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Regional unemployment, self-employment and family background1

Abstract. This paper analyses the role of regional unemployment on self-employment. The paper argues that family background separates individuals with respect to the effect of unemployment. The empirical analysis is based on data on a sample of Finnish residents aged 0-14 years in 1970 whose subsequent employment is examined. The results show that high unemployment in a region pushes individuals from self-employed families into self-employment, while it has the opposite effect on individuals from wage earner families. The push effect seems to work only among those individuals who already have entrepreneurial skills through their family background.

Keywords: regional unemployment; self-employment; family background; entrepreneurial qualifications

1. Introduction

The motivations for entering self-employment are various. This paper analyses the role of one such motivation, unemployment on self-employment using Finnish data. Theoretical arguments can be adduced in favour of both negative and positive effects of unemployment on self-employment. Individuals also behave differently depending on their background and qualifications. The evidence gathered so far on the significance of unemployment in this respect is mixed (Storey 1982 and 1991, Binks and Jennings 1986, Hamilton 1989, Marlow and Storey 1992, Thomas and Jungbauer-Gans 1999, Carrasco 1999, Martinez-Granado 2002, Moore and Mueller 2002). Clearly there is considerable disagreement in the literature about how unemployment affects self-employment (Parker 2004). In their analysis of Finnish data, Tervo and Niittykangas (1994) found that a high level of unemployment in a region has a negative and a rise in unemployment a positive effect on new firm formation. These relationships were found to be strengthened if the entrepreneurial qualifications of the population were developed and if the region offered opportunities for entrepreneurship. Ritsilä

1 The paper is a part of a research project (number 200856) financed by the Academy of Finland. I would like to thank an anonymous referee and the editor of this journal for helpful comments and suggestions..

and Tervo (2002) assumed that unemployment may affect new firm formation at three different levels, viz.: the personal, regional and national levels. Their results showed that a high national level of unemployment decreased the likelihood of new firm formation, while personal unemployment increased the likelihood of an individual becoming an entrepreneur. The effect of regional unemployment on business formation could not, however, be shown in this comprehensive analysis. This may be due to the fact that the push and pull forces were of equal size, the net effect being nil.

This paper argues that family background separates individuals with respect to the effect of unemployment: individuals raised in self-employed families enter self-employment more easily than others when faced with the prospect of unemployment. The empirical analysis is based on longitudinal data on a sample of Finnish residents aged 0-14 years in 1970. The results on occupational status and unemployment over the period 1987-1999 show differences between those raised in wage earner families as compared with those raised in self-employed families. Logit estimations suggest that high unemployment in a region pushes individuals from self-employed families into self-employment, while it has the opposite effect on individuals from wage earner families. This in turn would show that the push effect of unemployment only works among individuals who from childhood onwards have acquired entrepreneurial skills.

The paper is organized as follows. First, the framework related to unemployment, self-employment and family background is introduced. Second, the data and variables are presented. Third, the results are reported. The final section concludes.

2. Regional unemployment, self-employment and family background

Unemployment can *a priori* either increase or decrease new firm formation. Unemployment decreases self-employment if market pull is the dominant factor in new firm formation. The income growth theory, as noted by e.g. Storey (1982), views the growth of new firms as one of the effects of substantial income growth and growth in demand for more sophisticated goods. In general, individuals are tempted into forming their own businesses when demand is high and market conditions are promising. A low level of regional unemployment indicates a high level of local demand and thus a

high new firm formation rate. Conversely, high unemployment should have an inhibitory effect on entrepreneurship and transitions into self-employment.

On the other hand, the so-called push hypothesis suggests that a rise in unemployment will lead to an increase in firm births: many people who are experiencing or facing the prospect of unemployment will envisage higher returns from entrepreneurship compared with the other options open to them (Storey 1991, Marlow and Storey 1992, Meager 1992, Audretsch 1993, Keeble and Walker 1994, Reynolds *et al.* 1994, Tervo and Niittykangas 1994, Robson 1998, Moore and Mueller 2002, Ritsilä and Tervo 2002). Negative developments tend to activate latent entrepreneurial talent and push individuals into self-employment. Accordingly, individuals are pushed into business formation by high levels of unemployment. Employment conditions also influence self-employment decisions. In those areas which have fewer paid-employment opportunities, alternation between paid-employment and self-employment becomes a necessity for many individuals (Tervo 2004). Flexible small firms may trade profitably even when times are bad. A rise in business closures increases the availability of low-cost second-hand equipment and business premises. Furthermore, especially in regions with high levels of unemployment, the public sector encourages entrepreneurship.

Apart from unemployment, the likelihood of an individual choosing to become an entrepreneur depends on many other factors (Tervo and Niittykangas 1994, Uusitalo 2001, Parker 2004). Different individuals will perceive their prospects as entrepreneurs differently. Family background might be considered one important factor in pushing individuals into entrepreneurship. Earlier research has shown that children raised in self-employed families are more likely than others to perceive such a career as more acceptable than working for someone else (Gartner 1988, Lentz and Laband 1990, Laferrére and McEntee 1995, Uusitalo 2001, Niittykangas and Tervo 2005). These individuals possess a kind of entrepreneurial human capital or cultural inheritance, as they have been able to observe their self-employed parents in their childhood and youth. Intergenerational transfers of human capital - either general managerial skills or enterprise- specific skills - may motivate children to follow their self-employed parent. They may have also gained practical business experience by working in the family firm, and in consequence obtained “premarket” experience (Lentz and Laband 1990). In addition, family background may provide self-confidence and social support, some of the resources

needed to enter business on one's own account, and the strategic capacity to learn and organize new activities.

Thus, self-employment is a by-product of growing-up for the children of self-employed families. Family background may thus indicate latent entrepreneurial talent and should be an important factor in the analysis of transitions into self-employment. Consequently, the hypothesis is that high unemployment in a region pushes individuals, especially those with an entrepreneurial family background, into self-employment.

3. Data and variables

The analysis is based on longitudinal data on a sample of Finnish residents for 1970, 1975, 1980, 1985 and then annually from 1987 through 1999. The data are derived from the census and longitudinal employment statistics gathered by Statistics Finland. Since the same personal identifier is adopted in both, the two data sets can be merged, providing panel data on each resident of Finland. Statistics Finland does not provide information on the exact attrition rate in the data, but it is very low.

The empirical analysis is based on a ten percent sample drawn from the data. For 1970 this yields a total of 419 806 individuals. Children who were 0-14 years in 1970 were selected from the data and two groups were formed, the first consisting of children from self-employed families and the second one of children not from self-employed families, i.e. mainly from wage earner families. Census data for the years 1970, 1975 and 1980 were used to identify the children from these different backgrounds. Children whose parents worked in the agricultural sector were excluded as the concept of self-employment is more vague in agriculture than in other industries (Blanchflower 2000). Moreover, the nature of intergenerational transfers is probably different in agriculture (Laferrére and McEntee 1995). The final sample sizes are 13 970 in the group consisting of children from self-employed families and 114 263 in the group consisting of children from wage earner families.

The years 1987-1999 are used to describe the evolution in occupational status in both groups. Accordingly, the age of an individual in the sample ranged between 17 and 31 years in the first year (1987) of the study period and between 29 and 44 years in the last year (1999). A thorough analysis

of the effect of regional unemployment on self-employment in each group is based on the situation in the last two years of the period. The dependent variable in the multivariate logit analysis shows whether the individual was or was not self-employed in 1998 or 1999 (table 1).

To differentiate the effect of regional unemployment we used a dummy which identified those individuals who resided in travel-to-work areas with high unemployment from those residing in regions with lower unemployment. High unemployment was defined as 1 if unemployment in the region was higher than 18.5% in 1997. This 18.5% cut-off was selected as to differentiate the one third of the population living in high unemployment regions from the rest. The cut-off is high because unemployment remained very high in the late 1990s due to the deep recession in Finland in the early years of the decade when regional rates of unemployment rose to 30%.

Family background and unemployment are the most important variables in the analysis. The sign of the family background variable would be expected to be positive. Furthermore, if unemployment in a region is high individuals with an entrepreneurial family background would be expected to be even more eager to become self-employed. We hypothesize that this push effect would not be so strong among children from wage earner families. Thus, the regional unemployment variable would be expected to have a positive sign in the group of children from self-employed families, while the expected sign would be indefinable in the group of children from wage earner families. If it is positive, the size of the coefficient would nonetheless be expected to be smaller in the group of children from wage earner families than in the group of children from self-employed families.

In addition to regional unemployment and family background variables, two groups of explanatory variables were used in the logit analysis: those describing personal and family characteristics and those describing childhood. The variables describing personal and family characteristics are standard variables used in many previous analyses of self-employment describing sex, age, education, family relations and housing (Parker 2004). The other variables describing individuals' family situation and home ownership in their childhood have more rarely been used. Our exceptionally good data, however, allows their use. These variables indicate the industry in which the household reference individual worked, the family home and the structure of the family. Housing variables proxy the wealth of the family by showing whether in 1970 the family home was owner-occupied or rented. Another variable shows whether the individual comes from a big family, and yet another describes the

social relations in the family by showing whether the individual comes from a one-parent family. Descriptions and percentages of ones of the dummy variables are given in table 1.

Insert table 1 about here

4. Results

Let us first look at how occupational and employment status in the two groups evolved over the period 1987-1999. Figure 1 shows that the self-employment rate[2] throughout the period was more than twofold greater among the children with an entrepreneurial background than their peers at the same age. For example in 1999, when the age of the children ranged between 29 and 44 years, the self-employment rate was 15.5% among the descendants of self-employed families and 7.0% among the descendants of other families. The descendants of self-employed families either had established their own firms or had continued family businesses.

Insert figure 1 about here

Figure 2 shows the unemployment rates of the two groups. The change in the unemployment rate indicates the effect of the deep recession in Finland in the early 1990s, marked by a dramatic rise in unemployment. There is, however, a difference in unemployment between the two groups: unemployment was on a higher level throughout the study period among those raised in wage earner families as compared with those raised in self-employed families. In 1999, the difference was nearly two percentage points, the unemployment rates being 12.9% and 11.1%, respectively. The same finding concerns the employment rates (not shown here) in which the difference between the two groups is even greater. According to these descriptive findings it is easier for children raised in self-employed families in comparison to other children to find employment, particularly self-employment, if jobs otherwise are in short supply.

Insert figure 2 about here

[2] Self-employment as a percentage of all non-agricultural employment.

To assess this effect more thoroughly we first use the GLM (Generalized Linear Model) univariate procedure to provide a two-factor analysis of variance for the dependent variable, self-employment. The dependent variable indicates whether an individual was self-employed in 1998 or 1999. The two dummy variables, family background and unemployment rate in the region (in 1997) divide the population into groups. We can now test null hypotheses about the effects of these variables as well as their interaction on the means of various groupings of the dependent variable (table 2).

Descriptive statistics (table 2 (a)) show that the percentage share of those individuals in the sample who were self-employed in 1998 or 1999 is 6.9%. This share is considerably higher, 13.3%, among the individuals raised in self-employed families than the 6.1% share of the others. The effect of regional unemployment also seems noteworthy: the share of the self-employed is 7.2% in the high unemployment regions, while it is 6.7% in the low unemployment regions. Lastly, the mean differences in the share of the self-employed by unemployment in the region also seem to vary between the two groups of children. Unemployment increases the share of the self-employed from 12.0% to 15.3% among the individuals raised in self-employed families, while there is no increase among the children of wage-earner families. From our point of view, this finding is most interesting.

Insert table 2 about here

The analysis of variance table (table 2 (b)) shows that each term in the model is highly significant. Accordingly, the interaction term is also significant, with an F value of 50.5 ($p = 0.0000$): individuals raised in self-employed families and residing in a high-unemployment region entered more often into self-employment than those residing in a low unemployment region, while the pattern is less clear for individuals raised in wage-earner families.

This univariate analysis is based on the analysis of two variables and their interaction. To control for the effects of other important variables, three logit models were estimated (table 3). Estimations are made both separately and jointly for the two groups, children of self-employed families and other children. The specification in the joint estimation includes a variable which describes an entrepreneurial family background and an interaction variable in which the dummy describing regional unemployment is multiplied by the dummy describing an entrepreneurial family background. In

addition, the model includes the most important explanatory variables often used in modelling the employment/self-employment decision (see table 1).

Insert table 3 about here

Nearly all the variables used in the model show statistically significant and expected effects in both groups. This shows that several other important background variables also have an effect on an individual's probability of being self-employed, in addition to entrepreneurial inheritance and regional unemployment. For example, this probability increases if an individual is male, married, has children and has only a basic education. Furthermore, if the parent is a retailer or the family has property (own house or flat), the probability increases. In most cases, the effects are similar in both groups, although some differences remain.

Our main interest in the estimations is in the behaviour of the unemployment and family background-variables. The effect of high regional unemployment on self-employment is significant and positive in the group of children from self-employed families, while the effect is significant and negative in the other group. In the joint estimation, the effect of entrepreneurial family background is positive and the effect of high regional unemployment negative. Most interestingly, the estimated coefficient for the interaction variable is positive and significant.

These results would suggest that high unemployment in a region pushes individuals raised in self-employed families into self-employment, but has the opposite effect on individuals raised in wage earner families. Thus, the push effect of high unemployment seems to work only among those individuals who already have acquired entrepreneurial skills through their family background.

5. Conclusion

The results suggest that unemployment affects the two groups differently. First, the proportion of unemployed persons was higher throughout the study period among those from wage earner families than those from self-employed families. Second, the univariate analysis of variance shows that high unemployment in a region has a particularly strong effect on the decision to enter self-employment, if

an individual is raised in a self-employed family. Third, and most importantly, estimations of logit models in which the effects of all the other important variables are controlled for suggest that high unemployment in a region pushes individuals from self-employed families into self-employment, but has the opposite effect on individuals from wage earner families. The push effect seems to work only among those individuals who already have entrepreneurial skills. Negative developments activate latent entrepreneurial talent and push individuals with an entrepreneurial family background into self-employment. Those individuals who do not have this background are significantly less likely to enter self-employment. A direct policy implication from the study is that public labour market policy measures should include more training programs to develop entrepreneurial skills among all unemployed individuals to make it easier for them to enter self-employment.

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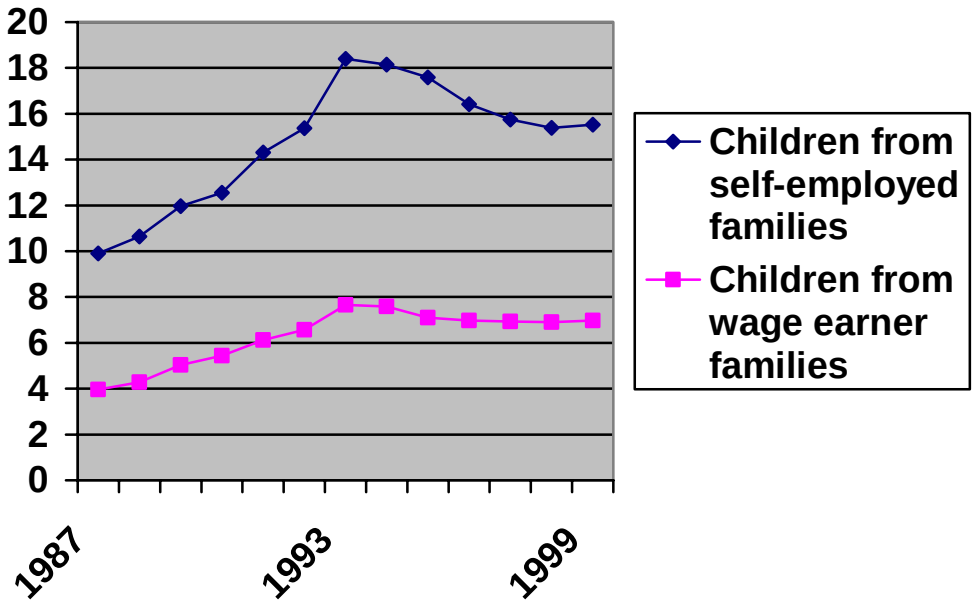

Figure 1. Self-employment rate (%) among the two groups in 1987-1999

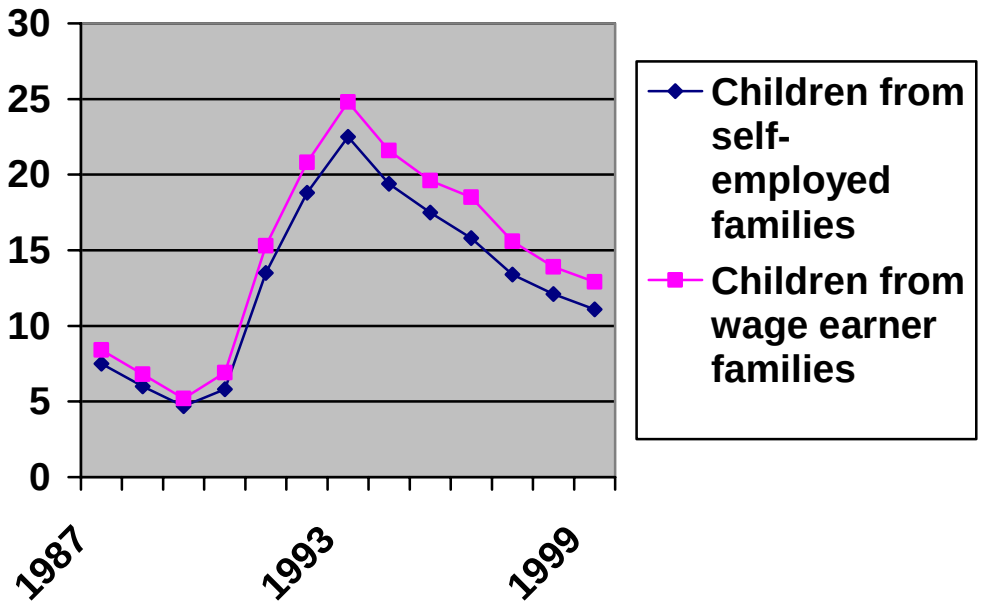

Figure 2. Unemployment rate (%) among the two groups in 1987-1999

Table 1. Descriptions of variables

Variable	Explanation (all variables are dummy variables)	Percentage of ones		
		Children of self-employed families (n = 13970)	Children of wage earner families (n=114 263)	All (n=128 233)
Family background	1 if a child of 0-14 in 1970 from a self-employed family, 0 if not (identification of self-employment from census data from the years 1970, 1975 and 1980; families working in agriculture excluded)	100	0	10.89
Self-employed (dependent variable)	1 if self-employed in 1998 or 1999, 0 otherwise (agriculture excluded)	13.26	6.10	6.88
High unemployment travel-to-work area	1 if unemployment rate in the travel-to-work area (1997) higher than 18.5%, 0 otherwise	37.92	35.25	35.54
Personal and family characteristics				
Female	1 if female, 0 if male (1998)	49.33	49.88	49.82
Old	1 if age in 1998 between 35 and 43, 0 if 28-34	55.54	59.51	59.08
Level of education – reference category basic education				
- intermediate	1 if secondary education (1998, equivalent of 10-12 years of education), 0 otherwise	44.30	46.00	45.81
- high	1 if higher education (1998, equivalent of 13 or more years of education), 0 otherwise	35.00	34.52	34.58
Field of education – reference category other fields				
- commercial	1 if field of education commercial (1998), 0 otherwise	18.10	15.90	16.14
- technical	1 if field of education technical (1998), 0 otherwise	25.15	27.45	27.20
Swedish-speaking	1 if Swedish-speaking (1998), 0 otherwise	5.05	3.78	3.92
Married or cohabiting	1 if married or cohabiting (1998), 0 if single	75.37	75.00	75.04
Family with children	1 if more than two persons in the household (1998), 0 otherwise	69.51	67.93	68.10
Housing – reference category rented flat				
- house owner	1 if owner-occupier of a house (1998), 0 otherwise	40.79	34.54	35.22
- flat owner	1 if owner-occupier of a flat as a shareholder in a housing corporation (1998), 0 otherwise	22.73	25.03	24.78
Characteristics related to childhood				
Parent's industry – reference category all other industries				
- manufacturing	1 if head of the household worked in manufacturing in 1970, 0 otherwise	14.01	28.75	27.15
- retailing	1 if head of the household worked in retailing in 1970; 0 otherwise	16.18	5.24	6.44

- transportation	1 if head of the household worked in transportation in 1970, 0 otherwise	28.31	7.41	9.69
Housing – reference category rented flat				
- own house	1 if head of the household was owner-occupier of a house in 1970, 0 otherwise	60.54	39.45	41.75
- own flat	1 if head of the household was owner-occupier of a flat as a shareholder in a housing corporation in 1970, 0 otherwise	8.38	12.53	12.08
A family of three or more children	1 if the family had at least three children in 1970, 0 otherwise	57.84	52.37	52.96
One-parent family	1 if comes from a one-parent family (1970), 0 otherwise	5.08	9.81	9.29

Table 2. Analysis of variance for self-employment by family background and unemployment rate

(a) Descriptive Statistics

Dependent variable: has (=1) / has not worked (=0) as self-employed in 1998 or 1999

Family background	Unemployment in the travel-to-work area	Mean	Std. Deviation	N
Children from wage earner families	Low	0.0611	0.2396	73983
	High	0.0608	0.2389	40280
	Total	0.0610	0.2394	114263
Children from self-employed families	Low	0.1201	0.3252	8673
	High	0.1529	0.3599	5297
	Total	0.1326	0.3391	13970
All	Low	0.0673	0.2506	82656
	High	0.0715	0.2576	45577
	Total	0.0688	0.2531	128233

(b) Tests of Between-Subjects Effects

Dependent variable: has (=1) / has not worked (=0) as self-employed in 1998 or 1999

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	67.3	3	22.4	352.8	0.000
Intercept	455.6	1	455.6	7168.7	0.000
Family background	66.7	1	66.7	1049.6	0.000
Unemployment rate	3.1	1	3.1	48.2	0.000
Family background * unemployment rate	3.2	1	3.2	50.5	0.000
Error	8149.5	128229	0.064		
Total	8824.0	128233			
Corrected Total	8216.8	128232			

Table 3. Logit estimations for self-employment

Dependent variable: has (=1) / has not worked (=0) as self-employed in 1998 or 1999

Variable	Family background: Children from self-employed families		Family background: Children from wage earner families		All children	
High unemployment travel-to-work area	0.147**	(0.054)	-0.096***	(0.027)	-0.099***	(0.027)
Family background	-		-		0.659***	(0.038)
Family background * high unemployment travel-to-work area	-		-		0.276***	(0.058)
Personal and family characteristics						
Female	-1.100***	(0.063)	-0.594***	(0.029)	-0.691***	(0.026)
Old	0.247***	(0.056)	0.210***	(0.028)	0.217***	(0.025)
Level of education (reference category basic education)						
- intermediate	-0.160*	(0.077)	0.112**	(0.037)	0.053	(0.033)
- high	-0.783***	(0.092)	-0.256***	(0.042)	-0.359***	(0.038)
Field of education (reference category: other fields)						
- commercial	0.425***	(0.089)	0.028	(0.042)	0.095*	(0.038)
- technical	-0.012	(0.074)	-0.238***	(0.034)	-0.202***	(0.031)
Swedish-speaking 0.110	(0.116)	0.118 (0.061))	0.119*	(0.054)		
Married or cohabiting	0.379***	(0.077)	0.381***	(0.038)	0.377***	(0.034)
Family with children	0.150*	(0.072)	0.103**	(0.034)	0.114***	(0.031)
Housing (reference category rented flat)						
- house owner	0.676***	(0.066)	0.517***	(0.031)	0.551***	(0.028)
- flat owner	0.289***	(0.078)	0.092**	(0.036)	0.127***	(0.032)
Characteristics related to childhood (situation in 1970)						
Parent's industry (reference category: all other industries)						
- manufacturing	0.053	(0.083)	-0.025	(0.029)	-0.018	(0.027)
- retailing	0.215**	(0.077)	0.298***	(0.051)	0.243***	(0.042)
- transportation	0.246***	(0.063)	-0.034	(0.049)	0.088*	(0.037)
Housing (reference category rented flat)						
- house owner	0.241***	(0.063)	0.076**	(0.028)	0.106***	(0.025)
- flat owner	0.287**	(0.105)	0.139***	(0.040)	0.154***	(0.037)
A family of three or more children	-0.203***	(0.055)	-0.013	(0.026)	-0.049*	(0.024)
One-parent family -0.192	(0.130)	-0.021 (0.043)	-0.036	(0.041)		
Constant	-2.372***	(0.102)	-3.134***	(0.048)	-3.093***	(0.043)
Sample size	13970		114 263		128 233	
Number of self-employed	1852		6972		8824	
-2 log likelihood	10035.5		51082.9		61284.4	
Nagelkerke R^2	0.114		0.034		0.058	
Model khii^2 (significance level)	895.8 (0.000)		1422.6 (0.000)		2974.6 (0.000)	
Overall predictive accuracy	86.7%		93.9%		93.1%	

Notes: *** statistically significant at the 0.001 level
** statistically significant at the 0.01 level
* statistically significant at the 0.05 level
Standard errors in parentheses.