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INTERGENERATIONAL MOBILITY IN SELF-EMPLOYMENT: A REGIONAL APPROACH

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ABSTRACT. The assumption of an intergenerational link in entrepreneurship is not a novelty. Labour economists emphasize the transfer of wealth and informal human capital, researchers in entrepreneurship that of cultural inheritance. Family background may provide self-confidence and social support, a supply of resources needed by the business, and strategic capasity to learn and organize for new activities. The movement to self-employment may also simply arise because children tend to inherit family firms. In this paper the Finnish Longitudinal Census and the Longitudinal Employment statistics from the period of 1970 to 1999 are exploited. The sample is consisted of those children in 1970 belonging to age-group 0-14 years who are from families of self-employed and non-self-employed.

Our empirical findings show, first, that the phenomenon of intergenerational mobility in self-employment is very evident. The self-employment rate of those children coming from self-employed families is more than two-fold in contrast to other children. Persistence is also stronger among second-generation self-employed as compared with first-generation self-employed. Second, regional differences in self-employment are distinct. Self-employment is more typical to rural and unemployment regions than highly developed regions which suggests that self-employment stems partly from necessity. The results would suggest that the region and its characteristics has a stronger effect among those of self-employed parentage in contrast to others, but this result remains tentative which still needs further analysis. Third, logit estimations indicate that the probability of becoming self-employed increases if an individual with entrepreneurial family background is male, married, has children, has only a basic education and the field of education is commercial and not at least technical. The childhood is also of importance for entering self-employment: if a child has grown up in a self-employed family with many siblings or if the family is only a one-parent family, the child's probability of entering self-employment in later life decreases. Furthermore, if the parent is retailer or the family has assets (own house or flat), the probability increases. Many of these background factors are not so important in the decisions to enter self-employment of individuals grown up in other families. The family business tradition most obviously is an important dividing factor. We can especially observe a difference in the importance of sex and education.

JEL-classification: J23, J24, J62, M13, O18

1. Introduction

Entrepreneurs' children both tend to inherit family firms and are, in general, more open to the idea of self-employment. This seems to be common knowledge, and also a result brought forth in labour economics (e.g. Blachflower 2000) and entrepreneurship research (e.g. Chell 1986; Gartner 1988; Davidsson and Wiklund 2001). An in-depth research of intergenerational mobility in self-employment is, however, rare (see Lentz and Laband 1990; Laferrère and McEntee 1995), although in general micro-econometric research on the economics of self-employment has expanded in recent years.[1]

Moreover, regions differ typically much with regard to entrepreneurship. For example, in Finland regional differences in the number of firms is substantial. Entrepreneurial vitality seems to be very much a local phenomenon, but why? Although there are various hypotheses in the literature of regional science about the significance of environmental factors in explaining regional difference in self-employment (cf. Fischer 1988; Malecki 1997), only scanty attention has been drawn on the role of entrepreneurial inheritance at the bottom of local differences in entrepreneurial vitality. The seed-bed hypothesis assumes that the main determinant of self-employment is the local industrial structure, through spin-off effects. Large firms are supposed to be poor incubators for new firms founders compared with small businesses. Several researches have indeed indicated a strong positive relationship between business formation rates and the number of existing firms in regions (e.g. in Finland, Niittykangas, Storhammar and Tervo 1994). However, the role of occupational inheritance in entrepreneurship is still unclear here. Intergenerational transfers of entrepreneurial human capital may be one important factor in explaining regional differences.

Our paper analyses occupational inheritance among self-employed families in Finland in 1970-1999 with longitudinal microdata. We have two main aims in our analysis. First, we examine the role of entrepreneurial inheritance in 1987-1999 and its regional differences among children aged 0-14 years in 1970. For that purpose, we picked up those children at that age who had a self-employed parent either in 1970, 1975 or 1980. We also compare the incidence of self-employment between this group and those children of the same age whose parents were not self-employed.

Second, we analyse the determinants of self-employment among these two groups. We are especially interested in the role of regional features when controlling for personal and family background factors. Do the regional features such as municipality size and type, industrial structure or unemployment level have significance in the probability of being self-employed? And still more importantly, are there differences in this respect between those from self-employed families and those at the same age from other families?

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[1] See, e.g., the special issue of Labour Economics 2000, no 5, on self-employment.

The paper is organized as follows. First, some theoretical starting points are under investigation. Second, the data is presented. Third, we examine the development of self-employment rates in 1987-1999 among those coming from self-employed families as compared with those coming from other families. Fourth, we compare how self-employment varies in these two groups in terms of regional features. Fifth, estimated logit equations for self-employment in the two samples are presented and compared with each other by means of an interaction model. Finally, some concluding remarks are presented.

2.   Theoretical linkages

There are many good reasons for being interested in entrepreneurship, especially in new and growing small firms (e.g. Reynolds and White 1997, 6), from the point of view of academic field as well. It is becoming an important option in the work careers of many, but the greatest interest comes from a belief that small businesses are essential to the growth and renewal of the whole economy (Blanchflower and Meyer 1994).

Storey (1994, 60) gives two broad explanations for firm births. He makes a difference between the work of industrial economists and that of labour market economists. The mainstream paradigm of industrial organization assumes that the structure of the industry influences the conduct of the firms which in turn influences the collective performance of the firms (Porter 1981). The primary elements of structure are such as barriers of entry, the number and size distribution of firms, product differentation, and the elasticity of demand.

According to Storey (1994, 60), labour market economists examine new firm formation as a decision exercised by the individual in the context of the labour market. An individual is influenced by a variety of factors, such as work experience, motivation, personality, family environment, and characteristics of location (see e.g. Blanchflower 2000). However, the main emphasis of labour market economists is on differences between self-employed people and those of other career options. The interest of the labour market economists in new firm formation originates, as Storey (1994, 62) has stated, from the work of Knight (1921) in which he argued that an individual has three options: unemployment, paid employment or self-employment.

Although our knowledge on the factors influencing the decision into entering business has expanded in recent years, only some researches take explicitly into account the intergenerational influence in the entrepreneurial process. Laferrére and McEntee (1995) suggest that the likelihood of being self-employed is higher if a person has received intergenerational transfers of wealth (i.e. helped in paying rent or provided a free place of residence, and ownership of the place of residence) despite that inheritance and gift are not significant which is contrary to the findings of Blanchflower and Oswald (1998). The transfer of human capital within the family is also important. Self-employed father or father-in-law

increases the probability to become self-employed. Marriage and the number of children are also significant in the decision to move from paid employment into self-employment. Moreover, Laferrére and McEntee (1995) find robust evidence that an individual is less likely to move into self-employment if he obtains a third level education.

According to Lentz and Laband (1990), roughly 50 per cent of self-employed proprietors are second-generation proprietors. These individuals acquire informal business experience while growing up in the context of a family business. Intergenerational transfer of enterprise-spesific and managerial human capital is a substitute for market-oriented acquisition of skills. Self-employed of second-generation were found to start their businesses at a younger age than those of first-generation. It is quite obvious that non-human capital transfers such as consumer loyalty to the family business, business and personal networks characterized by trust and commitment, and physical assets are not without importance in becoming self-employed.

Regional variation in new firm formation and its background factors have been considered by a large amount of researchers (for a review, see Malecki 1997, 162-170). Reynolds, Storey and Westhead (1994) found out that the average firm birth rates across countries as well as regional variations within countries are similar: the most fertile regions have annual firm birth rates two to four times higher than the least fertile regions. The underlying processes affecting firm births at the regional level appears uniform across countries, though differences exist between all economic sectors and manufacturing. For all economic sectors, the most significant process is growth in demand, but urbanization / agglomeration, specialization and the presence of small firms are also of importance. For manufacturing firm births, the presence of small firms and growth in demand have a strong positive effect.

According to Johannisson (1993, 118), contextual support such as role models and networks and general characteristics of the context are important in new firm formation process. For more understanding, Johannisson (1993) estimated four different models. The market model suggests that local market opportunities stimulate individuals to start their own business. The resource model refers to different types of input resources needed in the business-venturing process, e.g. physical, financial, human and socio-cultural. The milieu model underlines the importance of favourable and creative living conditions. Finally, the career model suggests that new venture creation may be seen as a learning process. Factors such as family background, education and existence of role models are important.

We believe that understanding of entrepreneurial process and affecting factors demands a deeper insight than that prevailing among labour and regional economists. A more precise content to concepts such as entrepreneurial learning process, learning environment of entrepreneurs and cultural inheritanceis needed. In that case, we may benefit the vast research in business administration and social sciences, especially that in entrepreneurship, which is

interested in new venture creation *in casu*, or more generally as Shane and Venkataraman (2000) have emphasized, in the existence, discovery, and exploitation of entrepreneurial opportunities.

From the very traditional point of view, discovery and exploitation of entrepreneurial opportunities may be concretized by Ronstadt (1984) in his three schools: the people school, the environmental school and the venture school.[2] Trait theory (e.g. McClelland 1961; Rotter 1966) and psychodynamic model of Kets de Vries (1977) are examples from ideas in the people school, and sociological research tradition (e.g. Shapero and Sokol 1982) from the environmental school. Some integrated models also exist, e.g. the theory of planned behaviour (e.g. Krueger and Carsrud 1993; Krueger and Brazeal 1994) which emphasizes the importance of intentions, and the social development model by Gibb and Ritchie (1982) and the model of entrepreneurial careers of Dyer (1994) as well. In these models, entrepreneurship is seen as an interactive learning process between individual, environment and business (see also Bygrave 1994). Family background is one of the most refered influental factor in the entrepreneurial process. For example, a review article by Gartner (1988; see also Davidsson and Wiklund 2001) on entrepreneurs and entrepreneurship strongly emphasizes family background.

According to Dyer and Handler (1994), family may affect an entrepreneur's career in four way: early experiences in the entrepreneur's family of origin, family involvement in the entrepreneur's start-up activities, employment of family members in the entrepreneurial firm, and the involvement of family members in ownership and management succession. Early experiences may appear in three ways. First, connection between childhood and adulthood may be best formulated by Kets de Vries (1977) in his psychodynamic model. Second, parental role models seem to encourage entrepreneurial behaviour. Third, in self-employed families, the parents may provide the children with the skills, values, and confidence they need to embark on an entrepreneurial career.

Our brief review shows that the importance of entrepreneurial learning environment is well-known. We are aware of the factors and processes affecting it generally, as well. Anyhow, detailed results concerning the magnitude and role of intergenerational transfers are not many in entrepreneurship research. In the survey of the process of small business start-ups (Stanworth, Blythe, Granger and Stanworth 1989), the results concerning more than 600 respondents indicate a consistently high presence of role models, not only within family but also within friends. The results show that 38% of those in business had a self-employed father. This is significantly higher than the 20 per cent reported by Curran and Burrows

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[2] For venture school proponents, the origin of an entrepreneurial career is in discovering a viable venture opportunity, developing a opportunity into a business concept, and implementing it. We may differ entrepreneurial opportunities from the larger set of all opportunities for profit (Venkataraman and Shane 2000) or we may emphasize the origin of an opportunity, technology or market.

(1988). They argue that the cultural inheritance of entrepreneurship does indeed move within families. Moreover, Aldrich, Renzoli and Langton (1998) investigated reasons why those with self-employed parents are more likely to become business founders themselves. We have also some evidence that the children's intentions to become self-employed are influenced by that how positively parent's status or performance is perceived (Delmar and Davidsson 2000). This effect may be stronger among males than females (Matthews and Moser 1995).

These theoretical starting points are quite far from those applied in labour economics, even though the outcomes are very similar. In labour economics different career options are under investigation and self-employment is compared explicitly with other career options. As Storey (1994, 60) stated, the entrepreneurial process is influenced by a variety of factors. From the point of view of entrepreneurship research, these kind of factors are strongly related to which business we are in and to the strategic choices of a firm. The importance of these factors in founding a business is dependent also on the life-stage of the founder as the social development model by Gibb and Ritchie (1982) emphasizes.

3.   Data

The empirical analysis is based on a sample of over 600 000 individuals of the Finnish Longitudinal Census data and the Longitudinal Employment Statistics (a supplement to the Finnish Longitudinal Census) from the period of 1970 to 1999. From 1987 onwards the data is yearly and before that at intervals of five year.

Two groups were formed, the first one consisting of children from (non-farming) self-employed families and the second one of other children. Individuals belonging to these groups were 0-14 years old in 1970 and still living in Finland in 1999. Accordingly, they were 29-44 years old in the final year of the study period 1999 and 17-31 years old in 1987. Children aged 0-14 years have the occupational status[3], socio-economic status and industry of their household reference person[4], mostly the father, included in the record. The years 1970, 1975 and 1980 were used to identify the group into which a child belongs. The number of those children who were from a self-employed family outside agriculture[5] either in 1970,

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[3] According to Statistics Finland (1996), occupational status describes the position of the employed in the labour market as follows: wage and salary earners, and entrepreneurs whom cannot be divided into employers and self-employed (sole entrepreneurs). The category of entrepreneurs also comprises unpaid family workers. The data on occupational status is based on the person's insurance and the amount of wage and salary and entrepreneurial income. As a whole, self-employment is more or less a statistical concept used in labour market statistics and national accounts, for which reason a great dispersion can be found among self-employed (Johansson 2000, 3).

[4] Reference person is the person with the highest income in a household (Statistics Finland 1996).

[5] Agricultural sector is excluded because the concept of self-employment is more vague in agriculture than in other industries (Blanchflower 2000). Moreover, the phenomenon of intergenerational transfers is probably different by nature in agriculture (Laferrére and McEntee 1995).

1975 or 1980 was 14 789 in our data file. They all were picked up into the first group. The reference group is consisted of a sample of children at the same age who did not fulfil the requirement concerning a self- employed parent. Most of these children are from wage earner families, but a part comes from farmer families. The sampling percentage used to pick up the reference group was 9.17% which produced about the same sample size as in the first group.

Two shortcomings remain in this procedure which should be taken into account. First, if the reference person (mostly the father) is a wage earner, but the other parent self-employed, a child is classified into the group of wage earner families. Second, if the occupational status of the household reference person was self-employed in any of the years out of those used (1970,1975, 1980), this cannot be elicited from the data. Other minor shortcomings are also possible such as the problem related to existence of part-time entrepreneurship.

3.   Incidence of self-employment

The occupational status describes the relation of each individual to economic activity. It shows whether an individual is a wage and salary earner or self-employed. Persons not employed belong to economically inactive population, including unemployed, students, pensioners and others, and are classified in the third category. In the following, we analyse how the occupational status of children aged 0-14 years in 1970 evolved during the study period 1987-1999 among those whose parents were non-farming self-employed as compared with those whose parents were not self-employed in the 1970s (Table 1). We have also here excluded those working in agriculture in the study period.

Table 1.   Self-employment and unemployment 1987-1999

Period [1]	Self-employment rate [2]			Employed, % of all		Unemployed, % of all	
	Group 1	Group 2	Ratio	Group 1	Group 2	Group 1	Group 2
1987-1989	10.2%	4.3%	2.4	72.8	72.1	4.7	5.4
1990-1992	13.4%	6.1%	2.2	75.6	73.7	10.5	12.0
1993-1995	17.5%	7.7%	2.3	71.3	68.4	16.4	18.4
1996-1998	15.5%	7.1%	2.2	75.1	72.0	11.9	13.9
1999	15.4%	7.2%	2.1	79.3	76.5	9.7	11.5

Notes: 1) The figures are annual averages in the periods; 2) Self-employed / all employed, % (farming excluded); 3) Group 1 - children of self-employed families (farming excluded), Group 2 - other children at the same age (farming included)

The results show that the non-farming self-employment rate (self-employment as a per cent of all non-agricultural employment) has been more than twofold among the children with the entrepreneurial background as compared to the others at the same age. In 1999, when the age

of the children ranged 29-44 years, 15.4% of the descendants from self-employed families were also self-employed themselves, while the share was only 7.2% among the descendants from other families. The self-employment rate was highest in the period of 1993-95 and lowest in 1987-89. The trend observed here coincides well with the general trend of self-employment in Finland. OECD Labour Force Statistics show that the non-farming self-employment rate in Finland was 6.6% in 1986 and 9.1% in 1996 (see also Blanchflower 2000, Table 3). It should be, however, noted that the youngest one in our data were only 18 in 1987-89 which also accounts for the relatively low self-employment rates in these early years. Despite this fact, the ratio between the self-employment rates of the two groups reached its highest value (2.4) in 1987-89 which suggests that second-generation self-employed start their own business earlier than first-generation self-employed.

Table 1 also indicates the shares of employed and unemployed in these two groups. The development in the shares of unemployed[6] indicates the effect of the deep recession in Finland in the early 1990s which led to a dramatic rise in unemployment climbing within a few years from about 3% to over 20%. Economic recovery since 1994 has only slowly reduced unemployment. From our viewpoint, an important finding is the difference in unemployment between the two groups: the share of unemployed was higher throughout the study period among those from wage earner families as compared with those from self-employed families. In 1999, the difference was about 2%, the shares being 11.5% and 9.7%, respectively. The same finding concerns the shares of employed in which the difference between the two groups is even greater. Consequently, it seems that it is easier for children grown up in self-employed families in comparison to other children at the same age to rely on self-employment if vacancies otherwise are in short supply.

The percentage of those who were self-employed at least one year in 1987-1999 was 23.0% among children of self-employed families and 13.0% among others (Table 2). Besides the difference in these percentages, it can also be clearly seen a difference in the number of years in which the second- and first-generation entrepreneurs were self-employed in the study period. 18.5% of the second-generation self-employed persons were self-employed more than 10 years out of 13, while the equivalent percentage was only 11.4% among the first-generation self-employed persons. Among self-employed, the average duration of self-employment in the study period was about one year longer in the first group compared with the second group (5.95 years vs. 4.96 years).

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[6] The share of unemployed is not directly the unemployment rate because the denominator is not the labour force, but the whole population.

Table 2.   Incidence and duration of self-employment

		Group 1 (children of self-employed families, farming excluded)	Group 2 (others)
Incidence of self-employment[1]		23.0%	13.0%
Number of self-employed	1	16.4	21.2
years in 1987-1999	2-4	27.5	33.6
(among self-employed)	5-7	22.3	20.8
	8-10	15.4	13.0
	11-12	8.5	5.6
	13	10.0	5.8
	Total	100.0%	100.0%
		(n=3 334)	(n=1 865)

Note: 1) Incidence of self-employment describes the percentage of individuals who were self-employed at
         least one year in 1987-1999.

4.   Regional variation in self-employment

Before analysing the determinants of self-employment it is useful to take a look at regional
variation in self-employment among individuals with different family background. In
examining this, we use two dependent variables, the first and more important one telling the
incidence of self-employment and the second one revealing the average length of self-
employed years in the study period among those who have been self-employed. The first
variable is the one also used above which reveals the shares of those who were self-employed
at least one year in 1987-1999. The variable is more useful than merely a cross-section
variable from one year as it encompasses the whole period.

The independent variables available describe regional characteristics such as the size as
measured in population, the employment shares of primary, secondary and tertiary
production, the degree of urbanization, and the unemployment rate. In most cases, they
concern the year 1997[7]. All variables concern the municipality of residence, except the
unemployment rate which concerns travel-to-work areas. For example, in 1995 Finland had a
total of 455 municipalities, while the number of travel-to-work areas was smaller, about 200.
The variables are categorized based on percentile groups, with each group containing
approximately the same number of cases. The number of categories is three, except for the
share of primary production in which the two first categories are joined due to the distribution
of the variable. In addition to these variables, we use a variable describing the greater home
region (NUTS 2), the number of which is five.

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[7] This is, of course, a problem especially if a person has moved during the study period, since the dependent
variable concerns the whole period.

Two different approaches may exist: market oriented approach (see Johannisson 1993) and social development model of Gibb and Ritchie (1982; near the model of entrepreneurial career by Dyer 1994). Market oriented model emphasizes the existence of business opportunities and capabilities for discovering and exploitation of these opportunities. Social development model, instead, considers entrepreneurship as a learning process in which factors such as family background and wider growing-up environment are of great importance. Both approaches are present here.

From the point of view of market oriented approach, Table 3 shows how self-employment varies with regard to different regional features in our two groups. First of all, there are clear regional differences, as expected. The average shares both in the incidence and length of self-employment vary statistically significantly in accordance with regional characteristics. For example, it can be seen that self-employment is less common in Uusimaa, the capital region. Very often those choosing self-employment reside in rural areas in which the share of primary production is high, the share of services small and which are characterized by high unemployment. This suggests that the most typical form of self-employment stems from necessity (on the nature of necessity, see e.g. Storey 1982; Littunen and Niittykangas 2002; Ritsilä and Tervo 2002).

Regional differences can be found in both groups, but the regional effect seems to be stronger among children of self-employed families. This is also confirmed by the F-statistics which are always bigger in that group. Related to the share of secondary production in the region, the F-statistics even show no significance among children of non-self-employed families. The effect of regional unemployment on the duration of self-employment is also only weakly significant in this group. Consequently, it seems that regional characteristics have a stronger effect on both becoming self-employed and the permanence of self-employment among those of self-employed parentage, and thus having entrepreneurial background, as compared with those of wage earner parentage. This is, however, only a tentative result, and the question of regional differences will be analysed more thoroughly in our interactive logit models in which the effects of other control variables can be taken into account.

Table 3.　　Regional variation in self-employment

Variable and its categories[2]	Group 1[1]		Group 2[1]	
	Incidence of self-employment[3]	Duration of self-employment[4]	Incidence of self-employment[3]	Duration of self-employment[4]
Altogether	23.0	6.0	13.0	5.0
Greater region (NUTS 2)				
- Uusimaa	17.1	4.9	10.3	4.6
- Southern Finland	24.2	6.1	13.3	4.7
- Eastern Finland	27.3	6.5	15.0	5.2
- Middle Finland	26.4	6.4	15.5	5.3
- Northern Finland	24.8	6.1	14.6	5.6
F statistic and p value[5]	29.0 (0.000)	15.6 (0.000)	11.9 (0.000)	4.2 (0.002)
Size of municipality in accordance with population				
- small	29.7	6.7	17.6	5.5
- medium-sized	22.2	5.9	11.5	4.8
- big	17.3	4.9	10.3	4.4
F statistic and p value[5]	106.8 (0.000)	56.7 (0.000)	61.2 (0.000)	15.5 (0.000)
Share of primary production in municipality				
- small or medium-sized	19.5	5.4	11.0	4.5
- high	31.1	6.7	18.7	5.7
F statistic and p value[5]	231.7 (0.000)	83.5 (0.000)	141.9 (0.000)	41.9 (0.000)
Share of secondary production in municipality				
- small	20.6	5.6	12.0	5.0
- medium-sized	24.0	5.9	13.5	4.9
- high	24.2	6.3	13.4	5.0
F statistic and p value[5]	9.6 (0.000)	5.5 (0.004)	2.7 (0.068)	0.1 (0.890)
Share of tertiary production in municipality				
- small	28.8	6.7	16.6	5.5
- medium-sized	22.5	5.7	12.7	4.6
- high	16.8	4.9	9.9	4.4
F statistic and p value[5]	102.5 (0.000)	55.0 (0.000)	50.9 (0.000)	17.4 (0.000)
Grouping of municipality in accordance with urbanisation				
- town-like	18.9	5.3	10.7	4.6
- densely populated	25.4	6.1	15.6	5.3
- rural area	31.6	6.8	18.4	5.5
F statistic and p value[5]	114.3 (0.000)	41.9 (0.000)	65.2 (0.000)	12.3 (0.000)
Unemployment rate in travel-to-work area				
- low	18.9	5.2	10.9	4.8
- medium-sized	23.6	6.1	14.2	4.8
- high	26.4	6.4	14.1	5.2
F statistic and p value[5]	39.9 (0.000)	22.2 (0.000)	14.6 (0.000)	3.1 (0.045)

Notes:　1) Group 1 - children of self-employed families (farming excluded), Group 2 - other children; 2) The independent variables are categorized into three subgroups (based on percentage groups), with each subgroup containing approximately the same number of cases; 3) Incidence of self-employment shows the percentage of individuals who were self-employed at least one year in 1987-1999; 4) Number of self-employed years in 1987-1999 (among self-employed); 5) F statistic and p value relate to a one-way analysis of variance in which the hypothesis that subgroup means are equal is tested.

From the point of view of social development model (Gibb and Ritchie 1982), the main question relates to the role the birthplace, learning environment in general, may have on individuals when they choose between self-employment and paid employment. In most cases individuals continue to reside in their birthplace, and it is difficult to disentangle the effect of

birthplace from that of the present residential area on self-employment. Therefore, we separated migrants from non-migrants and analysed only in this sub-group the effect of birthplace on self-employment.[8] If the residential county was different in 1997 than it was in 1970, an individual was picked to the group of "movers"[9]. The share of movers was 29.8% among children of self-employed families and little higher, 30.7% among other children at the same age.

Table 4 shows the association between the features of birthplace and incidence of self-employment among movers. First, when comparing the results with those of Table 3 we can find that both the shares of self-employed and their average durations are smaller among movers than in the whole population. This is especially true for children of self-employed families for whom the share of those who were self-employed at least one year in the study period was 17.2%, while it was 23.0% in the group as whole. The difference is smaller among other children at the same age, the shares being 12.0% and 13.1%, respectively.[10] Why is this so? It is likely that the role of family business in occupational inheritance among self-employed families is behind these figures. Many second-generation self-employed are continuators of family businesses. This is not, however, the only reason for the observed difference in self-employment between children from self-employed and non-self-employed families which is corroborated by a clear difference (5.2 %-units) in the shares of self-employment between these two groups among those who have moved.

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[8] We analyse here only that effect which regional features of childhood have on self-employment in later life. The analysis of the role of other characteristics related to childhood are left to logit analyses.

[9] The number of counties in Finland is 20 which is a substantially lower number than the number of municipalities. Therefore, to move from a county to another may be called long-distance migration which means a change in the local labour market area.

[10] This difference is also , however, statistically significant (p value is 0.016).

Table 4. Regional features in adolescence and self-employment among migrants

Variable and its categories[2]	Group 1[1]		Group 2[1]	
	Incidence of self-employment[3]	Duration of self-employment[4]	Incidence of self-employment[3]	Duration of self-employment[4]
Altogether	17.2	4.5	12.0	4.6
Greater region (NUTS 2) in 1970				
- Uusimaa	22.7	4.9	12.2	4.2
- Southern Finland	17.6	4.6	10.1	4.2
- Eastern Finland	14.9	4.1	13.2	4.9
- Middle Finland	17.5	4.6	12.8	5.0
- Northern Finland	16.1	4.2	13.4	4.4
F statistic and p value[5]	3.7 (0.005)	1.1 (0.361)	2.0 (0.089)	1.5 (0.207)
Size of municipality in accordance with population in 1970				
- small	16.7	4.7	13.1	4.9
- medium-sized	17.4	4.5	11.7	4.6
- big	17.7	4.3	11.4	4.1
F statistic and p value[5]	0.3 (0.776)	0.9 (0.427)	1.1 (0.330)	2.6 (0.075)
Share of primary production in municipality in 1970				
- small	17.6	4.5	10.8	4.1
- medium-sized	17.9	4.4	11.9	4.8
- high	16.5	4.5	13.5	4.8
F statistic and p value[5]	0.6 (0.573)	0.1 (0.923)	2.9 (0.056)	2.2 (.0116)
Share of secondary production in municipality in 1970				
- small	16.2	4.4	13.1	5.1
- medium-sized	17.9	4.8	12.5	4.3
- high	18.3	4.4	10.7	4.5
F statistic and p value[5]	1.4 (0.256)	0.8 (0.432)	2.1 (0.118)	2.2 (0.113)
Share of tertiary production in municipality in 1970				
- small	16.1	4.7	13.7	5.0
- medium-sized	17.8	4.4	11.6	4.6
- high	17.5	4.5	11.2	4.2
F statistic and p value[5]	0.8 (0.452)	0.4 (0.605)	2.3 (0.098)	2.7 (0.069)
Degree of urbanization in municipality in 1970				
-small	16.3	4.5	13.2	4.9
-medium-sized	17.7	4.4	11.5	4.5
- high	17.8	4.6	11.4	4.2
F statistic and p value[5]	0.6 (0.529)	0.2 (0.828)	1.4 (0.238)	1.5 (0.216)

Note: Number of migrants (n) is 4 323 in the first group and 4 477 in the second group. For other notes, see Table 3.

Secondly, Table 4 suggests against social development model that the characteristics of birthplace has only very minor effects on self-employment. In most cases, the observed differences are not statistically significant. Partly this follows from the smaller number of observations, but more from the simple fact that the differences are modest. The exception is the greater region: those children grown up in self-employed families who have out-migrated from Uusimaa have entered, perhaps unexpectedly, self-employment more often than other migrants, though self-employment is otherwise less popular in Uusimaa.

5. Interactive self-employment logits

5.1 Modelling strategy

At a theoretical level, the probability of being self-employed is a form of human capital investment problem in which an individual selects self-employment if the net present value of expected benefits of self-employment exceeds the net present value of the costs involved (Evans and Leighton 1990; Tervo and Niittykangas 1994; Ritsilä and Tervo 2002). The probability of becoming a self-employed person is seen as a function of different features related to the region, person and family background.

A logit analysis is applied in order to describe the characteristics of self-employed against others. The aim of this analysis is to examine the significance of different factors on the probability of being self-employed in each of our groups. The dependent variable is a dummy taking the value 1 if an individual has ever been self-employed in the study period 1987-1999. Transitions into and out of self-employment will not be modelled here, since the interest at this point is in the circumstances and characteristics of people who have entered self-employment.

An important task here is to test whether a factor has a similar effect on the probability of self-employment among second-generation self-employed in contrast to those of first-generation. We are also here especially interested in the effect of regional characteristics. Technically, we use pooled data of both groups and interaction dummy variables in order to compare the two estimated logit equations. First, to test whether there is a "universal" difference in the probabilities of being self-employed between the two groups, a dummy which obtains the value 1 if an individual has an entrepreneurial family background is included in the equation. Secondly, to test whether an observed effect of any explanatory variable depends on entrepreneurial family background, interaction variables in which each explanatory variable is multiplied with the dummy describing entrepreneurial family background are also included in the equation. Whether the coefficients of the interaction dummies are statistically significant or not can be tested by the conventional test based on the Wald statistic.

5.2 Explanatory variables

Our explanatory variables can broadly be divided into three groups: those describing residential area, those describing personal and family factors and those describing childhood. First group refers to a vast literature concerning regional variation in new firm formation. The main emphasis is on regional characteristics in general (e.g. Reynolds et al. 1994) or in industrial structure (e.g. Bianchi 1998) or in labour market characteristics (e.g. Ritsilä and

14

Tervo 2002; Tervo and Niittykangas 1994). Personal and family factors and those describing individual's childhood are emphasized in labour market approach and different behavioural sciences, in entrepreneurship as well. Despite differences in theoretical starting points, outcomes are, however, very similar. Family background and existing role models (e.g. Gibb and Ritchie 1982; Dyer 1994), personal characteristics like traits, education and experience background (e.g. Blachflower 2000; Blachflower and Meyer 1994), networks (e.g. Johannisson 1984), and financial slack (e.g. Blachflower and Oswald 1998; Johansson 2000) are of great importance. All variables employed are in dummy-form. The definitions, means and predicted outcomes of these explanatory variables are given in Appendix.

Regional characteristics We utilize the same regional variables as in the preceding examination of regional variation in self-employment, but now in dummy-form. Four dummies describe the greater region at NUTS-2 level, the reference region being Uusimaa. Also four dummies describe other characteristics of the region. The first of these identifies those living in small municipalities in contrast to the bigger ones, the second one sorts out highly industrialized home municipalities from the less industrialized ones, the third one identifies rural home municipalities from the other municipalities and the fourth one tells whether unemployment in the travel-to-work area an individual is residing in is high or not.

The relationship between unemployment and self-employment is not clear-cut. Unemployment may have an effect on self-employment at three different levels, viz. the personal level, regional level and national level (Ritsilä and Tervo 2002), but here only the regional level can be applied.[11] Both push and pull effects may operate, and evidence for both effects have been obtained in previous studies (Evans and Leighton 1989; Storey 1991; Tervo and Niittykangas 1994; Laferrére and McEntee 1995; Ritsilä and Tervo 2002).

Personal and family characteristics These are standard variables used in many previous analyses of self-employment, describing sex, age, education, family relations and housing (e.g. Evans and Leighton 1989; Laferrère and McEntee 1995; Blanchard and Oswald 1998; Johansson 2000). A dummy indicates whether the individual is female or not. The question of the sex is especially interesting in the context of occupational inheritance, since it is generally believed that entrepreneurs' sons continue in their fathers' footsteps, while daughters select another option. Due to our set-up, the age range is limited into 15 years in the data, but even then we use a dummy to sort out older individuals from the younger ones. Four dummies describe the level and orientation of education. Two dummies indicate the level of education, the first one separating those with an intermediate-level education (10-12 years) and the second one those with a higher education (12-16 years or more), the reference being basic education (9 years or less). In addition, two dummies indicate two main fields of education,

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[11] The personal or national level cannot be used in the analysis of the role of unemployment, since the analysis is of a cross-sectional nature.

the first one sorting out those with commercial education and the second one those with technical education. A language dummy shows whether the individual belongs to the Swedish-speaking part of the population. Two dummies indicate individual's family relations, the first one showing whether he/she is married or cohabiting, and the second one whether the size of the household is bigger than two (indicating families with children). Two variables relate to housing, the first one showing whether the individual owns a house and the second one whether he/she owns own shares in housing corporation, the reference for these two dummies being tenant. The last dummy in this group reveals whether the individual resides now in a different county than in 1970.

 Characteristics related to childhood These dummies describe individuals' family and residential situation in 1970. First, we employ a dummy indicating whether the individual lived in the capital region of Finland, Uusimaa in 1970. The results above suggested that self-employment is less common in Uusimaa, but then again that those who had moved from Uusimaa were more eager to enter self-employment. Three dummies indicate the industry in which the reference person of the household worked in 1970. These industries are the three main industries, viz. manufacturing, retailing and transportation. Two dummies are proxies of wealth of the family by showing whether the family lived in 1970 in a house of their own or in an owner-occupied flat. A dummy shows whether the individual comes from a big family with at least three children. Finally, a dummy describes the social relations in the family by showing whether the individual comes from a one-parent family.

5.3 Results

Table 5 shows the estimation results. The first part in the Table reports estimated coefficients, standard errors and statistical significances (related to the Wald statistic) for the first group which consists of individuals with entrepreneurial family background; the second part shows the equivalent results for the reference group consisting of a sample of all other individuals at the same age; and the third part reports the estimated coefficients, standard errors and significances for the interaction variables through which we can evaluate whether the effects deviate between the two groups. Actually we have made two estimations of which the first one is a standard logit with the data of the first group (these results are in the first part in the Table) and the second one an interactive logit with the pooled data (these results are in the second and third parts in the Table). Adding of the estimated coefficients in parts two and three also gives the coefficients estimated for the first group.[12]

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[12] It should also be noted that the parameter estimates for the second group are quite close to the estimates for the population as a whole (individuals aged 0-14 years in 1970), since the second group represents the main body of the population (the share of the first group is 8.5% in the population in 1970).

Table 5.   Logit estimations

Variable	Group 1 (children of self-employed families)		Group 2 (other children)		Interaction terms in pooled estimation	
Constant / family background in pooled estimation	-1.452***	(0.107)	-2.079***	(0.126)	0.627***	(0.165)
Regional characteristics						
Greater region (NUTS 2) (reference category Uusimaa)						
- Southern Finland	0.225**	(0.084)	0.138	(0.096)	0.087	(0.127)
- Eastern Finland	0.207*	(0.101)	0.085	(0.118)	0.122	(0.155)
- Middle Finland	0.197*	(0.095)	0.214º	(0.110)	-0.017	(0.145)
- Northern Finland	0.131	(0.098)	0.056	(0.115)	0.075	(0.151)
Small municipality	0.149*	(0.067)	0.276***	(0.079)	-0.127	(0.103)
Industrialized municipality	-0.052	(0.055)	-0.119º	(0.069)	0.067	(0.088)
Rural municipality	0.179*	(0.072)	0.086	(0.086)	0.093	(0.112)
High unemployment	0.107*	(0.053)	0.008	(0.065)	0.100	(0.084)
Personal and family characteristics						
Female	-0.932***	(0.049)	-0.554***	(0.060)	-0.378***	(0.077)
Old	0.399***	(0.045)	0.358***	(0.058)	0.041	(0.074)
Level of education (reference category basic education)						
- intermediate	-0.193**	(0.062)	0.078	(0.078)	-0.271**	(0.099)
- high	-0.685***	(0.075)	-0.125	(0.090)	-0.560***	(0.117)
Field of education (reference category: other fields)						
- commercial	0.231**	(0.071)	-0.067	(0.088)	0.298**	(0.113)
- technical	-0.150*	(0.061)	-0.326***	(0.072)	0.176 •	(0.094)
Swedish-speaking	0.026	(0.098)	-0.148	(0.147)	0.173	(0.177)
Married or cohabiting	0.205**	(0.059)	0.116	(0.074)	0.089	(0.094)
Family with children	0.141*	(0.057)	0.056	(0.070)	0.085	(0.090)
Housing (reference category rented flat)						
- own house	0.227***	(0.053)	0.267***	(0.066)	-0.041	(0.085)
- owner flat	-0.048	(0.061)	-0.228**	(0.078)	0.179	(0.099)
Regions differ in 1970 and 1997	-0.183**	(0.055)	0.024	(0.063)	-0.207*	(0.084)
Characteristics related to childhood (situation in 1970)						
Lived in Uusimaa	0.077	(0.085)	0.073	(0.096)	0.004	(0.128)
Parent's industry (reference category: all other industries)						
- manufacturing	-0.024	(0.067)	-0.132*	(0.067)	0.108	(0.094)
- retailing	0.270***	(0.061)	-0.022	(0.132)	0.292*	(0.146)
- transportation	0.083	(0.052)	-0.186	(0.118)	0.269*	(0.129)
Housing (reference category rented flat)						
- own house	0.181***	(0.051)	0.087	(0.061)	0.094	(0.079)
- owner flat	0.263**	(0.084)	0.013	(0.098)	0.250 •	(0.129)
A family of three or more children	-0.103*	(0.045)	-0.119*	(0.056)	0.017	(0.072)
One-parent family	-0.227*	(0.102)	-0.073	(0.094)	-0.154	(0.138)

Notes: Dependent variable: has / has not worked as self-employed in 1987-1999
   ***   statistically significant at the 0.001 level
   **   statistically significant at the 0.01 level
   *   statistically significant at the 0.05 level
   •   statistically significant at the 0.10 level
   Standard errors in parentheses. Interaction terms relate to an estimation with pooled data. In this specification, interaction variables are formed by multiplying the dummy describing family background with each independent variable.

To begin with, the dummy indicating whether an individual comes from a self-employed

family is strongly significant: the general effect of the family background on self-employment is remarkable. The results related to the effect of regional characteristics confirm our descriptive results of the importance of environmental factors in entering business. Nearly all regional variables have statistically significant and anticipated effects in the group of individuals grown up in self-employed families. On the contrary, statistical significances are more uncommon among the second group. This result is also consistent with the results obtained in the fourth section according to which regional effects would be stronger among descendants of self-employed families. The observed differences between these two groups do not, however, obtain the statistical confirmation: the estimated coefficients for the interaction variables are not significant, as can be seen from part three in Table 5. For example, high unemployment in a region seems to push individuals from self-employed families into self-employment, but not individuals from other families. The difference between the parameter estimates is, however, not significant. Thus, we cannot definitively show that the groups were dissimilar with respect to this or other regional effects. Either there really are no differences in the effects of environmental factors on the probabilities of being self-employed between individuals with different backgrounds or the sample sizes are not big enough to bring the effects out.

The behaviour of personal and family variables is in most cases as anticipated, but still we can find several interesting results when comparing the two groups. The results related to the demographic factors are mostly as expected. Gender has a strong effect on self-employment - men are more likely than women to be self-employed - and the likelihood of self-employment significantly increases with the age[13]. Language has no impact. These results are alike in both groups, but gender has still an extra impact in the first group - the interaction term is statistically significant. Thus, these results confirm the presumption that especially sons of entrepreneurs enter business.

The two variables measuring level of education have significant and negative coefficients in the first group, while in the second group education level does not seem to have significance. These differences between individuals with and without self-employed family background are also significant. Thus, an individual's probability of being self-employed decreases with formal education in the case of individuals of self-employed parentage, while formal education cannot be shown to have any effect on other individuals. Generally, a strong hypothesis is that education will increase an individual's probability of becoming self-employed, as enhancing his/her human capital (see e.g. Rees and Shah 1986), but our results are more in line with the opposite hypothesis which argues that the higher earning capacity which arises due to a higher education level depresses the probability of

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[13] It should be remembered that the age class is restricted in our samples.

becoming self-employed[14]. Two points should, however, be noted. First, we examine all industries. In the case of certain "advanced" industries, education level might have a positive effect. Second, our analysis is cross-sectional, and we cannot be sure whether education level is a consequence or cause in the choice of a career.

Commercial education increases the likelihood of self-employment among descendants of self-employed families, but not in general. Perhaps this tells that retailers' children, most often sons, school themselves also into retailers. Perhaps unexpectedly, technical education decreases the likelihood of self-employment in both groups. The negative effect seems to be greater among individuals with no entrepreneurial background in comparison to those with entrepreneurial background.

Marital status and family size both have a positive and significant effect on self-employment in the first group, but in the second one these effects are not significant. Nor are the interaction variables significant. Both second- and first generation self-employed seem often to be house-owners, as expected. On the contrary, the coefficient on the other housing variable, to reside in an owner-occupied flat, is not significant in the first group, and even significantly negative in the second group. The difference is also significant at the 10% level. Finally, the effect of migration is also as expected. This effect is negative for the second-generation self-employed, while moving from the 1970 residential county to another county has no effect on the probability of being self-employed among those with no entrepreneurial background. The groups also differ statistically significantly from each other as to this variable. The result backs up the presumption that second-generation self-employed persons are often continuators of family businesses in their birthplaces.

The behaviour of the variables measuring individuals' childhood characteristics are interesting. First, it seems to have no effect whether the individual lived in Uusimaa 1970. Next, if a child comes from an industrial worker-family, his/her probability of being self-employed decreases, while if the parent was self-employed working in manufacturing, this has no effect on individual's probability of being self-employed in later life. If parent's industry was retailing, the effects are reversed. The result confirms our previous inference that shopkeepers' children often follow in their parents' footsteps. The results related to the third industry used, transportation show no significant effects in either group. The signs of the estimated coefficients are, however, different and, interestingly, the estimated coefficient on the interaction variable reaches statistical significance at the 5% level. The two home-ownership variables which describe wealth in the childhood home are both positive and significant among those grown up in self-employed families while they are not significant in the other group. This implies that family assets have importance in entering self-employed for

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[14] Also some other results from Finland (e.g. Johansson 2000) suggest that individuals with a higher level of education have a lower probability of entering self-employment.

children of self-employed families especially but not for children at the same age from other families. The result may, however, also indirectly tell about the role of family businesses in the first group. If a child has several siblings, this prevents self-employment in both groups. Lastly, if a child comes from a one-parent family, his/her likelihood of being self-employed decreases in later life if he/she has grown up in self-employed family, but not statistically significantly if he/she grown up in wage earner family. The coefficient on the interaction variable does not reach significance so that we cannot definitely claim that the effects differ between those from self-employed families and those from other one-parent families.

6. Conclusions

Self-employment is an important option in the work careers of many. It may be seen as a learning process illustrated for example in the social development model by Gibb and Ritchie (1982) and in the model of entrepreneurial careers by Dyer (1994). In the former, entrepreneurship is mainly seen in terms of situations which individuals encounter and the social groups to which they relate. Among many others, family background, education and work experience have an effect directly, or indirectly through intentions (see Krueger and Carsrud 1993) on becoming self-employed. Children from self-employed families are more likely to see such a career more acceptable than working for someone else. They 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 motive children to follow their self-employed parent. They may also have gained practical business experience by working in the business, and in consequence obtained "premarket" experience (Lentz and Laband 1990). Family background may as well provide self-confidence and social support, a supply of resources needed by the business, and strategic capacity to learn and organise for new activities. Simply, self-employment is a by-product of growing-up for children of self-employed families and therefore running an own account business is a natural option for them.

Moreover, three main conclusions are possible on the basis of our empirical findings. First, the phenomenon of intergenerational mobility in self-employment is very evident. The results indicate that the self-employment rate of those children coming from self-employed families is more than two-fold in contrast to other children. Nearly one quarter (23.0%) of these children have worked as self-employed in later life, while the equivalent share is 13% among other children. A background in self-employed family also advances entering into self-employment. Furthermore, persistence is stronger among second-generation self-employed as compared with first-generation self-employed.

Second, regional differences in self-employment are distinct. The results show that self-

employment is more typical to rural and unemployment regions than highly developed regions which suggests that self-employment stems partly from necessity. This is confirmed by results which show that migrants are less likely to become self-employed and that they are older than other self-employed when entering self-employment. The results would suggest that the region and its characteristics has a stronger effect among those of self-employed parentage in contrast to others, but this result remains tentative which still needs further analysis. Consequently, we cannot definitively argue that the role of entrepreneurial inheritance would be of the essence in explaining local differences in entrepreunrial vitality, although some hints our results give of this.

Third, logit estimations indicate that there are also several other important background factors in addition to entrepreneurial inheritance and regional factors which have an effect on an individual's probability of becoming self-employed. This probability increases if an individual with entrepreneurial family background is male, married, has children, has only a basic education and the field of education is commercial and not at least technical. The childhood is also of importance for entering self-employment: if a child has grown up in a self-employed family with many siblings or if the family is only a one-parent family, the child's probability of entering self-employment in later life decreases. Furthermore, if the parent is retailer or the family has assets (own house or flat), the probability increases. The results related to the reference group consisting of other children show that, in general, many of these background factors are not so important in their decisions to enter self-employment. The family business tradition most obviously is an important dividing factor. We can especially observe a difference in the importance of sex and education. When generalizing it seems that sons in self-employed families do not school themselves, but continue straight in their parents' (father's) footsteps, while daughters in these families acquire a good schooling, but do not enter into business.

Finally, entrepreneurship is interested by many in academic field, in practice as well. Unfortunately, it seems that researchers of different fields are quite isolated from each others. Works of labour economists are not well known in the field of entrepreneurship, and *vice versa*. We believe that closer collaboration would deepen our understanding about entrepreneurship and its prevailing factors and processes and might open new opportunities for policy implications, as well.

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