012	–0.001	–0.045	–0.183**
	(0.93)	(6.18)	(2.01)	(0.33)	(0.02)	(1.08)	(–3.63)
BACHELOR'S							
Male	0.143**	0.162**	0.213**	0.112**	0.112**	0.108**	–0.020
	(4.25)	(5.61)	(7.01)	(4.93)	(3.41)	(4.13)	(–0.52)
Female	–0.064	–0.07	–0.039	0.01	0.071	–0.023	–0.026
	(1.43)	(1.84)	(0.95)	(0.33)	(1.65)	(0.71)	(–0.60)
MASTER'S							
Male	0.031	0.142**	0.15**	0.131**	0.12**	–0.059*	0.040
	(0.97)	(4.95)	(4.63)	(4.70)	(3.29)	(2.02)	(0.82)
Female	–0.011	0.016	0.036	–0.095*	0.024	0.052	0.084
	(0.20)	(0.31)	(0.72)	(2.36)	(0.61)	(1.45)	(1.50)
DOCTORATE							
Male	–0.161	0.214**	0.245**	0.207**	0.153**	0.12*	0.023
	(1.96)	(2.87)	(3.14)	(3.01)	(3.23)	(2.55)	(0.29)
Female	–0.184	0.276*	0.118	0.143	0.109	0.022	0.222*
	(1.40)	(2.48)	(1.32)	(1.53)	(1.25)	(0.25)	(2.50)

Notes: 1. Estimated equations include an intercept and control for age, age squarred, married, children, field of study, region of residence, mother's and father's education as well if the education program was of the coop type.
2. *t*-statistics shown in parentheses.
3. One asterisk indicates significance at the .05 confidence level, two asterisks indicate significance at the .01 level.
4. For detailed information, see Finnie, Laporte and Rivard (2002).

including fixed individual characteristics that might be correlated with employment status and earnings, thus biasing the employment status coefficient estimates. For example, perhaps self-employed workers tend to have greater initiative that would generally result in their having higher earnings regardless of their job status.

One way of resolving this problem in the presence of longitudinal data is to employ a fixed effects model. One might normally test whether the fixed effects model applies better than a random effects model. Our precise purpose here, however, is to control for unobserved fixed effects that might be biasing the OLS coefficient estimates, and a random effects model

does not do this. Conversely, using a fixed effects specification when a random effects model should apply results only in a loss of efficiency. Hence our choice of the fixed effects model: it does a better job of doing what we want here. An alternative approach would have been to use a two-step Heckman procedure to control for selection into the self-employment status. Again, though, such a method is inferior to the fixed effects approach in controlling for unobserved fixed effects. Furthermore, the NGS data contain no obvious choices as identifying restrictions in such a Heckman approach.

TABLE 6

Effect of Type of Employment on Earnings Using Fixed Effects Model

	1982 Cohort			*1986 Cohort*			*1990 Cohort*		
	SS	*SP*	*PS*	*SS*	*SP*	*PS*	*SS*	*SP*	*PS*
COLLEGE									
Men	–0.002	0.244**	0.042	0.015	–0.172**	–0.027	–0.267**	0.158*	0.029
	(0.05)	(3.62)	(1.02)	(0.41)	(3.19)	(0.76)	(4.97)	(2.41)	(0.68)
Women	0.201**	–0.006	0.268**	0.038	–0.061	–0.086*	–0.225**	0.555**	–0.076
	(3.12)	(0.07)	(4.49)	(0.50)	(0.87)	(2.04)	(3.45)	(4.96)	(1.41)
BACHELOR'S									
Men	0.118**	–0.281**	0.128**	–0.192**	–0.091	0.139**	0.016	–0.218**	0.165**
	(3.29)	(4.70)	(3.51)	(4.97)	(1.69)	(4.98)	(0.41)	(4.32)	(5.45)
Women	0.083	0.095	0.178**	–0.067	–0.143*	0.181**	–0.190**	–0.042	0.035
	(1.47)	(1.14)	(3.96)	(1.19)	(2.10)	(5.06)	(3.60)	(0.59)	(0.92)
MASTER'S									
Men	0.024	0.067	0.171**	–0.118**	–0.108*	–0.037	0.058	–0.032	–0.023
	(0.83)	(1.24)	(5.00)	(3.75)	(2.49)	(1.28)	(1.50)	(0.57)	(0.66)
Women	–0.075	–0.279*	0.175**	0.014	–0.072	–0.057	0.056	–0.080	–0.117**
	(1.43)	(2.53)	(2.65)	(0.28)	(1.08)	(1.03)	(1.34)	(1.84)	(2.97)
DOCTORATE									
Men	0.177	0.507**	0.175	0.005	–0.035	0.100	–0.100	–0.247**	0.150*
	(1.82)	(3.77)	(1.90)	(0.06)	(0.36)	(0.93)	(1.90)	(3.49)	(2.39)
Women	0.333**	N/A	N/A	–0.088	0.376	–0.162	–0.165*	–0.005	0.123
	(3.07)	N/A	N/A	(0.91)	(1.24)	(0.93)	(1.65)	(0.03)	(0.88)

Notes: 1. Estimated equations include an intercept and control for age, age squarred, region of residence, presence of children, mother's and father's education, field of study and indicator variables for change in province of residence and in marital status.

2. *SS* indicates was self-employed at the 1st and 2nd interviews, *SP* a transition from self-employment to paid-work and *PS* a move from paid-work to self-employment.

3. *t*-statistics shown in parentheses.

4. One asterisk indicates significance at the .05 confidence level, two asterisks indicates significance at the .01 level.

5. For detailed information, see Finnie, Laporte and Rivard (2002).

Here, we estimate a first difference specification where the dependent variable is the change in (log) earnings from the first interview to the second. Any constant ("fixed" effects) essentially drop out while the effects of employment status are estimated by observing what happens to individuals' earnings for those who move from self-employment to paid work, or vice versa.

In Table 6, we again focus on the employment status indicators, especially those indicating the change from paid to self-employment ("PS") or the reverse ("SP"). All coefficient estimates should be interpreted in comparison to the baseline (omitted) group of paid-paid workers.[20] The results are largely consistent with self-employment being associated with higher earnings, as 9 of the statistically significant paid-self coefficient estimates are positive and just two are negative. That is, switching from paid work to self-employment is more commonly associated with an increase in earnings compared to a status of paid employment in both periods. Similarly, 7 of the self-paid coefficient estimates are significantly negative and 9 of the 23 relevant coefficient estimates take the negative sign (but are not significantly different from zero). That being said, the evidence on this side is also less clear-cut in some ways, since there are also four coefficient estimates that are significantly *positive*.

CONCLUSION

This article has used the National Graduates Surveys to investigate the self-employment phenomenon among recent Canadian post-secondary graduates. The first important finding is that self-employment rates were relatively constant across the first three sets of graduates (who finished their programs in 1982, 1986, and 1990), varying between 6.5 and 11.1 percent for men, and between 3.2 and 6.7 percent for women. In the most recent cohort (1995 graduates), these tended to be higher for some (but not all) sex-education groups. Therefore, there is some evidence of an upward trend, but one that is smaller and more recent than might have been expected compared to what has been observed for the labour force in general.

The second finding is that the evidence regarding employment rates, earnings levels, job satisfaction, and the job-education skill match suggests that the self-employment status appears to be associated with enhanced labour market outcomes rather than a limited availability of paid positions—that is, "pull" rather than "push" factors. The earnings models which have

20. The "SS" variable captures the difference in the rate of earnings growth for those who are self-employed both periods.

been estimated provide additional support in this direction, with earnings being generally—although not uniformly—higher (on average) among the self-employed than among paid workers when other wage-determining factors are controlled for, whether standard cross-sectional models or fixed effect specifications are employed.

The simplest and most general implication for our understanding of labour market is that self-employment among recent post-secondary graduates is probably not something about which we need to be overly concerned. Rates have not changed a great deal and the associated outcomes tend to be favourable. At the same time, the data hint at certain recent shifts in these relationships, so further analysis using alternative data or new waves of the NGS (as they became available) would be in order.

A bolder position would be to suggest that—given the positive outcomes which seem to be associated with the status—we should perhaps be generally *encouraging* self-employment among young post-secondary graduates and introducing measures to make setting up shop a more feasible option for at least certain groups of younger workers. Before doing so, however, it would be important to do further research on the self-employment situation in general, including identifying where the effects are most positive, so that the best policy instruments could be put into place.

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RÉSUMÉ

Monter sa propre entreprise : le travail indépendant chez les diplômés des collèges et universités au Canada

Au cours des deux dernières décennies, le marché du travail au Canada a subi d'importantes transformations. Alors que la majorité des Canadiens possède toujours un emploi salarié permanent à temps plein, une portion croissante de la population active se retrouve maintenant dans l'une ou

l'autre des formes atypiques de travail : emploi à temps partiel, travail temporaire ou à contrat, travail indépendant, cumul de plusieurs emplois. Plus particulièrement, l'incidence du travail indépendant a augmenté de façon importante au cours des vingt dernières années. En 2001, 15,3 pourcent des travailleurs étaient travailleurs indépendants comparativement à 12,8 pourcent en 1981 (Enquête sur la population active).

On peut être travailleur indépendant plutôt que salarié pour deux grandes raisons : soit parce qu'on ne trouve pas un emploi convenable de type « conventionnel », soit parce qu'on préfère la situation de travail indépendant, pour des raisons personnelles ou parce qu'elle offre des avantages financiers à court terme ou des perspectives professionnelles plus favorables à long terme. Les individus sont-ils poussés vers le travail indépendant par manque de débouchés comme salariés ou sont-ils attirés par les avantages comparatifs qu'il offre ?

Les recherches sur le travail indépendant sont maintenant nombreuses. Au niveau empirique, les études se concentrent non seulement sur les variables traditionnelles comme l'éducation, l'expérience et l'âge mais aussi sur les contraintes de liquidités, l'entrepreneurship et les relations intergénérationnelles. Au niveau théorique, deux écoles s'opposent. Selon la théorie « recession-push », les travailleurs indépendants ne se distinguent pas des salariés par des caractéristiques qui leur sont propres mais sont poussés vers le travail indépendant par manque de débouchés sur le marché du travail « conventionnel ». De façon opposée, selon la théorie du « entrepreneurial-pull », les entrepreneurs ont les capacités et les connaissances voulues pour exercer un métier autonome, ce qui implique l'absence de relation positive significative entre le travail indépendant et le chômage. En fait, cette relation pourrait même être négative. Des observations empiriques compatibles avec l'une ou l'autre des théories ou même les deux à la fois ont été recueillies.

L'étude du travail indépendant chez les diplômés récents est intéressante pour deux raisons. Tout d'abord, comme les diplômés récents se situent à la marge (au point d'entrée) du marché du travail, on peut présumer qu'ils reflètent les tendances récentes et présagent l'évolution à venir mieux que ne le ferait un échantillon plus vaste de travailleurs. Ensuite, si les nouvelles générations de travailleurs font face à un rétrécissement général du marché du travail en ce sens qu'ils sont obligés d'adopter des formes moins classiques de travail, cela justifierait peut-être des initiatives politiques (préventives, curatives ou compensatoires).

L'objectif général du présent rapport est d'exposer les résultats d'une étude empirique qui utilise l'indicateur de statut de travail indépendant disponible dans les bases de données de l'Enquête nationale auprès des diplômés et les enquêtes de suivi (END). Le document présente et analyse

les modes de travail indépendant dans quatre cohortes récentes de diplômés canadiens des secteurs collégial et universitaire durant les cinq premières années suivant l'obtention de leur diplôme.

Plus précisément, ce document fournit des données empiriques sur l'incidence du travail indépendant (niveaux, tendances) parmi les diplômés récents dans leur ensemble et selon le sexe, l'année et le niveau du diplôme (collège, baccalauréat, maîtrise, doctorat). Il analyse ensuite le sort des travailleurs indépendants comparativement à celui des salariés afin de déterminer si le travail indépendant tend à être l'option privilégiée par ceux qui s'y engagent ou s'il découle d'un manque de débouchés dans les emplois dits « conventionnels », ou encore d'une combinaison des deux.

L'étude fait appel à diverses méthodes analytiques, depuis les tableaux simples et les modèles économétriques transversaux de type relativement standard jusqu'à l'exploitation plus poussée de la structure longitudinale des trois premières cohortes (complètes) de l'END en vue de comparer les jeunes qui gardent la même situation et ceux qui sont mobiles. L'étude utilise des modèles de rémunérations à effets fixes, qui tentent de séparer les effets propres au statut de travailleur indépendant des effets hétérogènes non observés avec lesquels ils sont peut-être corrélés.

Deux grandes conclusions se dégagent. Premièrement, pour les trois premières cohortes étudiées (diplômés de 1982, 1986 et 1990), l'incidence du travail indépendant est relativement stable. Les taux globaux se situent entre 6,5 pourcent et 11,1 pourcent chez les hommes et entre 3,2 pourcent et 6,7 pourcent chez les femmes. Les taux tendent à être supérieurs chez certains diplômés (mais pas tous) de la cohorte la plus récente (1995).

Deuxièmement, le travail indépendant semble généralement représenter un statut professionnel relativement attrayant. Tout d'abord dans chaque cohorte considérée globalement, les taux de travail indépendant augmentent de la première entrevue (deux ans après l'obtention du diplôme) à la seconde (cinq ans après le diplôme), alors que durant cet intervalle les diplômés voient généralement les occasions d'emploi s'améliorer sensiblement. Ensuite, de simples comparaisons ponctuelles (transversales) des rémunérations, de l'adéquation entre emplois et compétences ainsi que des niveaux de satisfaction au travail ne démontrent guère que le travail indépendant se caractériserait par des conditions moins favorables; en fait, le travail indépendant va généralement de pair avec un bonne situation sur le marché du travail plutôt qu'avec des débouchés limités. Enfin, tant le modèle transversal conventionnel des rémunérations que le modèle à effets fixes indiquent que le travail indépendant est mieux rémunéré (et donc plus attrayant) que le travail salarié conventionnel.

La conclusion peut-être la plus simple et la plus générale à en tirer est qu'il n'y a pas lieu de se préoccuper outre mesure du travail indépendant

chez les diplômés récents d'études supérieures. L'incidence du travail indépendant est demeurée relativement stable entre les cohortes étudiées et les résultats associés sont plutôt favorables. Toutefois, les données nous indiquent quelques modifications très récentes de ce phénomène qui justifieraient de poursuivre l'analyse avec d'autres données ou de nouvelles éditions de l'END (une fois qu'elles seront disponibles).