

# Cinicism Starts Young: Age and Entrepreneurship under Transition\*

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## Abstract

Research on entrepreneurship is said to have started with Cantillon's essay on the nature of commerce. Contexts included in economic literature from that time on comprise: (1) the business cycle, (2) transition from planned to market economy, (3) changing social structures, and (4) changing legal systems, industrial organization regulations and government policies. Among explanatory variables we find such as education, gender, age but also marital status and household situation.

This paper contributes to the literature by attempting to verify if previously defined tendencies are dependent upon labour market outlooks. We construct a panel of consistent models of entrepreneurship based on consecutive quarterly labour force surveys for Poland across the time span 1995q1-2007q4, what permits tracing changes in the selection function estimators (for both one-stage and two-stage models). While wage equations have been found to demonstrate cyclicity, with the exception of young entrepreneurs, self-employment selection estimators are fairly stable across time and do not seem to respond to economic prospects. We also confirm an inverted U-shape relationship between age and propensity to become self-employed, as opposed to wage employment.

**Key words:** entrepreneurship transition cyclicity selection models

**JEL Codes:** L26, J24, P51

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# 1 Introduction

It is frequently raised that being self-employed involves substantial risk, including the risk of bankruptcy. However, as a wage-employed one also runs the risk of losing a job as well as experiencing a potentially extended period of unemployment. The risks are perhaps less diversified in the context of self-employment, but on the other hand, also more manageable.

Who becomes an entrepreneur then? We inquire this question in a context of individual choices between wage-employment and self-employment among the economically active population of an economy following a transition from a centrally planned to a market economy. We analyse individual-level data over the period of 13 years using labour force surveys for Poland. As a country in transition, Poland has observed a massive growth in self-employment and entrepreneurship in the first years after 1989. However, reliable data only start in 1995, when this process was largely over. We continue with the sample till the end of 2007 and observe the changes in the determinants of the self-employment choices.

Previous literature in this field is vast and includes analysis of various demographic characteristics of potential entrepreneurs. Also the effects of the different institutional environments are analysed. The findings include alternative hypotheses. Hughes (2003) or Cowling and Mitchell (1997) point to the significance of external constraining factors hindering regular participation in the labour market. Blanchflower and Oswald (2007) put emphasis on the family business, while Dolton and Makepeace (1987) build on the potential flexibility of this form of professional activity.

This paper contributes to the literature in two major ways. Firstly, we provide the first analysis of selection into self-employment in the context of transition from a centrally planned to a market economy. Secondly, our approach allows to trace the changes in the patterns of choices among individuals choosing self-employment instead of wage-employment. Consequently, we are able to see if the relative labour market hardship, especially among the youth, facilitates or hinders the choice of self-employment.

The paper is organised as follows: Section 2 discusses relevant literature selected from a rich pool of studies analysing the self-employment. Subsequently we move to presenting the data and the methodology in section 3, while section 4 presents the findings. Finally, we provide some policy recommendations, concerning the viability of entrepreneurship in countries undergoing transition or an economic turmoil of comparable extent.

## 2 Literature review

One of the recognizable processes described in literature believed to significantly affect the motivations and conditions for self-employment is the process of switching from a centrally planned to market economy. As argued by Earle and Sakova (2000) the process of transition may, on a theoretical level, induce a wide scope of motivations which lead to self-employment as an output. On one hand self-employment may be a strategy which enables individuals to take advantage of new mar-

ket opportunities. Such a strategy was also described by Scase (2000) and classified as legitimate entrepreneurship.

On the other hand there may be people, as Earle and Sakova (2000) further claim, who became self-employed because of being unable to adapt to a new, competitive environment on the labor market. A third category which arises from works by Dallago (1997) and Scase (2000) are people who abuse the imperfections of transition in order to engage in rent seeking strategies, or operation in the shadow economy. Because of the various strategies which, in effect, lead to becoming self-employed, the number of people who engage in this form of labor market participation in CEE countries was said to be booming in the early 90's. As an example, Earle and Sakova (1999) present the findings of a 1993 survey conducted in six CEE countries. The analysis shows positive selection into self-employment based on the level of schooling, pre-transition household income, receipt of property in restitution, previous business engagement and assumed earnings differential.

As Earle and Sakova (1999) rely on data gathered in one point in time, Meager (1992) has performed an analysis of how selection into self-employment changes in time; namely, how do changes in the business cycle affect the process. This context of entrepreneurial activity is not exempt from ambiguities, just as the more general process of transition. And again, depending on whether one becomes self-employed because of the lack of opportunities, or because of increasing opportunities, increasing numbers of self-employed in the work force should appear pro-cyclically or counter-cyclically. The findings based on UK data make inclinations towards the theory that self-employment is unemployment driven and so behaves counter-cyclically. An opposite finding was presented by Roszkowska, Sączuk and Tyrowicz (2009) in relation to the selection to wage-employment in Poland. Yet an analysis of selection into self-employment with respect to this feature remained missing.

Further studies have analysed self-employment on an individual level, with respect to personal characteristics of entrepreneurs as opposed to non-entrepreneurs. Cowling and Mitchell (1997) present a hypothesis related to selection based on gender differences, in which they claim that increased self-employment rates among women may be an effect of discrimination among wage-earners. Other arguments for such outcomes are presented by Hughes (2003) who puts forward such issues as preference for more flexible working hours, the ability to work at home, proactive responding to lack of other opportunities. On the other hand weaker representation of women among the self-employed may be an effect of treating activity on the labor market as complimentary for house work, (Dolton and Makepeace 1987).

Apart from gender, such characteristics as one's level of human capital were also considered relevant for explaining selection into self-employment. In terms of education, cross sectional studies prove it is one of the most powerful variables used to explain the selection processes, yet its role remains ambiguous, (Dickson 2008). van der Sluis, van Praag and van Witteloostuijn (2004) claim that the differences arise from various returns to given levels of education in self-employment. Their analysis based on U.S. and European data explains this feature based on a theory of how the schooling system creates incentives for self-employment. Within this stream of literature the role-modelling effect of parents' occupational choices has also been considered, effecting in increased probabilities of

becoming an entrepreneur if one's father has been self-employed, (Blanchflower and Oswald 2007). The advantage of being able to experience some sort of on-the-job training as a natural consequence of getting more and more involved in the activities of one's household may in some cases compensate for formal education. The validity of this statement can only be explained though, under the condition that both variables are controlled for, e.g. Wit de and Winden (1989) and de Wit (1993).

A variable allowing for further analysis of selection into self-employment on an individual level is age. Various studies have presented divergent conclusions though, in terms of how age affects the fact of becoming self-employed. The variety has been explained by country-specific features of labor markets. Llisterri, Mantis, Angelelli and Tejerina (2006) have performed analysis based on Latin American economies, where they found a proportionally larger number of self-employed among the young, rather than the older cohorts of the working population. In this context self-employment became a survival strategy for the young adults, who experienced difficulties with occupying wage-earning positions. On the other hand numerous studies have found positive correlations between age and the probability of becoming self employed, (Brock and Evans 1986), (Rees and Shah 1986), (Borjas and Bronars 1989).

Reviewing these ambiguities Llisterri et al. (2006) take it an extra mile by mentioning support for the life cycle hypothesis in selection into self-employment. The argument follows a path which considers correlation of age with levels of financial and human capital gained by an individual during his life. According to this concept the selection process with respect to age does not follow a linear path. Representatives of the youngest cohorts would not get involved in setting up their own business due to lack of start-up capital and know-how. Neither the oldest cohorts in productive age would do so, because of risk aversion related to potential loss of their life-time savings just before retirement. Thus it is the mid-aged population that would be best suited to for the selection criteria. Having gathered enough financial and human capital and still having a long horizon of possible activity on the labor market in case of business failure, individuals in their 30s, 40s and 50s are said to be those who most probably become self-employed.

### 3 Data and empirical strategy

Inquiring the nature of selection into self-employment requires the use of individual level data and indeed this is the approach followed in this paper. However, instead of using a single data set, *i.e.* one point in time survey, we use a complete set of labour force surveys (LFS) conducted by the Central Statistical Office over the period of 1995q1 to 2007q4.

**Data** . In the Polish LFS, both self-employed and self-employed in agriculture are coded as self-employed. However, interacting the industry of activity with the form of professional activity allows for separating the individual farmers from the pool of self-employed rather rigorously. Figure 1 depicts shares of individuals declaring self-employment in agriculture and outside of it. In the reminder of the paper we focus on the latter, since selection into agriculture in Poland is frequently determined

within family strategies. This choice is also motivated by the fact that unlike the steadily decreasing trend in the rate of the self-employment among the farmers, there are relatively large fluctuations in the shares of self-employment.

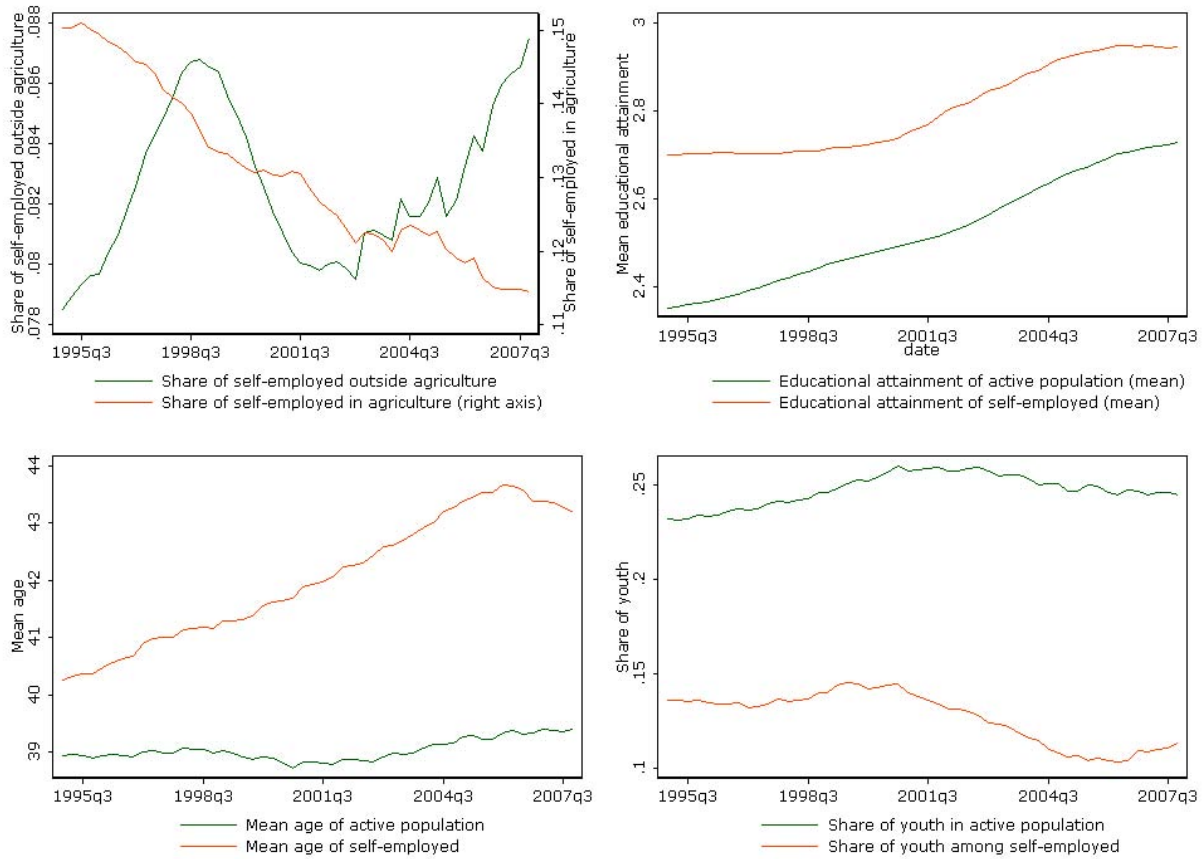


Figure 1: Source: Labour Force Surveys for 1995q1 - 2007q4

Polish LFS does not contain information on revenues achieved by the self-employed, which prohibits the estimation of returns to self-employment, so customary in the literature in the field. However, in this paper we focus more on the determinants of choice between self-employment and wage-employment.

Thirteen years of data cover both the up- and downturns in the economy and in the labour market, which might have affected the propensity of individuals to become self-employed. Indeed, the unemployment rate varied between 8% and 18%. Also, this was the period of transition from centrally planned to a market economy, which implies that except for temporary swings, also longer-term trends could be observed. Although, the share of self-employed in the labour force has not witnessed considerable changes throughout this period, the characteristics of the self-employed have been changing, Figure 1.

**Empirical strategy** . Observing the data one can state that, while the overall trend concerning the increase in educational attainment is evident throughout the economy in general, the pace of this process among the self-employed has been initially smaller, to pick up only as of 2001. Similarly, the

aging of the economically active population in general is slower than for the entrepreneurs. These characteristics already suggest that there is some systematic selectivity into self-employed accounted for by the basic observables like the demographics or education. Consequently, our empirical strategy is based in a two-stage Heckman (1979) selection model. We estimate an equation, where the first stage concerns selection into activity, while in the second stage a decision of engagement into self-employment is modeled as a binomial choice rationally made by people in the labour force<sup>1</sup>. In other words, conditional on the choice of being active, all individuals face the choice of wage- or self-employment. Similar approach has been followed in a classical paper by Evans and Leighton (1989) or more recently by Carrasco (2001) or Cramer, Hartogb, Jonkerb and van Praag (2002).

The main innovation of this paper is to present the evolutions of the estimated parameters in the context of general trends in the labour market. Namely, since in each quarter the same equation is estimated, marginal effects from each estimation refer to the same phenomenon. Consequently, they can be compared across time. Each quarter we estimate a two-stage equation of:

$$Activity = f(age, gender, education, residence) \quad (1)$$

$$Self - employment = f(age, gender, education, largesmall city). \quad (2)$$

while we also include the natural interactions of age, gender and education<sup>2</sup>. Since both residence and education are accessible as categorical variables in the Polish LFS, consequently, all marginal effects are estimated with reference to primary education and residence in a city above 100 000 inhabitants. However, controlling for the structure of the population with respect to these two characteristics, one can scale the obtained estimates to obtain marginal effects independent of the reference level, as described by:

$$\tilde{\beta}_{i,k} = \beta_{i,k} * \frac{n_k}{n_{ref}}. \quad (3)$$

where  $n_k$  denotes a number of individuals observing level  $k$  in characteristic  $i$ , while  $n_{ref}$  denotes a number of individuals described by a reference level in characteristic  $i$ . We implement time-relevant scaling for both education and place of residence.

After obtaining the estimates (and confidence intervals) we have inquired the changes in these parameters - both trends and cycles. Since the composition of LFS changes across quarters, some small alterations may be observed. Also, some seasonal effects play a role (exiting the educational system, reaching the retirement age, etc). Therefore, the obtained estimators were smoothed with a moving-average filter taking each time four steps (a year) back and four steps (a year) ahead.

The model was estimated in a number of versions. The two-stage approach experienced difficulties in convergence in some of the fourth quarters and scored lower on the information criteria

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<sup>1</sup>Please, note that implicitly this approach implies we consider unemployed as involuntarily unemployed, but nevertheless willing to work.

<sup>2</sup>The first stage equation includes place of residence directly, while in the second stage equation we only include interactions of educated inhabitants of large cities and poorly educated inhabitants of rural areas.

than a multinomial logit model with multiple labour market states (inactivity, wage-employment, unemployment and self-employment). On the other hand, the Mills ratios estimated in the first stage equation proved significant universally across time, suggesting there would be a serious risk of bias in estimating either a multinomial model or only a second stage equation, regardless of specification. Finally, since Polish LFS is only a *quasi*-panel, it was not possible to estimate any panel model (e.g. fixed individual effects), which implies there is no other way to explore the time dimension.

## 4 Results

Our main aim was to verify, if the choice of self-employment responds to the swings in the labour market and overall swings in the economy. For the purpose of comparison, Figure 2 presents the unemployment and GDP fluctuations over the period for which data is analysed. Unemployment rate picked up at the end of 1997 to reach a level of over 20% in the end of 2003. The labour market outlooks started improving since then, but the rate of unemployment only reached back the 10% thresholds in late 2007. Interestingly, general economy outlooks started improving much earlier than the labour market, *i.e.* as of 2002, with years of 2003-2007 observing over 4pp annual growth rates.

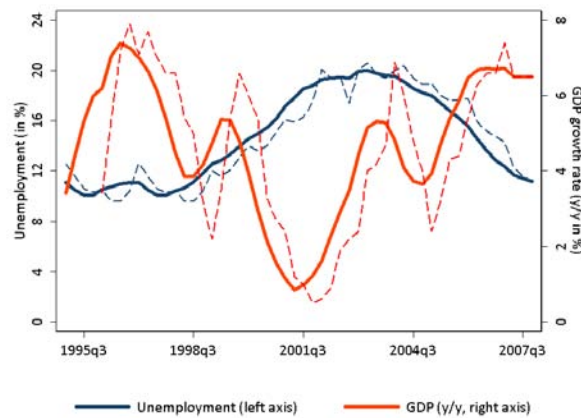


Figure 2: Unemployment and GDP fluctuations in Poland, 1995-2007

These simple observations would suggest that although the chances to obtain rewarding employment were rather limited mostly over this period, the economy in general was relatively lively and could have accommodated - perhaps even required - new providers of goods and services, entrepreneurs. Self-employment for some might have been the only viable strategy for retaining labour market activity, since the demand for labour was rather limited. Importantly, in the periods of labour market downturns, as demonstrated by Roszkowska et al. (2009), the women, the lower educated and the youth are less likely to remain in wage-employment. Also the returns to employment, *ceteris paribus* demonstrate a similar, cyclical pattern. With an increase in labour demand towards the end of our sample, the demand for employees might have intensified, translating to potential increase of

return from wage-employment as opposed to self-employment.

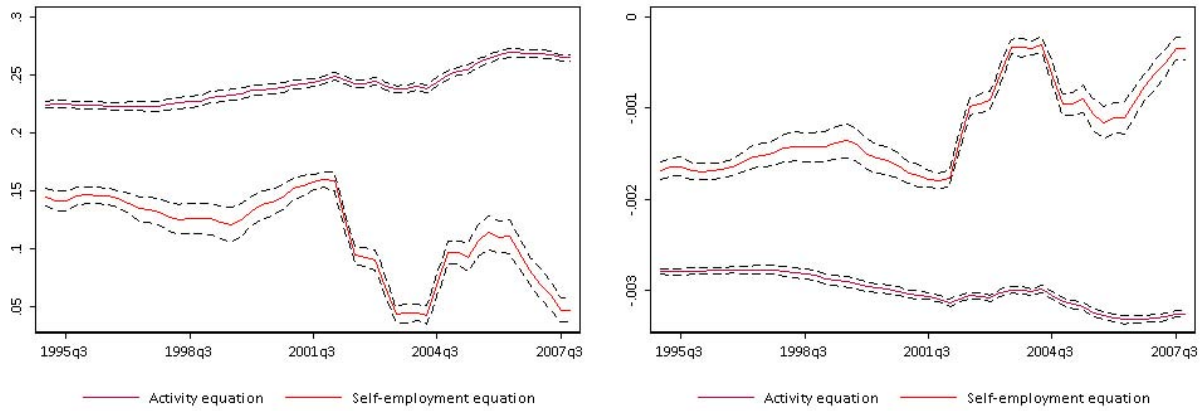


Figure 3: The marginal effects of selection and self-employment equation with respect to age (left) and age squared (right)

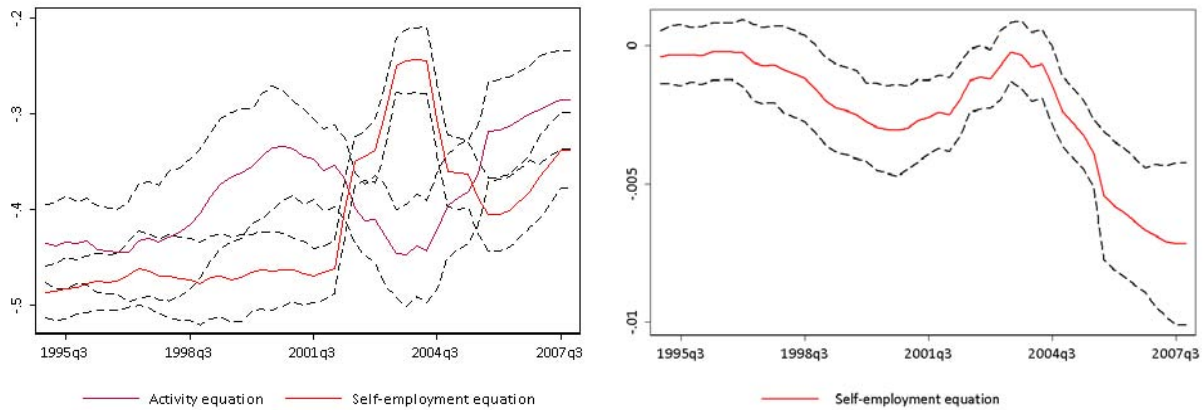


Figure 4: The marginal effects of selection and self-employment equation with respect to gender (left) as well as age and gender (right)

Analysing the marginal effects with respect to age, gender and their interactions, one should emphasise three important conclusions. First, the elasticity of the self-employment choice decreases in the period of poor labour market performance (the point estimates of marginal effects decrease threefold), while this seems to be associated with dampening of the inverse U-shape pattern. Secondly, consistently negative estimates of elasticities estimated with respect to the square of age suggest that the "tails" of the age distributions - the younger and the older - seem less inclined to be engaged into self-employment. However, this estimate naturally assumes symmetry between youth and the older groups. Recalling Figure 1, the age of self-employed throughout the entire timespan has been higher than that of active population. Therefore, we have separated these two groups using 35 years of age as a threshold and computed age probability ratios for becoming self-employed (conditional on being active) for these two subsamples. Averaged over time, this relationship is depicted by Figure 5<sup>3</sup>.

<sup>3</sup>Depicted are bivariate predicted probabilities for men with secondary education and living in a medium sized city (left panel, a typical entrepreneur) and a woman with higher education and living in large cities (right panel). No visible



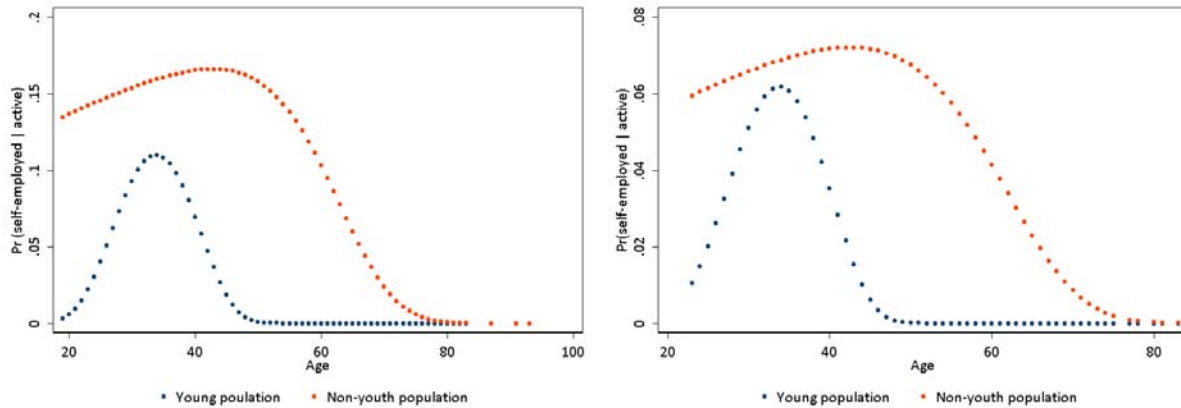


Figure 5: Marginal probabilities of self-employment decision

Clearly, the estimates for youth are lower than for the rest of the population. Moreover, they are more steep, which implies that lowering of the age squared coefficients depicted by Figure 3, has had adverse impact on the self-employment propensity among the youth. Summarising, it seems grounded to state that in the period of weaker labour market performance, decisions to become self-employed become less age-dependant, while the effect of the previous economic downturn is not necessarily transitory. Moreover, the dampening of the inverse U-shaped age curve concerns predominantly the older groups of the population - the youth responds negatively to the business cycle fluctuations and constrains - rather than expands - engagement into self-employment in the periods of labour market contraction

Figure 4 gives also interesting conclusions concerning the gender context of self-employment and the interaction between age and gender. Namely, with respect to age the selection equation demonstrated little cyclicity in the estimates of the marginal effects. In the case of gender both the first and the second stage equation prove to be highly business-cycle driven. Females decisions to become self-employed are typically of the same magnitude as their overall activity choices. As expected, these estimates are negative throughout the entire period, suggesting that *ceteris paribus* females are approximately 30%-40% less likely to be active than men.

However, in the period of economic slowdown, females seem to both withdraw from the labour market and intensify the efforts to survive despite the lack of demand for workers. Namely, first stage equation estimates decrease in the period of roughly 2001-2005. On the other hand, marginal effects of gender on the propensity to become self-employed increase considerably in the same period. Moreover, despite cyclical effects, there seems to be also a time-trend of females gradually increasing propensity to be active and - correspondingly - create their own workplaces too. While the cyclical effect is similar to survival hypothesis of Llisterri et al. (2006), the trend seems to be consistent with Cowling and Mitchell (1997) and/or Dolton and Makepeace (1987).

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differences between these graphs may be observed.

Interestingly, in context of gender there seems to be little age-specific effects in the decision of becoming self-employed. The magnitudes of estimates of the age-gender interaction term are very small and close to zero. They become statistically significant (and negative) towards the end of the sample, suggesting that age effects are somewhat weaker for women than for men. This is surprising if once considers the fact that in general labour market exit age is much lower for women than for men in Poland. Perhaps from a behavioural point of view, being self-employed provides satisfaction different from wage-employment on average, leading to longer tenures.

Inquiring the effect of education, the results are mixed. At all educational levels there is a strong cyclical effect of 2001-2003 economic slowdown. Similarly to the recovery of the economy, the estimates of the parameters in the self-employment equation revert rather rapidly to the levels comparable for activity determinants already in 2003, not gradually across 2004-2006, like the labour market. The cyclical effect seems much weaker for the highly educated entrepreneurs. On the other hand, recent years have observed a large increase in activity among the individuals with vocational education, which may explain the decrease in the odds to engage into self-employment. Interestingly, entrepreneurship is roughly equally likely among the individuals with vocational and with secondary education.

Highly educated are definitely more likely to be in the labour force than the other two groups, while they too experience a hump-shaped evolution of the parameters in the period of economy contraction. Second-stage equation parameter recovered more rapidly than the selection, which is another evidence that entrepreneurs respond more to business cycle fluctuations than to the changes in labour market outlooks.

Another interesting characteristic is that the propensity among highly skilled to be self-employed is considerably smaller than the marginal effects in the selection equation, while for individuals with vocational and secondary education this wedge - if it exists - is in favour of self-employment.

Finally, there seems to be no trend with reference to inhabitants of large cities with higher education or people living in the rural areas with lower educational attainment. Namely, Roszkowska et al. (2009) find a consistently growing trend in wage premium for the former. Here, the estimates are positive but insignificant (especially in the first half of the time span) and fairly stable across time. Also the marginal effects for the latter are occasionally insignificant, negative and fairly stable. Therefore, if anything, one can state that there is less entrepreneur-driven job creation in the rural areas outside agriculture<sup>4</sup>.

## 5 Conclusions

There may be many individual determinants of undertaking the risk of entrepreneurial activity. Access to finance, previous professional experience, willingness to undertake risks, the need for freedom and independence *etc.* are among the most important factors which cannot be traced basing on data from labour force surveys. However, even basic demographic factors may provide informative insights into

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<sup>4</sup>Please note, however, that we only analyse self-employment outside agriculture

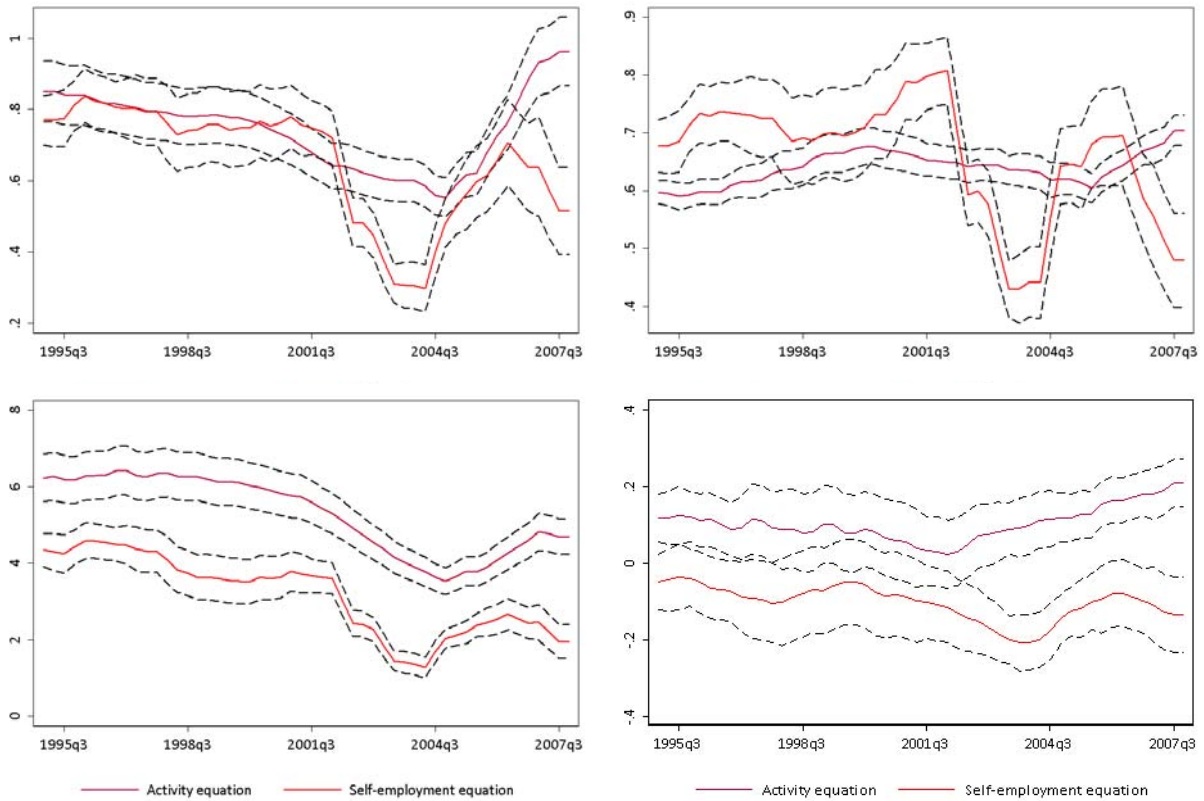


Figure 6: The marginal effects of selection and self-employment equation with respect to vocational (upper left), secondary (upper right) and higher (lower left) education as well as education and gender (lower right)

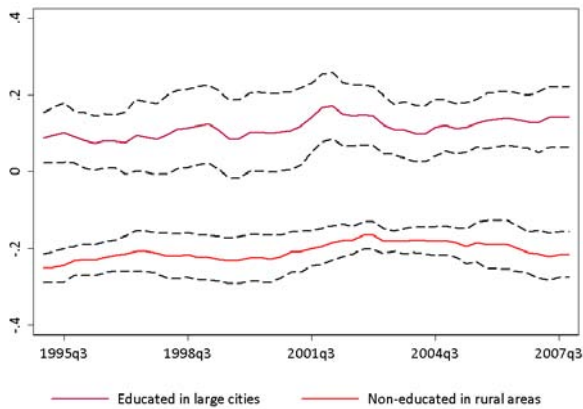


Figure 7: The marginal effects of selection and self-employment equation with respect to highly skilled living in large cities (left) as well as low skilled living in rural areas (right)

understanding the determinants of this decision.

We analysed consecutive quarterly labour force surveys for the period of 1995-2007. We have adopted a view that individuals - if already active - choose between being self-employed or wage-employed, in both cases bearing the risk of losing a job or going bankrupt. We have employed a

two-stage Heckman (1979) correction probit model determining the decision of self-employment as opposed to wage-employment.

This study finds that the propensity to become self-employed is cyclical, but seems to be more driven by general economic outlooks than by the swings in the labour market. We find some evidence in support of the "survival" character of some self-employment choices, (Llisterri et al. 2006). Especially women seem to be more bound to seek earning opportunities through self-employment in the case of higher labour market tightness. Finally, we find that young are less likely to undertake the entrepreneurs' risk and prefer wage-employment even at the price of potentially prolonged periods of unemployment in the case of labour market contraction.

There are important policy recommendations of this study. Firstly, the natural flexibility of self-employment does not seem to be sufficiently exploited by women, especially young. Many European countries have implemented policies targeting this particular group to facilitate entrepreneurship and job-creation among them. Secondly, the younger labour market participants typically - especially in Europe - experience large difficulties in entering labour market as workers. It is not evident that self-employment is a universally viable strategy to overcome this problem, but more diagnosis seems needed.

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