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Joanna Tyrowicz
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Cynicism Starts Young: Age and Entrepreneurship over Transition

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Age and Entrepreneurship over Transition

Joanna Tyrowicz

Faculty of Economic Sciences
University of Warsaw

National Bank of Poland
Rimini Center for Economic Analysis

Joanna Nestorowicz

Faculty of Economic Sciences
University of Warsaw

Abstract

Studies of self-employment determinants in developed market economies comprise the effects of business cycle, changing social structures or legal framework, industrial organization regulations and government policies. This paper contributes to the literature by analysing the cyclical patterns of self-employment determinants taking into account both the trends associated with the transition and the variability induced by economic and labour market fluctuations. We construct a consistent panel of entrepreneurship choice models based on consecutive quarterly labour force surveys for Poland - a country with nearly highest self-employment rates in CEECs and the EU - across the time span 1995q1-2008q4 and trace changes in the marginal effects estimators. We find that the notion of self-employment as survival strategy emphasised previously in the literature exhibits stronger in the periods of the labour market contraction. We also demonstrate that young university graduates prefer wage employment to entrepreneurship.

Keywords:
self-employment, transition, cyclicality, selection models

JEL:
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 easier to manage individually.

Who becomes an entrepreneur then? Typically self-employed are older and not necessarily with higher formal education. While these two phenomena may be linked in a transition country undergoing an educational boom (typically these are younger individuals who benefit from better formal training, while the shares of youth are relatively low among the self-employed). They also come from larger cities, including the metropolitan suburbia. On the other hand, although these characteristics are fairly stable over time, the flows to self-employment are substantial in Poland, especially by European standards. Namely, each year roughly 1-2% of the economically active population sets up their own business.

In this paper, we inquire into the individual choice of self-employment among the economically active population in a transition economy. We analyse individual-level data over the period of 13 years using labour force surveys for Poland following a transition from a centrally planned to a market based economic system[1]. We use the data from the early 1995 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 views. 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) emphasise the family business, while Dolton and Makepeace (1987) build on the potential flexibility of this form of professional activity.

We contribute to the literature in two main ways. Firstly, we provide the first analysis of selection into self-employment following the 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 as opposed to 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. 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

As argued by Earle and Sakova (2000) the process of transition may 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 market opportunities. On the other hand there may be people who become self-employed because of being unable to effectively adapt to the new, competitive environment on the labour market, Earle and Sakova (2000). A third category which arises from works by Dallago (1997) and Scase (2000) and involves individuals who abuse the imperfections of transition on order to engage in rent seeking strategies. Thus it seems that it is not only the quantity, but also the quality of entrepreneurship, that matters.

Switching form a centrally planned to a market economy significantly affects the motivations and conditions for self-employment. McMillan and Woodruff (2002) emphasize the crucial role of entrepreneurs in the transition process. Entrepreneurs are said to be responsible not only for the supply of innovative goods and services, but also for the creation of jobs and market competition. However, self-employment is not necessarily an exhibition of entrepreneurial spirit - as argued by Estrin and Mickiewicz (2009) this form of labour market

[1] As a country in transition, Poland has observed a massive growth in self-employment and entrepreneurship in the first years after 1986 ad the so-called Wilczek's reforms. However, reliable data only start in 1995, when the rapid process was largely over.

Table 1: Self-employed (% total employment)

	1995	2000	2005		1995	2000	2005
EU15	15,7	14,5	14,5	CEECs	15,9	16,3	15,6
Denmark	7,6	6,6	6,3	Czech Republic	13,8	17,4	18,0
Germany	10,0	10,0	11,2	Estonia	6,9	9,0	8,1
Belgium	18,3	17,0	16,3	Hungary	17,8	15,1	13,8
Ireland	20,5	18,6	16,9	Latvia	14,9	15,0	11,6
Greece	45,8	43,3	40,8	Lithuania	18,8	19,7	17,1
Spain	18,8	15,8	14,6	Poland	25,7	27,4	25,8
France	10,7	9,2	8,9	Slovakia	6,6	8,3	13,0
Italy	26,9	26,4	24,6	Slovenia	18,8	18,5	17,6
The Netherlands	15,9	13,9	14,0				
Austria	20,2	20,5	19,8				
Portugal	21,1	20,4	19,1				
Finland	13,7	12,2	11,7				
Sweden	6,8	6,5	5,7				
United Kingdom	14,1	12,1	12,8				

Source: Eurostat

activity, especially in transition countries, may follow from the lack of feasible alternatives (the so called low aspirations entrepreneurship).

While Naude (2008) claims that it is necessary to distinguish between entrepreneurship out of necessity as opposed to entrepreneurship resulting from voluntary realisation of a business plan - it is essentially impossible to directly address this distinction empirically. In the case of the former, self-employment may actually hinder further economic development due to misallocation of skills. The latter - on the hand - is an outcome of growth and further reinforces the stimulus. Because of the various strategies which, in effect, lead to becoming self-employed, the number of people who engage in this form of labour market participation in CEE countries was said to be booming in the early 90's, Earle and Sakova (1999). Yet as the transition process passes, the initial conditions might have given the way to business cycle regularities. Indeed, while we observe a decrease in the self-employment rates in CEECs, they are still higher than in the EU15 and do not seem to be decreasing after the initial stage of the transition Table (1). Without the exceptional contributions from Greece, the difference would have been even more pronounced, while the trend is stable or even decreasing within the EU15 at the aggregate level - it is still increasing in the majority of CEECs.

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. Analysing the UK data, Meager (1992) suggests that self-employment is unemployment driven and thus behaves counter-cyclically. On the other hand, pro-cyclicality of entrepreneurial activity has been advocated by Rampini (2004) in an approach based on decreasing absolute risk aversion.

Yet still some agents do engage into self-employment while, under the same external conditions, others do not. This leads to exploring individual characteristics as explanatory variables of entrepreneurial activity on the labour market. Various studies point to other individual-level variables which affect selection into entrepreneurship[2]. Cowling and Mitchell (1997) claim that self-employment rates among women may be an effect of discrimination among by the employers. 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 labour market as complimentary for house work, (Dolton and Makepeace 1987).

Apart from gender, also human capital is relevant for explaining selection into self-employment. Cross sectional studies prove it is one of the most powerful variables used to explain the selection processes, yet its role remains ambigues, Dickson, Solomon and Weaver (2008). van der Sluis, van Praag and van Witteloostuijn (2004) claims that the differences arise from diverging returns to various levels of education in self-employment. There analysis based on U.S. and European data draw 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 - probabilities of becoming an entrepreneur increase if one's father has been self-

[2]Le (1999) provides an excellent review of the earlier empirical findings. Recent literature is exhaustively briefed in Caliendo and Kritikos (2008)

employed, Blanchflower and Oswald (2007). In fact, some evidence demonstrates that the so to say "on-the-job training" in supporting family members entrepreneurial activity partially compensates for formal education shortcomings for young self-employed, Silva (2007), Hartog, van Praag and van der Sluis (2008), Caliendo and Kritikos (2008).

In fact, the interaction of age and education seem to have gained especial attention in the literature. Llisterri, Mantis, Angelelli and Tejerina (2006) found for Latin American economies a proportionally larger number of self-employed among the young cohorts of the working population. They argue that self-employment became a survival strategy for the young adults, who experienced difficulties with obtaining wage-earning positions. On the other hand numerous studies have found positive correlations between age and the probability of becoming self employed in developed economies, Brock and Evans (1986), Rees and Shah (1986) and Borjas and Bronars (1989). Reconciliation to these opposite findings may be sought in the life cycle hypothesis, *i.e.* correlation of age with levels of financial and human capital gained by an individual during lifetime[3].

This belief is further corroborated by the analysis of the role marital status plays in the decision to become self-employed. Tamvada (2007), Taylor (1996), Fairlie (2005), Hyytinen and Ilmakunnas (2007), just to name a few, mention positive correlations between being married and the propensity of being self-employed. In general, marriage is said to reduce risk through income diversification, given the spouse is economically active. Marriage may also possibly be a source of start up capital due to the ability of the couple to pool their resources. Le (1999) recalls a further number of reasons why there may be a positive correlation between being married and self-employed, especially when the spouse is also engaged in the business. In this case, apart from some of the possible reasons mentioned previously, the spouse increases the levels of human and social capital and provides reliable labour, (Borjas 1986).

Finally, Ferrante and Sabatini (2007) who find a negative effect of regional *per capita* income on the self-employment selection - the availability of less risky careers in richer regions bears a lower opportunity cost that becoming an entrepreneur. Other regional effects which may influence the probability of becoming self-employed are local labour market related factors such as the unemployment rate[4], issues associated with the local industrial organization structures[5] or regional institutions and policies[6].

In the context of economic transition from centrally planned to market based system, 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, and receipt of property in restitution, previous business engagement and larger earnings differences. The validity of this statement can only be explained though, under the condition that both variables are adequately controlled for, e.g. de Wit and Winden (1989) and de Wit (1993). Recent studies by Bruno, Bytchkova and Estrin (2008), Estrin and Mickiewicz (2009) and Estrin and Mickiewicz (2010) - which all utilise a cross-country surveys of Global Entrepreneurship Monitor - argue that the transition countries have not yet reached their long term self-employment rates, while the delay is attributed to the legacy of communist planning, which needs to be replaced with formal market-supporting institutions. This process may require, as they argument, a generational change.

Summarising the main findings of the literature - we apart here from the strand analysing the determinants of the *returns* to self-employment - age, gender, marital status, education and regional determinants have been universally been found to affect the decision of becoming entrepreneur[7]. On the other hand, there are some

[3]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 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 labour market in case of business failure, individuals in their 30s, 40s and 50s are said to be those who most probably become self-employed, Llisterri et al. (2006).

[4]Confirmed by Van Praag and Van Ophem (1995), Blanchflower and Oswald (1998), Audretsch, Carree and Thurik (2001) and Baptista and Thurik (2004)

[5]Analysed by Malecki (1993) and Storper (1995).

[6]See: Amin (1999), McQuaid (2002), Lee, Florida and Acs (2004).

[7]In the Polish LFS - which is the only source of representative data on self-employment - incomes of self-employed are universally coded in meaningless manner across the whole analysed time span. Thus, we abstract from this issue both in the literature review and in the subsequent empirical analysis. Some studies resort to the household budget surveys, but the aggregates of the labour market status obtained from HBS are not in accordance with the alternative source of data on economic activity. Thus, it does not seem to be a representative source for the labour market analyses.

ambiguities concerning the sign and the size of these effects. Some studies have found the dominant role of the aspirations, thus gearing towards self-employment individuals with characteristics demanded also by the employers. Other studies seem to have demonstrated that for some groups - especially youth and women - becoming entrepreneur may actually be the only viable option of active participation in the labour market. These effects may be dependent upon the business cycle (as a dominant push factor) and the employment outlooks (as a dominant pool factor), combining into the overall swings in both the signs and the sizes of the choice determinants.

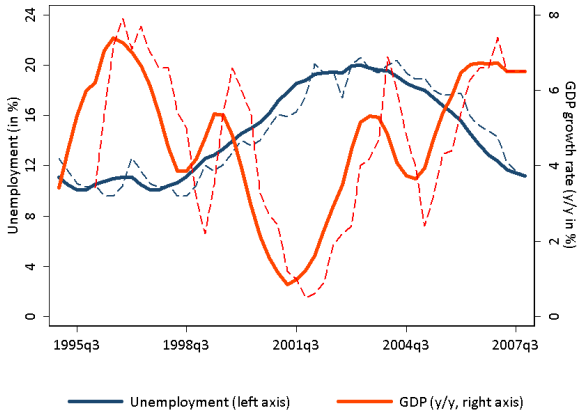

Figure 1: Unemployment and GDP fluctuations in Poland, 1995-2007

These simple observations 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, *i.e.* entrepreneurs. On the other hand, the considerable employment reductions experienced between 2000 and 2003 suggest that 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 Saczuk and Tyrowicz (2010), females, lower educated and the youth are less likely to remain in the wage-employment. Also the returns to employment, *ceteris paribus* demonstrate a similar, pro-cyclical pattern.

The main aim of this paper is to verify if the choice of self-employment responds to the swings in the labour market and/or economic growth changes. For the purpose of comparison, Figure 1 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 *per capita* GDP growth rates.

In the reminder of this paper we will trace the changes in the values of estimators obtained from modelling the selection into self employment. The timing of these changes may coincide either with the GDP or the unemployment fluctuations. Estimators with some of the variables may exhibit a stable trend which would than be interpreted as an evidence of the ongoing transition processes.

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 consecutive labour force surveys (LFS) conducted by the Central Statistical Office over the period of 1995q1 to 2008q4.

Data We use 56 consecutive labour force surveys. Each set contains roughly 50 000 individuals. Surveys are collected quarterly on a representative sample of adult individuals (as of 2002 also individuals with age below 15 years of age are included) while the non-systematic refusals to participate in the survey are compensated by the weighting scheme. Both the data and the weights are provided by the Central Statistical Office. The datasets do not contain information on revenues of the self-employed (they are universally coded in a meaningless way) which prohibits the estimation of returns to self-employment. While it is customary in the field, since it cannot be performed, we focus in the reminder of the paper on the determinants of choice between self-employment and wage-employment.

In the Polish LFS, both entrepreneurs and individual farmers are coded as self-employed. However, interacting the industry of activity with the form of labour market activity allows for rigorous separation of the the individual farmers from the pool of self-employed. In the reminder of the paper we focus on the latter. Such choice is motivated by two factors. Firstly, the selection into agriculture in Poland is frequently determined within family strategies and additionally, it largely depends on location of the household. Secondly, 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 2 depicts the evolution of the basic demographic and educational characteristics of the self-employed as opposed to the other participants of the labour force. Clearly, the characteristics of the Polish entrepreneurs do not seem to deviate from what has been already found in the literature for the other countries. They tend to be older than the wage earners. While they less frequently are female, they seem to have also slightly higher educational attainments than the employees. As of 2001 there is a clear change in the trend in tertiary or higher education, which is associated with the educational boom experienced by Poland. While prior to the boom the self-employed were slightly more frequently university graduates than the wage employed, the dramatic increase in tertiary enrolment seems to have equalised the initial differential.

Fourteen 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 21% based on the LFS (10% and 23% based on the registries). Also, this period captures the final stage of the transition from a centrally planned to a market economy, which implies that except for temporary swings, also longer-term trends could be observed. Both the share of the self-employed in the labour force and their characteristics have witnessed considerable changes throughout this period, Figure 2.

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, with tertiary attainment picking up only as of 2001. Similarly, the ageing 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.

Empirical strategy We estimate a model, where the first stage concerns selection into activity and the second stage - a decision of engagement into self-employment. In fact, self-employment is implicitly modelled as a binomial choice rationally made by all active participants of the labour force. Such estimation essentially implies that unemployment is in general involuntary, *i.e.* individuals being active have decided to seek wage employment and have not succeeded yet. 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).

Such strategy is not the only one, however. Firstly, one could envisage a model of the multinomial choice between wage employment, self-employment and unemployment/inactivity. Such approach was followed by Bukowski and Lewandowski (2005), who analysed the determinants of the transitions *from unemployment*. However, multinomial analyses are troublesome in interpretation, while the underlying rationale that inactivity/unemployment are entirely voluntary seem doubtful, especially in the context of large unemployment fluctuations.

Secondly, instead of Heckman (1979) two-stage approach, a bivariate probit model could be estimated. Such

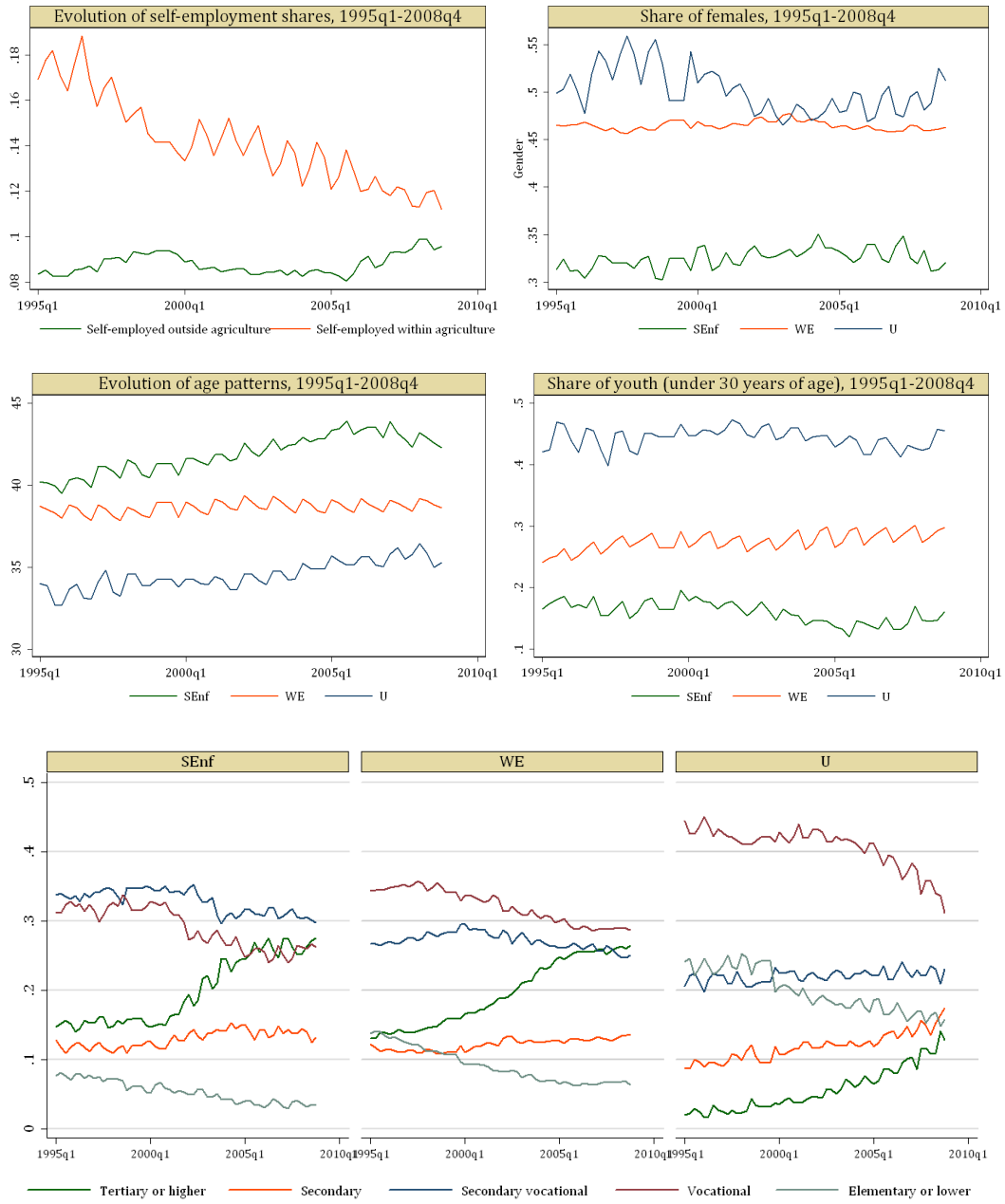

Figure 2: *Source*: Labour Force Surveys for 1995q1 - 2008q4. Notation: SEf - individual farmers, WE - workers and U - unemployed. Weights included in computing the averages.

approach permits the efficiency gains from contemporaneous estimation of the parameters in both activity and self-employment equation. Indeed, conditional on the regresors, one could argue that these outcomes are related potentially in both ways. However, it seems that the direction activity → self-employment is probably significantly stronger. The bivariate probit has become increasingly popular with the doubts around the implementation of the two-stage Heckman (1979) procedure, Estrin and Mickiewicz (2009). Namely, frequently the requirement of the exclusion restrictions has been violated, undermining the validity of the presented findings. Bivariate probit is immune to such problems at the expense of estimators' efficiency.

In the estimations we have adopted both techniques. While bivariate probit has consistently confirmed that the two equations are related (the values of ρ estimates ranged between 0.8-0.85 for the complete sample and 0.9-0.95 for the youth, both highly statistically significant), the marginal effects estimators were essentially unaffected by the estimation technique but the standard errors estimated under two-stage Heckman (1979)

procedure were considerably smaller. Thus, we have decided to focus on the results of the two-stage model[8].

Each quarter we estimate a two-stage system of equations:

$$Activity = f(age, gender, education, residence, marital\ status\ (+\ interactions)) \tag{1}$$

$$Self\text{-}employment = \phi(age, gender, education, residence (+\ interactions),\ 1/MillsRatio) \tag{2}$$

Age is a continuos variable expressing the age of individual at the moment of survey in years. Gender is coded to take the value of 1 for women. Education is a categorical variable with levels: elementary or lower; vocational, secondary vocational, secondary, tertiary or higher[9]. Martial status has separate coding for singles (reference level), married, divorced/separated or widowed. Finally, residence is a categorical variable too[10]. Since the rapid urbanisation associated with the brain drain is characteristic for the internal flows and educational patterns over the past two decades, we include additionally interaction terms for highly educated inhabitants of large cities and those who live in the rural areas and are characterised by elementary or lower education. We also include the interaction of gender with age and with tertiary education.

Since education is only accessible as categorical variable in the Polish LFS, all marginal effects are estimated with reference to the reference level (primary or lower education in our case). However, controlling for the structure of the population with respect to this characteristic, one can scale the obtained estimates to obtain marginal effects independent of the reference level, as described by:

$$\tilde{\beta_{i,k}} = \beta_{i,k} * \frac{n_k}{n_{ref}}, \tag{3}$$

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. After obtaining the estimates (and confidence intervals) we have inquired the changes in these parameters - both trends and cycles.

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 of the estimations refer to the same phenomenon. Consequently, they can be compared across time. As visible from Figure 2, determinant variables have stronger seasonality patterns than activity/self-employment outcomes. Some seasonal effects play a significant role, *e.g.* exiting the educational system, reaching the retirement age, etc. For the sake of clarity, the obtained estimators were seasonally adjusted with the TRAMO/Seats procedure. The width of the confidence intervals was preserved as original.

4 Results

This section will report the findings of the 56 consecutive estimations graphically. The estimated marginal effects with the confidence intervals were plotted against time for the complete sample and estimated on a sample aged between 18 and 30 (*i.e.* youth). Detailed statistics are available upon request, for the purposes of clarity reporting the results from 224 estimations in a table form was avoided.

Analysing the marginal effects with respect to the basic demographic characteristics (age, squared age and gender) and the inverse Mills ratio, three important conclusions appear. Firstly, there are considerable differences in the sizes of the point estimates for the total sample and the youth - typically much higher for the youth[11]. Secondly, the time evolutions for the youth and the total sample differ largely, with youth seemingly

[8] Results from bivariate probit available upon request.

[9] Some of the respective surveys comprised more categories, but for the sake of consistency between the quarters this is the most detailed categorisation.

[10] The strata include: rural areas, towns under 10 thou inhabitants, towns under 20 thou inhabitants, towns under 50 thou inhabitants, towns under 100 thou inhabitants, towns under 200 thou inhabitants, cities under 500 thou inhabitants, cities above 500 thou inhabitants.

[11] Also standard errors are larger in latter case, while this observation may be attributed to both smaller size of the samples and the *de facto* wider variety of choices among the youth. Namely, they can be frequently inactive for because of continuing the education but also - for females - because of setting up the family. Also the choice between wage employment and self-employment may be affected by the labour market status of the parents (e.g. joining the family company as a partner or employee may depend more on the structure of the family business than the individual characteristics of the analysed individuals). Corak and Piraino

more responsive to the GDP and employment fluctuations. Finally, the role of non-randomness in the first stage (activity) equation also vary with age - for the total sample it has become insignificant towards the end of economic expansion of 1997-1999 while for the youth it continued to be significant till the peak of unemployment levels in late 2004, Figure 5.

Irrespective of the age group, age itself seems to be positively related to the likelihood of becoming self-employed with a typical inverse U-shaped pattern, Figure 3. The clear increasing trend with the squared age estimator seems to be associated with the gradual dampening of this shape, which is consistent with the findings of Figure 2. Recall that the age of self-employed throughout the entire time span has been higher than that of wage employed or unemployed, but the size of this differential varies. For the youth, however, age has become insignificant in the period of largest labour market as of 2003 and returned to significant levels in 2005, *i.e.* with the economy resuming the growth rate but still extremely high unemployment levels. Thus, it seems 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, constraining - rather than expanding - engagement into self-employment in the periods of high unemployment.

The effect of gender differ for the young and the total sample - it is clearly negative in the latter and insignificant in the former case, Figure 3. In fact, *ceteris paribus* females are approximately 3%-10% less likely to be self-employed. The increasing trend for the total sample may be interpreted in terms of raising relative engagement of women in self-employment. Nonetheless, the difference between the point estimators at the beginning and towards the end of the analysed time span is only significant at 10% level, which suggests that this effect is not strong. Figure 4 gives also interesting conclusions concerning interaction between age and gender. Namely, it is insignificant for the total sample, but was negative till late 2003 and over 2005-2006 period. Naturally, while labour market entry is difficult for youth in general, it may be especially hard for young women, as the employers expect prolonged absences because of the family functions. The evolution of the marginal effect associated with the interaction of age and gender seems to suggest that indeed for young women the decision to become self-employed was a necessity rather than choice[12]. One could risk a statement that "normally" young females are less inclined to become self-employed than male peers, but in the periods of extremely high unemployment this effect disappears. 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).

Inquiring the effects of education, few conclusions are striking. Firstly, the time patterns for the total sample and the young are similar across the attainments, although different within the age groups. Naturally, the levels of estimated marginal effects are different, with secondary and tertiary education yielding initial point estimates of roughly 0.6 to 0.8. Secondly, the levels are similar for the total sample and for the young. Only the differences observed for the high school attainments are statistically significant. Finally, throughout the whole estimation period university degree has not been significant for the young, which suggests that indeed self-employment is a rare early career strategy among the best educated.

For the youth, at all educational levels there is a strong cyclical effect of 2001-2003 economic slowdown, with the significant drops of the point estimators for the marginal effects. It also seems that the reverting of the trend observed for the vocational education among the youth responds to the timing of the GDP and not the labour market recovery. Although the coefficients do not reach the late 1900s levels, the return to the pre-crisis values is rather rapid and commences already in 2003 - not gradually across 2005-2006 with the labour market improvements. The lower post-crisis levels may be associated with both increased post-2004 migrations and intensifying demand for low-skilled labour as of 2006. The lack of the cyclical effect among the better educated young entrepreneurs may be interpreted as evidence of more favourable employment opportunities but also resorting to continuing education as a survival strategy[13]. Interestingly, self-employment is roughly equally

(2010) demonstrate, using the Canadian census data, that 40% of the sons join the company either owned by the father or where the father is employed, while the effect increases in the formal education and family's financial status.

[12]It should be noted that in some circumstances over the analysed period Polish legislation encouraged "fake" self-employment, *i.e.* situations where regular employees were formally subcontractors. Such contractual design lowered tax wedge born by the employer at the expense of the employee, but high unemployment rate naturally raised the bargaining position of the employers.

[13]According to the LFS, for the individuals aged 18-25 education is treated as a "primary" and if continuing education is

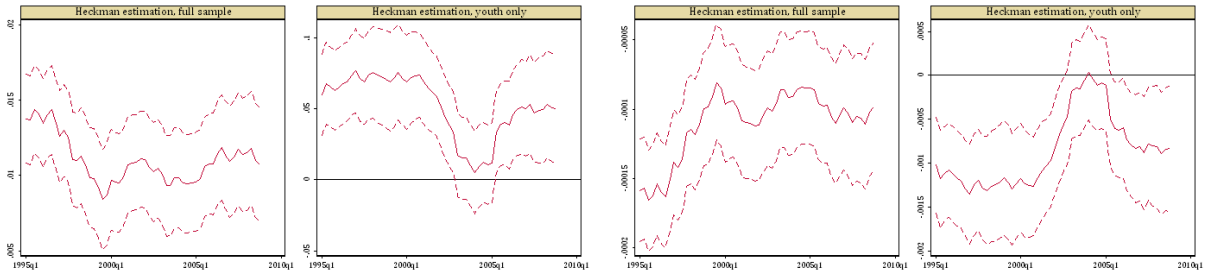

Figure 3: The marginal effects estimators in the self-employment equation with respect to age (left) and age squared (right)

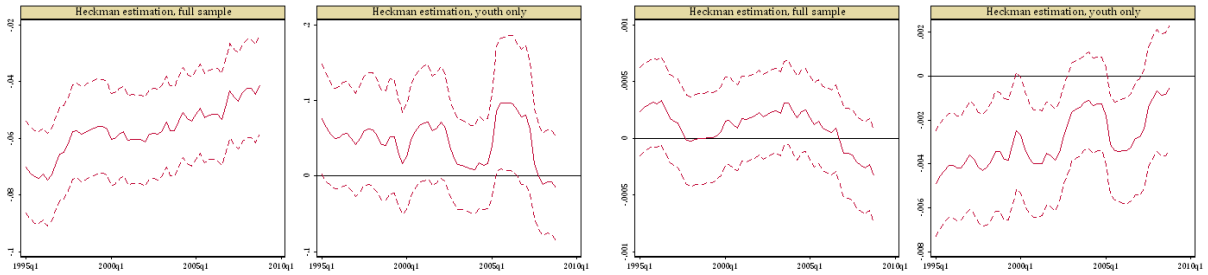

Figure 4: The marginal effects estimators in the self-employment equation with respect to gender (left) as well as age and gender (right)

Figure 5: The marginal effects estimators in the self-employment equation with respect to the inverse Mill's ratio

likely among the individuals with vocational and with secondary vocational education, which suggests that the educational reform of 1999 eliminating vocational schools and introducing compulsory secondary education in vocational training did not affect the propensity to self-employment among the graduates.

Finally, there seems to be no trend or cyclicality with reference to inhabitants of large cities with higher education - they are consistently more likely to choose self-employment, but this effect is not economically very large. For the youth, the effect is statistically insignificant, as other generally for the university graduates. On the other hand, individuals with lower skills inhabiting the rural areas have been consistently less likely to start up their own business, but the cyclicality patterns are more pronounced. Especially in the case of youth, as of 2005 the estimator looses significance to regain it only as of late 2007. This is the period of rather fast GDP growth but still high unemployment. Again, it seems that entrepreneurship in this context could be interpreted as evidence of the survival strategy[14].

reported, other economic activities are not inquired. Consequently, part time students who are also part time employees or support family businesses are treated as students.

[14]Please note, however, that we only analyse self-employment outside agriculture

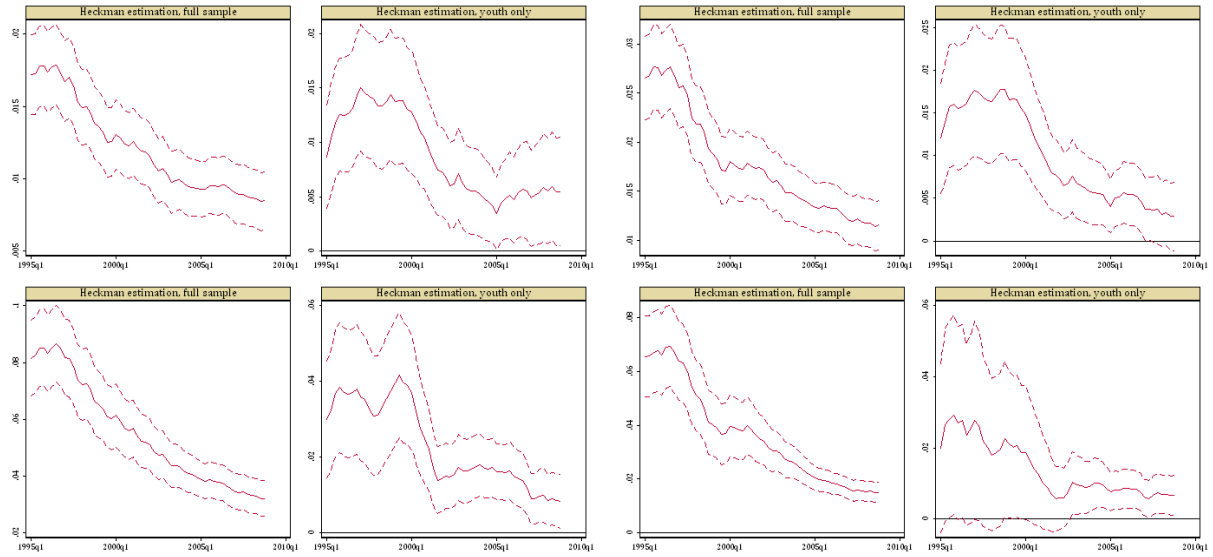

Figure 6: The marginal effects of selection and self-employment equation with respect to vocational (upper left), secondary vocational (upper right), secondary (lower left) and tertiary (lower right). Primary or lower education as reference level. Estimators controlled for the structural changes in the respective populations, thus time evolutions only reflect the actual effect of a particular educational attainment with respect to the reference level, regardless of the changes in the structural composition within the populations.

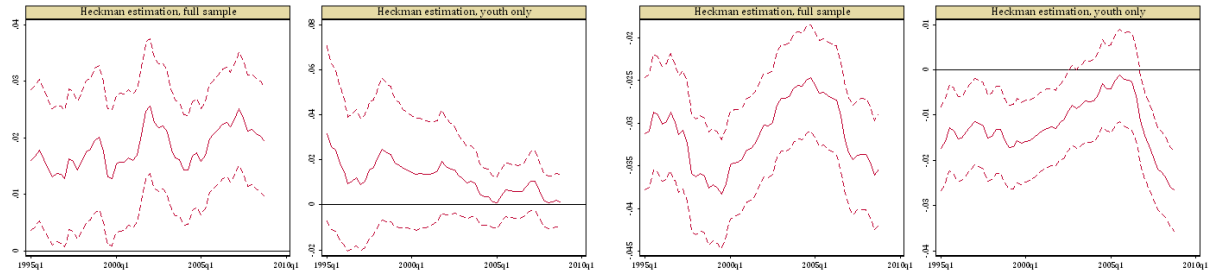

Figure 7: The marginal effects of selection and self-employment equation with respect to highly skilled living in large cities (left) as well as low skilled living in rural areas (right)

Summarising, highly skilled youth are not likely to become entrepreneurs, while in the total sample the probability associated with university education was roughly four times higher than among the vocationally trained. Young university graduates seek rather wage employment, resorting to self-employment as a survival strategy. Highly educated are definitely more likely to be in the labour force than the three other groups, while they too experience a hump-shaped evolution of the parameters in the selection equation in the period of economy contraction[15].

5 Conclusions

There may be many individual prerequisites for undertaking the risk of entrepreneurial activity. Access to finance, previous professional experience, attitude towards risk and uncertainty of future revenues, the need for freedom and independence *etc.* are among the most important factors which cannot be traced basing on data from labour force surveys. Polish high self-employment rates stand out both in the CEECs and in the EU. Although considerable share among the self-employed consists of the independent farmers, the entrepreneurial

[15]Not reported for the reasons of clarity, available upon request.

spirit released in the late 1980s has had its major role in the economic recovery throughout the transition from a centrally planned to a market based economy.

In this paper we have sought the trends and the cyclicality between the basic demographic and socio-economic factors and self-employment. 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 loosing 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.

We find that the propensity to become self-employed is cyclical in some of the characteristics, especially for the youth, which lends partial support to the "survival" hypothesis raised by Llisterri et al. (2006). However, the changing role of gender and education seems to be more driven by a steady trend, and thus should be attributed to the ongoing transition processes, as emphasised by Estrin and Mickiewicz (2010). We find that young - especially with university degree - are less likely to undertake the entrepreneurs' risk and prefer wage-employment even at the price of potentially prolonged periods of non-employment in the periods 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 further analyses could answer the question of whether the potential scope for entrepreneurship among the youth is already exhausted in Poland.

Implicitly, we treat these estimators as determinants of the self-employment decision. In fact, the two-stage probit estimation applied in this paper does not correspond to a *decision* by a certain individual among the alternatives of wage- and self-employment. By the properties of the *ceteris paribus* device we interpret the intellectual construct of the model to correspond to the decisions. The estimators in both stages of the equation have been estimated separately for each of the 56 consecutive datasets. However it is possible that some periods were associated with the additional determinants to be accounted for. Thus, the results of our study should be interpreted with caution.

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Faculty of Economic Sciences
University of Warsaw
44/50 Długa St.
00-241 Warsaw
www.wne.uw.edu.pl