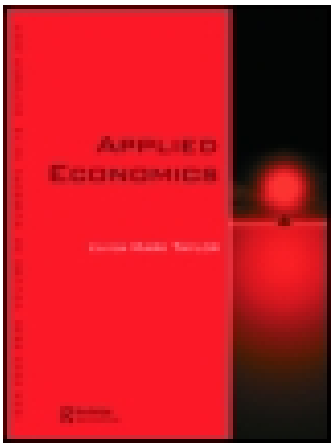

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The transition from paid to self-employment in Canada: the importance of push factors

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The share of self-employment in total employment has been growing in Canada throughout the 1990s. Recent research for Canada and elsewhere suggests that some workers may be 'pushed' into self-employment as a response to inadequate opportunities in the paid sector. Examining transitions from paid work to self-employment using the Labour Market Activity Survey, this push hypothesis is tested using a number of indicators of the economic opportunities facing the newly self-employed. It is found: (i) longer spells of joblessness favour self-employment, (ii) workers who collect unemployment benefits between jobs are less likely to become self-employed than are workers who did not, (iii) workers who left their previous, paid jobs involuntarily – i.e., due to layoff – were more likely to become self-employed than those who left voluntarily, but less likely than workers who specified personal reasons for leaving, and (iv) self-employment decisions are independent of the health of the labour market as measured by the unemployment rate. These results are generally consistent with the push hypothesis but provide more ambiguous evidence than found in some other studies.

I. INTRODUCTION

Nonfarm self-employment has become the primary source of new employment in the Canadian economy. Statistics Canada (1997) notes that over three-quarters of all new jobs created between 1989 and 1996 were in self-employment. By 1996, 17% of all workers were self-employed, up from 12% in 1976. At the same time that self-employment in Canada has been growing quickly, paid employment growth has been slow. Between 1990 and 1996, self-employment grew by an annual average of 3.3%, while paid employment grew by an average of 0.2% per year (Gauthier and Roy, 1997). Furthermore, the tendency of the self-employed to hire others into paid jobs seems to have declined over time. Gauthier and Roy (1997) note that, while most of the growth in self-employment over the 1976–1990 period was in employer self-employment (self-employed with paid labour), growth in own-account self-employment (no paid labour) has dominated since the early-1990s. The self-employment rate among those with no paid employees has increased by an average of 5.3% annually over this period.

The simultaneously slow pace of paid employment growth in Canada is consistent with research on individual self-employment decisions which suggests that self-employment may be a response to poor, or declining, opportunities in the paid sector. In this view, some individuals are 'pushed' into self-employment because of diminished employment opportunities. As Dennis (1996, p. 648) explains, the central question is, 'How many of these people are self-employed because they prefer to be and how many are self-employed because they have no reasonable alternative?' The prevailing, more traditional, view suggests that the self-employed prefer that sector, and

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that good economic opportunities are more likely to favour self-employment than are poor ones. If anything, self-employment is difficult to achieve, requiring at minimum, skill, financial resources, and good economic conditions. Blanchflower and Oswald (1998) observe that many more people claim a desire to be self-employed than actually are.

Economists have uncovered substantial evidence for the importance of tastes for flexible hours (Fuchs, 1982), access to credit (Evans and Jovanovic, 1989; Holtz-Easkin *et al*., 1994), and intergenerational transfers of wealth (Blanchflower and Oswald, 1998). Several studies (Borjas, 1987; Borjas and Bronars, 1989; Fugii and Hawley, 1991; Taylor, 1996) have argued that worker productivity differs between the two sectors and that more skilled workers sort into self-employment. Blau (1987) makes the assumption that managerial ability affects earnings only in self-employment, and that those with these (unobserved) skills will move into self-employment. Bernhardt (1994) examines self-employment in Canada and concentrates on the attractiveness of self-employment relative to paid employment. His central result was that relative potential earnings, determined by worker skill, were the dominant determinant of sector choice.

Several studies based on microdata support the role of 'push' factors during Canada's recent period of self-employment growth. The 1995 Survey of Work Arrangements, which was conducted by Statistics Canada and Human Resources Development in November of that year, asked respondents their main reason for being self-employed. Twelve per cent said that they were self-employed because no other work was available (Statistics Canada, 1997).[1] Of the own-account self-employed, this number increased to 15.4% (versus 6.9% for the self-employed with employees). A recent consulting report (Ekos Research Associates, 1998) observes that factors such as employer downsizing and subcontracting appear to be important determinants of own-account self-employment and that 'push' appears to be the main reason for entering self-employment. The same report, however, goes on to note that many respondents had come to enjoy the 'pull' factors of self-employment such as independence and flexibility.

Several econometric studies of self-employment have found evidence for the role of push factors. Using data from Canada's Survey of Labour and Income Dynamics, Simpson and Sproule (1998) found that for women, the likelihood of entering self-employment increases with the local unemployment rate; the opposite was found to be true for men. Schuetze (2000) finds a positive relationship between area unemployment rates and self-employment among males in both the US and Canada. According to Kuhn and Schuetze (1999), transitions from paid employment to nonemployment have increased for men in Canada, and attribute most of the increase in the male self-employment rate to increased instability in the paid sector in the 1990s. Maxim (1992) alludes to the importance of push factors when he tests the hypothesis that immigrants to Canada choose self-employment as a means of circumventing discriminatory practices in wage labour.

Studies using US and European data also uncover a link between push factors and self-employment. Bradbury (1994) examines trends in paid- and self-employment in New England between 1988 and 1992, and argues that self-employment may represent a 'stopgap measure' to sustain earnings after the loss of a paid job. She finds, for example, that the earnings of those who moved into self-employment fell by a greater degree than did those who maintained employment in the paid sector, but fell by less than those who remained unemployed. Although her data do not extend into the economic recovery following 1992, Bradbury hypothesizes that the movement into self-employment could partially be reversed as employment opportunities in the paid sector increase. Evans and Leighton (1989) find that self-employment is more likely among workers who were unemployed at the beginning of the observation period. Alba-Ramirez (1994) uses data from both Spain and the United States and finds that the probability of movement from paid work to self-employment following job loss is positively correlated to the duration of joblessness. Cowling and Mitchell (1997) discovered that the ratio of the number of self-employed to the number in the labour force in the United Kingdom is negatively related to short-term unemployment, but positively related to long-term unemployment. They argue that this may imply that self-employment is a last resort for those individuals marginalized in paid employment and who face lengthy unemployment spells.

This paper examines the determinants of self-employment using data from the Canadian Labour Market Activity Survey (LMAS). The focus is on the role of push factors in the decision to enter self-employment. Of course, individuals may experience economic push in several ways, and they may be reflected in the data variously. Self-employment is related to the incidence of involuntary job loss, number of weeks between jobs, gender-specific annual provincial unemployment rates, and whether the respondent collected unemployment benefits at any time during the survey year.

[1] The fraction reporting that no other work was available is small – most of the self-employed want to be self-employed. However, as Dennis (1996, p. 650) points out in the context of similar US survey data, economically stressed people are more represented among the self-employed than among the workforce at large. He points out, for example, that the fraction of US survey respondents reporting that self-employment was 'the best alternative available' was greater than the unemployment rate at the time the survey was conducted.

This study makes use of the LMAS and is one of the few to focus on the transition from paid- to self-employment in the Canadian context. The data also track each worker through intervening spells of joblessness. While transitions from paid- to self-employment account for only about 1% of all annual job changes in the Canadian labour market, most entrants into self-employment had previously been in the wage-salary sector (Kuhn and Schuetze, 1999). A number of other studies of self-employment in Canada rely on comparisons of self-employed and paid workers in cross-sectional samples (e.g., Bernhardt, 1994; Simpson and Sproule, 1998).[2]

The probability of moving into self-employment may depend on the reasons for leaving the previous job. These motives are addressed by disaggregating the data on job changes by reason for leaving: personal reasons, involuntary job loss, or voluntary job change.

Analysis is undertaken for both men and women. Women constitute growing shares of both the paid and self-employed labour markets in Canada. Between 1991 and 1995, the number of women reporting self-employment income increased by 46.2%, while the comparable figure for men was 19.2% (Statistics Canada, 1998). Only a few studies (Kuhn and Schuetze, 1999; Simpson and Sproule, 1998; Georgellis and Wall, 1998) have made direct comparisons between men and women drawn from the same data set, and these have found that unemployment exerts a different push on women than on men.

This paper examines a number of other issues in addition to the role of unemployment push. Because the LMAS tracks a subset of workers over time, it is possible to identify some characteristics of workers' previous (paid) jobs. Previous studies have not included information about the job held prior to self-employment, but several have observed that the self-employed have different labour market experiences than do those in the paid sector (Evans and Leighton, 1989; Picot and Lin, 1997).

The paper is organized as follows. The next section briefly describes the methodology used to conduct all subsequent analyses. Section III details the construction of the LMAS data set. The subsequent section discusses the estimation results. Finally, Section V concludes.

II. MEASURING PUSH

The goal of this research is to determine if push factors affect an individual's decision to select self-employment instead of paid employment. Several hypotheses are advanced consistent with push. First, it is hypothesized that individuals will be more likely to enter self-employment following a spell of paid employment, as the length of the jobless spell increases. If the probability of exiting unemployment and/or the reservation wage fall with the duration of the spell, it is expected that the relative attractiveness of self-employment will increase. Workers who collect unemployment benefits may extend the period of search for paid work. Evans and Leighton (1989) observe that previous weeks of unemployment experience entails a wage 'penalty' in the paid sector twice as large as that found for the self-employed, suggesting that 'unemployed workers with the poorest opportunities in the wage sector switch to and remain in self-employment.' Vishwanath (1989) argues that prolonged unemployment generates a negative signal to potential employers, amounting to a 'stigma effect' which diminishes the paid wage offers.

The unemployment rate reflects economic conditions in place at the time of job search. Unemployment rates have been the focus of most studies that assess the role of push factors (e.g., Alba-Ramirez, 1994; Simpson and Sproule, 1998; Schuetze, 2000). Local, regional and national rates have been used with various degrees of demographic specificity. Despite the apparent centrality of unemployment rates to the push hypothesis, results in the literature are mixed.

Finally, the importance of involuntary reasons for job change is addressed. There is evidence that layoff rates in Canada are higher for those with a history of lay-offs (Picot *et al.*, 1998). Several US studies (e.g., Addison and Portugal, 1989) have found that displaced workers take a wage cut upon re-employment, suggesting that self-employment may be relatively attractive to displaced workers. The incidence of involuntary job loss in the US has increased among some workers since the 1970s (Monks and Pizer, 1998). Polsky (1999) documents recent changes in the consequences of voluntary and involuntary job separation among men in the US paid employment sector. He finds that the aftermath of involuntary job loss was worse in the period 1986–1991 than in the years 1976–1981. The re-employment rate of those workers declined, and the odds of a large wage cut upon re-employment rose from 9% to 17%. The consequences of voluntary job loss did not change.

In the context of a sectoral choice model, it can be assumed that individuals will maximize utility. All else equal, individuals who are faced with the choice of paid labour and self-employment will choose the option with the highest returns. The expected earnings differential from self-employment may be written as:

$$P^* = Y^{se} - Y^p = X\beta + \varepsilon$$

[2] The use of cross-sectional data in a study of push factors may be problematic if the probability of observing a worker in self-employment is correlated with the economic stress under which self-employment was undertaken in the first place.

where Y^{se} is the expected income from self-employment (net of any psychic of pecuniary costs of transitioning into that sector, which we assume to be constant). The term Y^{p} is the expected income from self-employment, X is a vector of individual and labour market charteristics that affect the expected income in either sector, β is the relative returns to these characteristics, and ε is the error term and follows the usual normality assumptions.

P^* is not observed, but it is observed whether the individual moves from paid to paid employment, or from paid to self-employment. Thus, the estimatable probit model becomes:

$$P = 1 \quad \text{if} \quad P^* > 0 \quad \text{i.e., } \varepsilon > -\beta X$$

$$P = 0 \quad \text{if} \quad P^* \leq 0 \quad \text{i.e., } \varepsilon \leq -\beta X$$

III. DATA

A pooled cross-section from the 1988–1990 Labour Market Activity Survey (LMAS) is used to test our hypotheses. This data set contains detailed information on both paid and self-employed jobs, reason for job separation, start and stop dates of each employment and nonemployment spell, and demographic variables within each cross section. The data also contain information on the whether the respondent collected unemployment benefits at any time during the survey period. Job durations, and lengths of time between jobs, are coded in weeks; workers who started their jobs the same week that the previous job ended are counted as having no spell between jobs. The data do not distinguish between weeks of labour market nonparticipation, and weeks of active search between jobs. The LMAS uses several definitions of self-employment, including own-account self-employment. Most of the analysis focuses on a broad definition that includes those working for incorporated and unincorporated businesses, with or without paid help. The LMAS is supplemented with data containing annual averages of seasonally adjusted provincial unemployment rates for each gender from Statistics Canada (1994).

Reasons for leaving the starting job were coded into four groups. 'Voluntary' leavers expressed dissatisfaction with some job attribute as a reason for leaving. 'Involuntary' separations included plant closures, lay offs, or firings. Because household and other personal demands have been found to influence self-employment, a 'personal separations' category was created. Finally, a residual category, 'other', was coded for which reasons for leaving were unspecified.[3]

Each year of the LMAS contains over 60 000 observations. The analysis is restricted to workers who held a paid job, and who transitioned to either another paid job or self-employment. Thus, each respondent in the sample held at least two jobs during the year in which they were included in the survey – 1988, 1989 or 1990. Since a pooled cross-section is being used, each transition occurred within a calendar year. Consequently, the longest actual spell of joblessness in the sample was 49 weeks. The sample is further limited to those who were between the ages of 25 and 64, and who were not full-time students at any point during the year. Of the total of 9832 individuals in the data, 650 moved from paid into self-employment while 9182 remained in the paid employment sector. The LMAS is a nonrandom sample and the final weighted sample size represents 2 913 030 individuals. In general, only results from the weighted sample are reported in the analysis below.[4]

IV. RESULTS

The summary statistics for the weighted and unweighted samples are presented in Table 1. Overall, no clear relationship between unemployment and self-employment is apparent from the pattern of means. There is little difference in the average unemployment rate faced by workers who opted for self-employment and those who returned to paid work. The weighted subsample averages show that those entering self-employment have only a marginally higher mean spell between jobs (5.0 weeks versus 4.7 weeks); but the self-employed are also more likely to have no spell between jobs (42% versus 37% of those who returned to paid labour). Those who became self-employed were also about 25% less likely to have collected unemployment insurance benefits in the year of the survey (24% versus 33%). Consistent with the push hypothesis, it may mean that workers who are unable to sustain income using unemployment insurance (because they do not qualify for it) are more likely to be pushed into self-employment.

Reasons for separation differ somewhat between the two groups. Involuntary separations are about 3 percentage

[3] Specifically, involuntary leavers are those who were permanently separated from their first jobs because of a labour dispute, the end of a seasonal job, a permanent layoff, an employer moving or going out of business, or disimissal by the employer. Voluntary leavers are those who separated for reasons of low pay, no advancement opportunity, working conditions, concern about job security, or to begin a new job. Personal reasons for separation include illness or disability, personal or family responsibilities, return to school, move to a new residence and retirement. The residual category is other and includes those who separated for undisclosed reasons (but may be included in any of the above three categories).

[4] An analysis identical to that presented below was also conducted on the unweighted sample. The results did not differ substantially.

Table 1. *Summary statistics by employment status at second job*

	Self-employed				Paid employees			
	Unweighted		Weighted		Unweighted		Weighted	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Un. rate (by year, province, and gender)	8.64	(2.64)	7.72	(2.23)	8.98	(3.00)	7.80	(2.44)
Spell between jobs (weeks)	5.31	(8.32)	5.05	(8.38)	5.19	(8.08)	4.71	(7.84)
Zero spell between jobs	0.39	(0.49)	0.42	(0.49)	0.34	(0.47)	0.37	(0.48)
Collected UI benefits	0.31	(0.46)	0.24	(0.43)	0.42	(0.49)	0.33	(0.47)
Involuntary separation	0.28	(0.45)	0.23	(0.42)	0.32	(0.47)	0.26	(0.44)
Voluntary separation	0.43	(0.49)	0.41	(0.49)	0.48	(0.50)	0.54	(0.50)
Personal separation	0.13	(0.34)	0.12	(0.32)	0.11	(0.32)	0.11	(0.31)
Other reason for separation	0.17	(0.37)	0.24	(0.43)	0.09	(0.28)	0.09	(0.29)
Male	0.67	(0.47)	0.69	(0.46)	0.56	(0.50)	0.54	(0.50)
Atlantic	0.20	(0.40)	0.06	(0.24)	0.26	(0.44)	0.08	(0.27)
Quebec	0.13	(0.34)	0.22	(0.42)	0.14	(0.34)	0.22	(0.42)
Ontario	0.18	(0.39)	0.37	(0.48)	0.20	(0.40)	0.40	(0.49)
Prairies	0.32	(0.47)	0.17	(0.38)	0.29	(0.46)	0.17	(0.38)
British Columbia	0.17	(0.37)	0.17	(0.38)	0.12	(0.32)	0.13	(0.34)
Family members in LF	2.01	(0.64)	1.92	(0.64)	2.00	(0.74)	1.95	(0.77)
Married	0.82	(0.38)	0.77	(0.42)	0.75	(0.44)	0.68	(0.46)
Number of children	1.02	(1.14)	0.92	(1.08)	0.89	(1.05)	0.75	(1.00)
Age 25–34	0.46	(0.50)	0.48	(0.50)	0.54	(0.50)	0.57	(0.50)
Age 35–44	0.34	(0.48)	0.33	(0.47)	0.29	(0.46)	0.28	(0.45)
Age 45–54	0.15	(0.36)	0.15	(0.36)	0.13	(0.33)	0.12	(0.32)
Age 55–64	0.04	(0.20)	0.04	(0.19)	0.04	(0.20)	0.03	(0.18)
Visible minority	0.05	(0.21)	0.08	(0.28)	0.03	(0.18)	0.06	(0.25)
Immigrant	0.11	(0.32)	0.18	(0.39)	0.09	(0.29)	0.14	(0.35)
Elementary education	0.08	(0.26)	0.04	(0.20)	0.09	(0.28)	0.06	(0.25)
Some high school	0.24	(0.43)	0.17	(0.38)	0.22	(0.42)	0.18	(0.39)
Completed high school	0.22	(0.42)	0.25	(0.43)	0.23	(0.42)	0.23	(0.42)
Some post-secondary education	0.09	(0.29)	0.09	(0.28)	0.10	(0.30)	0.12	(0.32)
Completed post-secondary	0.21	(0.41)	0.21	(0.40)	0.23	(0.42)	0.24	(0.43)
University education	0.16	(0.37)	0.24	(0.43)	0.12	(0.33)	0.16	(0.37)
Unionized – job 1	0.21	(0.40)	0.18	(0.38)	0.29	(0.45)	0.27	(0.45)
Covered by pension – job 1	0.26	(0.44)	0.30	(0.46)	0.30	(0.46)	0.33	(0.47)
Tenure at job 1 (no. weeks/100)	1.76	(2.65)	1.86	(2.76)	1.45	(2.37)	1.58	(2.38)
No. observations	650		199 391		9182		2 713 639	

points less prevalent in the weighted data amongst those who entered self-employment (23% versus 26%), while there is little difference in the fraction claiming personal reasons for job change (12% versus 11% for paid employees). Voluntary leavers constitute a greater fraction of those who obtained paid re-employment (54%) than self-employment (41%). For the self-employed, data on reason for leaving were less likely to be complete; workers who reported 'other' reasons for leaving constitute a far larger fraction of the self-employed (24%) than of the paid employees (9%). It is possible that 'other' reasons include a desire to be self-employed. These respondents may have been pulled, not pushed into self-employment, but there is no way of knowing this.

Other variables suggest that the self-employed differ from paid employees in significant ways. Movement from paid- into self-employment was much more prevalent amongst males (69% of the sample). Those entering self-employment were more likely to be married than those who took a paid job in the second instant. This may reflect spousal contributions to household resources, allowing the respondent the means necessary to enter self-employment. Individuals entering self-employment are more likely to be in the middle of their careers (ages 35–54) and to have a university education than those who move between paid jobs.

The self-employed also differ in the characteristics of their previous jobs. They show lower rates of unionization and (employer-provided) pension coverage in their initial jobs, and had about 29 weeks more of job tenure (186 weeks versus 157 weeks). This set of facts suggests workers who transition into self-employment may, for a variety of reasons, face relatively low expected returns to additional time spent in the paid sector. Because unions increase

returns to seniority, union members are likely to favour returning to the same employer, or remaining within their original industry and occupation so as to enjoy continued union coverage. Workers may do better sticking to an employer-provided pension plan, especially if the plan is not fully portable across employers. Lazear and Moore (1984) suggest that paid employment (but not self-employment) produces a monitoring problem that the employer solves by offering positive returns to seniority in the form of pensions or wages that increase with job tenure. Consequently, the expected returns to starting a new job in the paid sector may be low compared to the earnings expected from self-employment.

To investigate the independent effects of factors that motivate individuals to move from paid to self-employment, several probit equations are estimated. The dependent variable takes on a value of 1 if the respondent was self-employed in his or her second job and zero if the second job was in paid employment. The results from four specifications are presented in Table 2. A number of findings are robust. The probability of moving into self-employment is higher for males and for married individuals. Residents of British Columbia have a much higher probability of moving from paid to self-employment. Those aged 45–54 are more likely to move into self-employment than those individuals under 35 years of age. In each specification the probability of entering self-employment generally increases with the level of education, but there is evidence of a pattern similar to that found by other researchers: Individuals with only an elementary school education are least likely to move from paid to self-employment, while those with a university education are the most

Table 2. *Partial derivatives from probit estimates of movement from paid to self-employment* (absolute values of *t*-ratios are in parentheses)

	(1)		(2)		(3)		(4)	
Unemployment rate	−0.0015	(0.62)	−0.0014	(0.54)	−0.0009	(0.36)	−0.0008	(0.31)
Spell between jobs (weeks)	–	–	0.0011	(1.69)	0.0014	(2.14)	0.0010	(1.63)
Zero spell between jobs	–	–	0.0178	(1.89)	0.0154	(1.66)	0.0187	(2.03)
Collected UI benefits	–	–	–	–	−0.0219	(2.21)	−0.0206	(2.27)
Involuntary separation	–	–	–	–	–	–	−0.0457	(4.05)
Voluntary separation	–	–	–	–	–	–	−0.0733	(6.44)
Personal Separation	–	–	–	–	–	–	−0.0328	(3.58)
Male	0.0363	(7.10)	0.0366	(6.88)	0.0381	(6.76)	0.0370	(6.11)
Atlantic	0.0039	(0.21)	0.0023	(0.12)	0.0053	(0.28)	0.0060	(0.31)
Quebec	0.0157	(1.02)	0.0146	(0.95)	0.0159	(1.04)	0.0140	(0.87)
Prairies	0.0102	(1.15)	0.0091	(1.03)	0.0103	(1.19)	0.0109	(1.22)
British Columbia	0.0284	(2.13)	0.0274	(2.06)	0.0276	(2.06)	0.0264	(1.93)
Family members in LF	−0.0145	(3.62)	−0.0145	(3.68)	−0.0148	(3.78)	−0.0131	(3.62)
Married	0.0270	(3.24)	0.0267	(3.30)	0.0267	(3.34)	0.0248	(3.51)
Number of children	0.0069	(1.94)	0.0069	(1.90)	0.0067	(1.83)	0.0069	(2.05)
Age 35–44	0.0156	(1.77)	0.0152	(1.81)	0.0145	(1.74)	0.0119	(1.49)
Age 45–54	0.0362	(2.99)	0.0361	(2.99)	0.0365	(2.95)	0.0321	(2.75)
Age 55–64	0.0220	(1.21)	0.0201	(1.19)	0.0195	(1.19)	0.0106	(0.72)
Visible minority	0.0053	(0.28)	0.0053	(0.28)	0.0048	(0.25)	0.0049	(0.27)
Immigrant	0.0070	(0.57)	0.0064	(0.50)	0.0054	(0.43)	0.0064	(0.55)
Elementary education	−0.0310	(3.07)	−0.0301	(2.96)	−0.0290	(2.77)	−0.0277	(2.76)
Some high school	−0.0115	(1.33)	−0.0112	(1.33)	−0.0102	(1.22)	−0.0090	(1.26)
Some post−secondary education	−0.0185	(1.66)	−0.0187	(1.67)	−0.0187	(1.68)	−0.0205	(1.99)
Completed post−secondary	−0.0112	(1.23)	−0.0113	(1.24)	−0.0113	(1.25)	−0.0104	(1.16)
University education	0.0252	(2.01)	0.0244	(1.92)	0.0212	(1.70)	0.0167	(1.34)
Unionized – job 1	−0.0314	(3.65)	−0.0312	(3.92)	−0.0297	(3.77)	−0.0307	(4.45)
Covered by pension – job 1	−0.0103	(1.06)	−0.0103	(1.07)	−0.0107	(1.12)	−0.0103	(1.25)
Tenure at job 1	0.0007	(0.18)	0.0005	(0.13)	−0.0008	(0.23)	−0.0006	(0.19)
Tenure squared	0.0001	(0.43)	0.0001	(0.46)	0.0002	(0.67)	0.0001	(0.52)
Pseudo R^2	0.0448		0.0475		0.0506		0.0727	
χ^2 (23, 25, 26 and 29 d.f.) d.f. = degrees of freedom	857.16		1956.67		2441.15		3695.51	
p−value	0.0000		0.0000		0.0000		0.0000	
Observed P	0.0684		0.0684		0.0684		0.0684	
Predicted P	0.0605		0.0600		0.0594		0.0563	
No. observations (weighted)	2 913 030		2 913 030		2 913 030		2 913 030	
No. observations (unweighted)	9832		9832		9832		9832	

likely. However, those who have some post-secondary education are less likely to become self-employed than are high school graduates with no higher education. Union status at the first job is negatively related to changing sectors. Similarly, pension status at the first job is also negatively (albeit insignificantly) related to the probability of moving into self-employment. Tenure on the previous job is unrelated to self-employment.

The variables of central interest are related to unemployment and reasons for separation from the initial job. In contrast to the unemployment push hypothesis, the unemployment rate is not significantly related to the probability of self-employment in any of the four models. Other studies have found insignificant relationships between these two variables as well (Taylor (1996) and Robson (1998), using British data; Lin *et al.* (1999), for Canada). However, no consistent relationship between self-employment probabilities and unemployment rates appear in the literature. While Schuetze (2000) and Simpson and Sproule (1998) find positive relationships between those variables, others find significantly negative relationships (Blanchflower, 2000; Alba-Ramirez, 1994). Each of these studies use a variety of methodologies, data sets, and subsample selection, and none is directly comparable to the present study in the focus on the transition from paid to self-employment.[5]

To examine the relationship between spell length and self-employment, weeks between jobs together with a dummy set equal to one was used for jobless spells of zero weeks (i.e., ending the previous job and starting the new one within the same calendar week). The results in Columns 2–4 of Table 2 show that significance of spell length is dependent on model specification, although coefficients are consistently positive.[6] Cowling and Mitchell (1997) also find that the structure of unemployment is important with long-term unemployment having a positive effect on the probability of self-employment.

For those who were jobless for a week or more, the probability of moving into self-employment increases with the number of weeks out of work. However, zero spell length is also positive and significant (at 10% or better) in all three specifications. This result is consistent with the results of Alba-Ramirez (1994) who discovered similar relationships in his Spanish data, and found a clearly positive relationship between spell length and self-employment probabilities among displaced workers in the US data. Together, the positive significance of both zero spell length and total duration of joblessness suggests that there are different motives for entering self-employment. Those with no weeks between jobs may have had previous plans to enter self-employment (the plans would be unobservable; the LMAS does include self-employment among its reason-for-leaving codes). The role of spell length is small; each additional week of joblessness increases the self-employment probability by only one-tenth of a percentage point, which is 1.5% of the mean sample rate of 6.8%. However, it represents a fair number of workers (e.g., an extension of the average spell by one week would raise the number of self-employed by about 3000 out of the weighted sample of 2.9 million job changers).

As expected, time between jobs is also correlated with the collection of unemployment insurance benefits ($r = 0.32$). The dummy variable indicating whether the worker collected unemployment benefits is significant at the 5% level in both specifications in which it is included, and is negatively related to self-employment. The point estimates imply that collecting unemployment benefits reduces the probability of entering self-employment by about 2.1 percentage points.

Finally, the relationship between reason for separation and the probability of self-employment is examined. The results from this exercise are presented as model 4 in the final column of Table 2 (with 'other' the omitted category). Each of these coefficient estimates is significant, but since the omitted category is the ambiguous 'other' category, only the relative magnitude of the coefficients is informative. What is known is that voluntary leavers are the least likely to enter self-employment followed by involuntary leavers and finally those who left for personal reasons. Pairwise comparisons between voluntary and involuntary leavers and between voluntary and personal leavers do allow rejection of the hypothesis that coefficient estimates

[5] Results seem sensitive to the data and to the way unemployment is entered into the analysis. For example, Alba-Ramirez (1994) estimates the relationship to be negative and significant but it is not clear whether he corrects for intergroup heteroscedasticity of regional unemployment rates as done here (see Moulton (1990) for discussion). In separate estimates on LMAS data that did not correct for this form of heteroskedasticity (not reported here), coefficient estimates were significantly positive. More recently, Blanchflower (2000) finds a negative and significant relationship between these variables for Canada. He used a different unemployment rate disaggregate (gender, age and year-specific) in estimating a pooled cross-sectional model using 14 years of data from the Survey of Consumer Finances. Blanchflower also performs a comparable analysis on 19 other OECD countries and finds mixed results regarding the effect of unemployment rates of self-employment. Schuetze (2000) and Simpson and Sproule (1998) also find a positive relationship between the unemployment rate and self-employment. Both of these studies use cross-sectional data in studying the *stock* of self-employment in the cross-section. By contrast, the present analysis uses the panel properties of our data set in addressing the *transition* from paid- into self-employment.

[6] As mentioned in the data section, spell length is top coded to 49 weeks. This potentially could bias the estimated coefficients on this variable in any of the specifications in Tables 2 through 4.

are equal ($\chi^2 = 4.46$, $p = 0.0347$ and $\chi^2 = 12.30$, $p = 0.0005$, respectively). Thus, those who separate from their jobs for personal reasons are the most likely to enter self-employment (at least among the three groups that we have unambiguously identified). This result is consistent with the idea that workers are pulled into self-employment to, say, maintain flexible schedules, but is inconsistent with the push hypothesis.[7]

In sum, these data show that unemployment spell length is positively related to the probability of entering self-employment, but so is a spell length of zero length. This implies that there are different motives for entering self-employment with some individuals presumably entering with solid plans, and others entering as spell length increases. Only in the latter case is support found for the push hypothesis; however, this is not particularly convincing evidence since this result is also consistent with other motives for entering self-employment. For example, longer spells may be associated with accessing credit or other activities related to becoming self-employed. Collecting unemployment insurance benefits and entering self-employment are negatively related and this result is robust across model specifications. Perhaps these transfer payments lower the opportunity cost of job search in the paid employment sector, rather than providing stopgap income during the transition into self-employment.[8]

Also, there is interest in determining if push factors exert different effects on the self-employment decisions of men and women. Recent work has shown the determinants of male and female self-employment to differ (Simpson and Sproule, 1998; Georgellis and Wall, 1998). Results for separate probit regressions are presented in Table 3. For both men and women, being married increases the probability of movement into self-employment. This supports the importance of spousal resources in the self-employment decision. The influences of other demographic and job variables differ along gender lines. For example, the number of children is a positive influence for males, but not for females. Similarly, age variables are only significant determinants of male self-employment and follow the pattern in Table 2 as the probability of self-employment follows an inverse u-shape, peaking at ages 45–54. Men who were unionized were less likely to choose self-employment following job separation, while employer-provided pension coverage in the previous job was inversely related to self-employment for women (at the 10% level of significance).

As in the pooled results of Table 2, the unemployment rate is not statistically significant for either gender. For women, but not for men, a positive spell length is a significant predictor of moving into self-employment, but the size of the coefficient is small (about 0.1 percentage points) as was the case in the pooled results. The converse is true for zero spell length; it is a significant predictor of self-employment transition behaviour, but only for males. As in the pooled sample, men who collected unemployment benefits were more likely than men who did not enter self-employment. For women, unemployment benefits exerted a weaker effect.

The influence of the reason given for job separation also differs along gender lines. For men, all coefficients are different from zero at 5%, so reason for job separation is important relative to the omitted 'other' category. Pairwise *t*-tests, however, show that only personal and voluntary reasons for job separation are statistically distinguishable at the 5% level ($\chi^2 = 6.27$, $p = 0.0123$). For women, only voluntary separation is significantly different than the omitted category at 5%. Pairwise comparisons of the three main reasons allow a statistical differentiation only of the voluntary and involuntary reasons for job separation ($\chi^2 = 5.72$, $p = 0.0167$).

These results do not provide very compelling evidence in favour of the push hypothesis for men. For women, however, the results are somewhat more favourable; involuntary leavers were significantly more likely to move into self-employment compared to voluntary leavers. Spell length is also positively related to the probability of female self-employment.

The evidence from Table 2 suggests that reasons for job separation are related to self-employment rates. Table 4 presents self-employment equations for each reason. Push factors are likely to be of greatest relevance to workers who left their paid jobs involuntary. For those workers, the coefficient on the unemployment rate is positive, in accordance with the push hypothesis. However, the significance

[7] These differences in coefficient estimates are mildly sensitive to the classification of workers into the voluntary and involuntary categories. For example, when seasonal workers are considered voluntary leavers, and those who leave because of lack of job security are considered to be involuntary leavers, the difference between the voluntary and involuntary leavers is no longer significant at the 5% level (i.e., $\chi^2 = 4.46$, $p = 0.0575$). When the sample is split into male and female subsamples and estimated with these new definitions (as in Table 3), the results also do not change markedly.

[8] A number of different specifications were estimated similar to the full model estimated in Table 2, column 4. In particular, in a specification using the Labor Force Survey (LFS) definition of self-employment (which excludes individuals with and without paid help in incorporated businesses) had similar coefficient estimates, but the effects of no spell between jobs and collecting UI benefits were statistically insignificant. The results were similarly affected by using a narrower definition of self-employment, the so-called own account workers (those either incorporated or unincorporated with no paid help). Furthermore, eliminating the ambiguous 'other reason for separation' results in the zero spell between jobs being the only significant (and positive) coefficient estimate amongst those of interest. This result does not bode well for confirmation of the push hypothesis.

Table 3. *Partial derivatives from probit estimates of movement from paid to self-employment, males and females* (absolute values of *t*-ratios are in parentheses)

	Male		Female	
Unemployment rate	0.0013	(0.30)	−0.0028	(1.26)
Spell between jobs (weeks)	0.0006	(0.57)	0.0011	(2.01)
Zero spell between jobs	0.0281	(1.91)	0.0041	(0.35)
Collected UI benefits	−0.0195	(1.79)	−0.0173	(1.58)
Involuntary separation	−0.0647	(3.97)	−0.0199	(1.51)
Voluntary separation	−0.0879	(5.69)	−0.0476	(3.17)
Personal separation	−0.0332	(2.18)	−0.0235	(1.73)
Atlantic	−0.0097	(0.35)	0.0233	(1.24)
Quebec	−0.0026	(0.14)	0.0323	(2.52)
Prairies	0.0074	(0.70)	0.0138	(1.48)
British Columbia	0.0245	(1.27)	0.0247	(2.86)
Family members in LF	−0.0090	(1.93)	−0.0212	(2.65)
Married	0.0231	(2.71)	0.0243	(2.89)
Number of children	0.0105	(2.68)	0.0003	(0.07)
Age 35–44	0.0253	(2.06)	−0.0024	(0.29)
Age 45–54	0.0566	(3.30)	0.0027	(0.23)
Age 55–64	0.0345	(1.88)	−0.0204	(1.21)
Visible minority	0.0144	(0.58)	0.0044	(0.19)
Immigrant	−0.0028	(0.19)	0.0143	(1.14)
Elementary education	−0.0422	(3.48)	0.0005	(0.03)
Some high school	−0.0140	(1.65)	−0.0034	(0.34)
Some post-secondary education	−0.0282	(2.04)	−0.0149	(0.99)
Completed post-secondary	−0.0256	(2.56)	0.0039	(0.24)
University education	0.0146	(0.73)	0.0068	(0.52)
Unionized – job 1	−0.0486	(5.13)	−0.0049	(0.50)
Covered by pension – job 1	−0.0031	(0.22)	−0.0183	(1.94)
Tenure at job 1	0.0024	(0.71)	−0.0060	(1.05)
Tenure squared	−0.0001	(0.26)	0.0004	(0.97)
Pseudo R^2	0.0847		0.0589	
χ^2 (25 d.f.) d.f. = degrees of freedom	205387.70		74641.67	
p-value	0.0000		0.0000	
Observed *P*	0.0852		0.0476	
Predicted *P*	0.0693		0.0390	
No. observations (weighted)	1 612 068		1 300 962	
No. observations (unweighted)	5561		4271	

of the estimate lies just outside 10%. Spell length is positively correlated with self-employment for involuntary and personal leavers, but the results are insignificant at 5%. The duration of joblessness exerts a significantly positive impact on self-employment probabilities only among voluntary job leavers. It is possible that some voluntary leavers left with the purpose of entering into self-employment, and that the positive effect of spell length reflects the time needed to open a business.

V. CONCLUSIONS

The purpose of this paper was to test the hypothesis that unfavourable economic opportunities 'push' workers from paid into self-employment. Using the 1988–1990 LMAS, the roles of the unemployment rate, length of time between jobs, and reason for job separation are analysed in the decision to enter self-employment following a paid job. It is found that, among workers who experienced a spell of joblessness, those with longer spells between jobs are more likely to become self-employed. Spell length appears to be more important for women and for voluntary job leavers who left for reasons other than personal. However, the effect of spell length is very small. Furthermore, the results are difficult to interpret. They could also indicate simply that the self-employed need a longer period of joblessness to set up a business than paid workers need to find a new job.

Results for reason for loss of the first job suggest that both push and pull factors are important to selecting self-employment, underscoring the heterogeneity of the circumstances surrounding self-employment. Workers who left for personal reasons were significantly more likely than either

Table 4. *Partial derivatives from probit estimates of movement from paid to self-employment by reasons for separation* (absolute values of *t*-ratios are in parentheses)

	Voluntary		Involuntary		Personal	
Unemployment rate	−0.0037	(1.13)	0.0051	(1.64)	0.0052	(0.62)
Spell between jobs (weeks)	0.0013	(2.27)	0.0009	(1.25)	−0.0014	(1.71)
Zero spell between jobs	0.0213	(2.75)	0.0232	(1.85)	0.0044	(0.21)
Collected UI benefits	−0.0054	(0.74)	−0.0213	(1.39)	0.0171	(0.73)
Male	0.0345	(6.73)	0.0114	(1.33)	0.0608	(2.11)
Atlantic	0.0399	(1.47)	−0.0282	(1.21)	−0.0162	(0.29)
Quebec	0.0269	(1.41)	−0.0215	(1.35)	−0.0040	(0.08)
Prairies	0.0188	(2.19)	0.0112	(1.00)	−0.0068	(0.25)
British Columbia	0.0337	(2.14)	−0.0005	(0.03)	0.0051	(0.13)
Family members in LF	−0.0051	(1.00)	−0.0193	(2.58)	−0.0031	(0.28)
Married	0.0326	(5.41)	0.0155	(1.16)	−0.0044	(0.30)
Number of children	0.0070	(2.12)	0.0086	(1.72)	0.0151	(1.43)
Age 35–44	0.0130	(1.48)	−0.0097	(0.90)	−0.0163	(0.85)
Age 45–54	0.0263	(2.77)	−0.0091	(0.72)	0.0675	(1.58)
Age 55–64	0.0315	(0.96)	−0.0166	(0.98)	−0.0029	(0.09)
Visible minority	0.0125	(0.71)	−0.0362	(1.57)	0.0693	(1.71)
Immigrant	0.0045	(0.31)	0.0569	(2.68)	−0.0392	(1.69)
Elementary education	−0.0213	(1.85)	−0.0262	(1.66)	−0.0137	(0.27)
Some high school	−0.0115	(1.25)	−0.0115	(0.77)	0.0041	(0.16)
Some post−secondary education	−0.0096	(0.88)	−0.0301	(1.95)	0.0317	(0.57)
Completed post−secondary	−0.0024	(0.25)	−0.0183	(1.37)	0.0330	(1.07)
University education	0.0019	(0.16)	0.0001	(0.00)	0.0624	(2.23)
Unionized – job 1	−0.0267	(2.89)	−0.0431	(3.35)	−0.0514	(3.31)
Covered by pension – job 1	−0.0106	(1.20)	0.0187	(1.13)	0.0031	(0.14)
Tenure at job 1	−0.0020	(0.54)	0.0065	(0.91)	0.0061	(0.79)
Tenure squared	0.0001	(0.37)	−0.0009	(1.27)	−0.0004	(0.86)
Pseudo R^2	0.0688		0.0831		0.0885	
χ^2 (26 d.f.) d.f. = degrees of freedom	1303.94		633.17		269.12	
p-value	0.0000		0.0000		0.0000	
Observed *P*	0.0537		0.0608		0.0737	
Predicted *P*	0.0426		0.0468		0.0576	
No. observations (weighted)	1 538 393		750 036		323 641	
No. observations (unweighted)	4659		3125		1129	

other quitters or involuntary leavers to enter self-employment. This supports the relative importance of pull factors (e.g., flexible hours and independence) in self-employment growth. Finally, in none of the estimates does the unemployment rate exert a significantly positive influence on self-employment entry.

In sum, only weak evidence is found to support 'push factor' interpretations of self-employment growth in Canada. It does appear that workers choose self-employment for a variety of reasons, many of which were not captured in the data. Few of the individuals in the sample, however, appear to be pushed into self-employment.

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REFERENCES

Addison, J. T. and Portugal, P. (1989) Job displacement, relative wage changes, and duration of unemployment, *Journal of Labor Economics*, **7**(3), 281–302.

Alba-Ramirez, A. (1994) Self-employment in the midst of unemployment: the case of Spain and the United States, *Applied Economics*, **26**(3), 189–204.

Bernhardt, I. (1994) Comparative advantage in self-employment and paid work, *Canadian Journal of Economics*, **27**(2), 273–89.

Blanchflower, D. G. (2000) Self-employment in OECD Countries, *Labour Economics* **7**(5), 471–505.

Blanchflower, D. G. and Oswald, A. J. (1998) What makes an entrepreneur? *Journal of Labor Economics*, **16**(1), 26–60.

Blau, D. M. (1987). A time-series analysis of self-employment in the United States, *Journal of Political Economy*, **95**(3), 445–67.

Borjas, G. J. (1987) The self-employment experience of immigrants, *Journal of Human Resources*, **21**(4), 445–67.

Borjas, G. J. and Bronars, S. G. (1989) Consumer discrimination and self-employment, *Journal of Political Economy*, **97**(3), 581–605.

Bradbury, K. L. (1994) New England job changes during the recession: the role of self-employment, *New England Economic Review*, September/October, 45–57.

Cowling, M. and Mitchell, P. (1997). The evolution of UK self-employment: a study of government policy and the role of the macroeconomy, *The Manchester School*, **65**(4), 427–42.

Dennis, W. J. (1996) Self-employment when nothing else is available? *Journal of Labor Research*, **17**(4), 645–61.

Ekos Research Associates Inc. (1998). *Own-Account Self-Employment in Canada*. Prepared for the Evaluation and Data Development Branch of Human Resources Development Canada. Cited in *Applied Research Bulletin*, **4**(1).

Evans, D. S. and Jovanovic, B. (1989) An estimated model of entrepreneurial choice under liquidity constraints, *Journal of Political Economy*, **97**(4), 808–27.

Evans, D. S. and Leighton, L. S. (1989) Some empirical aspects of entrepreneurship, *American Economic Review*, **79**(3), 519–35.

Fuchs, V. R. (1982) Self-employment and the labor force participation of older males, *Journal of Human Resources*, **17**(3), 339–57.

Fugii, E. T. and Hawley, C. B. (1991). Empirical aspects of self-employment, *Economic Letters*, **36**(3), 323–329.

Gauthier, J. and Roy, R. (1997). Diverging Trends in Self-Employment in Canada, Human Resources Development Canada: Applied Research Branch, Strategic Policy, Paper No. R-97-13E.

Georgellis, Y. and Wall, H. J. (1998). Gender differences in self-employment: panel evidence from the former West Germany, Birkbeck College, Department of Economics Discussion paper 98–03.

Holtz-Easkin, D., Joulfaian, D. and Rosen, H. S. (1994). Sticking it out: entrepreneurial survival and liquidity constraints, *Journal of Political Economy*, **102**(1), 53–75.

Kuhn, P. J. and Schuetze, H. J. (1999). Self-employment dynamics and self-employment trends: a study of Canadian men and women, 1982–95, Canadian International Labour Network (CILN) Working paper No. 31.

Lazear, E. P. and Moore, R. L. (1984) Incentive, productivity and labor contracts, *Quarterly Journal of Economics*, **99**, 275–96.

Lin, Z., Yates, J. and Picot, G. (1999). Rising self-employment in the midst of high unemployment: an empirical analysis of recent developments in Canada, Statistics Canada: Analytical Studies Branch Research Paper No. 133.

Maxim, P. S. (1992). Immigrants, visible minorities, and self-employment, *Demography*, **29**(2), 181–98.

Monks, J. and Pizer, S. (1998) Trends in voluntary and involuntary job turnover, *Industrial Relations*, **37**(4), 440–59.

Moulton, B. R. (1990) An illustration of a pitfall in estimating the effects of aggregate variables on micro units, *Review of Economics and Statistics*, **72**(2), 334–38.

Picot, G. and Lin, Z. (1997) Are Canadians More Likely to Lose Their Jobs in the 1990s? Statistics Canada: Analytical Studies Branch Research Paper No. 96.

Picot, G., Lin, Z. and Pyper, W. (1998) Permanent layoffs in Canada: overview and longitudinal analysis, *Canadian Journal of Economics*, **31**(5), 1154–78.

Polsky, D. (1999) Changing consequences of job separation in the United States, *Industrial and Labor Relations Review*, **52**(4), 565–80.

Robson, M. T. (1998) Self-employment in the UK regions, *Applied Economics*, **30**(3), 313–22.

Schuetze, H. J. (2000) Taxes, Economic Conditions and Recent Trends in Males Self-employment A Canada-US. Comparison, *Labour Economics*, **7**(5), 507–44.

Simpson, W. and Sproule, R. (1998) Econometric Analysis of Canadian Self-Employment Using SLID, Income and Labour Dynamics Working Paper No. 98-16, Statistics Canada (November).

Statistics Canada (1994) *Historical Labour Force Statistics*. Catalogue No. 71–201. Minister of Industry, Science and Technology, Ottawa.

Statistics Canada (1997) *Labour Force Update: The Self-Employed in Canada*. Catalogue No. 71-005 (Autumn). Minister of Industry, Science and Technology, Ottawa.

Statistics Canada (1998). *The Daily*, 18 August.

Taylor, M. P. (1996) Earnings, independence or unemployment: why become self-employed? *Oxford Bulletin of Economics and Statistics*, **58**(2), 253–66.

Vishwanath, T. (1989) Job search, stigma effect, and escape rate from unemployment, *Journal of Labor Economics*, **7**(4), 487–502.