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CHOICE OF BECOMING SELF-EMPLOYED IN BELARUS: IMPACT OF MONETARY GAINS

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Belarusian Economic Research and Outreach Center (BEROC) started its work as joint project of Stockholm Institute of Transition Economics (SITE) and Economics Education and Research Consortium (EERC) in 2008 with financial support from SIDA and USAID. The mission of BEROC is to spread the international academic standards and values through academic and policy research, modern economic education and strengthening of communication and networking with the world academic community.

Abstract

Development of self-employment becomes increasingly important issue for the transitional economy of Belarus. However the role of pecuniary benefits in terms of moving people towards self-employment is not explored, and neither is the question of whether the direction of its' impact is different for men and women in Belarus. The paper investigates that question using 2006-2010 Belarusian Household Survey on Incomes and Expenditures and is based on the multinomial logit choice model. To get selectivity corrected predicted earnings the methodology proposed by Bourguignon et al. (2007) is applied. The obtained results show that higher expected earnings attract women to turn into entrepreneurship compared with paid-employment while pecuniary benefits do not have significant effect on choice of men. Education, age and risk factor appear to be important influencing factors in terms of choice depending on the gender of an entrepreneur.

Keywords: Entrepreneurship, pecuniary benefits, influencing factors, Belarus

JEL codes: J31, J42

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Contents

1. Introduction

Self-employment is important for any country, as it increases competition, promotes the effective use of resources and generates new jobs (de Witt, 1993; Headd, 2010). But for Belarus, where more than half of the economy and most of the large enterprises are state-owned, self-employment is even more important as it is the driving force of market economy (Spulber, 2011).

The choice of economically rational person is driven by utility maximization through the growth of monetary benefits. Therefore, that is important to understand whether the possibility to earn more is a key factor that motivates people to turn into entrepreneurship or if people are motivated by other factors. Moreover, this paper aims to see what measures should be implemented in order to stimulate self-employment development in the country.

Belarusian labor market still possess heritage of the Soviet Union. Denationalization of the economy is going rather slowly and the share of people working in the state-owned enterprises is still around 44%[1]. It should be mentioned that the state indirectly controls even larger share of the economy. Enterprises keep implementing full employment policy, which explains low mobility (people are not motivated in finding a new workplace or occupation) as well as low level of unemployment (just 6.1% according to Population Census 2009[2]). That is because enterprises are more focused on accomplishing of social functions rather than increasing of competitiveness. Therefore, self-employment sector is still weakly developed and the share of labor force involved into entrepreneurship forms just 3.3%[3]. Thus, such a low share of self-employed is an evidence of that Belarus is in a need of entrepreneurship development.

However, the main determinants of becoming an entrepreneur are still not clear, as that issue was not investigated before, to the best of our knowledge. Belarusian labor market has certain peculiarities. On the one hand Belarusian self-employed people have to face various obstacles, which raise the cost of entry into self-employment. Main obstacles are general complicated registration and taxation procedures (according to "Doing Business 2012" Belarus is on the 156 place in paying taxes factor)[4], low property rights protection, state controls and high fees, large number of required documents, licensing, price regulation, unequal conditions for

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[1] http://belstat.gov.by/homep/ru/indicators/labor.php

[2] http://belstat.gov.by/homep/en/census/2009/pc_publications.php

[3] http://belstat.gov.by/homep/en/census/2009/pc_publications.php

[4] http://russian.doingbusiness.org/data/exploreeconomies/belarus/

doing business in comparison to state enterprises, administrative intervention are the main difficulties the entrepreneurs have to deal with. On the other hand the cost of entry into employment is relatively low in Belarus, given the low level of official unemployment in 2011 - 0.6%[5]. Given those high costs of self-employment and relative easiness of entering employment we can expect that it is not just about money, but there are also some other specific driving factors of becoming self-employed in Belarus and that the push factors (necessity to become self-employed because of no perspectives of becoming employed) are not particularly important. That is why it is necessary to understand to what degree pecuniary benefits are motivating people to turn into self-employment, as that will help to develop efficient policy of promoting and supporting self-employment.

Usually men are more involved in entrepreneurship than women (Parker, 2004). This observation resulted in a fact that previous literature mostly analyzed motivating factors for self-employed people in general without their separation by gender. However, the reasons of switching toward self-employment may differ for males and females. It is known that there are differences in the labor market decisions and opportunities between men and women, because of various factors like discrimination, labor market segmentation or different work experiences. Thus, women face constraints in their labor market decisions that men do not face (Galego, 2006). Moreover, many studies show that men are usually less risk-averse (Eckel and Grossman, 2008; Croson and Gneezy, 2009), and hence are more likely to engage in entrepreneurial activities. Because of the above mentioned facts it is necessary to see not just how earnings differential and other factors affect choice of becoming self-employed but also whether the effects differ by gender.

The goal of this study is to investigate this issue deeper through answering the question: whether larger expected earnings is the main factor that determines the choice of becoming self-employed in Belarus and what are the gender differences in factors that motivate to become self-employed? To answer these questions the structural choice model will be used. The hypothesis here is that gender is an important factor in determination of this choice – women are well-known to be more risk-averse, and thus prefer to be employees more than men. As a consequence, it is expected that there are clear gender differences in moving to self-employment. Besides it's also expected that self-employed people are those who not just expect to earn more but also realize that there are no good perspectives of being paid-employed. This study contributes to the existent literature on two levels, academic and policy one. It will shed some light on the factors that

[5] http://belstat.gov.by/homep/ru/indicators/labor.php

determine the choice to become self-employed in Belarus. Its findings also aim to generate useful policy recommendations that will allow the government to buster the growth of self-employment.

This paper is as follows. In section 2 the previous work is summarized, section 3 provides the methodology; section 4 shows how data was constructed and describes it; section 5 presents estimated results. Finally, section 6 summarizes the paper.

2. Literature review

Rees and Shah (1986) were looking at what factors make people become self-employed using the UK data. As the authors were looking at whether there is the interaction between the choice and earnings only the full-time employed people were included into the sample. The obtained results show that increasing earnings differential between self- and paid-employment as well as education and age positively affect the propensity of becoming an entrepreneur. De Wit and van Winden (1989) were investigating the same question. Authors come up with the results that the chances of becoming an entrepreneur are positively influenced by expected monetary benefits together with high IQ scores. Later on similar results regarding positive significant impact of earnings differential were found by Taylor (1996). On contrary Hamilton (2000) came up with the conclusion that monetary benefits are not the main driving force that motivates people to work on their own. Even though the earnings and the growth of earnings are lower for the self-employed people, the idea of being a boss reweighs the drawbacks in terms of money and leads them to the entrepreneurship. Clark and Drinkwater (2000) addressed question of status choice using the data on ethnic minorities of England and Wales. The obtained results show that the wage discrimination of immigrants appeared to be a push factor towards self-employment. In addition enclave effect as well as low level of English and immigration occurred not long ago negatively affect on the probability of being self-employed. Buchmann et al. (2009) while exploring the similar question for the case of Switzerland revealed that education, male gender, and age positively affect self-employed status. Good job opportunities have the opposite effect on self-employment meaning that the economic conditions are the push factor. Type of occupation and positive economic prospects appeared to be the pull factors.

As for the gender differences, Boden (1999) as well as Arenius and Kovailanen (2006) claimed that possibility to combine work and family issues are one of the driving factors moving females into entrepreneurship. Cowling and Taylor (2001), while answering this question, came

up with the conclusion that on average self-employed females are more educated. Later on Georgellis and Wall (2005) found that earnings differential is important only for men in Germany and not for women. Galego (2006) analyzed the choice-making question between self-, non- and wage-employment of males and females in Portugal. The paper claimed that the choice-making decision varies by European countries, as each of them has its own peculiarity. Portugal is the case, where not the family issues but the unfavorable economic conditions make women to enter the self-employment.

As for the situation in Belarus, there are no studies exploring the issue of the main factors influencing on the decision of being self- or wage-employed for now. Therefore, this study is the first one to address that particular question of interest.

3. The model

The study is based on the people's behavior in the labor market. The work is based on the discrete choice behavior model, which is broadly applied in the literature (Rees and Shah, 1986; Blanchflower, Clark and Drinkwater, 2000). We assume that individual has four choices to make. The options are to be paid-employed (p) [j=1], self-employed (s) [j=2], unemployed (u) [j=3] and not in active labor force (a) [j=4]. As each individual aims to maximize the expected utility, the choice selection depends on these utilities comparison. Utility in each case is affected by personal characteristics and expected earnings of individual. Thus person i will switch to self-employment if the utility there (U^s) is higher in comparison to other choice.

$U_i^s > U_i^l$, l=p,u,a

$U_i = \beta_1 \ln Y_i^j + \beta_2 X_i + \varepsilon_i$, i=1……n; j=s, p, u, a

$$(U_i^s - U_i^l) = \beta_1 (\ln Y_i^s - \ln Y_i^l) + \beta_2 X_i + \varepsilon_i > 0 \quad (1)$$

U_i – utility, person i assumes to get from being in different occupational statuses

Y_i – level of earnings

X_i – personal characteristics influencing on the choice

The probability that individual chooses alternative j can be estimated using multinomial logit model

$$P_j = \exp(F\alpha_j)/(1+\sum_{j=1}^{4}(F\alpha_j) \quad (2)$$

where F – vector of various potential explanatory variables affecting the choice of the person,

α_k - unknown parameters of choices j.

Equation (1) can be estimated using multinomial logit model and written in a way such that person i switches to self-employment if:

$$prob\,(U_i^s - U_i^l) = prob\,[\beta_1(\ln Y_i^s - \ln Y_i^l) + \beta_2 X_i + \varepsilon_i > 0] \quad (3)$$

$$\varepsilon_i \sim N(0, \delta_i^2) \quad (4)$$

Main problem with estimation of equation (3) is that we can see individuals being either self- or in some other status. Thus, the earnings differential cannot be observed. So in case individual is self-employed we cannot see the level of earnings in paid-employed status, and in case person is unemployed or not in actual labor force, earnings' level in both self- and paid-employed statuses are not observed. Therefore, problem of sample selection bias arise. That means that people make their choice depending on maximum utility not on random. The solution to that problem is to run earnings equations separately for each of the choices, correcting for selectivity bias. The two-stage correction method first introduced by Dubin and McFadden (1984) and then modified by Bourguignon et al. (2007) is used in order to get rid of that problem. The idea here is to use multiple selectivity correction terms in order to control for self-selection in the choice i with respect to all other choices. Thus, earnings are estimated simultaneously on a set of control variables and on selection terms, calculated from reduced selection equation. These earnings are then used to predict the expected earnings in each sector. The estimation procedure is the following:

$$C_i = \alpha W_i + \upsilon_i, \qquad \upsilon_i = N(0, \sigma^2) \quad (5)$$

$$\ln Y_i^s = \delta_s M_i + \gamma_s \lambda_i^s + u_i, \quad u_i = N(0, \sigma^2) \quad (6)$$

$$\ln Y_i^l = \delta_l M_i + \gamma_p \lambda_i^l + u_i, \quad u_i = N(0, \sigma^2) \quad (7)$$

C_i – indicator variable and it equals to 1 in case person i chose paid-employment and 2 if self-employment, 3 and 4 in case of unemployment and out of actual labor force status respectively

W_i – vector of factors that affect the choice

M_i – vector of factors that affect level of earnings ($M_i \neq X_i$)

λ_i^s and λ_i^l - the inverse Mills Ratios correcting for selectivity in each occupation choice calculated from reduced selection logit equation (4) and

$$\lambda_i^s = \frac{\hat{f}(-\beta_2 X_i / \sigma_\upsilon)}{[1 - \hat{F}(-\beta_2 X_i / \sigma_\upsilon)]} \tag{8}$$

$$\lambda_i^l = \frac{[-\hat{f}(-\beta_2 X_i / \sigma_\upsilon)]}{\hat{F}(-\beta_2 X_i / \sigma_\upsilon)}, \text{ where} \tag{9}$$

$\hat{f}(-\beta_2 X_i / \sigma_\upsilon)$ and $\hat{F}(-\beta_2 X_i / \sigma_\upsilon)$ - standard normal density and standard normal distribution function of estimated at $(-\beta_2 X_i / \sigma_\upsilon)$. These Mills Ratios allow making consistent estimation of Mincer earnings equations (6) and (7), which in their turn estimate predicted earnings in each sector. The difference in predicted earnings is used in the structural choice equation (1).

So, the estimation procedure has three phases. First, the reduced selection equation (5) is estimated, which allows measuring the impact of personal characteristics on the occupational choice and estimates the inverse Mills Ratios. Second, obtained Mills Ratios are used in earning equations (6) and (7) to calculate the predicted earnings in occupational sectors. The first and second phases are a common standard in the literature studying labor supply. For example it is similar to the methodology used by Kimmel and Kniesner (1998). Third, the multinomial logit equation (1) is estimated, where the predicted earnings differential is used as an independent influencing factor. Thus, person switches toward self-employment in case:

$$(U_i^s - U_i^l) > 0 \Leftrightarrow \beta_1(\ln \hat{Y}_i^s - \ln \hat{Y}_i^l) + \beta_2 X_i + \varepsilon_i > 0, \text{ or} \tag{10}$$

$$prob\,(U_i^s - U_i^l) = prob\,[\beta_1(\ln \hat{Y}_i^s - \ln \hat{Y}_i^l) + \beta_2 X_i + \varepsilon_i > 0], \text{ where} \tag{11}$$

$\ln \hat{Y}_i^s$ and $\ln \hat{Y}_i^l$ - earnings, predicted using Bourguignon et al. procedure.

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4. Data

4.1 Data construction

This paper is based on the data from the Belarusian Household Survey on Incomes and Expenditures for the time period from 2006 to 2010. As the goal of the research is to see whether monetary gains are the main driving factor or there are other important influencing factors affecting the employment status of the person, the dataset consists of full-time paid- and self-employed workers, as well as unemployed and people not in the active labor force like students, housewives. The data includes information about the level of income, education, experience, age, gender, whether the respondent is self-employed or is working on someone else and other personal characteristic factors. The analysis is performed on a sample of 34161 observations separately for working age men (16-60) and women (16-55), as women are well-known to be more risk-averse, thus the factors influencing them might be different from those affecting males choice.

The variable of interest [status] is discrete: it is equal to 1 if a person is paid-employed and 2 if a person is self-employed, 3 if a person is unemployed and 4 if a person is not in the active labor force.

Self-employed are individuals, who defined themselves as entrepreneurs in the Belarusian Household Survey on Incomes and Expenditures. Self-employed people in the agriculture sector were excluded from the population of interest. The reason is that entrepreneurship idea in agriculture is more ambiguous compared with other sectors of the economy and has other specific features (Blanchflower, 2000; Parker, 2004). Unemployed are people who answered in the survey that they are unemployed. Non-active individuals are people

According to the literature (Evans and Jovanovic, 1989) the propensity of becoming self-employed depends on the person's net worth, so that the property functions as a backup that stimulates switching into self-employment. Thus, a dummy variable is included into the model, which shows whether person owns land plot or not [landplot].

Regional and residential characteristics affect both on the occupational choice and level of income because of possible wage curve effect (Blanchflower and Oswald, 1994). Thus regional dummies are included into the regression. Besides 3 dummies denoting person's type of residence are used in the model – whether person lives in Minsk [Minsk], large city [large] or small one [small].

4.2 Data description

The structural composition of our population of interest is presented in the Table 1 and shows the following picture. According to the Belarusian Household Survey on Incomes and Expenditures, the share of the self-employed men is around 3.3%; paid employees form about 90.8%. As for women the picture is similar, so paid-employed form 90.7%, self-employed form just 1.4%, which is almost 2.5 times lower in comparison to men. As for the difference between unemployed and non-active individuals, from the Table 1 we see that 0.4% of men define themselves as non-active and 5.6% of women. As for unemployed, the picture is opposite, so that 5.0% of men and 2.9% of women. It becomes clear that men almost never define themselves as non-active and prefer to name themselves as unemployed. Thus, there is no clear difference between these two categories.

[Table 1]

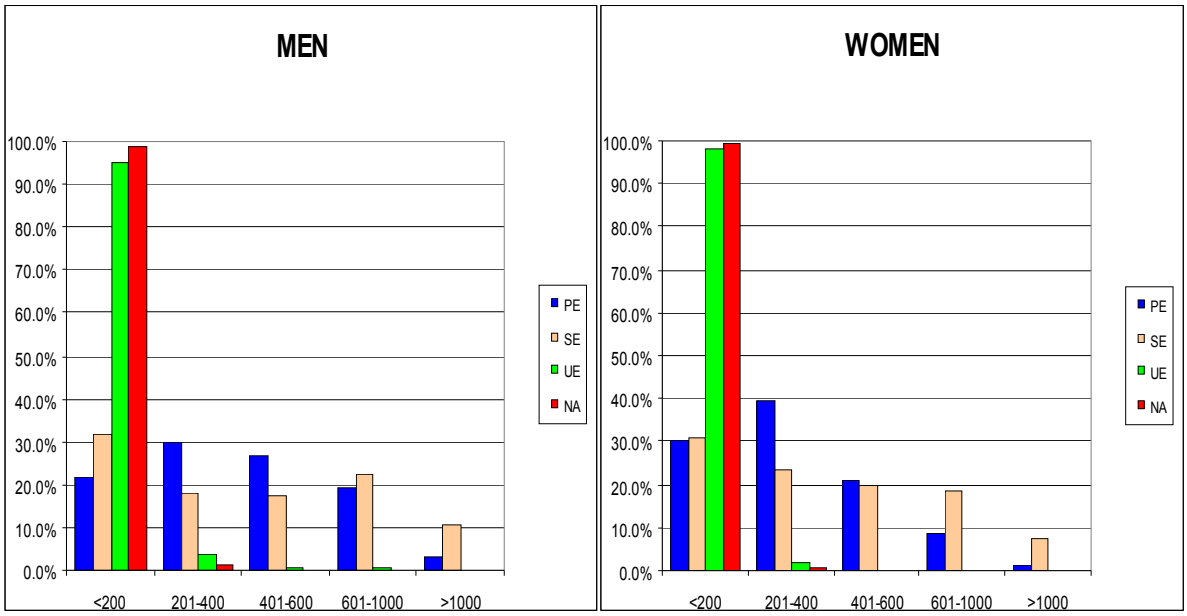
We can see that average earnings' level of self-employed is higher than of paid-employed ones (Table 2). That is true for both men and women. Self-employed men earn around 466 thousand BYR while paid-employed about 420 thousand BYR. Thus self-employed earn around 1.1 times more. In case of women self-employed income is around 1.31 times larger and amounts to 419 thousand BYR vs. 321 thousand BYR in paid-employed sector. It should be noted that the standard deviation of earnings in self-employed sector is also higher in comparison to paid-employed. That follows the argument that self-employed people are assumed to be more risky in comparison to paid-employees in order to get higher profits. The variation coefficient between the earnings in self- / paid-employed sector is equal to 94% / 68% for men and 87% / 71% for women respectively. As for the unemployed and not in active labor force individuals their earnings' levels are significantly lower equaling to 37 and 25 thousand BYR correspondingly for unemployed men and women and 11 and 15 thousand for non-active ones.

[Table 2]

Figure 1 presents distribution of men and women earnings depending on category. Each panel compares the percentage of individuals distributed among 5 income categories, ranging from those who earn less than 200 thousand BYR to those whose earnings exceed 1 million BYR. A feature that is common to both men and women is that much larger share of self-employed people is located in the two highest earnings brackets in comparison to paid-employed. The largest share of both paid- and self-employed men and women is situated in the top three

earnings brackets. Around 31% of both self-employed men / women earn less than 200 thousand BYR, but income of 10 / 8% is more than 1 million BYR, while for paid employed sector the numbers are 22 / 30% of those who earn less than 200 thousand BYR and 3 / 1% correspondingly. As for the unemployed and not active labor force male and female participants not surprisingly the main shares of them are in the lowest earnings bracket.

Figure 1. Distribution of earnings



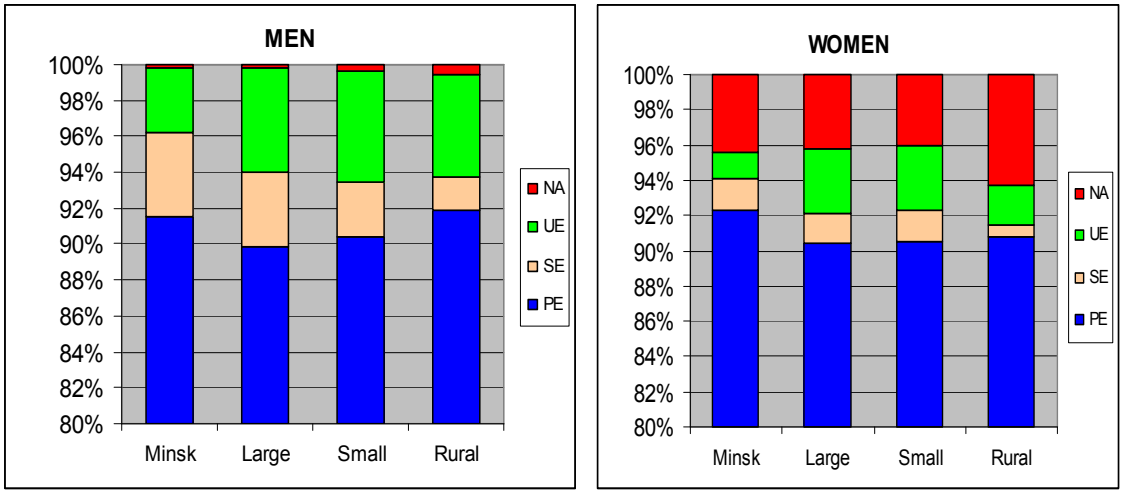
Other descriptive statistics is presented in Table 3. We can see that both self-employed men and women tend to be slightly younger (around 40 years old) in comparison to paid-employees (41 years). There is a gap between self- and paid-employed males/females and unemployed (38 / 36) as well as out of active labor force (47 / 36).

Self-employed tend to be a little bit more educated than paid-employees. However, in general number of years of education doesn't change much in all fours sectors and is around 12-13 years. On the other hand the number of people with university degree is much higher in self- (31% / 24%) and paid-employed (19% / 24%) sectors compared with unemployed (9% / 12%) and non active (7% / 12%). Thus, we can say that person with higher education degree is more likely to be working than be unemployed or out of active labor force.

The share of self- and paid-employed men and women living in the Minsk and large cities is higher in comparison to those who are unemployed or out of active labor force. Moreover, as Figure 2 claims, the share of self- and paid-employed in the total population of interest is

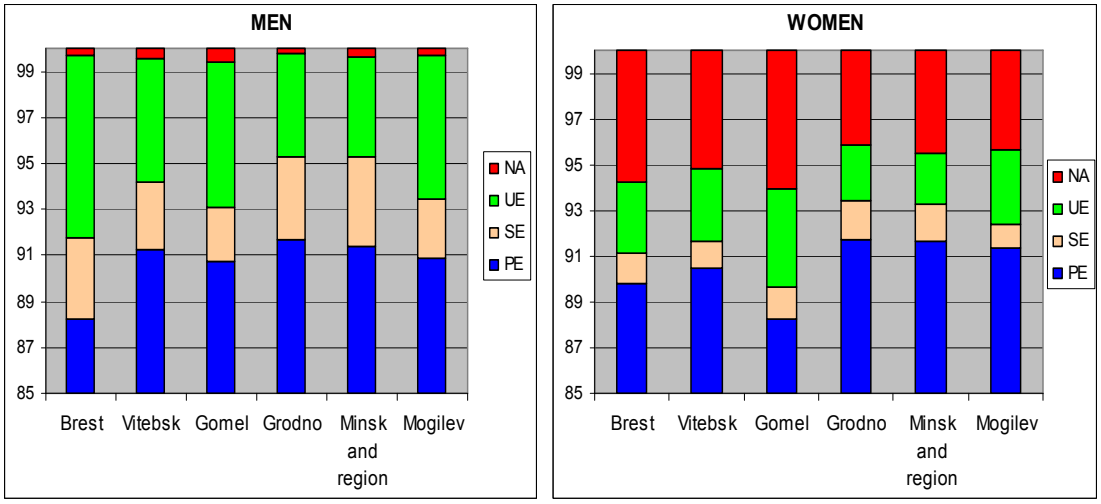
decreasing while moving from Minsk to rural type of residence. That might follow the hypothesis that the working opportunities in the Minsk and large towns are better compared with small towns and rural areas, especially for entrepreneur sector. The explanation for that is that the number of opportunities is much lower in rural areas. Besides that is more complicated in comparison to highly urbanized area to be an entrepreneur in terms of paperwork due to the less-developed infrastructure. Plus there is a possibility to obtain in-kind earnings there.

Figure 2. Residential distribution by sector



As for the regional distribution by sector, which is presented in Figure 3, we can see that the largest share of self-employed men and women in the total population of interest is in Minsk, Brest and Grodno regions, which isn't surprising. If Minsk is a capital with initially larger number of opportunities for business, Grodno and Brest regions are geographically located on the country's border with Poland and Lithuania, which is why trade services are well developed there due to the fact that this geographical location allowed people to buy cheaper goods there and and sell them in the domestic market afterwards.

Figure 3. Regional distribution by sector.



As for other groups' characteristics, size of other unearned income of self-employed men and women is larger compared with other status groups. However, the amount of it is almost negligible and equals to 61 / 42 thousand BYR for self-employed men and women. As for other groups, the means of not-earned income for men / women are the following – 30 / 34 thousand BYR for paid-employed, 29 / 22 for unemployed and 12 / 21 for non-active respectively.

Share of self-employed men (56%) with children is larger in comparison to others (47%, 34% and 31% respectively). As for women, picture is different here. 67% of non-active women reported that they have children, which is not a surprise and probably the main reason of their status choice. Next go self-employed women with 52% share of those with children. That might be the evidence that possibility of having more flexible hours in order to be able spend more time with their families is one of the reasons that stimulates woman to become an entrepreneur. Childrens' division by age revealed that the share of self-employed men with children is the largest one in comparison to other statuses no matter how old the child is (24% have a child from 0 to 5, 27% - from 6 to 12 and 22% from 13 to 15). As for women, the picture is similar for the highest age groups (26% and 26%). However, share of women with a child from 0 to 5 among non-active is significantly larger than among self-employed women (40.7% vs. 17%).

Share of those, who has a land plot is around 64% for almost all male statuses, and is much smaller (53%) in case of self-employed men. Similar situation is with women, while on average 60% of all statuses except for self-employed have a land plot in their ownership; just 51% of entrepreneur women also have it. Share of smoking self-employed men is the lowest compared with other groups. While 58% of paid-employed males smoke, only 49% of self-

employed posses that habit. Picture for women is opposite, so that the share of smokers among self-employed women forms 20% and is almost twice higher than within paid-employed women (11%).

Just 1.4% / 4.3% of self- and 1.8% / 2.5% of paid-employed men and women evaluated their health condition as a bad one, while 7.6% / 6.7% of unemployed and 10.3% / 3.4% of non-active males and females gave the same answer to that question. However, bmi index revealed that the share of obese men and women among self- and paid-employed people is higher compared with unemployed and non-active ones. So the percentage of self-employed men and women with obesity amounted to 18% and 22%, shares of paid-employed obese people equaled to 14% and 22% respectively, while for unemployed and non-active the numbers were the following – 6% / 14% for unemployed and 9% / 17% for non-active ones.

[Table 3]

5. Estimation results

The main questions of interests are whether earnings differential is the main driving factor helping people to choose between working on someone and being an entrepreneur or there is also significant impact of other factors and whether this influence is different for men and women.

As it was mentioned above the estimation procedure consists of three phases. First, the reduced choice equation is estimated. Second, earnings equations, corrected for selectivity, are calculated in order to get the predicted earnings difference. Third, structural choice equation is obtained.

5.1 Reduced selection equation

The reduced selection model's results are presented in a Table 4. The main goal of this model is to estimate the selectivity terms, which are then used in order to obtain the corrected predicted earnings. However, some preliminary some results can be seen here. Self-employment, unemployment and non-active choices are compared to the base category, which is paid-employment here.

First we can see that other income has a positive impact on males' probability of becoming self-employed, which follows the literature. For women that factor also has a similar direction of influence and is also significant. Impact of different types of education is different. Only higher education degree has a positive and significant influence on the males' self-

employment choice. In case of female entrepreneurs, even though all types of education have positive signs, none of them is significant. Age as a proxy for experience is positive and significant for both men and women indicating, that older people get, the more likely they will switch towards self-employment. Impact of children existence is opposite for men and women, not significant though. Thus, the sign is positive for males and opposite for females. If we look at children's existence across various age groups of children, we see that the picture does not change in case of women. However, for men existence of children of a highest age group from 13 to15 years old has a negative coefficient.

Living in Minsk or some large city positively and significantly affects the men's propensity. This positive effect may be due to better infrastructure and wider possibilities for entrepreneurship in urban areas. For females residence in a urban area also has a positive and significant effect. Smoking as a proxy for risk factor is different for men and women. It indicates that less risk-averse women in the country are more likely to become entrepreneurs, as for men – the situation is opposite, which basically contradicts the literature (Eckel and Grossman, 2008; Croson and Gneezy, 2009).

Obesity as an indicator of health condition is positive and significant for men and insignificant for women. The probable explanation here is that in general men are more involved in physical work and overweight makes this work more complicated. However switching towards self-employment allows them choosing between other money-making options, which are suitable for them. On the other hand subjective measure of health status is positive and significant for women making them choosing self-employment.

Table 5 presents results of different tests. First, Small-Hsiao test does not reject the independence of irrelevant hypothesis (IIA) assumption and states that the usage of four separate choices (PE, SE, UE and NA) is appropriate here. Second, results of log-likelihood Wald and tests reject the hypothesis that the outcomes can be combined.

5.2 Earnings equations

The earnings equations are presented in Table 6. Log of annual income works as dependent variable here. The factors that affect people's choice but do not affect the earnings were excluded from the regressions. Some interesting results were obtained here. First, it appeared that education does not affect the level of earnings of self-employed men and women. The probable reason of such a result might that the education, obtained by entrepreneurs in

educational institutions years ago is not useful nowadays under conditions of economy in transition. As for the paid-employed males and females the obtained results were not surprising. The level of wages goes up with the increasing level of education. Second, age matters only for paid-employed men and women and has none significant effects of entrepreneurs' earnings. Type of residence is a very important factor affecting the level of earnings of both groups. Thus it follows the argument, that earnings in Minsk and urban area are higher in comparison to rural one. Existence of kids has a positive and significant effect only on the self-employed men. As for female entrepreneurs the direction of this factor impact is negative, insignificant though. The results follow the literature (Lundberg and Rose, 2000), that claims that children (and marriage) motivate men to work more, while women become more involved into their family life. As for paid-employed men / women, the sign of the coefficient is positive and is insignificant. Coefficients near year dummies show that the level of paid-employed men and women earnings was growing throughout the years, which proves the statistical numbers, as for self-employed men and women the signs of the coefficients are positive, mostly insignificant though. Regarding regional influence all of the regional dummies are significant in case of paid-employed men and women indicating that the level of earnings is lower in the regions compared with Minsk. Coefficient near the Brest region is the only exception showing that paid-employed male salaries are higher there than in the capital, which is quite a surprising result. As for the self-employed males and females, no significant impact of region was revealed.

As for the selection criteria (which are m1, m2, m3 and m4), they were obtained with the help of reduced multinomial logit model, presented above using the methodology offered by Bourguignon et al. (2007). Positive and significant coefficient of such a selection criterion in respect of some other provided choice (i) shows higher earnings than those of randomly chosen people because of allocation of respondents with poorer unobserved characteristics from this sector to sector i. For instance, positive and significant coefficient m2 in case of paid-employed men indicates that there is larger than random remuneration to men in paid-employed sector because of that males with better unobserved characteristics move from self- to paid-employment or because of allocation of men with worse unobserved features from paid- to self-employment. Thus the results show that paid-employed men and self-employed women are those who enjoy comparative advantages and that self-employed men and paid-employed women other non-pecuniary motivating factors that stimulate them choosing their status group (Hamilton, 2000).

5.3 Structural selectivity equation

Predicted earnings, computed in the previous step, allow us to find individual's difference in predicted earnings between paid-employment and entrepreneurship. This difference is included into structural selection equation together with all other factors that have an impact on choice. Thus the difference in earnings was used in estimation procedure as it is proposed by the theory. The obtained results (Table 7) show that for self-employed men the sigh of earnings differential is positive but insignificant, indicating that pecuniary benefits is not the main driving factor driving men into entrepreneurship. This finding is not in line with the results of previous research forother countries (Rees and Shah, 1986; Constant and Zimmerman, 2006), however still follows some (Georgellis and Wall, 2005). As for females, we obtained positive and significant sign of the coefficient, which is an evidence of the fact that difference in earnings between self- and paid-employment is one of the factors that determines women's choice. Thus, the higher difference between predicted earnings of self- and paid-employed is, the more likely women will turn into entrepreneurship..

As for other influencing factors, flows of other earnings positively and significantly affect men and women choice towards self-employment, which follows the literature (Constant and Zimmerman, 2006). Regarding educational impact, only high education has a positive and significant impact on propensity of both men and women to turn into self-employment. That is interesting to note that at the same time higher educational degree does not influence on the level of earnings of self-employed males and females. Thus, it might indicate that self-employed sector offers some unobserved alternatives that person is not able to see in paid-employed sector. As for the impact of age, it increases the propensity of both men and women to become entrepreneurs and this result is in line with previous studies (Rees and Shah, 1986). Besides, as the coefficient near age squared is negative and significant in case of both males and females, thus relation between age and propensity is non-linear. Urban residence positively influences the choice of men to become self-employed, but is no longer significant for women. Obesity still increases the chances of males to turn into entrepreneurship. Again this might indicate that the number of opportunities for males is higher in urban areas allowing men to be involved not just in physical labor, where overweight is an obstacle, but also in many other more suitable options. As for the risk factor –it is positive and significant in case of women, following the literature (Rees and Shah, 1986) that self-employed people are less risk averse. However it is negative and significant for men.

6. Conclusions

The goal of this paper was to answer the question whether monetary gains is the most important factor in terms of choice of a status in Belarus. The analysis was performed separately for working age men and women. According to the results, share of women that turn into entrepreneurship is more than two times lower compared with self-employed men in Belarus. The reasons motivating males and females into self-employment in the country are different, which affects the difference in self-employed shares.

Comparison of self- and paid-employed earnings revealed that self-employed earn around 1.1-1.3 times more than employees. Earnings' dispersion around mean is also larger in case of self-employed males and females. The principal finding of a study is that difference in the predicted earnings has positive effect on propensity of becoming self-employed for women. However, pecuniary benefits are not the significant factor in case of men.

An unexpected result is that though higher education degree does not affect the level of self-employed earnings of both men and women, it positively affects the propensity of turning into self-employment. Thus, there are some unobserved stimuli that motivate highly educated men and women to become entrepreneurs. Moreover, that might be the evidence that higher education obtained earlier does not meet the requirements and needs of the transition economy, where self-employed people are operating nowadays. .

Positive attitude towards risk (as proxied by past smoking) appears to be an important driving factor for self-employed women. However, risk loving negatively affects choice of males, which is a contradiction to the literature on that topic.

Given the increasing role of entrepreneurship in Belarus, the paper gives an intuition for understanding of what are the main driving factors for self-employment development in the country.

It appears that probably due to obstacles and still developing business infrastructure possibility to earn more is not the main driving force for males to become an entrepreneur, That could be useful for Belarusian authorities in order to make correct decisions regarding the development of this sector and implementation of stimuli for expansion of entrepreneurship initiative in the economy.

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APPENDIX

Table 1. Structural composition

%	Men	Women
PE	90.8	90.6
SE	3.3	1.4
UE	5.6	2.9
NA	0.4	5.0

Table 2. Description of earnings by gender and sector

	Male				Female			
	PE	SE	UE	NA	PE	SE	UE	NA
Income	420122 [284575]	466184 [438451]	37438 [97957]	11444 [40648]	320485 [228317]	419435 [363164]	24607 [53063]	14749 [39445]
Coefficient of variation	0.68	0.94	2.62	3.55	0.71	0.87	2.16	2.67

Table 3. Descriptive statistics

	Male				Female			
	PE	SE	UE	NA	PE	SE	UE	NA
Other income	29643 [91235]	60550 [169255]	29325 [90341]	11944 [34977]	34298 [89865]	41726 [114715]	22015 [89508]	20505 [102073]
Age	41 [12.2]	39.6 [10.1]	37.5 [11.9]	47 [9.3]	40.9 [11.2]	40.2 [9.9]	35.6 [11.4]	36.1 [10.6]
Kids	0.473	0.557	0.337	0.309	0.505	0.526	0.405	0.667
Child 0-5	0.192	0.241	0.131	0.088	0.191	0.168	0.152	0.407
Child 6-12	0.203	0.269	0.119	0.132	0.217	0.258	0.171	0.272
Child 13-15	0.205	0.221	0.165	0.132	0.223	0.261	0.178	0.196
Years of education	12.7 [1.9]	13.3 [2.0]	12 [1.7]	12.1 [1.4]	13.1 [1.9]	13.2 [1.8]	12.3 [1.7]	12.4 [1.8]
Primary	0.0006	0	0.0002	0	0.0009	0.0003	0	0.0001
Secondary	0.235	0.19	0.294	0.368	0.185	0.167	0.3	0.263
Vocational	0.535	0.492	0.532	0.544	0.55	0.592	0.522	0.544
High	0.194	0.305	0.088	0.074	0.244	0.235	0.116	0.132
Landplot	0.638	0.534	0.652	0.647	0.593	0.503	0.564	0.614
Smoker	0.579	0.492	0.714	0.647	0.108	0.199	0.207	0.169
Health status	0.018	0.014	0.076	0.103	0.025	0.043	0.067	0.034
Obese	0.14	0.179	0.064	0.088	0.219	0.216	0.141	0.172
Over	0.41	0.429	0.305	0.338	0.303	0.284	0.235	0.249
Normal	0.444	0.387	0.615	0.559	0.446	0.474	0.557	0.529
Under	0.006	0.005	0.016	0.015	0.032	0.026	0.067	0.05
Minsk	0.147	0.202	0.09	0.074	0.156	0.177	0.072	0.128
Large	0.263	0.333	0.275	0.132	0.28	0.327	0.341	0.239
Small	0.226	0.22	0.256	0.206	0.238	0.311	0.298	0.199
Rural	0.337	0.195	0.341	50	0.303	0.137	0.236	0.389
Brest	0.157	0.17	0.231	0.118	0.151	0.154	0.164	0.18
Vitebsk	0.141	0.126	0.135	0.177	0.141	0.118	0.152	0.149
Gomel	0.149	0.111	0.17	0.235	0.147	0.15	0.219	0.184
Grodno	0.122	0.135	0.099	0.074	0.125	0.157	0.105	0.105
Minsk and Minsk region	0.321	0.369	0.239	0.309	0.321	0.333	0.231	0.28
Mogilev	0.111	0.089	0.126	0.088	0.116	0.088	0.129	0.103
Observations	16277	585	1004	68	17884	284	580	982

Table 4. Reduced choice model

	Men			Women		
Coefficient	SE	UE	NA	SE	UE	NA
Other income	3.23e-06***	1.91e-06***	-3.51e-06	1.74e-06***	1.38e-06***	1.17e-06**
Secondary	0.353	-0.620***	1.264	1.327	-0.575***	-0.523***
Vocational	0.406	-0.845***	1.017	1.534	-1.059***	-0.845***
Higher	0.701*	-1.352***	0.269	1.317	-1.652***	-1.357***
Age	0.241***	0.0372	0.174	0.357***	-0.157***	-0.175***
Age2	-0.00323***	-0.000751**	-0.00129	-0.00476***	0.00164***	0.00212***
Minsk	0.410**	-0.171	-1.291**	0.549**	-0.547***	-0.181
Large	0.536***	0.0207	-1.410***	0.694***	0.306**	-0.401***
Small	0.186	0.200**	-0.718**	0.733***	0.432***	-0.411***
Desease	-0.185	1.569***	1.647***	0.623**	1.112***	0.651***
Kids	0.0210	-0.758***	-0.345	-0.256*	-0.707***	0.572***
Land plot	-0.0878	0.0265	-0.787***	-0.0424	0.0492	0.00598
Past smoking	-0.301***	0.381***	-0.0992	0.586***	0.619***	0.343***
Overweight	0.126	-0.411***	-0.616**	-0.0394	-0.198*	-0.161*
Obese	0.317**	-0.835***	-1.073**	0.000471	-0.377***	-0.196*
Underweight	0.107	0.389	1.045	-0.221	0.211	0.0906
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-8.257***	-2.058***	-10.43***	-12.45***	1.309**	1.034**
Observations	17934	17934	17934	19729	19729	19729

Dependent variable – is status choice
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4.1. Reduced choice model (by children age groups)

	Men			Women		
Coefficient	SE	UE	NA	SE	UE	NA
Other income	3.22e-06***	1.94e-06***	-3.50e-06	1.71e-06***	1.33e-06***	1.15e-06**
Secondary	0.359	-0.641***	1.257	1.317	-0.601***	-0.422**
Vocational	0.409	-0.868***	1.007	1.518	-1.093***	-0.723***
Higher	0.699*	-1.379***	0.250	1.302	-1.673***	-1.257***
Age	0.249***	0.0372	0.174	0.335***	-0.187***	-0.127***
Age2	-0.00331***	-0.000750**	-0.00128	-0.00446***	0.00205***	0.00159***
Minsk	0.409**	-0.191	-1.303**	0.540**	-0.561***	-0.141
Large	0.536***	-0.00516	-1.421***	0.682***	0.280**	-0.341***
Small	0.186	0.174*	-0.728**	0.722***	0.408***	-0.367***
Desease	-0.174	1.552***	1.648***	0.618**	1.117***	0.662***
Child 0-5	0.0689	-0.511***	-0.196	-0.196	-0.602***	0.698***
Child 6-12	0.0209	-0.577***	-0.101	-0.0704	-0.319***	0.233***
Child 13-15	-0.0762	-0.328***	-0.341	-0.105	-0.231**	0.0234
Land plot	-0.0810	0.0328	-0.780***	-0.0413	0.0560	0.0107
Past smoking	-0.300***	0.378***	-0.101	0.578***	0.609***	0.367***
Overweight	0.126	-0.410***	-0.620**	-0.0359	-0.190	-0.173**
Obese	0.315**	-0.837***	-1.080**	0.00310	-0.367***	-0.208**
Underweight	0.132	0.367	1.043	-0.223	0.209	0.110
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-8.416***	-2.069***	-10.46***	-12.09***	1.763***	-0.0330
Observations	17934	17934	17934	19729	19729	19729

Dependent variable – is status choice

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5. Diagnostic tests

Men						Women					
**** Small-Hsiao tests of IIA assumption (N=17934)						**** Small-Hsiao tests of IIA assumption (N=19729)					
Ho: Odds(Outcome-J vs Outcome-K) are independent of other alternatives.						Ho: Odds(Outcome-J vs Outcome-K) are independent of other alternatives.					
Omitted						Omitted					
	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence
2	-1962.112	-1937.964	48.296	52	0.620	for Ho	-2966.701	-2942.446	48.510	52	0.612	for Ho
3	-1433.161	-1408.557	49.207	52	0.584	for Ho	-2483.802	-2462.460	42.684	52	0.818	for Ho
4	-2982.300	-2963.572	37.456	52	0.936	for Ho	-1863.075	-1844.600	36.949	52	0.943	for Ho
1	-554.022	-529.929	48.187	52	0.625	for Ho	-783.960	-763.830	40.260	52	0.882	for Ho
**** LR tests for combining alternatives (N=17934)						**** LR tests for combining alternatives (N=19729)					
Ho: All coefficients except intercepts associated with a given pair of alternatives are 0 (i.e., alternatives can be collapsed).						Ho: All coefficients except intercepts associated with a given pair of alternatives are 0 (i.e., alternatives can be collapsed).					
Alternatives tested			chi2	df	P>chi2	Alternatives tested			chi2	df	P>chi2
2-	3		483.946	25	0.000	2-	3		208.576	25	0.000
2-	4		169.140	25	.000	2-	4		206.981	25	0.000
2-	1		277.921	25	.000	2-	1		111.846	25	0.000
3-	4		113.359	25	.000	3-	4		217.410	25	0.000
3-	1		596.510	25	.000	3-	1		429.213	25	0.000
4-	1		102.948	25	.000	4-	1		364.337	25	0.000
**** Wald tests for combining alternatives (N=17934)						**** Wald tests for combining alternatives (N=19729)					
Ho: All coefficients except intercepts associated with a given pair of alternatives are 0 (i.e., alternatives can be combined).						Ho: All coefficients except intercepts associated with a given pair of alternatives are 0 (i.e., alternatives can be combined).					
Alternatives tested			chi2	df	P>chi2	Alternatives tested			chi2	df	P>chi2
2-	3		419.586	25	0.000	2-	3		170.165	25	0.000
2-	4		151.489	25	0.000	2-	4		168.883	25	0.000
2-	1		286.317	25	0.000	2-	1		108.239	25	0.000
3-	4		92.357	25	0.000	3-	4		208.993	25	0.000
3-	1		571.407	25	0.000	3-	1		434.107	25	0.000
4-	1		99.156	25	0.000	4-	1		373.941	25	0.000

Table 6. Earnings equation

	PE		SE	
Coefficient	Men	Women	Men	Women
Secondary	0.0411	0.0652	-0.105	-0.150
Vocational	0.107***	0.165***	0.107	0.071
Higher	0.303***	0.487***	0.426	0.214
Age	0.0708***	0.0704***	0.0244	0.115
Age2	-0.000890***	-0.000711***	-0.000426	-0.00134
Minsk	0.477***	0.278***	0.511**	0.517*
Large	0.458***	0.137***	0.520**	0.601*
Small	0.326***	0.0778***	0.665***	0.672*
Kids	0.0194	0.0116	0.449***	-0.373
Brest	0.0413*	-0.0471**	0.229	-0.170
Vitebsk	-0.0573***	-0.0410**	-0.133	-0.221
Gomel	-0.0957***	-0.0961***	-0.168	-0.0714
Grodno	-0.0871***	-0.0800***	-0.245	-0.0206
Mogilev	-0.143***	-0.137***	0.0881	-0.336
2007	0.211***	0.130***	0.274	0.00379
2008	0.416***	0.337***	0.343*	0.119
2009	0.455***	0.469***	0.328	0.158
2010	0.718***	0.631***	0.172	0.486***
m1	4.353***	1.641*	0.701	-0.451
m2	4.142***	-0.450	0.942**	0.298
m3	6.333***	1.380*	4.366***	6.770***
m4	1.952***	2.600***	4.33**	3.976**
Constant	11.78***	10.94***	10.86***	9.714
Observations	15188	16302	459	239

Dependent variable – is log of annual earnings
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7. Structural choice model

	Men			Women		
Coefficient	SE	UE	NA	SE	UE	NA
Earnings difference	0.0580	0.308*	-1.882**	2.242*	-0.359	0.127
Other income	3.23e-06***	1.91e-06***	-3.51e-06	1.74e-06***	1.38e-06***	1.17e-06**
Secondary	0.359	-0.590***	1.081	1.334	-0.577***	-0.523***
Vocational	0.403	-0.859***	1.104	1.561	-1.064***	-0.844***
Higher	0.690*	-1.411***	0.633	2.021*	-1.764***	-1.317***
Age	0.243***	0.0465*	0.117	0.277***	-0.144***	-0.180***
Age2	-0.00325***	-0.000827**	-0.000825	-0.00361***	0.00146**	0.00219***
Minsk	0.407**	-0.187	-1.195**	0.0472	-0.467	-0.209
Large	0.523***	-0.0523	-0.964**	-0.432	0.486	-0.464
Small	0.173	0.127	-0.271	-0.392	0.612	-0.475
Desease	-0.185	1.569***	1.647***	0.623**	1.112***	0.651***
Kids	-0.00466	-0.895***	0.487	0.511	-0.830***	0.615***
Land plot	-0.0878	0.0265	-0.787***	-0.0424	0.0492	0.00598
Past smoking	-0.301***	0.381***	-0.0992	0.586***	0.619***	0.343***
Obese	0.317**	-0.835***	-1.073**	0.000471	-0.377***	-0.196*
Overweight	0.126	-0.411***	-0.616**	-0.0394	-0.198*	-0.161*
Underweight	0.107	0.389	1.045	-0.221	0.211	0.0906
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-8.186***	-1.679***	-12.75***	-10.29***	0.964	1.157
Observations	17934	17934	17934	19729	19729	19729

Dependent variable – is status choice
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table7.1. Structural choice model (by children age groups)

	Men			Women		
Coefficient	SE	UE	NA	SE	UE	NA
Earnings difference	0.126	0.432**	-2.049**	2.455*	-0.373	0.221
Other income	3.22e-06***	1.94e-06***	-3.50e-06	1.71e-06***	1.33e-06***	1.15e-06**
Secondary	0.358	-0.643***	1.268	1.200	-0.583***	-0.432***
Vocational	0.381	-0.965***	1.464	1.415	-1.077***	-0.733***
Higher	0.652*	-1.541***	1.021	2.247**	-1.817***	-1.172***
Age	0.250***	0.0428*	0.148	0.403***	-0.197***	-0.121***
Age2	-0.00332***	-0.000773**	-0.00118	-0.00508***	0.00214***	0.00153***
Minsk	0.399**	-0.229	-1.127**	0.189	-0.507*	-0.172
Large	0.496***	-0.144	-0.763	-0.553	0.467	-0.452
Small	0.145	0.0356	-0.0704	-0.513	0.596	-0.478
Desease	-0.174	1.552***	1.648***	0.618**	1.117***	0.662***
Child 0-5	0.0374	-0.619***	0.316	0.798	-0.753**	0.787***
Child 6-12	-0.0118	-0.689***	0.430	0.205	-0.361**	0.257**
Child 13-15	-0.0979	-0.402***	0.0114	0.129	-0.267*	0.0443
Land plot	-0.0810	0.0328	-0.780***	-0.0413	0.0560	0.0107
Past smoking	-0.300***	0.378***	-0.101	0.578***	0.609***	0.367***
Obese	0.315**	-0.837***	-1.080**	0.00310	-0.367***	-0.208**
Overweight	0.126	-0.410***	-0.620**	-0.0359	-0.190	-0.173**
Underweight	0.132	0.367	1.043	-0.223	0.209	0.110
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-8.196***	-1.317**	-14.03***	-15.84***	2.334*	-0.371
Observations	17934	17934	17934	19729	19729	19729

Dependent variable – is status choice
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1