Pushed or pulled to self-employment? Self-employment among Immigrants in Sweden, 1985-2001.

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Abstract

The aim of this paper is to examine whether immigrants in Sweden are pushed or pulled into self-employment. The period under study, 1985-2001, covers a period with different macroeconomic conditions. This study considers not only human capital, but also the effect from local labour demand and characteristics at the regional labour market.

The complete set of transition between non- employment, wage-employment and self-employment are examined estimating a multinomial logit competing risk model, taking state dependency into account. Natives are used as a control group.

This study use a large sample of self-employed from the Swedish Longitudinal Immigrant database (SLI), which is a register-based, representative panel on a randomly selected sample of native Swedes and immigrants.

While no support is found for the push-hypothesis regarding human capital factors variables we found that immigrants are more sensitive for local economic conditions, in terms of local labour demand and economic structure in the region. Self-employed immigrants are more likely to leave their business for non-employment in poor economic times and less likely to exit for wage-employment under such circumstances. Evidence does not point to self-employment being a stepping-stone to wage-employment. This study shows the importance of taking state dependence into consideration when analysing the mechanisms behind the self-employment decision.

Keywords: Self-employment, migration, local economic conditions, state dependence

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1. Introduction

The in general weak labour market connection for immigrants in combination with an increasing proportion of self-employed immigrants in Sweden during the 1990ties has given rise to a view where self-employment is considered as a last resort. This notion is theoretically strengthened in the Swedish context where the institutional setup may induce an insider/outsider situation, where minimum wages stipulated by collective agreements are too high to receive equilibrium between supply and demand for individuals with low education and low skills. This might explain why immigrants in Sweden do not end up in lower paid jobs than natives, but instead are overrepresented as non-employed (Bengtsson/Lundh/Scott, 2005). Furthermore, in view of that underbidding is not allowed, there is an incentive to become self-employed since self-employment with a low hourly income may be a way to get an income without relying on the social welfare system and to escape unemployment (Andersson & Wadensjö, 2004).

While there is a flourishing literature on the economic consequences and determinants of self-employment in general, these studies have not explicitly focused of self-employment among immigrants. This implicate that work on self-employment among immigrants is scarce (Dustmann & Fabri, 2005).

The exclusion of the self-employed is problematic for several reasons. First, self-employed do not represent a small proportion of the labor force in Sweden, but contain up to 15 percent of all employed immigrants and 20 percent of the new companies in the later part of the 1990s was created by immigrants. Second, self-employed can not be treated as a random sub-sample of the labour force with similar socio-economic characteristics as wage-earners, since they have a financial investment in the firm and thereby will bear a larger risk. Third, since self-employment is assumed to be an important tool for facilitating the process of cultural and economic assimilation of immigrants- potentially working as an upward stepping - stone to improved social and economic mobility- important aspects of the dynamics of the labour market are omitted. Fourth, self-employment in general has increasing importance in Sweden and other OECD countries and in several regions in Sweden the self-employed play an important role for the development in the region.

The aim of this paper is to examine whether immigrants in Sweden are pushed or pulled to self-employment. The research question is motivated in view of the demand for an increased understanding to the under-researched area considering the mechanisms behind the self-employment decision for immigrants in Sweden.[1] Analysis of self-employment has important policy implications, since it gives guidance on whether self-employment should be promoted or discouraged for immigrants.

Two alternative hypotheses are claimed regarding the determinants of self-employment. On the one hand the "push hypothesis", arguing that there is a negative selection into self-employment with individuals who change jobs frequently and exhibit long spells of unemployment and thereby choose self-employment as a last resort in order to avoid unemployment. The "pull hypotheses", on the other hand, emphasizes a positive selection with innovative individuals opting for self-employment as an enhancement of their labor market career. However, since we lack sufficient knowledge of the mechanisms behind the self-employment decision among

[1] While it exists qualitative studies focusing on the question why immigrants in Sweden become self-employed (see Stein, 2000: Lange, 2005) there is a lack with research with a quantitative and longitudinal approach making comparisons over time.

immigrants in Sweden, *a priori*, none of these hypotheses should be emphasized in favour of the other.

While self-employment mostly has been analysed in a cross-sectional framework and thereby contributed to the understanding why an individual is self-employed at a certain point in time this paper goes beyond that and focus on the transitions into and out of self-employment. Hence, this approach deals with the dynamics associated with the self-employment decision and the conditions that determine whether an individual becomes self-employed.

The analyses of entries into self-employment are performed separately for non-employed and wage-employed individuals, in view of that the mechanism behind the entries into self-employment might be different for individuals coming from non-employment or wage-employment. The exit-process from self-employment is also examined, since an exit-analysis increases our understanding of whether self-employment works as a stepping- stone to paid employment or if individuals are pushed out from self-employment.

A multinomial logit model on the probability to enter into wage-employment or self-employment in time period $t+1$ given that the individual is non-employed in time t is estimated. Second, the probability to enter wage-employment or non-employment in time period $t+1$, given that the individual is self-employed in time t is estimated. Third, the probability to enter self-employment or non-employment in time period $t+1$, given that the individual is wage-employed in time t is estimated. Consequently, the full transition pattern between non-employment, wage-employment and self-employment are investigated. Natives are used as a control group.

The explanatory variables can be classified into different categories; individual characteristics (e.g. age, education and country of origin), local labour demand and characteristics at the regional labour market. Hence, focus is put on factors at the supply - and demand side of labour. Both time invariant and time varying covariates are included in the model. Furthermore, contextual variables that vary between regions/municipalities but are fixed between individuals in the same region/municipality are used. It is reasonable to consider local labour demand as exogenous and that a causal relationship between local labour demand and the self-employment decision is identified.

The data is a register panel data set for the period 1985 to 2001 from the Swedish Longitudinal Immigrant Database (SLI). The panel data makes it possible to take into account previous labor market experience and thus deal with state dependence, i.e. that the probability of moving in to a state is not independent of the experience of the event in the past.

This study is different from previous research in the Swedish context in several aspects. First, since we use longitudinal data for a longer period we can make comparisons over time and capture the business cycle effect. The period under study, 1985 to 2001, covers a period with different macroeconomic conditions with regard to Sweden. In the later part of the 1980s up to 1990 the Swedish Economy was experiencing a business cycle peak with low unemployment rates. In 1990 the economy turned into a substantial recession, which lasted during the first half of the 1990ties. The recession period was followed by a catch-up period characterized with jobless growth, i.e. high growth rates but weak increases in the employment rate. Second, we use a regional approach not treating Sweden as a single region and thereby taking into account the importance of regional conditions, such as local labour demand, industrial structure and density of companies. This regional approach is important in view of the large regional variation in labor market experience for Immigrants in Sweden (see Lundh et al 2002). Third, the analysis considers a combination of entry and exit-processes considering self-employment.

The remainder of this paper is organized as follows. First, the self-employment situation for immigrants is described followed by a presentation of theory and previous research in section 3. In section 4 the theories considering self-employment are described. In part 5 the methodological questions are presented followed by a description of data and variables in section 6. The results are presented in part 7 and section 8 concludes the paper.

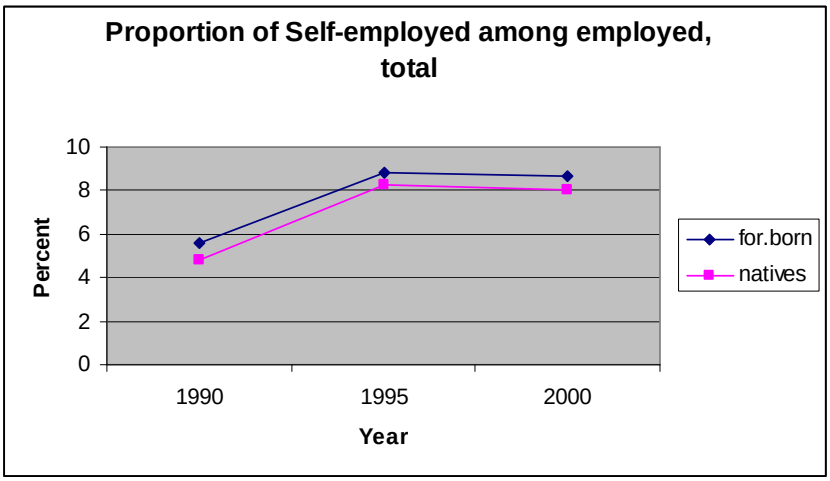
2. Self-employment among immigrants in Sweden, descriptive statistics

There has been a continuous increase of immigrant companies since the 1960ties.[2] Wadensjö (1972) shows that the Self-employment rates among immigrants were lower than among Swedes. During the 1990ties immigrants contain of 20 percent of all self-employed in Sweden.

Figure 2 shows the proportion of self-employed immigrants among employed immigrants and the corresponding proportion for natives. For both Immigrants and natives there is a dramatic increase in both the number and proportion of self-employed during the 1990ties, although the differences are small.[3] The number of foreign born self-employed increased with 65 percent from around 34 000 in 1990 to 56 000 in 2000. The increase for natives was 47 percent from 182 000 self-employed in 1990 to 266 000 in 2000.

While the proportion of self-employed immigrants among employed foreign born immigrants increased from around 6 percent in 1990 to around 9 percent in 2000, the corresponding proportion for natives was 5 percent in 1990 and 8 percent in 2000. Men have higher self-employment levels and a higher proportion of the employed that run there own business. However, the increases in the proportion of the employed that are self-employed are more severe for women than men.

Figure 2. Proportion of self-employed among employed, immigrants and natives.



Source: Register based Labour Market Statistics (RAMS), Statistics Sweden. It's contains yearly information of the total population based on the employees statement of earnings and the self-reported income from the self-employed. The total population contains of all individual national registered in a given year.

[2] In 1960 the number of companies driven by immigrant amounted to 11 000. In 1970 the corresponding number were 14 000 and in 1980 the number was 20 000 (SOU 1999:49, p. 37). These numbers are underestimated. The statistics are based on the People and Living Accounts (Folk- och Bostadsräkningarna) the year 1960, 1970 and 1980 where the holders of stock corporations are considered as employed.

[3] The small differences in self-employment rates between immigrants and natives are also found for Germany (Constant/Zimmermann, 2004)

During the 1990s there was a rapid expansion of "immigrant companies", as a product of an explosion during the period 1993-1997, where more than 25 000 companies were created by immigrants.[4] The proportion of new companies for those with foreign background was around 20 percent between 1995 and 2001 (Rapport Integration, 2005).

The immigration population is heterogeneous with large variations in self-employment rates based on country of origin. While immigrants from Europe (the Nordic countries and Western Europe) contained the great majority among the self-employed in 1980 almost 25 percent were born in non-European countries in 1990, illustrating that the composition of self employed immigrants changed during the 1980s, which in turn implies that there was a large amount of entries and exits during this decade. Up to 1990 Danes and Germans were the most common nationalities among self-employed immigrants. In 1990 the largest single immigrant group among those born outside Europe was the Turkish and the Iranian immigrants. The highest proportion of self-employed among employed are found for immigrants from outside Europe while immigrants from the Nordic countries, in particular Finland, have a lower proportion of self-employed (Scott, 1999; Andersson, 2006).

There is a regional variation in self-employment rates with a large concentration of the self-employed to the greater cities. Though the increase in immigrant companies during the 1990ties were most severe in the service sector the proportion among industries are differentiated, more complex than the common notion that self-employed immigrants are low-educated and concentrated to small business (Rapport Integration 2005, p.91).

3. Theory and Previous research

The literature has provided several theories of the determinants of self-employment and explanations for the pattern with differences in self-employment rates between immigrants and natives and within the immigrant population.

The relative labour market performance (earnings) of self-employed immigrants, in relation to native self-employed and wage-employed immigrants have been in focus in several studies (see Hamilton, 2000; Lofstrom, 2002 for US, Frenette, 2004 for Canada, Constant & Zimmermann, 2004 for Germany, Clark/Drinkwater/Leslie, 1998 for UK; Andersson, 2006 for Sweden). While most studies show that self-employed immigrants have lower income than employees with the same characteristics (Hamilton, 2000; Frenette, 2004), Lofstrom (2002) finds that self-employed immigrants have higher earnings than wage-employed immigrants. For Sweden, (Andersson & Wadensjö, 2004) show that self-employed non-western immigrants have lower incomes than their native counterparts and lower income than from paid employment. Analysing different percentiles of the income- distribution, Andersson (2006) finds that the income differences are smaller among those with high incomes, indicating a group of self-employed immigrants with low incomes.

In the sociological framework *ethnic resources,* e.g. skills to provide services/goods to other co-nationals, availability of low wage labour and social support networks that assist an individual in obtaining capital, are considered to be important (Light 1984). In this respect, the *home-country self-employment hypothesis*, i.e. that cultural endowment such as traditions of entrepreneurship among immigrants from specific countries explains why these immigrant groups are self-employed to a

[4] "Statistics for new Companies", Statistics Sweden. However, since some companies fall (go bankrupt) the level of self-employed do not increase with the same amount as the inflow.

larger extent, are emphasized.[5] The empirical supports for the home-country self-employment hypothesis are ambiguous. While Yungert (1995) support the hypothesis, Fairlie/Meyer (1996) finds that ethnic groups that emigrate from countries with high self-employment rates do not have higher self-employment rates.

Another example of ethnic group ability are those running business among co-ethnics, which in economic terms could be seen as sector-specific human capital (Fairlie/Meyer 1996).This *enclave hypothesis* stresses the importance of living in areas where relatively many co-nationals reside and that this explains differences within the immigrant population and differences between immigrants and natives in self-employment rates (Borjas 1986). In this context Aldrich et al (1985) emphasize that immigrants living in areas with high proportion of co-nationals have a comparative advantage in providing services/goods for an ethnic market due their knowledge of special tastes and preferences. The result is that the self-employment rates are higher among immigrants living in enclaves.[6] Waldinger et al (1990) emphasizes that immigrant entrepreneurship is explained by an interaction between the opportunity structure of the host country and group characteristics and social structures of the immigrant community.

In line with the human capital theory educational attainment is considered as a determinant of self-employment and differences in self-employment rates between immigrants and natives are explained by differences in educational level. On the one hand, education is assumed to enhance managerial ability and thereby increase the probability to become self-employment. On the other hand, education might have a higher premium on the expected future earnings as wage-employed.[7] Consequently, *a priori,* the net effect from education cannot be determined. This is reflected in the empirical studies.[8] While Borjas (1986) and Evans & Leighton (1989) find that more educated individuals are more likely to become self-employed, Evans (1989) argues that a high level of education reduces the propensity. In a cross-sectional study for Sweden 1990, Hammarstedt (2001) finds a negative relation between self-employment propensity and education for immigrants. Andersson (2006) show that individuals with a higher level of education is more likely to exit self-employment for wage-employment. However, this analysis is not performed separately for immigrants.

The *"entrepreneurial pull"* school of theories emphasize that entrepreneurs engage in risk taking activities due to particular abilities (Lucas, 1978; Kihlstrom & Laffont, 1979; Fairlie & Meyer, 1996; Lofstrom, 2002). In this framework, the least risk- adverse individuals become entrepreneurs, since their expected relative earnings are higher as self-employed and due to that they do not value the risk premium to self-employment. This pull hypothesis emphasizes a positive selection with innovative individuals opting for self-employment as an enhancement of their labor market career. Thus, there is no relation between unemployment and self-employment at the individual level. If immigrants have higher self-employment rates, it is due to that they have higher levels of unobservable motivation and/or are more risk-taking (see Stark, 1993). In line with the pull hypothesis individuals with more experience at the labour market have a higher

[5] Immigrants from countries with a large sector of self-employed are more likely to have been self-employed or have had training in their home country. Such an experience gives a sector-specific human capital, which could imply that these immigrants have a comparative advantage in this sector, leading to higher relative earnings (higher productivity) or in the sense that the start-up costs are lower (Frasier, 1957; Light, 1984).

[6] The presence of too much competition among self-employed in this enclaves could limit the entrepreneurial activities (Aldrich and Waldinger, 1990). For a description of the literature considering ethnic enclave, see Portes (1995).

[7] Education is only positive associated with the propensity to become self-employed if the marginal increase in education affects the relative earnings as self-employed more than the earnings as wage-employed.

[8] For an overview of the literature, see Le (1999).

probability entering self-employment (see Evans & Leighton, 1989; Lin et al, 2000 for such empirical support).

The *disadvantage theory,* emphasizes that self-employment is a product of disadvantages such as unemployment, bad language skills and discrimination[9], factors that push some groups into self-employment. Hence, individuals sometimes choose self-employment even if it's only the second best option and thus an alternative to avoid unemployment.[10] In this framework, the self-employment decision is positive associated with the worsened macroeconomic conditions (the unemployment rate). This hypothesis receives support from Evans & Leighton (1989) arguing that individuals who switch from wage earning to self-employment tend to be people who where receiving relatively low wages, who have changed jobs frequently and who experienced relatively long spells of unemployment as wage workers. Another indication of the disadvantage theory is that unemployed are more likely to enter self-employment than wage-employed (see Carrasco, 1999; Clark & Drinkwater, 2000; Taylor, 2004; Andersson & Wadensjö, 2006).

Previous literature regarding the influence from macroeconomic conditions on the self-employment decision is ambiguous. While Evans & Leighton (1989) and Alba-Ramirez (1994) find a positive relationship between the national unemployment rate and self-employment entries for US, Taylor (1996) finds the opposite for UK. In a study for Spain, Carrasco (1999) shows that the effect from macroeconomic conditions is different based on the individuals' educational level and labour market situation. While self-employment becomes a less attractive alternative for unemployed when the labour market conditions are worsened the opposite is found for wage-employed individuals. As expected the national unemployment rate has a positive effect on the probability to leave self-employment. Constant & Zimmermann (2004) investigate the business cycle-effect on self-employment dynamics for immigrants and natives in Germany and finds that the process to move from self-employment into wage-employment is increased (fuelled) by economic growth.

The empirical results in previous studies, - showing a regional variation in self-employment rates and that regional labour market characteristic have importance for immigrants labour market situation, motivates a regional approach. This is also motivated from a theoretical perspective. First, entrepreneurial activities are not exogenous given, but affected by factors in the local environment such as entrepreneurial culture, local attitudes to self-employment and the presence of networks of self-employed in the region. Second, we expect the heterogeneous economic structures in the regions to affect the importance of push and pull factors different, since the economic characteristics in a region affects the possibilities and the relative earnings and thus the propensity to enter and exit self-employment. Differences in economic structure between the regions might have several components. The composition of industries is assumed to be important in this respect. If a region is dominated by industrial sectors with low entry barriers, e.g. the service sector, it is assumed that such a region will experience higher levels of business establishments. The opposite are expected if the region is characterised by large scale capital intensive industries, e.g. old industrial areas, due to high entry barriers (capital intensive sector) and to lower knowledge intensity. Another component is the educational level. Urban areas are assumed to have higher self-employment entry rates, since there are positive knowledge externalities from universities, a large potential market and a high density of entrepreneurs.

[9] This could be a result of discrimination against immigrants, both on the relative opportunity to receive employment and on the relative earnings.

[10] If the expected utility of self-employment exceeds the expected utility of unemployment and not the expected utility of wage-employment, then self-employment is chosen not in preference to wage-employment but to avoid unemployment.

4. Method

Self-employment has mostly been analysed in a cross-sectional framework and thereby contributing to the understanding why an individual is self-employed at a certain point in time. However, such an analysis do not capture the possibility that entry - and exit processes might be different, since its unit of analysis is a net-result based on the stock in the previous period and the differences between entries and exits. Hence, it is only capturing the total effect, i.e. the sum of its effect on each process, which can cancel each other out if working in different directions. For example, at the same time as a high unemployment rate might push individuals to self-employment it might drive people out of business. This illustrates that since cross-sectional studies neglects the dynamics associated with the self-employment decision it cannot increase our understanding of the conditions that determines whether an individual becomes self-employed.

In view of this, this study focuses on the dynamics of self-employment, i.e. the transitions into and out from self-employment.[11] The analyses of entries into self-employment are performed separately for non-employed and wage-employed individuals, in view of that the mechanism behind the entries into self-employment might be different for individuals coming from non-employment or wage-employment.[12] This approach considers separately the effects from the explanatory variables on the entry from non-employment (wage-employment) to self-employment and wage-employment (non-employment). To receive a more complete picture of the reasons behind self-employment we also investigate the exit-process from self-employment.[13] The reason is that an exit-analysis taking the destinations after self-employment into consideration increases our understanding to the question if individuals are pushed or pulled out from self-employment.

The conceptual framework in this study is inspired by the theoretical approach in Evans & Leighton (1989) and Taylor (2004), with utility maximizing individuals that are in a given status in period *t* choosing between three possible states; wage-employment, self-employment and non-employment in period *t+1*. Individuals will be observed in self-employment at time t+1 if the utility derived from self-employment exceeds the utility obtained as wage- earner or non-employed, formally written as:

$$U^{s}_{i,t+1} - \max U^{w}_{i,t+1}, U^{N}_{i,t+1} > 0$$

Where $U^{s}_{i,t+1}$, $U^{w}_{i,t+1}$ and $U^{N}_{i,t+1}$ are the utility obtained for the individual from self-employment, paid employment and non-employment, respectively, at time *t+1*.

4.1 Econometric specification

Given that an individual are in state *k* in time period *t*, the individual *i* is assumed to have three possible destinations in period *t+1*. Hence, this study uses a competing risk (transition) model distinguishing between three possible states where the dependent variables are divided between 1) non-employed, 2) wage-employed and 3) self-employed. Consequently, the full transition pattern between non-employment, wage-employment and self-employment are investigated. Multinomial logit models with these three different unordered outcomes are estimated,

[11] A similar approach is found in Carrasco (1999) and Constant & Zimmermann (2004)
[12] Non-employment may have a negative influence on the individuals' prospects at the labour market, both in terms of accumulation of human capital and/or that a potential employer interprets the non-employment experience as a proxy for low ability. This may increase the individuals' propensity to become self-employed.
[13] The approach are analytical analogous to the entry equation above, considering separately the effects from the explanatory variables on the exit from self-employment to either wage-employment or non-employment.

comparing the effect of the explanatory variables on the probability of each of the outcome category compared to a reference category.[14] The status of the individual in the previous period *t* is used as the reference category in the estimations. Separate regressions are performed for immigrants and natives. The standard errors are robust and cluster-corrected at the municipality level.[15]

In the models we estimate transitions from state *k* separately for each state where the transition intensity from state *k* to state *m* for the individual *i* is assumed to have the following specification:

$$\Pr(y_i = m \mid \boldsymbol{x}_i) = \frac{\exp(\boldsymbol{x}_i \beta_m)}{\sum_{j=1}^{j} \exp(\mathbf{x}_i \beta_j)} \qquad (1)$$

, where we let Pr (y=m|**x)** be the probability of observing outcome *m* given **x**.

To identify the model, we must impose constraints on the β's, such that $\beta_1 = 0$, written as:

$$\Pr(y_i = m \mid \boldsymbol{x}_i) = \frac{\exp(\boldsymbol{x}_i \beta_m)}{1 + \sum_{j=2}^{j} \exp(\mathbf{x}_i \beta_j)} \qquad \text{for } m>1 \qquad (2)$$

In the multinomial logit model the size of the coefficients can't be interpreted as the "effect", instead we can only interpret the sign of the coefficients. If we are interested in the quantitative interpretation the natural method in all logit models is to express results as odds/risk ratios, the ratio of the likelihood of some base outcomes.[16] However, in the multinomial logit the risk ratio doesn't give a total picture of the variables effect. The reason is that the change in the value of a variable affects the probability for every outcome such that it could be that the probability of another category will increase even more. In view of this, predicted (transition) probabilities, where a standardized individual is constructed with characteristics as the mean value, are also used. The predicted probabilities are calculated using the native mean and thereby capturing the transition probability for immigrants if they have the same characteristics as an average native.

4.2 Methodological questions

The approach in this paper gives rise to several methodological problems. One problem is state dependency, which accounts for the possibility that the transition possibilities depend on the origin and destination states, which creates biases estimates not taking into account the occupational choices made before the present choice (Hsiao 1986, p.172f).[17] Hence, we take into

[14] The alternatives should be independent of irrelevant alternatives, see Long (1997, p.182f). Given the approach where those in labour market programs are included among the non-employed this is not considered to be a problem.

[15] When combining aggregated data with data on characteristics of the individuals as explanatory variables there is often an assumption that the errors are uncorrelated within groups. However, since it is reasonable to expect that units such as location sharing an observable characteristic also share unobservable characteristics, this assumption is problematic and might lead to downward biased standard errors. (See Moulton 1990)

[16] In the multinomial model, in contrast to binary models, the risk ratios can not be expressed in terms of odds ratios, since the odds and risk ratio are different from each other (Long, 1997, p.152ff).

[17] It's often assumed that the probability of moving into a state is independent of the experience or non-experience of the event in the past. However, in studies considering labour force participation and unemployment it is often

consideration the individuals' labour market status in time period t-1, i.e. before being in the origin state.

Another problem considers whether unemployment and non-employment (including those outside the labour force) should be seen as distinct states. This study utilizes the term non-employment, including both unemployed and individuals outside the labour market. This is motivated from the development where immigrants in Sweden have experienced an increased dependence of the social welfare system and in view of that an alternative to unemployment and to receive support from the social welfare system is to become self-employed. For Sweden, Andersson & Wadensjö (2006), shows that the probability for inactive to be self-employed are higher than for the unemployed or for different types of wage- earners. This might be a product of that unemployed search more intensively for jobs than inactive and hence have a higher movement into wage-employment.[18]

5. Data and Variables

This study uses data from the Swedish Longitudinal Immigrant Database (SLI), which is a unique register-based database, consisting of socioeconomic and demographic information of a sample of native and foreign born individuals from 16 countries and covers the period 1968-2001. The data is constructed in such a manner that information throughout the complete life-cycle is provided and hence repeated observations of the individual are available. We use annual observations to receive data on important variables, both considering the explanatory and outcome variables during our period for investigation, 1985 to 2001. This starting point are motivated due to that before 1985 the information on self-employment in Sweden were based on personal judgment, known to not be reliable (Statistics Sweden, 2006).[19] The Swedish Longitudinal Immigrant database (SLI) is based on register data where the incomes analysed are the annual incomes reported to the tax authorities. Unfortunately, the data does not allow for separate analyses of self-employment in different sectors.

The sample includes native and foreign born individuals in the age-interval 24 to 60. The lower boundary is chosen, due to the assumption that individuals older than 23 have finished their studies and are active in the labour market. The higher boundary is chosen because individuals older than 60 leave the labour market for early retirement. In view of that the estimation considers transitions, individuals who only end up in the data during one year and thereby are not on risk to experience a transition, are excluded. The individual are excluded from the analysis when the transition has occurred.

The individuals' labour market status is based on what is considered as the main activity in a given year.[20] To distinguish the individuals' status and to identify labor markets transitions in the data the full annual income-profile of the individual is taken into consideration. Thus, it is not possible to perfectly observe the timing of the transition during the year, but instead this approach deals with the fact that the process into self-employment could be a gradual process.

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noted that individuals who have experienced an event in the past are more likely to experience the event in the future. Thus, the probability that an individual will experience an event is a function of past experience.

[18] In Sweden the institutional framework stipulates that unemployed have to search for jobs to receive unemployment benefits (see National Labour Market Board)

[19] The definition of the individuals' main activity should not be determined from personal judgement. For example, between 1980 and 1985 the official self-employment rates declined, due to that individuals with small companies, but obtaining there main income from other types of employment, reported themselves as self-employed.

[20] The focus on main activity might be a reasonable approach for studies comparing immigrants and natives, since its differences in the group with self-employment as a main activity that can lead to persistent differences between natives and immigrants on the labour market.

For example, in a given year an individual might have had other several activities, e.g. both being self-employed and employed/non-employed.

A distinction is made in the data between self-employed with incorporated business and self-employed with unincorporated business. The latter declare income from business activity while those with incorporated business declare wage-income from their own business. SLI contains information on income from business activity. Therefore, self-employed with incorporated business are not included. An individual is defined as self-employed (with or without employees) if the reported income from business activity in a given year is greater than 2 base-amounts.[21] For a more detailed description, see appendix A.

Table 1 illustrates the raw transition probabilities between the three labour market states for natives and immigrants. The observed transitions have a pattern suggesting state dependence in all states. Almost 90 percent of the immigrants and 94 percent of natives who were wage-employed in time t are wage-employed in time t+1. The corresponding number for self-employed is approximately 80 percent. Among the self-employed immigrants it is more common to exit for non-employment (13,3 percent) than wage-employment (7,2 percent), (suggesting that self-employment does no work as a stepping-stone.) Natives, on the other hand, are more likely to leave self- employment for wage-employment (9,8 percent) than to exit for non-employment (8,6 percent).

Table 1. Raw Transition Probabilities, immigrants

Immigrants	NE(t+1)	WE(t+1)	SE(t+1)
Non-employment NE(t)	0,883	0,105	0,012
Wage-employment WE(t)	0,109	0,883	0,008
Self-employment SE(t)	0,133	0,072	0,796
Natives	NE(t+1)	WE(t+1)	SE(t+1)
Non-employment NE(t)	0,785	0,201	0,014
Wage-employment WE(t)	0,053	0,941	0,006
Self-employment SE(t)	0,086	0,098	0,816

Source: SLI

5.1 Summary Statistics

--- table 2 here ---

[21] Previous research illustrates that there are indications that self-employed underreport their income due to tax evasion (Pissarides & Weber, 1989; Apel, 1994; Taylor, 2004; Engström & Holmlund, 2006). Therefore, the self-employment income is multiplied with a factor of 1.6 to receive comparable incomes with non-employed and wage-earners (see Statistics Sweden, 2006).

Summary statistics for a selected set of variables are presented in table 2. The final sample of immigrants contains of 98 143 individuals and the sample of natives contains 165 489 individuals. The sample of self-employed individuals is 17 245.

Self-employment is a status dominated by men for both natives and immigrants. As expected non-employed immigrants have been in Sweden for a shorter time compared to self-employed and wage-employed immigrants. For both immigrants and natives the proportion of individuals with higher education is highest among wage-employed followed by self-employed and with the lowest proportion among non-employed.

Immigrants from Turkey, Iran and Iraq contain 40 percent of the self-employed immigrant population. Immigrants from the Nordic countries, U.S and Germany contain over 30 percent of the wage-employed. An interesting pattern is that individuals from immigrant groups (such as Middle East) that on the general level have weak labour market connection in Sweden have higher self-employment rates than immigrants from the Nordic countries.

5.2 Explanatory variables

--- table 3 here ---

Differences based on sex are captured through a dummy variable. Previous research show that men have a higher propensity to become self-employed than women, which might be explained by different incentive structures.

It seems reasonable to assume that an individual needs time and skills to acquire resources to establish a business and to investigate the extent of the market and customer preferences. Age and time of residence reflects know-how of the labour market and experience. Therefore, older individuals are expected to be more likely to enter self-employment. Newly arrived immigrants are expected to have a higher non-employment risk. Immigrants with longer time in Sweden are assumed to be more likely to enter wage-employment and self-employment.

A priori, marriage is assumed to have a positive effect on the probability to become self-employed. There are several factors working in the same direction. First, marriage is a reflection of stability and married individuals are considered to be positive selected. Second, as pointed out by Borjas (1986) the risk of shirking among employees might be solved by hiring their spouses, which also could be a "family income maximization strategy". Third, finance to start a business is a simplified process when two individuals are involved.

The education variable are divided in three categories; primary, secondary and higher (university) education.[22] In view of that self-employed differ from salaried workers in respect of the financial investment in the firm and that they thereby will bear a larger risk, education will be positive correlated with the propensity to become self-employed if the relative earnings from a marginal increase in education are higher as self-employed than as wage-employed.

[22] The educational categories are based on the Swedish SUN code, containing of 5 levels. The information comes from the Swedish Education Register, which contains of information of the individuals highest education, received either in Sweden or in the country of origin, where a foreign education are translated to Swedish circumstances.

For immigrants, the model includes dummies for country of birth, one for each country. This is motivated since country of origin, in line with the home-country self-employment hypothesis, might explain differences in self-employment rates within the immigrant group.

In an attempt to capture the effect from labour market education, i.e. individuals in a labour market program, we use a dummy for those being in a labour market program the year before a transition. One problem is that this variable does not isolate the effect from participation in labour market programs that support self-employment.[23] However an investigation in the data show that few individuals have a transition from labour market programs and it is therefore not considered as a significant problem.

The non-employed contains of both unemployed and inactive. In view of that unemployed are expected to have a higher transition out of non-employment, due to their higher search – intensity for jobs, a dummy variable are constructed if an individual are unemployed.[24]

The propensity to enter and exit self-employment may be affected by time in the origin state (duration dependence), which in turn gives indications of the mechanisms behind the self-employment decision. In the self-employment exit process it gives guidance if self-employment is a stable labour market status, i.e. if the probability to leave self-employment is decreasing with time in self-employment. The propensity to become self-employed might be different between short and long term non-employed, due to that the duration in non-employment has detrimental consequences on the non-employed individuals human capital and physical health. For Sweden, Andersson & Wadensjö (2006) finds a negative relation between days in unemployment and the probability to become self-employed. The duration dependence is modelled using a continuous variable, reflecting the years in the origin state.

As mentioned before, the probability of moving into a state is not independent of the experience of the event in the past. For example, we expect the propensity to become self-employed to be higher if the individual have prior experience as self-employed before the status as non-employed or wage-employed. Hence, we control for the individuals labour market status in time period t-1, i.e. before being in the origin state.

To capture the assumed positive effect from access to liquidity on self-employment propensity we use information of homeownership, where whether the individual pays property tax is used as a proxy.[25]

To receive differences in regional economic characteristics we use a classification proposed by "The Swedish Agency for Economic and Regional Growth", which regroups the labour market regions to six types of regions.[26] This division is assumed to reflect demographic factors,

[23] The existence of self-employment assistance programmes for unemployed and employed individuals decrease the capital constraints and aim to pull and push individuals into self-employment. For Sweden, Carling & Gustafson (2000) shows that self-employment assistance programmes are more efficient than other labour market programs for immigrants (in terms of unemployment risk).

[24] An individual is defined as unemployed if the income from the Unemployment Insurance exceeds the income from the Social Insurance system, given that the individual are non-employed.

[25] Evans/Jovanovic (1989), Johansson (2000) and Taylor (2000) points to the importance of wealth and liquidity constraints. Longitudinal studies find a positive relation between access of assets and the probability to enter self-employment (Fairlie & Meyer, 1996, p.777). Lange (2005) argues that this is a significant problem; almost every other of the immigrant employers considers that the access to credits is weak.

[26] 1) Larger cities, 2) university regions, 3) regional centre, 4) secondary centre, 5) small regions, dominated with private employment, 6) small regions, dominated with public employment.

production conditions and economic structure.[27] A priori, the propensity to become self-employed is expected to be higher in greater cities, due to the closeness to market and a large service sector. Larger labour markets in greater cities are assumed to increase the tendency to exit self-employment for wage-employment.

Previous studies have analysed the business cycle effect on self-employment by focusing on the relation between the national unemployment rate and the self-employment decision. Here, the *local* unemployment rate is used, which is preferable due to that it is as an indicator of local labour demand reflecting the economic climate facing the individual and since it varies over time and between regions.[28] It capture whether individuals are pushed or pulled into and from self-employment in poor economic times. It is reasonable to consider local labour demand as exogenous and therefore it is likely that we are identifying a causal relationship between local labour demand and the self-employment decision. A priori, a high local unemployment rate has both a positive and a negative effect on the self-employment decision. The positive effect is a product of lower opportunity costs entering self-employment, due to worsened opportunities as wage-employed and self-employment is used as a strategy to avoid future non-employment. The negative effect comes from that individuals might expect decreasing return as self-employed when the economic conditions are depressed and/or do not want to start a risky business when facing lower possibilities at the labour market if they fail. In the self-employment exit process a high local unemployment rate may push individuals to leave their business as a product of decreasing demand for their products/services. On the other hand, a high unemployment rate in the municipality reduces the probability to find other employment and thus force individuals to stay in self-employment. The net effect in both the entry and exit process is determined from which of this effects that dominates. In estimation, the local unemployment rate is lagged one year. The reason is that there is not always an immediate link between local economic conditions and the retirement decision, e.g. the transition year could be in *t-1* while the outcome is observed in *t*.

6. Results

The empirical strategy has two components. First, the results from the multinomial logit competing risk model with different origin states for immigrants and natives will be presented. Second, to receive comparable transition probabilities predicted probabilities are calculated separately for immigrants and natives.

In the first step focus is put on the effect from the explanatory variables. For example, if the local unemployment rate has a positive effect on self-employment and an opposite effect on the propensity to become a wage-earner this is interpreted as the importance of push-factors.

In view of that it is not straightforward to distinguish between individuals who are pushed or pulled into and out from self-employment it might be informative to look at the destination after transition. Comparing the transition pattern between immigrants and natives gives guidance to if one group to a higher extent is pushed or pulled into and out from self-employment. For

[27] This division are based on several factors; i) population size (number in working age 20-64 years), ii) the proportion of self-employed among inhabitants, iii) part of the population with a higher education, IV) population density (proportion of the population with less then 10 minutes to a local centre), V) proportion of the population with less then 30 minutes to a university.

[28] The local unemployment rate is the share of the labour force in the ages 20-64 in the municipality that are unemployed or in labour market programs. The (register based) local unemployment statistics comes from The Swedish Labour Market Board (AMS).

example, if immigrants are more likely to exit self-employment for non-employment this could be interpreted as such that immigrants to a larger extent have been pushed out of self-employment.

The results from the multinomial logit models are presented in table B1 to B6 in Appendix B. The reference state is that no transition occurs from the origin state.

--- Table B1 to B6 here ---

The regressions illustrate the presence of state dependence; the propensity to enter a status is higher if the individual has experienced the event in the past. The effect is strongest for self-employed, which indicates that previous self-employment experience is a good proxy for preferences and risk taking behaviour. This in turn illustrates the importance of taking state dependence into consideration when analysing the mechanisms behind the self-employment decision.

As expected men have a higher probability than women to experience a transition to self-employment, both from non-employment and wage-employment. Age has a negative effect on the probability to exit self-employment for non-employment. This relationship is u-shaped, which implies that middle age individuals are less likely to leave their business for non-employment than younger and older individuals. While there is a positive effect from age on the propensity to exit for wage-employment for natives this is not found for immigrants. Older non-employed immigrants use, in contrast to natives, self-employment to escape non-employment.

For both non-employed and wage-employed immigrants the propensity to become self-employed increases with time spent in Sweden, although at a declining rate. Self-employed immigrants with a longer stay in Sweden are more likely to exit for wage-employment. The effect from age and year since migration is expected since age reflects know-how of the labour market and that the individual needs time to acquire resources to start a business.

Among both natives and immigrants those paying property tax (homeownership) are more likely to enter self-employment, which indicates that access to capital is important in the self-employment process. This is in line with previous longitudinal studies. As expected, self-employed who owns property are less likely to leave their business and this is in particular the case when exiting into non-employment. Another indication of the importance of access to capital comes from the effect of marital status. For immigrants, being married increases the self-employment propensity and reduces the non-employment risk as self-employed.

In line with previous research we find that country of origin is important for the individual labour market connection.[29] Immigrants from Turkey and Iran are more likely to become self-employed, from both wage- and non-employment. As self-employed, these immigrant groups experience a reduced risk to exit for wage-employment. This indicates that self-employment does not work as a stepping-stone to wage-employment for these immigrant groups.

For immigrants support is found for the presence of negative duration dependence, i.e. individuals with long non-employment spells do not have higher propensity to become self-employed. Natives, on the other hand, are more likely to exit non-employment if they have longer non-employment spells. While the propensity to exit self-employment is increased with time spent in self-employment for immigrant the opposite effect is found for natives.

[29] In a sensitivity-analysis the effect when country of origin were regrouped into larger groups ("Outside Europe", "other Europe" and "Western Europe"). This does not change the results.

The general pattern for both immigrants and natives is that an increased educational level has a negative effect on the probability for a transition into non-employment and a positive effect for a transition into wage-employment. The relation between the educational level and self-employment is not straightforward. For wage-employed immigrants education has a significant positive effect on the probability to enter self-employment. However, there is no extra gain from a university degree on the self-employment propensity. For natives, a higher educational level reduces the risk to exit self-employment for non-employment and increases the risk to exit for wage-employment. The educational level does not influence the movement from self-employment to non-employment for immigrants.

Turning to the influence from the local economic conditions facing the individual an interesting pattern is found. Worsened local economic conditions have different effect on transitions for native and immigrant self-employed and the effect seems to be stronger for immigrants. Natives have a higher propensity to leave their business when the local economic conditions are worsened, both for wage-employment and non-employment. Self-employed immigrants are more likely to leave their business for non-employment and less likely to exit for wage-employment when the economic conditions in the region are worsened, which indicates that they are pushed out from self-employment as a product of decreasing demand for their product/services. This could also be interpreted such as that self-employed natives have an alternative at the regular labour market, while this is not the case for immigrants. This might be a product of that native self-employment experience is valued higher from employers.

Local economic conditions are not only a matter of local labour demand but also the economic structure in the region is important in this respect. There is an effect from where you live and it is different for immigrants and natives. For immigrants, living outside a city centre has a significant positive effect on the probability to exit non-employment for self-employment. Differences in economic characteristics in the regions also have importance for the self-employment exit process. Immigrants living in several labour market regions outside the greater cities are more likely to exit self-employment for non-employment. Hence, not living in a city centre increases the self-employment propensity from non-employment and the other way around. This is not in line with the expectation where self-employment often is assumed to be a "greater city phenomena". For natives, the economic structure has no significant effect in the self-employment exit process.

In the next stage we use predicted probabilities calculated separately for immigrants and natives, where a standardized individual is constructed with characteristics as the mean value. The predicted probabilities are calculated using the estimated coefficients for each transition (outcome category) in the multinomial regressions and the means for the individuals in each category. To receive comparable probabilities the mean for natives is used, taking into consideration that immigrants and natives have different compositions and put interest to the transition probabilities if immigrants and natives have the same individual characteristics.

--- Table 4 here ---

Table 4 shows that there is a variation in estimated transitions probabilities (predicted probabilities). Taking the composition effect into consideration (using native means), both groups have a higher transition probability to exit non-employment for wage-employment than for self-employment. As expected, natives are less likely to enter non-employment from wage-employment. While immigrants as self-employed have a higher probability to exit self-employment for non-employment than wage-employment the opposite pattern is found for natives.

7. Conclusions

In Sweden and other developed countries immigrants experience a high rate of self-employment simultaneously with a high non-employment rate. The increased inflow into self-employment among immigrants in Sweden during and after the depression in the beginning of the 1990ties indicates that self-employment is used as a last resort. This notion is theoretically strengthened in view of the institutional framework in Sweden.

This study examines whether immigrants in Sweden are pushed or pulled to self-employment. The importance of individual characteristics, local labour demand and characteristics at the regional labour market are investigated.

While self-employment mostly has been analysed in a cross-sectional framework this paper goes beyond that and focuses on the transitions into and out from self-employment. Hence, this paper deals with the dynamics associated with the self-employment decision and the conditions that determines whether an individual becomes self-employed. The full transition pattern between non-employment, wage-employment and self-employment is examined. This study shows the importance of taking state dependence into consideration when analysing the mechanisms behind the self-employment decision.

The results indicate that the pattern for the mechanism regarding self-employment in Sweden is more complex than a distinct division between the push and the pull-hypothesis. The mechanisms behind the self-employment entry/exit-process are rather similar for natives and immigrants regarding individual characteristics such as age, civil status, financial situation and education. They have no negative effect on the self-employment propensity and in this respect no support for the push hypothesis is found.

However, the influence from local economic conditions, in terms of local labour demand and characteristics at the regional labour market, has different impact on immigrants and natives. Local economic conditions have a stronger effect for immigrants. Natives are more likely to leave their business when the local economic conditions are worsened, both for wage-employment and non-employment. Immigrants are more likely to leave their business for non-employment and less likely to exit for wage-employment when the economic conditions in the region are worsened, which indicates that they are pushed out from self-employment as a product of decreasing demand for their product/services. This could also be interpreted such that self-employed natives have an alternative at the regular labour market, while this is not the case for immigrants. This might be a product of that native self-employment experience is valued higher from employers.

The heterogeneous economic structures in the regions have different effect on the self-employment pattern for immigrants and natives. While self-employment seems to be a greater city phenomenon for natives, immigrants living outside a greater city area have a higher propensity to move into self-employment. This could be interpreted such that immigrants do not gain from knowledge spill-over in urban areas or that better labour market prospect in general outside the city centre also has a positive effect on self-employment. This study illustrates the importance of a regional perspective when analysing immigrant labour market experience.

In line with previous research it is shown that country of origin is an important factor for the labour market connection in general and for the self-employment propensity. An explanation to these differences is the presence of traditions of entrepreneurship among immigrants from

specific countries. This could also explain the low propensity to leave their business for wage-employment. However, from previous research we know that several of the immigrant groups with a high self-employment probability, such as individuals from Turkey, Iraq and Iran, have a weak labour market connection in general (low income and employment rate). This, in combination with that they are more likely to exit self-employment for non-employment and less likely for wage-employment, indicates that the differences might be a product of that some immigrant groups are pushed into and from self-employment. In this respect, self-employment could be seen as a strategy in response to the institutional framework.

This study shows the importance of focusing on the exit process. The results from the transition probabilities (using predicted probabilities) in combination with the effect from the covariates indicate that self-employment does not work as a stepping stone into the labour market for immigrants.

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Table 1. Summary Statistics by Labour Market Status, selected mean characteristics.

	Wage- employment		**Non-employment**		**Self-employment**	
Variable	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants
sex	0,46	0,45	0,58	0,55	0,33	0,29
age	38,65	40,18	35,98	40,45	41,40	39,51
civilstatus	0,64	0,75	0,55	0,73	0,68	0,79
ysm	-	14,68	-	10,88	-	15,30
Second_Edu	0,27	0,25	0,24	0,19	0,27	0,23
Higher_Edu	0,14	0,15	0,06	0,06	0,10	0,09
Local_UE	6,16	5,78	6,61	6,47	7,91	6,28
Prop.tax	0,48	0,25	0,24	0,08	0,57	0,26
Country of origin						
norden	-	0,20	-	0,13	-	0,12
chile	-	0,09	-	0,07	-	0,03
form. cze	-	0,07	-	0,04	-	0,04
etiopien	-	0,04	-	0,05	-	0,02
ger	-	0,08	-	0,05	-	0,07
gre	-	0,04	-	0,07	-	0,07
iran	-	0,04	-	0,07	-	0,07
irak	-	0,04	-	0,07	-	0,05
ita	-	0,04	-	0,03	-	0,04
polen	-	0,11	-	0,09	-	0,09
turkey	-	0,08	-	0,14	-	0,24
usa	-	0,04	-	0,04	-	0,03
form. yugoslavia	-	0,09	-	0,09	-	0,09
vietnam	-	0,05	-	0,05	-	0,03
No of individuals (n)	95.046	41.852	60.128	49.361	10.315	6.930

Table 3. Explanatory variables in the X vector

Variable name	Description
Sex	dummy; 1 if women
Age	
Civil status	dummy; 1 if married
Years since migration	year-immigration year
Education	(3 categories)
Primary	Elementary School
Secondary	Swedish Secondary School (or corresponding education in other country)
University	Swedish University (or corresponding education in other country)
Country of birth	dummies based on country of birth (14 countries)
Duration in the origin state	number of year in the origin state
Labour Market Program	dummy; 1 if individual are in labour market program
Unemployment	dummy; 1 if individual are unemployed
State dependence P	dummy; 1 if individual have had experience of the status before being in origin state
SE/WE-income	log income as self-employed/wage-employed
Prop tax	dummy; 1 if individual pays property tax
Municipal unemployment rate	the share of the labour force in ages 20-64 in the municipality that are unemployed or in labour market programs
Regional classification,	6 categories

Table 4. Transition Probabilities, Exit from Non-employment, Wage-employment and Self-employment, native mean. Probabilities using Immigrant mean (in parenthesis).

Origin state Non-employment	**Immigrants**	**Natives**
Destination State		
Wage-employment	0,251 (0,139)	0,214
Self-employment	0,012 (0,021)	0,016
Origin state Self-employment	**Immigrants**	**Natives**
Destination State		
Wage-employment	0,059 (0,065)	0,088
Non-employment	0,115 (0,119)	0,085
Origin state Wage-employment	**Immigrants**	**Natives**
Destination State		
Non-employment	0,105 (0,107)	0,059
Self-employment	0,006 (0,009)	0,007

Appendix A. Definition of labour market states

The population in the sample has been divided into three categories. For every given year a given individual are assumed to be in a distinct stage, neither non-employed, wage-earner or self-employed. The definition is based on reported earnings to tax authorities and whether it exceeds the base amount, which is a government stipulated level that follows price trends.

Wage-earner

An individual is defined as wage-earner if the income in a given year is greater than 3 base-amounts and no income is reported from active business activity. The income levels are assumed to reflect that the individual are fairly active at the labour market and thus also capturing part-time work.

Non-employed

An individual is defined as non-employed if the reported income in a given year is less than 3 base-amounts and no income is reported from active business activity. The condition with income levels for being classified as non-employed are motivated in view of that we want to disregard temporary layoffs and the main part of voluntary search unemployment

Self-employed

An individual is defined as self-employed if the reported income from business activity in a given year is greater than 2 base-amounts[30], independent of income from other statuses. In view of that it is problematic to treat these statuses as distinct events and that income from self-employed are assumed to vary between years since the revenues for the firm differ between the years, individuals with a positive but lower reported income from business activity than 2 base-amounts and with an income from wage-employment lower than 3 base- amounts are considered to be self-employed.

[30] The income for self-employed are multiplied with a factor of 1.6 to receive comparable incomes with non-employed and wage-earners (Statistics Sweden, 2006)

Appendix B. Regression Results

Table B1. Results from Multinomial Logit model for Immigrants. Non-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Wage- employment)	**Pr (Self-employment)**
Variable	**Coefficient**	**Coefficient**
Sex	- 0,170***	-1,021***
	(0,018)	(0,042)
Age	0,060***	0,089***
	(0,007)	(0,018)
Age2^	- 0,001***	-0,002***
	(0,000)	(0,000)
Ysm	-0,042***	0,030***
	(0,003)	(0,006)
Ysm2	0,001***	- 0,001***
	(0,001)	(0,000)
Civil status	0,123***	0,552***
	(0,018)	(0,079)
Education		
Primary	ref.	ref.
Secondary	0,326***	0,184***
	(0,026)	(0,050)
University	0,646***	0,357***
	(0,047)	(0,083)
Property tax	0,384***	0,776***
	(0,034)	(0,075)
Unemployed	0,949***	0,488***
	(0,019)	(0,070)
Labour market program	- 0,200***	-0,319***
	(0,040)	(0,119)
Previous WE-Experience	0,194***	-0,061
	(0,018)	(0,044)
Previous SE-Experience	-0,036	1,676***
	(0,040)	(0,076)
Duration	- 0,024***	-0,072***
	(0,004)	(0,007)
Local Unemployment rate	-0,080***	-0,022***
	(0,005)	(0,006)
Regional characteristics		
Region 1	ref.	ref.
Region 2	-0,124**	-0,046
	(0,015)	(0,072)
Region 3	-0,020	0,128**
	(0,034)	(0,060)
Region 4	0,056	0,073
	(0,046)	(0,120)
Region 5	0,075	0,495***
	(0,054)	(0,164)
Region 6	0,032	0,353***
	(0,060)	(0,134)
Country of birth		
Norden	ref.	ref.
Chile	-0,204***	-0,761***
	(0,036)	(0,142)
form.Cze	-0,248***	-0,153
	(0,079)	(0,142)
Etiopien	-0,073	-1,271***
	(0,064)	(0,195)
Germany	-0,174***	0,267***

	(0,039)	(0,099)	
Greece	-0,525***	-0,145	
	(0,046)	(0,106)	
Iran	-0,377***	0,219**	
	(0,022)	(0,087)	
Iraq	-0,544***	0,293***	
	(0,032)	(0,096)	
Italy	-0,242***	0,146	
	(0,068)	(0,106)	
Poland	-0,149***	-0,139*	
	(0,031)	(0,084)	
Turkey	-0,418***	0,482***	
	(0,038)	(0,088)	
U.S.A	-0,436***	-0,151	
	(0,039)	(0,112)	
form Yugoslavia	-0,153***	-0,171*	
	(0,020)	(0,102)	
Vietnam	-0,076*	-0,193	
	(0,044)	(0,163)	
constant	-1,543***	-5,334***	
Number of individuals (n)	25657	2862	N= 49361

Note: * significant at 10%, ** significant at 5%, *** significant at 1%,
Standard errors are robust and clustered at the municipality level.

Table B2. Results from Multinomial Logit model for Immigrants. Self-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Wage- employment)	**Pr (Non-employment)**
Variable	**Coefficient**	**Coefficient**
Sex	0,213***	0,047
	(0,047)	(0,057)
Age	0,033	-0,035**
	(0,020)	(0,017)
Age2^	-0,001***	-0,001**
	(0,000)	(0,000)
Ysm	0,029**	-0,005
	(0,008)	(0,008)
Ysm2	-0,001	-0,001***
	(0,000)	(0,001)
Civil status	0,023	-0,071*
	(0,050)	(0,039)
Education		
Primary	ref.	ref.
Secondary	0,151**	-0,069
	(0,068)	(0,060)
University	0,588***	-0,106*
	(0,094)	(0,064)
Proptax	-0,042	-0,607***
	(0,058)	(0,052)
Previous WE-experience	0,366***	-0,125***
	(0,056)	(0,037)
Previous NE-experience	-0,142***	0,572***
	(0,049)	(0,048)
Duration	0,013*	0,030***
	(0,007)	(0,006)
Local Unemployment rate	-0,032***	0,011**
	(0,006)	(0,005)
Regional characteristics		
Region 1	ref.	ref.
Region 2	0,126	0,110**

	(0,077)		(0,047)	
Region 3	0,003		0,159***	
	(0,070)		(0,040)	
Region 4	0,101		0,005	
	(0,107)		(0,064)	
Region 5	0,050		0,296***	
	(0,174)		(0,097)	
Region 6	0,071		0,027	
	(0,239)		(0,092)	
Country of birth				
Norden	ref.		ref.	
Chile	0,184		0,029	
	(0,103)		(0,089)	
form Cze	-0,228**		-0,016	
	(0,116)		(0,089)	
Etiopien	-0,362*		-0,186**	
	(0,207)		(0,136)	
Germany	-0,003		-0,037	
	(0,133)		(0,071)	
Greece	-0,371**		-0,042	
	(0,192)		(0,065)	
Iran	-0,226***		-0,175	
	(0,093)		(0,061)	
Iraq	-0,463**		0,174	
	(0,122)		(0,071)	
Italy	-0,212*		-0,206	
	(0,113)		(0,091)	
Poland	-0,229**		-0,016	
	(0,113)		(0,060)	
Turkey	-0,591***		-0,108	
	(0,081)		(0,049)	
U.S.A	0,171		0,011	
	(0,172)		(0,097)	
form Yugoslavia	-0,282**	-0,022		
	(0,118)		(0,057)	
Vietnam	-0,499*		-0,301	
	(0,276)		(0,137)	
constant	-2,969		1,608***	
Number of individuals	1852		3425	N=6930

Note: * significant at 10%, ** significant at 5%, *** significant at 1%,
Standard errors are robust and clustered at the municipality level.

Table B3. Results from Multinomial Logit model for immigrants. Wage-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Non- employment)	**Pr (Self-employment)**
Variable	**Coefficient**	**Coefficient**
Sex	0,156***	-0,688**
	(0,019)	(0,046)
Age	-0,101***	0,010
	(0,008)	(0,028)
Age2^	0,001***	-0,001*
	(0,000)	(0,000)
Ysm	-0,019***	0,019*
	(0,002)	(0,010)
Ysm2	0,001	-0,001**
	(0,001)	(0,000)
Civil status	-0,050**	0,255***
	(0,022)	(0,070)
Education		

Primary	ref.	ref.	
Secondary	-0,201***	0,117**	
	(0,015)	(0,060)	
University	-0,584***	0,174**	
	(0,031)	(0,077)	
Proptax	-0,421***	0,188***	
	(0,026)	(0,071)	
Duration	-0,015***	0,032***	
	(0,003)	(0,007)	
Previous NE-experience	0,434***	0,133***	
	(0,015)	(0,045)	
Previous SE-experience	0,244***	1,739***	
	(0,036)	(0,081)	
Local Unemployment rate	0,021***	-0,039***	
	(0,003)	(0,007)	
Regional characteristics			
Region 1	ref.	ref.	
Region 2	0,018	-0,132**	
	(0,027)	(0,063)	
Region 3	0,042	-0,184***	
	(0,026)	(0,070)	
Region 4	-0,009	-0,165	
	(0,049)	(0,128)	
Region 5	0,051	0,247	
	(0,071)	(0,125)	
Region 6	-0,037**	0,177	
	(0,059)	(0,212)	
Country of birth			
Norden	ref.	ref.	
Chile	0,024	-0,714***	
	(0,029)	(0,199)	
form Cze	-0,159***	0,012	
	(0,035)	(0,113)	
Etiopien	0,041	-0,273	
	(0,040)	(0,177)	
Germany	-0,185***	0,101	
	(0,039)	(0,090)	
Greece	0,426***	0,474***	
	(0,037)	(0,135)	
Iran	0,246***	0,229*	
	(0,044)	(0,124)	
Iraq	0,301***	0,209	
	(0,048)	(0,148)	
Italy	0,022	0,179	
	(0,055)	(0,159)	
Poland	-0,027	-0,018	
	(0,032)	(0,159)	
Turkey	0,369***	0,759***	
	(0,036)	(0,093)	
U.S.A	0,267***	0,284**	
	(0,055)	(0,128)	
form Yugoslavia	0,128***	0,065	
	(0,035)	(0,108)	
Vietnam	-0,162***	-0,419***	
	0,057)	(0,141)	
constant	-0,252	-4,622***	
Number of individuals	24 705	1782	N=41 852

Note: * significant at 10%, ** significant at 5%, *** significant at 1%. Standard errors are robust and clustered at the municipality level.

Table B4. Results from Multinomial Logit model for natives. Non-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Wage- employment)	**Pr (Self-employment)**	
Variable	**Coefficient**	**Coefficient**	
Sex	-0,018	-0,743***	
	(0,014)	(0,050)	
Age	0,022***	0,028	
	(0,008)	(0,020)	
Age2^	-0,001***	-0,001**	
	(0,000)	(0,000)	
Civil status	0,042***	0,164***	
	(0,016)	(0,057)	
Education			
Primary	ref.	ref.	
Secondary	0,333***	0,358***	
	(0,019)	(0,047)	
University	1,039***	0,378***	
	(0,028)	(0,080)	
Property tax	0,258***	0,912***	
	(0,013)	(0,039)	
Unemployed	0,920***	0,221***	
	(0,016)	(0,055)	
Labour market program	-0,126***	-0,154**	
	(0,027)	(0,099)	
Previous WE-experience	0,323***	0,154***	
	(0,015)	(0,075)	
Previous SE-experience	0,001	1,869***	
Duration	-0,433***	-0,329***	
	(0,008)	(0,028)	
Local Unemployment rate	-0,039***	-0,004	
	(0,003)	(0,004)	
Regional characteristics			
Region 1	ref.	ref.	
Region 2	-0,09***	-0,214***	
	(0,023)	(0,071)	
Region 3	-0,127***	-0,215***	
	(0,020)	(0,073)	
Region 4	-0,054*	-0,111	
	(0,030)	(0,074)	
Region 5	-0,013	-0,09	
	(0,041)	(0,113)	
Region 6	0,014	0,079	
	(0,038)	(0,094)	
constant	-1,45	-4,913***	
Number of individuals	43201	2932	N=60128

Note: * significant at 10%, ** significant at 5%, *** significant at 1%,
Standard errors are robust and clustered at the municipality level.

Table B5. Results from Multinomial Logit model for natives. Self-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Wage- employment)	**Pr (Non-employment)**	
Variable	**Coefficient**	**Coefficient**	
Sex	0,104**	-0,023	
	(0,023)	(0,042)	
Age	0,030**	-0,061***	
	(0,015)	(0,016)	
Age2^	-0,001***	0,001***	
	(0,000)	(0,001)	
Civil status	0,110***	0,209***	
	(0,041)	(0,046)	
Education			
Primary	ref.	ref.	
Secondary	0,268***	-0,174***	
	(0,040)	(0,048)	
University	0,752***	-0,194***	
	(0,057)	(0,076)	
Proptax	-0,083**	-0,581***	
	(0,043)	(0,035)	
Previous WE-experience	0,410***	-0,334***	
	(0,056)	(0,051)	
Previous NE-experience	-0,224***	0,838***	
	(0,038)	(0,044)	
Duration	-0,030***	-0,039***	
	(0,008)	(0,008)	
Local Unemployment rate	0,024***	0,052***	
	(0,007)	(0,005)	
Regional characteristics			
Region 1	ref.	ref.	
Region 2	0,015	0,006	
	(0,071)	(0,063)	
Region 3	-0,035	0,033	
	(0,049)	(0,053)	
Region 4	0,068	-0,004	
	(0,064)	(0,073)	
Region 5	-0,089	-0,035	
	(0,104)	(0,111)	
Region 6	-0,121	-0,085	
	(0,093)	(0,097)	
constant	1,215**	2,649***	
Number of individuals	3790	3347	N=10 315

Note: * significant at 10%, ** significant at 5%, *** significant at 1%,
Standard errors are robust and clustered at the municipality level.

Table B6. Results from Multinomial Logit model for natives. Wage-employment as reference outcome category. Coefficients and standard deviation (in parenthesis).

	Pr (Non- employment)	**Pr (Self-employment)**	
Variable	**Coefficient**	**Coefficient**	
Sex	0,301***	-0,759***	
	(0,017)	(0,040)	
Age	-0,166***	0,001	
	(0,006)	(0,014)	
Age2^	0,002***	-0,001	
	(0,000)	(0,000)	
Civil status	0,152***	0,032	
	(0,014)	(0,033)	
Education			
Primary	ref.	ref.	
Secondary	-0,316***	0,027	
	(0,016)	(0,047)	
University	-0,859***	-0,097	
	(0,027)	(0,068)	
Proptax	-0,400***	0,400***	
	(0,011)	(0,054)	
Duration	-0,021***	0,040***	
	(0,002)	(0,004)	
Previous NE-experience	0,709***	0,574***	
	(0,001)	(0,001)	
Previous SE-experience	0,032	1,676***	
	(0,046)	(0,068)	
Local Unemployment rate	0,022***	-0,019***	
	(0,002)	(0,006)	
Regional characteristics			
Region 1	ref.	ref.	
Region 2	0,009	-0,293***	
	(0,024)	(0,076)	
Region 3	0,014	-0,243***	
	(0,016)	(0,066)	
Region 4	-0,036	-0,150**	
	(0,023)	(0,075)	
Region 5	0,075*	-0,106	
	(0,034)	(0,102)	
Region 6	0,1647***	0,039	
	(0,030)	(0,097)	
constant	0,333***	-5,186***	
Number of individuals	40 866	4805	N= 95 046

Note: * significant at 10%, ** significant at 5%, *** significant at 1%,
Standard errors are robust and clustered at the municipality level.