On Female Labour Force Participation and their Job Remuneration in Transition: Evidence from Belarus

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Abstract[∀]: Unlike in many other transition countries, where the gender pay gap was rather stable or slightly reduced while female employment and activity rates contracted, in the case of Belarus women' activity rate has been remarkably stable, while wage differentials have increased. This paper inquires why this is the case by looking at the determinants of female labour force participation in 1996 and 2001 (data from the Belarusian Household Survey). The selectivity corrected wage equation is estimated to compute an expected wage offer for women. The latter is included, as a regressor in the structural female labour force participation equation, estimated by probit. The demand and supply side measures of facilities to care for children and elderly people, being a proxy for the opportunity cost of working, do affect female participation, without generating sample selection mechanisms though. The attained elasticities of female participation to wages are high and positive, also pretty stable over the period considered.

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Introduction

In their study of female participation during transition, Paci and Reilly (2004, p. 130) notice that much attention has been lent in the literature to women' wages and the gender wage gap (GWG since now), whereas, with few exceptions (see, for instance, Saget, 1999), little systematic work has been undertaken on the determinants of female labour force participation. However, as well known, these two issues are closely related to each other and should therefore be treated jointly.

Although with some exceptions[1], a general finding of the literature on gender pay gap during transition is that it is stable or slightly declining compared to the pre-transition period. In principle, labour supply considerations would suggest that lower gender pay gap be accompanied by increasing female compared to male participation. However, this was not the case and, in fact, the former has been declining for a long time all over Central and Eastern European Countries (CEECs) as well as in the Commonwealth of Independent States (CIS), though from a high of over 80%, which has rarely been reached in advanced economies. As noted, among others, by Hunt (2002), a general cause of declining gender pay gap in East Germany was the reduction in female participation rates, through sample selection mechanisms. In other words, the causality chain would run in the opposite direction of that commonly hypothesised. It was not the reduced gender pay gap to cause reduced female participation, but rather reduced female participation to yield an *apparent* reduction in the gender pay gap.

Privatisation of state-owned enterprises (Paci and Reilly, 2004) or also the simple process of liberalisation of wage setting mechanisms and a general weakening of employment protection

[1] In fact, as noted also in Paci and Reilly (2004), there is not a full consensus on this issue. For instance, Joliffe and Campos (2005) hold a different view and find that the gender pay gap dramatically reduced in Hungary over the period 1986-'98. In a similar vein, Brainerd (2000) find that the gender pay gap has dramatically reduced in CEECs, but has increased in Russia and Ukraine. The interpretation she provides is that in these latter countries, women have been penalised by the tremendous widening of the wage distribution. At the same time Pastore and Verashchagina (2007) find an increase in GWG over the recent decade in a neighbouring Belarus, even though there was practically no change in wage inequality over the period considered.

legislation (Munich, Svejnar and Terrell, 2005)[2] would be the *causa causarum*. They would have caused increasingly hard budget constraints for firms (and consequently also for households), forcing hence the least motivated and skilled women from low wage employment into inactivity. This would give the fake impression of an increase in female wages and a reduction in the unexplained gender wage gap: in fact, women average wages were declining when considering also those who had become unemployed or inactive. The ensuing literature has confirmed this finding in the case of several transition countries (Orazem and Vodopivec, 1997, for Slovenia; Oglobin, 1999, for Russia; Paci and Reilly, 2004, for Albania, Bosnia-Herzegovina, Bulgaria, Poland, Serbia, Tajikistan, Uzbekistan; Pastore and Verashchagina, 2005, for Belarus).

This paper aims to investigate the issue now outlined in more depth for the specific case of Belarus. In previous studies, Pastore and Verashchagina (2005) found a persistent gender pay differential, though slightly lower than in neighbouring Russia and Ukraine. This finding correlates well with the lowest Gini coefficient in the CIS found for Belarus. Overall, this findings are the consequence of one of the main peculiarities of the Belarusian economy, where privatisation of state-owned enterprises and liberalisation of wage setting mechanisms have been both very slow compared also to other CIS countries, not to mention CEECs.

However, previous studies on Belarus did not consider female labour market participation and its determinants, which is the focus of this study. The evidence provided in section 2 shows that women participation in the labour market in Belarus has been remarkably high at over 80% and stable during the transition, especially compared to other transition countries. The obvious question is why participation did not decline in Belarus? Is this an achievement or a sign of increasing hardship for households? What types of difficulties did women experience and how are they changing their working life strategies? Are such difficulties evenly distributed among women or do

[2] According to Brainerd (2000), transition has meant a liberalisation of wage setting mechanisms especially in the CIS republics, whereas the objective of macroeconomic liberalisation in CEE has pushed governments to put in place wage setting mechanisms, such as wage fixing, minimum wages and unemployment benefits, which would have partly hindered the free working of market forces.

they concentrate in particular categories of women? And in the latter case, which are the weakest segments of women?

The high participation rate of Belarusian women mirrors the permanence of the two-bread winner family scheme, which prevailed in all socialist countries before transition. At the same time, household income experienced increasingly hard budget constraints due to the contraction, especially at the eve of transition, of real wages, public and firms' expenditure in the care of children and elderly people. Such economic tensions are forcing women to rethink their strategies to reconcile working and reproductive activities. First, the fertility rate of Belarusian women is dramatically declining and the divorce rate increasing. Second, having children has meant for many women to segregate themselves in occupations with a low level of commitment in terms of working time, but often with low pay and low career perspectives. Third, this has happened also through the typical pre-market mechanisms of gender differentiation, such as the tendency to choose educational types, which can be spent in low wage sectors only.

The paper is structured as follows. Section one provides a survey of the literature on female labour force participation and wages in transition economies. Section two provides descriptive evidence on labour market position of women in Belarus. Section three illustrates the methodology implemented and the data used, including the definition of variables. Section four discusses the results, whereas section five puts them into the context of the relevant literature and draws some policy implications. The final section concludes on the main finding of the entire paper.

1. Female participation and wages in transition countries. A literature survey

The literature studying gender differences in the labour market during the eve of economic transition has mainly focused on wage differentials, returns to education, and their evolution over time. A recent paper by Munich, Svejnar and Terrell (2005) phrases the enquired question as: "Is women's human capital valued more by markets than by planners?" More generally, many studies

asked whether market liberalisation increases or reduces gender differences at the labour market. Other related questions were: What role did pervasive welfare systems exert to prevent gender differences in the communist period? How would increasingly hard budget constraints on both the state administration and the private sector affect women' wages? With the end of communism many observers thought that it was the right time to ask this type of questions in non-ideological way.

As noted, among others, in Atkinson and Micklewright (1992), Katz (1997; 2002), Ogloblin (1999), Brainerd (2000), Paci and Reilly (2004), Joliffe and Campos (2005), and Pastore and Verashchagina (2005), under central-planning the system of wage and price setting was aimed at equalising wages for all, requiring in fact that both adults in every family would have to work in order to maintain a basic standard of living[3]. At the same time, women had a wide range of rights and privileges at work, such as, for instance, full-paid maternity leaves. Moreover, big enterprises provided kindergartens, schools and health care facilities for common use. As a consequence, in many centrally planned economies, women's labour market participation was high and gender pay gaps low in comparison to many Western economies. For example, in the former Soviet Union (FSU) and CEECs, female participation rates were regularly over 85 percent, a rate rarely observed elsewhere.

There were also grey sides, though, especially the phenomena of horizontal and vertical segregation. The revolution in gender relations, which is on-going in the last decades in mature market economies and has brought about a slow but noticeable shift in the household division of labour, never happened in the communist countries. As a consequence, in terms of occupations and industry branch, women and men were at least as segregated as in the West. Moreover, Eastern women undertook a very large share of domestic duties, having then less time to pursue a career than men. In fact, similar to the case of mature market economies, relatively few women held senior positions.

[3] Kornai (1992, Ch. 10) provides a suggestive explanation of why this was the case everywhere under communist regimes. As He puts it, the socialist system had a preference for labour intensive production processes with the double intent to extract the entire possible surplus from manpower and at the same time to maintain social and political control. In this type of system, working was almost a duty, rather than a right. This was true independent of gender.

The process of economic transition in CEE and the FSU countries is drastically changing the working profiles of women, re-assessing their lifetime decisions in such matters as when and whether to start a family, whether to participate in tertiary education and/or seek gainful employment. Privatisation of state-owned enterprises (Paci and Reilly, 2004) or also the simple process of liberalisation of wage setting mechanisms and a general weakening of the employment protection legislation (Brainerd, 2000; Munich, Svejnar and Terrell, 2005)[4] at the labour market would be the determinants of such changes.

Most observers foresaw reduced female labour force participation *and* wages as a consequence of market liberalisation, assuming that in a market economy the least motivated women are forced out of market by reduced social assistance for children and elderly people. Moreover, the increasing complexity of the production structure would push the least skilled women to pool into female dominated sectors, such as state administration and public services, where employment protection is higher and wages are lower. Along the same line of reasoning, many were expected to opt for part-time work to trade low wages in exchange for free time.

Were these predictions correct? Overall, how did these changes affect women' labour market participation and wages? Answer to this question is essentially an empirical matter. And in fact this question has stimulated a now large empirical literature. What does the empirical evidence tell us? A majority of observers noted that the gender pay gap has been stable or slightly declining during transition and also compared to the pre-transition period. Newell and Reilly (2001) find this for a large number of CEE and CIS countries. Munich, Svejnar and Terrell (2005) argue that returns to education increased by the same amount for men and women in the Czech Republic from the late 1980s to the early 2000s, leaving substantially unchanged conditional and unconditional gender differences. Most part of the increase happened in the early 1990s after price and wage liberalisation, when privatisation was still at the beginning. Adamchik and Bedi (2003a; 2003b) find

[4] According to Brainerd (2000), transition has meant a liberalisation of wage setting mechanisms especially in CIS republics, whereas the objective of macroeconomic liberalisation in CEE has pushed governments to put in place wage setting mechanisms, such as wage fixing, minimum wages and unemployment benefits, which would have partly hindered the working of market forces.

similar results for Poland over the period from 1993 to 2001. Joliffe and Campos (2005) claim that the gender pay gap has dramatically reduced in Hungary over the period 1986-‘98. This evidence would line towards the hypothesis that women’ economic conditions have improved, not worsened during transition. Even a stable gender pay gap would be a satisfactory result, in fact, if one considers the enormous loss of welfare caused by economic restructuring.

Brainerd (2000) was the first to note important country differences: she found that the gender pay gap has dramatically reduced in CEECs, but increased in Russia and Ukraine. In these latter countries, women have been penalised by the tremendous widening of the wage distribution happened in the early 1990s. According to Paci and Reilly (2004), it could be the particular types of data that she used and the pre-transition year chosen as a term of reference that drive Brainerd’s results. But then also Anderson and Pomfret (2003) and also Pastore and Verashchagina (2007) find a similar pattern of increasing GWG for Kyrgyzstan and Belarus correspondingly. Still the opinion prevailing in the literature remains that the gender pay gap remained stable or slightly declined during transition, while returns to education increased for women.

In principle and based on labour supply considerations, one would have expected that lower gender pay gap and increased returns to education should be accompanied by increasing participation of women relative to men. However, this was not the case and, in fact, female participation has been declining for a long time over almost all emerging market economies in eastern Europe, though from a high that has rarely been reached in mature market economies. As noted, among others, by Hunt (2002), a general cause of declining gender pay gap could be, in fact, the reduction in female participation rates, through sample selection mechanisms. In other words, the causality chain would be just the other way around compared to that commonly hypothesised based on labour supply considerations. It was not the reduced gender pay gap and increased wages for women to cause increasing female participation, but rather reduced female participation to yield an apparent reduction in the gender pay gap and increase in women’ wages.

In other words, the driving force behind the observed changes – increased wages *and* reduced employment (and participation) – was not increased *demand* for female labour, but rather reduced *supply* of female labour. Obvious reasoning suggests that changes in the same direction of employment and wages happen along the supply curve and are demand driven, whereas changes in the opposite direction of employment and wages happen along the demand curve and are supply driven. Market liberalisation (and perhaps also privatisation) would have caused increasingly hard budget constraints for firms (and consequently also for households), forcing the least motivated and skilled women from traditionally low wage employment into inactivity. This would give the fake impression of an increase in female wages and a reduction in the unexplained gender wage gap: in fact, women average wages were declining, not increasing when considering not only employed women, but also those who had become unemployed or inactive.

Ascertaining whether this was the case is a matter of empirical investigation. In fact, a number of studies in the ensuing literature have tested the hypothesis whether employment reduction was random or, rather, distributed in an asymmetric way against low skill, low motivated women. The usual procedure to test the hypothesis that the reduction in participation has affected in particular the least motivated women has consisted of estimating returns to education corrected for sample selection mechanisms. This literature has neither been unanimous in terms of methodology nor of results. Table 1 gives a synoptic view of the main results of this literature. Obviously, the results may change for various reasons and, therefore, information is provided for a number of studies relative to transition countries on several aspects:

a) the country, data source and year;
b) the type of sample. The sample includes all women in some studies, but only a selected fraction of them in others;
c) the value and significance level of γ, ρ and λ, when available;
d) whether the estimates were carried out using a two step procedure or a maximum likelihood simultaneous estimates and whether the author(s) carried out the test for the normality of

residuals and collinearity suggested in Puhani (2000). Some studies adopt a three step approach like the one followed here, whereas in addition to the reduced form model of participation and wages based on selectivity, also a structural participation equation is estimated;

e) the instruments used to identify the parameters in the selection equation;

f) whether the authors apply the rule that the variables in the main and selection equation should be the same, with the exception of instruments for female participation. Mention is made also as to whether the authors adopt a short (include only the regressors defined for the selection equation) or a long (include all the regressors defined for the main equation) specification;

g) whether the returns to education are reduced, increased or remain the same in the wage equation with selection correction compared to the OLS estimate;

h) the value of the wage elasticity.

Beyond the methodological differences and the large variety of instrumental variables used, two main streams of literature can be identified. On the one hand, some studies (Orazem and Vodopivec, 1995; and 1997; for Slovenia; and 2000, for Estonia and Slovenia; Jolliffe, 2002, for Bulgaria; Pastore and Verashchagina, 2005, for Belarus) have found that, when detected, sample selection mechanisms do cause a reduction in returns to education whose actual size differs across countries. In several other cases, however, sample selection was not detected and the OLS coefficients of human capital remain unchanged (see, for instance, Saget, 1999; Ogloblin, 1999; and Katz, 2002, for Russia).

[Table 1 about here]

Paci and Reilly (2004) find that female labour force participation is influenced by the household's wealth, as proxied by the household's expenditure, for some, if not all of a group of Balkan and other CEE countries. The relation is, in most cases, inversely u-shaped: for incomes levels at low quantiles of the income distribution, female participation is low; it tends to increase for

middle quantiles, before declining again for the highest quantiles. Based on this relationship, the authors suggest that an increase in income levels in the near future should cause an upsurge of female participation. Saget (1999), instead, finds that the household income has no affect.

Pastore and Verashchagina (2005; and 2006b) focus on Belarus, which is a particular case in as much as the empirical evidence suggests that the returns to education were high during the transition period, although this happened not as a consequence of privatisation, but rather of the redistribution caused by price liberalisation. Therefore, rigidly controlled wage grid could not prevent low educated and low skilled workers to loose part of their main wages during the process of hyperinflation. However, as a consequence of such depreciation of low skill wages, a widespread system of subsidies contributed to compensate low wage groups, mainly with in-kind fringe benefits. In addition, firms maintained the pre-transition commitment to almost full employment.

Pastore and Verashchagina (2006a) estimate the unconditional gender wage gap in Belarus as equal to 16% in 2001 and find that the returns to education for women are generally higher than for men. Using the same data, Pastore and Verashchagina (2006b) aim to understand how the relative pay position of women in Belarus is changing over the period of reforms. If women losing their jobs were chosen among the least skilled, the average wages of employed women should be increased. Also in this case gender differences in the returns to education should disappear when controlling for sample selection bias. They provide evidence based on maximum likelihood estimates of the Heckman procedure. As a result, the returns to education of Belarusian workers are generally reduced by a certain amount though the corrected coefficients are still remarkably high for a transition country. The annual rate of return to post-compulsory education is around 8% for those who reached university education, while the annual return to work experience reduces to 3–4%. The returns to education of women become lower than those of men in 1996, but not in 2001. The gender discrimination coefficient is stable. Pastore and Verashchagina (2005) provide a more systematic treatment of the gender pay gap in Belarus using a new release of the BHSIE including such newly available information as the working hours, the civil status and the sectors of industry.

2. Methodology and data

The determinants of female labour force participation have been studied using two approaches.

The first approach consists of the maximum likelihood estimate for the reduced form selection equation and the selectivity corrected wage equation. As observed in section one, this is the typical exercise that also other studies have carried out to assess the impact of reduced female participation on wages during the process of economic transition.

The second approach is by using the expected wage women can obtain based on their characteristics as a proxy for their reservation wage at the second stage of the analysis. The use of a sample selection procedure allows computing the expected wage for non-employed women. The structural female labour force participation equation is used to test for the impact of the reservation wage on female participation. This is estimated by PROBIT and includes as independent variable also the reservation wage computed based on the selectivity corrected wage equation.

We start with the Heckman procedure (Heckman, 1979) in order to verify whether there is space for sample selection, and controlling for that predict the wage offer for an individual. Together with a set of other variables it is used afterwards to estimate the probability of female participation in the labour market. The structural participation equation is the following:

$$Prob[p_i]=f(Z_i,w_i), \qquad i=1,\ldots,N$$

where $p_i=1$ if the woman participates into the labour market;

Z_i is a vector of characteristics that are assumed to affect female participation;

w_i - predicted wages.

Though used more and more frequently, the correct specification of the model is subject to several contrasting interpretations. According to Wooldridge (2004), for instance, as a rule all of the

variables included in the main equation should be also included in the selection equation. This is important for the identification of the model. This general rule has been interpreted in different ways. For instance, Pastore and Verashchagina (2005), define the set of variables included in both equations using those defined for the main wage equation. Similar to Paci and Reilly (2004, §5.17, p.124), this study, instead, ends up into exclusion from the selection equation of such variables like sectors and branches of work that are not defined for unemployed or inactive women.

The econometric analysis is based on the Belarusian Household Survey of Incomes and Expenditures, elicited quarterly by the Ministry of Statistics and Analysis. Table A.1 of the Appendix provides summary statistics of all the variables used in the econometric analysis, thus giving also an idea of the questionnaire used in the survey.

Additional regressors have been introduced as compared to Pastore and Verashchagina (2005). Also the dependent variable is defined in a different way. Two types of information on wages are available in the BHSIE. First is the wage declared by the respondents, which for the available data is that declared at the fourth quarter interview. Second is an average wage computed by the National Statistical Office probably to control for hyperinflation, considering answers to the four quarters of the survey. Due to the lack of information on the way this average value is computed, we opted for using the respondent's answer at the end of the year. The questionnaire asks about the monthly wage, but this has been transformed into the log of hourly wage: this last has been obtained as usual by dividing the monthly wage by declared weekly hours times 4.3. This allows also accounting for the difference in the hours worked between men and women. The alternative way to do that is by incorporating dummy variable for part-time workers (less than 40 hours per week), or otherwise using log of working hours as an explanatory variable. In fact, hourly wage rates are not widely used in Belarus, and the calculation procedure may introduce some distortions, for example by excluding around 200 observations for those who do not report hours of work. Having this in

mind, we prefer to control for both monthly and hourly wages. The fact that they sometimes produce different results (see Heckman procedure) deserves further insight[5].

The most difficult task to correctly perform the sample selection procedure is to find proper instruments for the participation equation. As well-known to applied economists, given the interrelation between wages and participation, it is almost impossible to find variables which affects participation without affecting wages. Moreover, data limitations might be sometimes impossible to overcome. Also in the case of this study, the available data set is unfortunately limited.

As already noted, since certain variables that usually enter augmented earnings equations, but are not defined for those who are unemployed or inactive, should be excluded from the estimates, overall, three types of determinants of female participation are considered. First are the individual characteristics, such as the level and type of education attained, age, marital status and, finally, regional dummies. The latter have not been reported for space constraints.

Apart from using age and age groups, we try different definitions of work experience, starting with values declared by the respondents (actual work experience). However, the actual work experience measure has several drawbacks: first, many observations are missing, which cumulate with missing observations on wages and education; second, only employed women declare actual work experience. Therefore, also the potential work experience (PWE) is computed in the usual way: age – years of study – six, which is the age, when schooling starts in Belarus. We experiment as well with a non-traditional definition of work experience, as defined in Munich, Svejnar and Terrell (2005). This is obtained by deducting from a standard PWE the number of children multiplied by three. This definition aims to account for the child leave as defined in the Labour Code of the Republic of Belarus, which is provided until the child is 3 years old. Even though this measure can understate the real values in case of overlapping of three-years periods taken for two

[5] The calculation of hourly wages forces us to loose some information compared to using monthly wages, since some individuals refuse to give this information. Additionally, since in some cases people declare unusually low wages and unusually high working hours, the variable has been truncated to exclude outliers, defined as those with wages higher or lower than the mean by 3-times the standard deviation of the distribution.

children born one after another. Note that in the standard version of the estimates, age groups substituted PWE in the selection equation.

We use the dummy for the "new degree", which intends to control for the quality of higher education diplomas, attained during the period of reforms (90-s and later on), or otherwise their recognition and appraisal by the employers. This variable is constructed on the basis of the information about age and possessing university diploma[6].

Second, the instruments used to identify the selection equation represent an important part of the wage offer estimates. The choice of instruments is always problematic, because it is always difficult to identify factors that affect participation without affecting wages. The focus has been placed on two groups of factors, household and region-specific, that should affect the opportunity cost of working.

The former are drawn from the BHSIE itself and have been obtained merging the data relative to individuals and those relative to households. They include "*age when the first child was born"*, which presumably affects the early stages of a woman' carrier. All over transition countries, the age of the first marriage and child is dramatically increasing as a sign of the increasing importance of maternity as a factor able to affect women participation to the labour market or their career perspectives. Nonetheless, as shown elsewhere in this paper, this data is stable in the case of Belarus. Of course, also in this case, it is doubtful whether this variable does not affect wages: having had children early means putting less effort in the development of human capital and therefore having less productivity. In addition, the age of first child is itself affected by numerous economic and cultural factors, specific for the period of reforms. Nonetheless, our reasoning is that once decided to have children at a given age, this represents a sufficiently independent factor to

[6] Unfortunately, the BHSIE does not allow us to distinguish between private and state universities. This is a peaty, because whereas graduates of state universities are provided with a guaranteed place of work at state enterprise, even though not always high paid, those graduating from private universities can only rely on themselves to find a job. However, this means that they might have different attitude towards studying, having in mind the acquisition of specific, high-valued skills, at least at the time of attaining their degree.

affect women participation. Here we also distinguish between those, who are under 30 from the rest of the sample, since the effect of birth of the first child may reduce with the woman' age.

Second, we test also whether *the number of children under-5* in the family reduces the probability for a woman to be employed, unless there is help provided at the household level. Third, the *number of dependent children* tends to control for predisposition of women to opt for maternity compared to labour market participation. This is a sensitive issue nowadays in Belarus, considering that the fertility rate is dramatically reducing.

A fourth factor, which may effect women participation into the labour market, is the *presence of elderly people* (over-60) in the family. Even though the effect may be twofold. On the one side, old people may need special care, forcing somebody to provide constant care and therefore reduce participation into paid work. On the other hand, grandparents tend to look after small children and thus on the opposite make it easier for young mothers to insert into the working environment. This two hypothesis are difficult to treat separately in our data. However, we use the overall number of old people to test for the presence of the latter effect and interact this variable with the declared health status of elderly people to catch the former effect.

A fifth factor is whether the household enjoys *child allowances* intended to account for state support provided to families in bringing up their children. Even though the amount of money paid is not really big[7], thus we intend to control for how in reality it is helpful for women. This can also shed some light on the differences in the share of women employed into the state and private sector, while the latter tend not to provide any child allowances.

The last factor at a household level is the household consumption, considered a proxy for family wealth (see Paci and Reilly, 2004). The hypothesis to be tested is then whether the members of poorer families tend to be more engaged into the working process due to necessity rather than choice. This variable is expected to shed light on the discussed linkage between the female participation and poverty issues at the household level.

[7] In Aprile 2007 it was at the range of 50 USD.

Important would be to check as well for the presence of non-linearity's in the effect of this variable on participation. To do that we create a set of dummies for the 10^{th}, 25^{th}, 50^{th} 75^{th} and 90^{th} percentile as for the log of total household expenditures. We also check for the effect of moving alongside expenditure distribution by constructing splined function.

Another instrument at the household level used in the estimate is the logged difference between the total household income and the respondents total monthly income, which intends to account for the person's contribution to the household income which would also determine the roles within the family. Some recent studies (Cagatay, 1998; Valenzuela, 2003) discuss on the determinants of poverty, linking it with the female dominance in the family. In fact belarusian data makes us think that it may be relevant for our case study. About half of the households are reported to be female dominated, which can be as well a subjective phenomenon. Still it deserves more attention to provide some guidance on the ways to combat poverty.

The second set of variables is created on the basis of the official statistics, at the regional level, and was meant to provide exogenous determinants of women participation (see Table A.1 of the Appendix). Among them the percentage of the population younger than 16 in the overall population, in log terms, as well as the percentage of the population older than the working age. Percentage of children attending preschool establishments, number of pupils attending general education, as well as secondary specialised educational establishments, number of hospital beds per 1000 of population. All these variables were intended to control for the demand and supply factors of female participation.

Anticipating the results, which will be discussed in detail in the following sections, we should say, that sample selection procedure tends to be very sensible to the type of instruments used, as well as the dependent variable chosen. Finally, the structural wage offer equation includes all the variables included in the selection equation of the Heckman procedure plus the expected level of wages a woman can obtain, which is expected to affect positively participation. The expected wage is predicted on the basis of estimates of Heckman selection procedure.

3. The labour market position of women in Belarus

How did economic transition affect female participation and wages in Belarus? Recall from the introduction that economic transition brought about price, but not wage liberalisation in the case of Belarus. In fact, firms are mainly state-owned and also the small private sector follows the state directives in determining wages.

From the viewpoint of this paper, another important specificity of the Belarusian case is that women have maintained very stable labour market participation during the transition. Table 2 documents this by showing that since the mid-1990s until 2004 the economically active population of working age (below 55 for women and below 60 for men) has always been above 80%, which is one of the highest rates in the region, not much far from that of the pre-transition period. This data is in contrast with that of other transition countries, including the CIS republics, where participation rates have universally declined by two-digit figures during transition generally from a high of about 80% (Paci and Reilly, 2004, Tables 3.5 and 5.2).

[Table 2 about here]

Notice also in Table 2 that the unemployment rate based on the BHSIE is relatively low[8], fluctuating between 5.5 and 7.3%, and cannot explain the high activity rate, which depends essentially on the high employment rate. Women have a lower activity rate compared to men, but this is the consequence of lower unemployment, rather than of lower employment. Indeed, the female is higher than male employment.

[8] The official unemployment rate computed by the Ministry of Statistics is much lower. The discrepancy between official and BHSIE unemployment has two explanations: first is the fact that the official rate is computed using the registered unemployed, a number generally lower than that found in sample surveys; second, the number of unemployed is divided by the over-16 year old population, a much bigger number compared to the population of working age, as suggested by the ILO. Moreover, since men are usually less active in registering at the employment register than women, the official male unemployment rate is reported to be lower than the female unemployment rate. This is the opposite of what is found in the BHSIE.

One of the main reasons why the activity rate has remained so stable over the last decade[9] is the fact that privatisation has never taken off allowing the state to keep strict control over the economy. The World Bank (2002) suggested that in 2001 no more than 11% of employment was in private firms. The EBRD (2004) reckons that the share of the private sector in Belarus' GDP was only about 25%, the lowest in the area together with Turkmenistan. Table 3 provides the statistics available from the BHSIE on the share of private employment. Unfortunately, the BHSIE does not allow a definition of firm's ownership that is clear and consistent over time. One question asks about the "type of employer" and Table 3 provides the distribution of answers. The employment share in the private sector amounts only to less than 5%. Another small share of around 3.5% are registered as working for "individual entrepreneurs" (small business).

[Table 3 about here]

In turn, the state's ability to keep control over firms has meant that the concept typical of the socialist times according to which providing employment to labourers is a right of labourers no matter the cost for firms is still alive and commonly accepted. Moreover, similar to the pre-transition period, only rarely firms go to bankruptcy, which mitigates flows from employment to other labour market statuses. Nonetheless, as noted in Pastore and Verashchagina (2006b), price liberalisation has contributed to generate several notable changes to the Belarusian labour market. The process of feminisation of some industrial sectors is one of them. It might happen through job-to-job moves of relatively large shares of workers. Inspection of Table 4 highlights that important shifts in the gender composition of employment across industries happened from 1996 to 2004. In 1996, the share of employment by gender seems to be quite even, also in sectors that are female dominated in almost every country and also in Soviet Union times (Katz, 2002). The table provides not only the share of employment by gender, but also the share of the sector' over total employment and the ratio of the sector to the average wage. The sectors where female employment has increased include services, such as Trade and Catering, Education and Health care, where wages are about ten

[9] In other transition countries, the activity rate has decreased, sometimes dramatically, especially for women.

percent below average and, in some cases, such as Trade and catering, are dramatically shrinking. Conversely, the share of women employed in the manufacturing sector, where wages are generally about 10% above the average, has declined from 51 to 44 percent. Similarly, female employment has dramatically decreased in the high wage sectors of Transportation and Communication and Construction. Conversely, some changes, such as the reduction of female employment in the very low wage Agriculture and fishery, are in the direction of an increase in the average female wages. The overall impact of these shifts on average gender gap is difficult to assess here and is also conditional on other differences in productivity of individuals who stay and those who leave. The analysis implemented in Pastore and Verashchagina (2007) relying on Juhn, Murphy and Pierce (1991) decomposition of change of the GWG over time provides a tentative answer to this question.

[Table 4 about here]

Table 5 gives evidence of the fact that the process of feminisation is taking place also before labour market entry. The table contains the distribution of people with tertiary education by subject of degree and gender in 1996 and 2001. The last column reports the conditional wage effect of each type of diploma as obtained in estimates of augmented earnings equations in Pastore and Verashchagina (2006b, Table 5). The figures are averages of the 1996 and 2001 coefficients. Note that the wage effect of military school is low, because it is partly caught by a separate dummy (45% higher wage than average): the overall wage effect of attending a military school is therefore higher, not lower than that of other subjects' degrees.

On the one hand, one may observe that, similar to other countries worldwide, also in Belarus women' access to tertiary education has increased dramatically. In recent years it has been even proportionally higher resulting in almost equal composition of skilled labour force by gender. According to the population census 17 out of 1000 men had higher education in 1959, 78 in 1979 and 141 in 1999. The corresponding figures for women are 15, 63 and 139 (MSA, 2003).

Nonetheless, on the other hand, women tend also to get a university degree in such fields as pedagogic studies and humanities, subjects necessary to access jobs that are typically occupied by

women and pay a relatively lower return also in Belarus, as shown in the previous discussion on Table 4. In addition, in both years, the share of women holding a degree in economics, medicine and natural sciences is higher than average, whereas it is lower than average in engineering, military school and agriculture. There are little changes in the distribution of women according to the subject degree over the period considered, which suggests a further strengthening of the existing pattern.

[Table 5 about here]

Certain changes worth noting have happened at the household level as well. According to the BHSIE, the share of Belarusian household heads that are reported to be female has increased from 53.5 in 1996 to 60.8% in 2001. These percentages are slightly lower if one considers only the working age population, suggesting that they are not due to the lower life expectancy of men.

Divorce rates increased from 35.3 marriages out of 100 in 1989 up to 69.6 in 2000. A decline down to 56.1 is observed in 2001. This is not the maximum rate in the area: for comparison, the corresponding figures for Russia equal 41.2, 70.0 and 83.7 in the same years (UNICEF, 2004).

An increase in the age of first marriage and of first child is sometimes taken as a sign of increasing hardship for women. In fact, it is mainly due to the difficulty to find gainful and stable employment. In the case of Belarus, consistently with the remarkable stability of employment and participation rates, also these indicators are very stable up to the early 2000s. According to UNICEF (2004) data, the age of the first marriage for women was 22.3 in 1989 and 22.5 in 2002. The corresponding figures for men were 24.1 and 24.8. The age of first child also increased almost imperceptibly from 23.1 in 1989 to 23.5 in 2002.

One of the signs of economic hardship would be the dramatic reduction in the fertility rate (number of births for woman at the age 15-44) from 2,03 in 1989 down to 1.22 in 2002 (UNICEF, 2004). This is accompanied by an increasing percentage of children attending preschool establishments at the age of 3-6 years, from 63.2% in 1989 to 69.2% in 2002 (UNICEF, 2004). Nonetheless, as already noted, this data is coupled with an overall decreasing number of children and therefore would hardly be indicative of improved quality of preschool establishments.

4. Results

The Tables from 8 through 10 present the results of different Heckman selection procedures. The maximum likelihood estimator has been preferred to the two-step procedure based on testing of the assumption of normality of residuals and of absence of collinearity between the inverse Mills ratio and the regressors in the main equation (for a discussion of these types of tests, see, for instance, Vella, 1998; and Puhani, 2000). For shortness sake, we report only the results of such tests with reference to the specification using as instrumental variables the household expenditure and the difference between the household and the woman' income (Table 9)[10]. In this case the normality assumption is not violated (by using normal probability plot of the residuals). Moreover, the mean value for the VIF (*variable inflation factor*) test in an OLS specification of the wage equation including the inverse Mills ratio is 3.12. This is far below the critical value of 10 and we cannot reject the hypothesis of absence of multicollinearity.

The estimates essentially differ in terms of the instruments used, whereas all the other variables in the main and selection equation coincide. Tables 7 and 8 use household specific effects as instruments. The former Table uses the number of dependent people in the household, namely children under the age of 5 and the elderly over 60. The estimate in Table 9 is exactly the same as that in Table 8, the only difference being that the former includes also a measure of the household overall income, as proxied by the expenditure. Table 9 uses indices aiming to catch region specific effects, such as the local supply of childcare and care for elderly people. The instruments in Table 7 and 8 aim to catch demand side factors, whereas the instruments used in Table 9 aim to catch supply side factors.

This sensitivity analysis is informative on such matters as the specific supply and/or demand side factors that might cause sample selection mechanisms as well as the stability of the sample

[10] Similar results of such tests relative to the other specifications are available on request.

selection procedure itself. In fact, as shown below, the results of the tests for sample selection bias markedly differ from one estimate to the other.

More specifically, the instruments used in Table 8 include: Children under the age of 5 present in the household, the woman's age when the first child was born, the number of dependent children and the presence of elderly people in the household. As expected, the presence of dependent children under the age of 5 and of over-60-year old people in the household reduces female participation in a statistically significant way. This confirms that women' participation to the labour market is influenced by opportunity cost considerations. The impact of elderly people in the household is greater in 2001 than in 1996, which might catch some kind of reduction in the state expenditure in the care of elderly people.

Other household specific instruments are not highly significant. In other words, the fact that a woman has children very early in her life, say between a 15-17 or a 18-22 range of age, does not seem to cause any stigma or problem in the working life. In addition, the number of children itself does not seem to matter. Only in 1996, the model seems to detect a statistically significant effect of the number of children, though not one with a high significance level. What matters, then, is only the young age of children. Once children have grown up sufficiently, they do not represent any impediment to women' participation to the labour market. This is interesting since it suggests that the Belarusian welfare system does help women to conciliate work and maternity.

Overall, in neither of the two years was any selection mechanism detected, although σ and λ are both statistically significant. The statistical significance of these variables might explain why the returns to education based on reduced form estimates are different from those estimated by unreported augmented wage equations. In particular, confirming expectations, the corrected returns are lower than the OLS counterparts. For these reasons, the predicted hourly wage offer for women have been computed using the sample selection corrections contained in Table 8. This is important also under another point of view: it allows, in fact, to compute expected wages for all women in the

sample, including those who are not currently working, or do not report their wages or hours worked for some reasons.

[Table 8 about here]

For the sake of comparison we provide as well the results of estimates based on a slightly different set of instruments. The model presented in Table 9 is similar to that in Table 8, the only difference being that other two instruments were added: household expenditure (taken as a proxy of the household income) and the difference between the individual woman personal income and the household income. As noted in the methodological section, these last two instruments have an important drawback, being potentially endogenous: on the one hand, in fact, increasing household income might cause higher female participation, but, on the other hand, a higher female employment be the cause behind high household income (on this issue see also Paci and Reilly, 2004, p.124). This suggests taking the estimates of Table 9 with the due caveats. Nonetheless, it is interesting to note that the two variables are statistically highly significant and reveal sample selection mechanisms. In turn, this causes a reduction in the returns to education of women by 20% compared to those obtained by unreported OLS augmented earnings equations. This result is reminiscent of that obtained in Pastore and Verashchagina (2006b).

[Table 9 about here]

Table 9 reports results of experiments on the hypothesis of non-linearity of the effect of household income on female participation as well. The hypothesis is that female participation is low for women belonging to low income household, but increases with the household income, up to a certain level of income, when it starts declining. In fact, women belonging to poor households would be less prone to work, since they are forced to take care of children. Rich women have also a lower than average probability to participate to the labour market, since they have a higher opportunity cost of working. Taking care of the household produces a higher income than that obtained by working.

This was done first by including into the participation equation, instead of logged household expenditure, a set of dummies identifying the 10^{th}, 25^{th}, 75^{th}, 90^{th} and 100^{th} percentiles[11]. Contrary to *a priori* expectations, the hypothesis of a non-linear effect of household income on female participation is rejected. Female participation is lower for the poorest households and increases steadily when moving to the upper percentiles (see the estimated coefficients for Selection equation 2 in Table 9). This result is confirmed by the coefficients of a splined function of household expenditure with nodes determined by a certain percentile values of the household expenditure. These coefficients show up as statistically insignificant meaning that simple move among the percentile groups does not change the effect on female participation. The only exception is the borderline of the 10^{th} percentile, which is highly significant (see the estimated coefficients for Selection equation 3 in Table 9). This finding is hardly surprising in the case of Belarus considering that the income distribution is very flat.

This result is suggestive of the existence of a high risk of falling into poverty trap for the poorest households: since belonging to the poor households seems to create strong obstacles for women's labour force participation. In turn, a one-breadwinner model of household is likely to further reduce income and welfare levels. At the same time, once entering the labour force, women generally tend to work ever more intensively with the increase of the family wealth, without withdrawing from the labour force even belonging to wealthier families (always in relative terms and by Belarusian standards). The interpretation would be that the rising standards of leaving still do not catch up with the expectations of the families, thus sustaining the two-breadwinner family model.

In Table 10, regional characteristics of the demand for and supply of social services are taken into account in place of household characteristics. The regional characteristics include the number of preschool institutions, the share population of young and old age, the number of hospital beds.

[11] We deliberately excluded the 50^{th} percentile in order to see how the border groups tend to behave, anticipating that female participation could be high at the bottom end of household consumption distribution, since in this case they are driven by necessity, instead may be reducing with the rise of family wealth.

Again, the coefficients of the instrumental variables used suggest that they do not affect female participation, with the only exception of the share of people older than the working age population. The coefficient is positive, suggesting that elderly people help the young generation to cope with the care of dependent people in the household. There seems to be no sample selection at work.

[Table 10 about here]

Overall, Tables 7 through 9 confirm that the Heckman procedure is very sensitive to the type of instruments used in the selection equation. For this reason, it is difficult to choose the right model on which to compute the expected wages to include in the estimates of the so-called structural female labour force participation model. Two alternative probit estimates are hence presented. Table 11 is based on predicted hourly wage offers for women from the baseline model in Table 8, whereas Table 12 is based on predicted hourly wage offers for women from the baseline model in Table 10. Note that in both cases also the other variables in the reduced form model have been included. The tables present both the estimated coefficients and the marginal effects.

Table 11 confirms the results of Table 7 regarding the significance level of household specific factors, such as having dependent children, the age the first child was born, the number of children and the presence of over-60-year-old people in the household. The impact of age on labour market participation is non-linear, with younger women working significantly less than older ones. Those aged over 40 are the most active. Disabled women have also a much lower degree of participation also. These results are stable across the two specifications.

[Table 11 and 12 about here]

The aim of this exercise if to see the impact on labour market participation of the individual expected wage together with the other variables included in the selection equation of the reduced form model. The attained marginal effects for the predicted hourly wage offer are telling us about rather high but slightly decreasing between 1996-2001 degree of responsiveness of female participation to the hourly wage offers. The results confirm that the expected wage does affect

female participation. Though higher pseudo-R^2 in Table 11 suggests that the model with individual characteristics only is to be preferred to that including regional characteristics.

Note that the attained elasticities of female participation to wages in Belarus are almost twice lower than in Saget (1999) for Hungary, but are still twice as high as those attained in Blau and Kahn (2006)[12] for the USA, rather comparable to those at the of 1980-s in the US. Note that in our case the elasticities are pretty stable over the period considered.

5. Discussion and policy implications

Gender analysis is given little importance in the current policy agenda in Belarus. In fact, gender issues are universally considered to be of minor importance, compared to the poverty due to the low average income, which leads many households below the poverty line. However, this is a sign of apparent underestimation of gender issues, which may provide tools to fight poverty and contribute to a stable and socially acceptable long-term growth path of the country.

The case of Belarus, a country generally known as a very gradual reformer, is somehow different from the neighbouring countries like Poland or even Russia. The latter experienced high, sometimes double-digit unemployment rates, accompanied by drastic reduction of female participation since the beginning of transition. In turn the unemployment rate in Belarus has been quite stable over the last decade at about 2-4%. Also the participation rate of women remains quite high, in the range of 80%, even though there is a tendency to its contraction. Worth noting also that about 53% of the population employed in Belarus are women. They prevail in food, textile and closing industries, trade and catering, information services, public health, social services and education, culture, finance and insurance. This predetermines different possibilities for men and women, as well as their pay differentials, but also the pace of change in GWG.

[12] Note that both Blau and Kahn (2006) and Saget (1999) consider only married women, while in the present study we did not reduce our sample to married, just using the dummy for marital status.

Over the past decade, financial insecurity has grown both among women and men. The share of men having per capita incomes below the standard minimum rose from 39.4 per cent in 1995 to 42.9 per cent in 2000, while the corresponding figures for women rose from 37.4 per cent to 41 per cent. Women generally tend to be overrepresented among the poor. Even though, as was also noted in Quisumbing et al. (2001) in their study of 10 developing countries, this might not be so straightforward and needs further investigation in order to understand which are the ways to combat the poverty.

Still the processes behind female participation partly explain why, similar to other countries, despite the existence of an overall gender wage differential, employed women tend to have higher returns to education compared to men: in fact, those women that are able to find and maintain gainful employment are the most motivated, their advantage in terms of earnings compared to less educated women is higher than that of men. Alongside with the continuous increase of the educational level of women, there is a persistent unexplained component of the gender wage gap, not in their favour (Pastore and Verashchagina, 2005).

There might be several reasons for the worsening of the labour market position of women in Belarus. Above all, with time passing, the inherited system of labour market regulation seems to become unable to grant women the same rights as men. One of the reasons for that is the emergence of small, but buoyant highly unregulated private sector, with the current legislation exhibiting much inertia to account for the consequences of it on gender disparities. The possible explanation, still to be tested, is that the practice of “overprotection” of women coming from the past becomes hardly sustainable, but also difficult to be abandoned because of the risk to rise social instability. The current labour legislation, and the core of it represented by the Labour Code, definitely do not help to rise the competitiveness of women at the labour market. Some articles of the Labour Code, supportive to this statement are given in Table 13.

[Table 13 about here]

The existing benefits make female labour quite expensive and thus preclude firms from employing women. It is ever more typical both for state sector, which tends to get rid of surplus labour, as well as for private sector, driven first of all by efficiency considerations, to neglect the problems of women, having difficulties to fit into the new economic environment. When loosing employment less motivated of them tend, as a consequence, to be relegated to their homes or to be segregated in low-pay industries. All this is slowly changing the role of men and women in the household in particular, and in the society in general.

Figure 1 is illustrative to how differently Belarusian people look at the role of men and women in society. In fact the prevailing idea of a woman being destined to dedicate her life to household does not fit with nowadays very high female labour force participation in Belarus, and may actually be the consequence of that (see Kungurova, 2004; Malysheva and Verashchagina, 2007).

[Figure 1 about here]

The increasing unemployment and inactivity in fact tend, in some cases, to generate a one-bread-winner households. The diffusion of it might also be the result of the rational choice made by households in the absence of adequate government policy that provides good quality and affordable kindergartens and schools, encourages part-time employment or temporarily employment, sustains well-functioning pension system able to support the shift of generations of workers.

In other words, there seem to be changes both from the demand and the supply side of the labour market which warrant an in-depth investigation. On the demand side, the failure of the current legislation to foster and, in the meantime, to regulate the growth of small and medium sized private companies, tend to reduce job opportunities for non-employed workers, especially women. Among the supply side consequences of the changes occurred and the slowness of the legislation in recognising them there are important indirect effects, such as the reduction in the birth rate, accompanied with the opposite rising divorce rate, which together make the demographic picture really worrisome. Therefore it was of the utmost importance to understand the direction of these transformations, in order to design a long-sighted policy response.

Conclusions

The gender literature on economic transition has asked the question whether women fare better (or worse) in a market compared to a centrally planned economy. Previous studies have observed a reduction (or sometimes a stable) gender pay gap, suggesting that women receive higher wages in a market economy. However, a stream of literature has contended that the reduction in the gender pay gap is not necessarily a consequence of improved welfare: in fact, it was related to a reduction, not to an increase in female participation. Numerous reasons have been raised to explain reduced female participation in studies relative to CEE and CIS countries. First is the increased hardship of finding (or keeping) a job and the increasing uncertainty of the entire economic system due, in turn, to price and wage liberalisation as well as privatisation of state owned enterprises. Second is the increasingly hard budget constraint of (state or private) firms and the state. This has caused a reduction in the state and corporate expenditure for providing childcare facilities and services for elderly people, which has translated into a dramatically increased opportunity cost of supplying labour for many women. The consequent reduction in female labour supply can actually explain also the increased average wages of the most motivated working women.

The question asked in this study is whether the mechanisms at work in other transition countries were also at place in Belarus despite the slow transition process. In this country, since the beginning transition was very slow and touched upon only single parts of the system. The main conclusion of our enquiry is that differently from other transition countries, in Belarus female labour force participation remains very high, despite the now documented increase in the GWG (Pastore and Verashchagina, 2007). The latter is still lower than in the neighbouring countries, but considering the estimated high elasticity of participation to wages, if the outlined trend of rising pay gap continues, there is a high probability of women withdrawing from the labour market more often. To prevent this further investigation of the evolution of the GWG and participation is

necessary. Here we outline the general framework to address the issue, providing the first available results of the type for Belarus.

A possible general interpretation of the attained results is that the average income level of the population is conducive for many households to deprivation and poverty. On the other hand, firms still experience soft budget constraints and keep demand for labour high with the aim to ensure that everybody, including women, have access to some income. The state sector allows this by continuing to provide access to public services at low cost for all. In other words, different from other transition countries, the hardship and uncertainty of economic transition has translated in the Belarusian case in increased, not reduced female participation. Moreover, this has allowed the country to maintain alive the two-bread winner model of household.

These general conclusions are drawn based on a systematic study of the determinants of female earnings and participation in 1996 and 2001 (data from the Belarusian Household Survey). A selectivity corrected wage equation is estimated to compute the expected wage offer for women. The latter enters as regressor in the structural female labour force participation equation, estimated by PROBIT. The results provide interesting insights into several aspects of the link between female participation and their wages in Belarus. The opportunity cost of working – as measured by demand and supply side measures of facilities for the care of children and elderly people – do affect female participation, but without generating sample selection mechanisms. In other words, having dependent children, under the age of 5, or elderly people, aged more than 60, reduces the probability for a woman to participate to the labour market, but this reduction seems to be randomly distributed across the sample of women. This suggests that welfare state answers to women needs do not generate discrimination against specific groups of women. However, sample selection procedures prove to be very sensitive to the type if instruments used in the selectivity equation. In fact, sample selection is detected when a measure of household income, as proxied by the household expenditure, is used as a determinant of female participation. Female participation is found to be lower for poorer households, which might generate poverty trap mechanisms.

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Appendix of Tables and Figures

Table 1. A synoptic view of results from using sample selection correction procedure to study female participation and wages in transition countries

Study	Country, data source, (year)	Sample	Maximum likelihood / two step (test for normality of residuals and collinearity)	Instruments (sign, significance level) used in the participation equation	Same specification in main and selection equation (except for instruments)	$\Delta\gamma$	$\Delta\rho$	λ (sign)	Returns to education	Wage elasticity
Katz (2002)	Taganrog, Russia (1993)	All women	Two steps (no)	Number of children (-, ***), Number of pre-school children (-, n.s.), number of school children (-, n.s.), drink alcohol (-, n.s.), access to garden (+, **), household income (-, ***)	No (occupational and industry dummies in main equation and marital status in the selection equation)	n.a.	n.a.	n.s. (0.61)	Unchanged (or slightly reduced)	n.a.
Ogloblin (1999)	Russia, RLMS ()		n.a.	n.a.		Stable	Stable	n.s. (-)		n.a.
Saget (1999)	Hungary, Household panel TARKI agency (1992)	Married women (no if maternity leave, no unemployed, 25-55)	Two steps, plus structural equation (no)	Children (0-3, 4-6 and 14-20, ***), household non-labour income (n.s.), other household's earnings (n.s.), occasional earnings (n.s.), unemployed in the household (n.s.)	Yes	-0.38 (***)	n.a.	n.s. (-.05)	n.a.	1.947

Note: * stands for significant at 10%; ** for significant at5%; *** for significant at 1%; "n.s." for not significant; "n.a." for not available.
Source: own elaboration.

Table 2. Labour market participation of working age population by gender

	1996			2001			2004[a]		
	All	Men	Women	All	Men	Women	All	Men	Women
Employment rate	75.6	75.3	76.0	75.5	74.4	76.6	76.8	76.4	77.1
Unemployment rate	7.3	8.0	6.6	5.5	6.9	4.2	6.7	7.8	5.6
Activity rate	82.9	83.3	82.6	81.0	81.3	80.8	83.5	84.2	82.7

Note: The definitions here are not based on the ILO classification of labour market status. The BHSIE questionnaire includes a question on the "socio-economic status" of the respondent, including whether (s)he is employed, unemployed or inactive (pensioner, housewife, student and so on). All the data is computed on working age population, which means aged 16 through 55 for women and 16 through 60 for men. The figures have been computed using averages weighted by the sample weight provided in the data.

[a] Notice that the definition of "socio-economic status" relative to 2004 has slightly changed, which does not allow a rigorous comparison with previous years.

Source: Own elaboration on the BHSIE.

Table 3. Distribution of employment by gender and type of employer

Type of employer	1996			2001			2004		
	Men	Women	All	Men	Women	All	Men	Women	All
State enterprise or budget organization	1,927	2,378	4,305	1,895	2,459	4,354	2,225	2,757	4,982
	38.96	39.83	39.43	38.3	40.58	39.56	44.9	45.22	45.07
State farm	208	108	316	-	-	-	207	147	354
	4.21	1.81	2.89	-	-	-	4.18	2.41	3.2
Collective farm	494	295	789	339	206	545	456	313	769
	9.99	4.94	7.23	6.85	3.4	4.95	9.2	5.13	6.96
Joint or foreign enterprise	136	172	308	40	19	59	-	-	-
	2.75	2.88	2.82	0.81	0.31	0.54	-	-	-
Leasing enterprise	-	-	-	15	21	36	-	-	-
	-	-	-	0.3	0.35	0.33	-	-	-
Joint stock company	-	-	-	224	255	479	-	-	-
	-	-	-	4.53	4.21	4.35	-	-	-
Individual entrepreneur	64	55	119	219	166	385	25	25	50
	1.29	0.92	1.09	4.43	2.74	3.5	0.5	0.41	0.45
Other	106	94	200	48	41	89	-	-	-
	2.14	1.57	1.83	0.97	0.68	0.81	-	-	-
No answer	2,011	2,869	4,880	2,168	2,892	5,060	2,043	2,855	4,898
	40.66	48.05	44.7	43.82	47.73	45.97	41.22	46.83	44.31
Total	4,946	5,971	10,917	4,948	6,059	11,007	4,956	6,097	11,053
	100	100	100	100	100	100	100	100	100

Source: Own elaboration on the BHSIE.

Table 4. The gender composition of industrial employment (1996, 2001 and 2004)

Branch of the main job	1996				2001				2004			
	Male %	Female %	% of the aver. wage in the field to the average in the country	% of the Total	Male %	Female %	% of the aver. wage in the field to the average in the country	% of the Total	Male %	Female %	% of the aver. wage in the field to the average in the country	% of the Total
Industry*	0.49	0.51	108.56	25.26	52.27	47.73	110.68	24.77	55.70	44.30	111.30	25.67
Agriculture*	0.48	0.52	55.94	20.67	61.28	38.72	64.13	16.02	59.91	40.09	65.17	14.10
Forestry	0.41	0.59	84.74	1.69	86.36	13.64	90.95	1.11	85.00	15.00	87.31	1.30
Fishery	0.43	0.57	74.12	0.12	80.00	20.00	101.46	0.08				
Transportation and communication	0.50	0.50	114.22	6.82	63.07	36.93	111.66	7.01	65.07	34.93	117.43	6.79
Construction	0.49	0.51	123.64	6.71	80.30	19.70	125.74	6.83	80.35	19.65	121.37	7.36
Trade and public catering	0.45	0.55	99.62	8.26	21.80	78.20	88.72	10.64	26.43	73.57	74.70	10.51
Material and technical supply and sales activity	0.51	0.49	90.25	0.61	74.19	25.81	117.03	0.52	47.37	52.63	96.19	0.31
Procurement	0.75	0.25	97.25	0.07	71.43	28.57	62.79	0.12	50.00	50.00	73.42	0.10
Information and computer services	0.42	0.58	132.99	0.20	40.00	60.00	174.17	0.08	90.00	10.00	95.53	0.16
Real-estate activities	0.67	0.33	250.32	0.05	-	-	-		50.00	50.00	97.20	0.06
Commercial and market activity	0.50	0.50	225.76	0.13	42.86	57.14	158.67	0.12	50.00	50.00	99.85	0.10
Geology and mineral wealth prospecting	0.45	0.55	159.84	0.18	57.14	42.86	119.36	0.12	80.00	20.00	180.49	0.24
Other types of activities in material production	0.54	0.46	110.04	0.40	57.45	42.55	88.42	0.79	62.75	37.25	100.09	0.83
Housing and communal services	0.42	0.58	96.99	2.73	62.45	37.55	101.11	3.99	61.51	38.49	102.64	4.09
Non-production consumer services	0.46	0.54	81.04	1.19	28.57	71.43	79.17	0.82	13.16	86.84	69.08	0.62
Health care, sports and social security	0.46	0.54	92.44	7.24	15.73	84.27	82.40	7.80	13.58	86.42	83.15	7.89
Education	0.45	0.55	92.70	9.92	19.13	80.87	85.12	11.60	18.23	81.77	83.79	11.58
Culture and art	0.51	0.49	86.63	1.16	27.06	72.94	87.76	1.43	32.22	67.78	75.66	1.46
Science and scientific activities	0.47	0.53	155.01	0.63	25.81	74.19	107.14	0.52	38.00	62.00	104.02	0.81
Credit and finance, insurance, pensions security	0.48	0.52	113.74	1.09	26.76	73.24	122.41	1.19	29.27	70.73	145.67	1.33
Administration	0.51	0.49	144.09	4.64	60.63	39.37	134.96	4.27	50.94	49.06	140.28	4.30
Public associations	0.64	0.36	76.57	0.23	33.33	66.67	72.48	0.15	26.09	73.91	86.93	0.37
Total				100 (6,038)				100 (5,947)				100 (6,156)

Note: * In 2004, Fishery is included.
Source: Own elaboration on the BHSIE.

Table 5. Field of higher education attained by gender

Field of study		Education attainment						Wage effect
		1996			2001			1996-'01[a]
		Men	Women	Total	Men	Women	Total	Total
Economics		39	108	147	48	134	182	0.73
	in %	6.14	14.5	10.65	7.22	15.67	11.97	
Medicine		25	56	81	20	53	73	0.84
	in %	3.94	7.52	5.87	3.01	6.2	4.8	
Engineering		248	142	390	262	197	459	0.70
	in %	39.06	19.06	28.26	39.4	23.04	30.2	
Natural Sciences		23	40	63	23	33	56	0.65
	in %	3.62	5.37	4.57	3.46	3.86	3.68	
Humanities		38	75	113	62	108	170	0.72
	in %	5.98	10.07	8.19	9.32	12.63	11.18	
Pedagogic		82	264	346	79	269	348	0.53
	in %	12.91	35.44	25.07	11.88	31.46	22.89	
Military school		96	2	98	75	0	75	0.47
	in %	15.12	0.27	7.1	11.28	0	4.93	
Agriculture		84	58	142	96	61	157	0.55
	in %	13.23	7.79	10.29	14.44	7.13	10.33	
Total		635	745	1,380	665	855	1,520	
	in %	100	100	100	100	100	100	0.74

Note: [a] The last column reports wage effects by type of degree as an average between the 1996 and 2001 coefficients, reported separately in Pastore and Verashchagina (2006b, Table 5). Note also that the wage effect of military school is low, because it is partly caught by a separate dummy for those employed in the military sector (45% higher wage than average).
Source: own elaboration on the basis of the BHSIE.

Table 6. Weighted means of monthly and hourly wages by gender (1996, 2001)

	1996						2001					
	1-Wf/Wm*=0.2721474			1-Wf/Wm**=0.3359805			1-Wf/Wm*=0.2864142			1-Wf/Wm**=0.2918779		
Levels of education	M*	W*	1-Wf/Wm*	M**	W**	1-Wf/Wm**	M*	W*	1-Wf/Wm*	M**	W**	1-Wf/Wm**
Ph.D.	11.9758	9.7860	0.1828	1742.3120	1614.9490	0.0731	757.7428	881.7276	-0.1636	129540.1000	138839.9000	-0.0718
University	7.8591	7.9170	-0.0074	1227.4550	981.3927	0.2005	741.3867	694.6840	0.0630	116288.6000	102453.5000	0.1190
Technical secondary	5.8432	4.1843	0.2839	924.8796	651.7985	0.2953	561.6130	419.3490	0.2533	88588.9000	65503.8200	0.2606
Vocational secondary	5.3408	3.5169	0.3415	874.1358	544.0817	0.3776	562.8415	386.8628	0.3127	89693.7200	60978.6000	0.3201
General secondary	4.3506	3.1732	0.2706	691.6975	489.0060	0.2930	473.5399	288.3913	0.3910	68455.5400	44698.0100	0.3471
Low sec.	1.8827	0.9426	0.4993	291.6547	144.7442	0.5037	112.1133	57.8707	0.4838	17586.9000	8750.5570	0.5024
Regions												
Brest	3.3780	2.5464	0.2462	519.0436	383.8505	0.2605	389.7479	284.9649	0.2688	60102.8900	42653.5800	0.2903
Vitebsk	3.4640	2.5294	0.2698	588.0594	377.9109	0.3574	400.2872	293.2213	0.2675	64992.7000	44785.5000	0.3109
Gomel	3.8983	2.6186	0.3283	628.4848	402.1891	0.3601	382.0575	288.8607	0.2439	59234.7000	43749.9100	0.2614
Grodno	4.3012	3.1232	0.2739	685.3473	467.5715	0.3178	353.2360	258.5583	0.2680	55843.5600	39809.3500	0.2871
Minsk city	7.4861	5.4636	0.2702	1182.3380	709.0789	0.4003	705.6050	467.1843	0.3379	103369.5000	73060.5600	0.2932
Minsk	3.7421	2.5745	0.3120	572.0380	379.0458	0.3374	445.5508	305.1543	0.3151	70014.5100	46819.7200	0.3313
Mogilev	3.8023	3.0438	0.1995	606.1943	465.2099	0.2326	380.3892	284.3072	0.2526	60064.8900	43433.3900	0.2769
Age groups:												
16 through 20	0.7082	0.8138	-0.1491	95.3303	123.1242	-0.2916	72.7935	68.1874	0.0633	10314.7600	10479.3100	-0.0160
21 through 30	4.6112	3.4111	0.2603	732.3853	505.8620	0.3093	491.5744	362.7318	0.2621	77519.2700	55417.5600	0.2851
31 through 40	6.8458	5.0910	0.2563	1110.9480	772.7156	0.3045	686.3706	562.6874	0.1802	109709.0000	86604.0700	0.2106
41 through 50	6.3092	6.1227	0.0296	1000.9280	934.8338	0.0660	713.1552	626.0061	0.1222	104411.4000	97375.1200	0.0674
51 through 60	4.3644	3.2993	0.2440	678.5067	351.8978	0.4814	577.9627	378.9296	0.3444	91689.4000	57221.2300	0.3759
Over 60	0.3811	0.1427	0.6255	53.3430	19.5278	0.6339	73.9399	25.3606	0.6570	11247.1700	3306.3260	0.7060

**Note: ***Weighted hourly wages are used, ** Weighted monthly wages are used, declared at the fourth quarter interview

Source: Own elaboration on the basis if the BHSIE**.**

Table 7. Descriptive statistics

	1996					2001				
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
lhwage0	5585	1.66698	0.6324656	0.0057971	6.181508	5715	6.317261	0.6369551	2.923412	10.5869
participation	10917	0.5115874	0.4998886	0	1	11007	0.519215	0.4996533	0	1
laurphd	10917	0.1264084	0.3323242	0	1	11007	0.1380939	0.3450142	0	1
techsec	10917	0.1637813	0.3700939	0	1	11007	0.2183156	0.4131215	0	1
vocsec	10917	0.2006962	0.4005395	0	1	11007	0.1402744	0.3472872	0	1
gensec	10917	0.1889713	0.3915038	0	1	11007	0.2306714	0.4212816	0	1
women	10917	0.5469451	0.4978141	0	1	11007	0.5504679	0.4974691	0	1
age	10917	43.49913	17.70612	16	96	11007	43.63278	18.19844	12	99
pwe	10917	24.1647	18.3181	0	85	11007	23.97774	18.26444	0	85
pwe2	10917	919.4546	1163.694	0	7225	11007	908.4916	1143.557	0	7225
married	10917	0.6684987	0.4707744	0	1	11007	0.6208776	0.4851907	0	1
divwidow	10917	0.1561784	0.3630411	0	1	11007	0.1701644	0.3757943	0	1
disabled	10917	0.010076	0.099877	0	1	11007	0.0094485	0.0967477	0	1
chernob	10917	0.074471	0.2625479	0	1	11007	0.070228	0.2555425	0	1
jscomp	10917	0.0282129	0.1655881	0	1	11007	0.0435178	0.2040288	0	1
prsector	10917	0.0136484	0.1160319	0	1	11007	0.0447897	0.2068513	0	1
budgorg	10917	0.126042	0.3319118	0	1	11007	0.0495139	0.2169484	0	1
collfarm	10917	0.1012183	0.3016314	0	1	11007	0.0086309	0.0925049	0	1
AgrForFish	10917	0.1243015	0.3299404	0	1	11007	0.0930317	0.2904901	0	1
TrCom	10917	0.0377393	0.1905738	0	1	11007	0.037885	0.1909267	0	1
Constr	10917	0.0370981	0.1890109	0	1	11007	0.0368856	0.1884895	0	1
TrCater	10917	0.0457085	0.2088618	0	1	11007	0.0575089	0.2328229	0	1
Services	10917	0.0090684	0.0947999	0	1	11007	0.0094485	0.0967477	0	1
SocPublServ	10917	0.0217093	0.1457392	0	1	11007	0.0259835	0.1590931	0	1
HealthSoc	10917	0.0400293	0.196037	0	1	11007	0.042155	0.2009518	0	1
Educat	10917	0.0548686	0.2277339	0	1	11007	0.0626874	0.2424108	0	1
Managem	10917	0.0256481	0.1580903	0	1	11007	0.0230762	0.1501525	0	1
Finance	10917	0.0060456	0.0775217	0	1	11007	0.0064504	0.0800588	0	1
CultArtScien	10917	0.0111752	0.1051254	0	1	11007	0.0113564	0.1059644	0	1
student	10917	0.0518457	0.2217257	0	1	11007	0.0612338	0.2397695	0	1
pensionr	10917	0.2397179	0.4269308	0	1	11007	0.2308531	0.4213978	0	1
selfemp	10917	0.0032976	0.0573327	0	1	11007	0.0131734	0.1140223	0	1
age16t20	10917	0.0992947	0.299071	0	1	11007	0.1144726	0.3183989	0	1
age21t30	10917	0.1683613	0.3742039	0	1	11007	0.1729808	0.3782479	0	1
age31t40	10917	0.2223138	0.4158199	0	1	11007	0.1829745	0.3866632	0	1
age41t50	10917	0.1776129	0.3822041	0	1	11007	0.18997	0.392295	0	1
CH05	10917	0.1780709	0.3825899	0	1	11007	0.1402744	0.3472872	0	1
nchild3	10917	0.1152331	0.3193177	0	1	11007	0.1007541	0.3010165	0	1
old60	10917	0.3191353	0.4661629	0	1	11007	0.3319706	0.4709419	0	1
ltotalexp	10917	7.586681	0.6731795	4.394449	11.0442	11007	12.10933	0.6572639	9.246865	15.80459
ldifer	10917	7.24213	1.22109	0	11.04873	10861	11.73698	1.595289	0	15.69447
lpreschool	10917	4.011494	0.3486386	3.577948	4.291828	11007	4.18329	0.2581251	3.8416	4.37827
lyoungerwap	10917	3.13957	0.0317209	3.086487	3.190476	11007	2.99543	0.050474	2.901422	3.068053
lolderwap	10917	3.052591	0.1397721	2.70805	3.139833	11007	3.06095	0.1167876	2.778819	3.144152
lhbedsreg	10917	4.825018	0.0798774	4.665324	4.90305	11007	4.838522	0.0793874	4.671894	4.922168

Note: We exclude respondents over 60 years old, to basically account for the working age population, students, pensioners, self-employed and outliers on the basis of declared wages.

Table 8. Maximum likelihood estimates for the selectivity corrected female wage equation. The role of household characteristics

	1996		2001	
Regressors[a]	**Selection equation**	**Wage equation**	**Selection equation**	**Wage equation**
Constant	0.477***	1.534***	0.22	6.059***
	0.143	0.103	0.134	0.098
University	0.856***	0.606***	0.998***	0.670***
	0.101	0.057	0.109	0.063
Technical school	0.673***	0.248***	0.834***	0.315***
	0.09	0.051	0.097	0.058
Vocational school	0.529***	0.057	0.694***	0.114
	0.089	0.05	0.104	0.059
General sec school	0.509***	0.074	0.713***	0.101
	0.089	0.049	0.097	0.057
PWE	-	0.016**	-	0.026***
		0.005		0.005
PWE2	-	-0.000**	-	-0.001***
		0		0
16≤Age≤20	-1.497***	-	-1.445***	-
	0.144		0.119	
21≤Age≤30	-0.650***	-	-0.553***	-
	0.11		0.093	
31≤Age≤40	0.007	-	0.051	-
	0.09		0.084	
41≤Age≤50	0.288**	-	0.342***	-
	0.093		0.086	
Married	-0.054	-0.018	0.021	-0.039
	0.097	0.036	0.066	0.026
Divorced/Widowed	0.047	-0.013	0.15	-0.047
	0.116	0.044	0.086	0.033
Disabled	-1.965***	-0.216	-2.077***	-0.700**
	0.261	0.237	0.278	0.264
Chernobyl affected	-0.036	0.071	-0.072	-0.054
	0.1	0.039	0.097	0.036
Children under 5 present in the household	-0.530***	-	-0.680***	-
	0.06		0.063	
15≤Age the first child was born≤17	-0.234	-	0.515*	-
	0.293		0.255	
18≤Age the first child was born≤22	0.224*	-	0.207*	-
	0.094		0.092	
More than 3 dependent children	-0.202*	-	0.004	-
	0.079		0.087	
Presence of old persons over 60	-0.151*	-	-0.285***	-
	0.073		0.071	
rho	-0.1481		0.0020	
	0.1287		0.1126	
sigma	0.4978		0.4964	
	0.0078		0.0066	
lambda	-0.0737		0.0010	
	0.0647		0.0010	
Sample size	3818		3878	
Log likelihood value	-3764.336		-3729.716	
LR test of indep. eqns. (rho=0):	chi2(1)=1.33 Prob>chi2=0.2489		chi2(1) = 0.00 Prob>chi2=0.9859	

Note: *significant at 10%; **significant at5%; *** significant at 1%. The figures under the coefficients represent standard errors. [a] The list of variables incorporated into both wage and selectivity equations includes as well 18 regional dummies as described in Table A1 of the Appendix I, not reported for the lack of space

Source: Own elaboration on the BHSIE.

Table 9[†]. Maximum likelihood estimates for the selectivity corrected female wage equation. The role of the household's income

	1996			2001		
Additional instruments	**Selection equation [1]**	**Selection equation [2]**	**Selection equation [3]**	**Selection equation [1]**	**Selection equation [2]**	**Selection equation [3]**
Differ. between personal and HH income	-0.249***	-0.2122***	-0.2340***	-0.208***	-0.2046***	-0.2018***
	0.03	0.0288	0.0298	0.027	0.0270	0.0271
Household expenditure	0.596***	-	-	0.630***	-	-
	0.044			0.041		
p10	-	-0.6455***	1.0666***	-	-0.9123***	1.3851***
		0.1024	0.2524		0.0927	0.2333
P25	-	-0.4302***	-0.0602	-	-0.4039***	-0.9209*
		0.0762	0.4185		0.0727	0.4038
P50	-	-	-0.5778	-	-	0.2098
		-	0.3960			0.3936
P75	-	0.3514***	-0.3822	-	0.1970***	0.0753
		0.0628	0.4849		0.0590	0.4511
P90	-	0.3531***	0.3857	-	0.4102***	-0.6355
		0.0726	0.3975		0.0686	0.3780
P100	-	0.5750***	-	-	0.6753***	-
		0.0879			0.0815	
rho	-0.7156	-0.6867	-0.7027	-0.8504	-0.8502	-0.8404
	0.0358	0.0403	0.0379	0.0201	0.0202	0.0215
sigma	0.5492	0.5439	0.5464	0.5657	0.5645	0.5629
	0.0106	0.0107	0.0106	0.0095	0.0095	0.0096
lambda	-0.3930	-0.3735	-0.3840	-0.4811	-0.4800	-0.4730
	0.0256	0.0277	0.026492	0.0175	0.0175	0.0181
Sample size	3818	3818	3818	3858	3858	3858
Log likelihood value	-3681.478	-3680.5190	-3674.347	-3577.585	-3567.541	-3575.748
LR test of indep. eqns. (rho=0):	chi2(1)= 87.2 Prob>chi2= 0.0	chi2(1)= 73.57 Prob>chi2=0.0	chi2(1)= 81.58 Prob>chi2=0.0	chi2(1) =138.36 Prob>chi2= 0.0	chi2(1)=140.27 Prob>chi2=0.0	chi2(1)=128.87 Prob>chi2= 0.0

Note: * significant at 10%; ** significant at5%; *** significant at 1%. The figures under the coefficients represent standard errors.

[†] The estimates include all the variables in Table 7, plus the two extra instruments reported here. Both household expenditure as well as the difference between household and personal income enter the specification in logged form in the **Selection equation [1]**. The household income enters **Selection equation [2]** in the form of dummies representing different percentiles of the personal income distribution and **Selection equation [3]** in the form of a spline function.

Source: Own elaboration on the BHSIE.

Table 10[†]. Maximum likelihood estimates for the selectivity corrected female wage equation. The role of regional characteristics

	1996		2001	
Regressors	**Selection equation**	**Wage equation**	**Selection equation**	**Wage equation**
Constant	4.644	0.983***	0.299	5.553***
	4.532	0.111	2.786	0.079
University	0.927***	0.833***	1.043***	0.916***
	0.101	0.062	0.107	0.058
Technical school	0.766***	0.424***	0.881***	0.497***
	0.09	0.055	0.095	0.055
Vocational school	0.597***	0.228***	0.753***	0.315***
	0.09	0.052	0.102	0.057
General sec school	0.556***	0.219***	0.772***	0.266***
	0.088	0.051	0.095	0.055
PWE	-	0.030***	-	0.031***
		0.006		0.005
PWE2	-	-0.001***	-	-0.001***
		0		0
16≤Age≤20	-1.554***	-	-1.378***	-
	0.134		0.114	
21≤Age≤30	-0.786***	-	-0.676***	-
	0.091		0.079	
31≤Age≤40	-0.056	-	0.006	-
	0.088		0.081	
41≤Age≤50	0.255**	-	0.355***	-
	0.093		0.084	
Married	-0.199*	-0.05	0.018	-0.085**
	0.086	0.038	0.064	0.026
Divorced/Widowed	-0.07	-0.026	0.146	-0.044
	0.107	0.045	0.083	0.034
Disabled	-1.918***	-0.37	-2.094***	-1.038***
	0.26	0.249	0.281	0.264
Chernobyl affected	-0.004	0.092*	-0.052	-0.019
	0.098	0.04	0.094	0.038
Preschool institutions[a]	-0.041	-	-0.173	-
	0.092		0.113	
Younger WAP[a]	-0.334	-	-0.919	-
	0.966		0.633	
Older WAP[a]	0.022	-	0.677**	-
	0.183		0.257	
Hospital beds[a]	-0.632	-	0.248	-
	0.394		0.346	
Rho	0.2232		0.2676	
	0.1419		0.0752	
sigma	0.5217		0.5257	
	0.0099		0.0082	
lambda	0.1165		0.1407	
	0.0756		0.0407	
Sample size	3818		3878	
Log likelihood value	-3931.606		-3925.177	
LR test of indep. eqns. (rho=0):	chi2(1)=1.65 Prob>chi2=0.1996		chi2(1)=8.06 Prob>chi2=0.0045	

Note: * significant at 10%; ** significant at5%; *** significant at 1%. The figures under the coefficients represent standard errors. [†] Different from Table 7, instead of household level variables, the instruments in the selection equation here are built on the basis of the regional level data. The set of regional dummies has been dropped.

[a] For the definition of these instruments see Table A1 of Appendix I, as well as the section on data and methodology. WAP stands for the working age population (16 through 60 for men, and 16 through 55 for women)

Source: Own elaboration on the BHSIE.

Table 11. Structural female labour force participation model

	1996		2001	
Regressors[a]	**Probit estimates**	**Marginal effects**	**Probit estimates**	**Marginal effects**
Constant	-0.883**	-	-5.815***	-
	0.2770		0.857	
16≤Age≤20	-1.531***	-0.5560***	-1.530***	-0.5534***
	0.1510	0.0448	0.118	0.0373
21≤Age≤30	-0.572***	-0.2004***	-0.525***	-0.1746***
	0.1100	0.0404	0.093	0.0331
31≤Age≤40	0.0820	0.0265	0.063	0.0190
	0.0890	0.0282	0.082	0.0246
41≤Age≤50	0.304**	0.0938**	0.318***	0.0917***
	0.0930	0.0271	0.086	0.0233
Married	-0.0560	-0.0181	0.067	0.0205
	0.0990	0.0317	0.066	0.0204
Divorced/Widowed	0.0350	0.0113	0.214*	0.0617*
	0.1180	0.0376	0.088	0.0239
Disabled	-1.786***	-0.6155***	-1.386***	-0.5110***
	0.2650	0.0565	0.323	0.1052
Chernobyl affected	-0.0870	-0.0289	-0.007	-0.0023
	0.1060	0.0361	0.096	0.0294
Children under 5 present in the household	-0.507***	-0.1766***	-0.671***	-0.2300***
	0.0610	0.0222	0.065	0.0239
15≤Age the first child was born≤17	-0.2530	-0.0883	0.668*	0.1518
	0.3100	0.1144	0.29	0.0441
18≤Age the first child was born≤22	0.285**	0.0856**	0.340***	0.0929***
	0.0940	0.0261	0.092	0.0224
More than 3 dependent children	-0.193**	-0.0653**	0.006	0.0019
	0.0750	0.0263	0.083	0.0251
Presence of old persons over 60	-0.161*	-0.0541*	-0.308***	-0.1010***
	0.0740	0.0256	0.073	0.0257
Predicted log hourly wage offer[b]	1.023***	0.3323***	1.042***	0.3174***
	0.1390	0.0445	0.131	0.0391
Sample size	3818		3878	
Log likelihood value	-1834.9583		-1708.7396	
Pseudo R2	0.2036		0.2449	

Note: * significant at 10%; ** significant at5%; *** significant at 1%. The figures under the coefficients represent standard errors.

[a] Both the wage and the selectivity equations include 18 regional dummies as described in Table A1 of Appendix I. The coefficients of these variables are omitted.

[b] The predicted hourly wage is calculated on the basis of specification as reported in Table 7.

Source: Own elaboration on the BHSIE.

Table 12. Structural female labour force participation model

	1996		2001	
Regressors	**Probit estimates**	**Marginal effects**	**Probit estimates**	**Marginal effects**
Constant	2.466	-	-2.966	-
	4.513		2.878	
16≤Age≤20	-1.295***	-0.4812***	-1.301***	-0.4785***
	0.142	0.0479	0.119	0.0419
21≤Age≤30	-0.521***	-0.1825***	-0.497***	-0.1671***
	0.087	0.0320	0.08	0.0285
31≤Age≤40	0.058	0.0189	0.06	0.0185
	0.086	0.0278	0.081	0.0246
41≤Age≤50	0.289**	0.0902***	0.353***	0.1035***
	0.092	0.0272	0.084	0.0229
Married	-0.112	-0.0359	0.106	0.0332
	0.088	0.0277	0.065	0.0207
Divorced/Widowed	-0.022	-0.0073	0.190*	0.0561
	0.108	0.0357	0.085	0.0239
Disabled	-1.521***	-0.5501***	-1.100***	-0.4122***
	0.263	0.0716	0.32	0.1188
Chernobyl affected	-0.094	-0.0317	-0.052	-0.0165
	0.103	0.0354	0.095	0.0303
Preschool institutions [a]	0.049	0.0159	0.007	0.0023
	0.072	0.0237	0.102	0.0316
Younger WAP [a]	-0.253	-0.0828	-1.191	-0.3697
	0.965	0.3161	0.633	0.1965
Older WAP [a]	-0.014	-0.0044	0.564*	0.1753*
	0.178	0.0583	0.257	0.0798
Hospital beds [a]	-0.542	-0.1776	-0.101	-0.0315
	0.389	0.1273	0.345	0.1073
Predicted log hourly wage offer [b]	1.092***	0.3576***	0.976***	0.3031***
	0.116	0.0370	0.108	0.0327
Sample size	3818		3878	
Log likelihood value	-1877.2529		-1775.7394	
Pseudo R2	0.1853		0.2153	

Note: * significant at 10%; ** significant at5%; *** significant at 1%. The figures under the coefficients represent standard errors.

[a] For the definition of these instruments see Table A1 of Appendix I, as well as the section on data and methodology. WAP stand for the working age population (under 60 for men, and under 55 for women)

[b] The predicted hourly wage is calculated on the basis of specification as reported in Table 9.

Source: Own elaboration on the BHSIE.

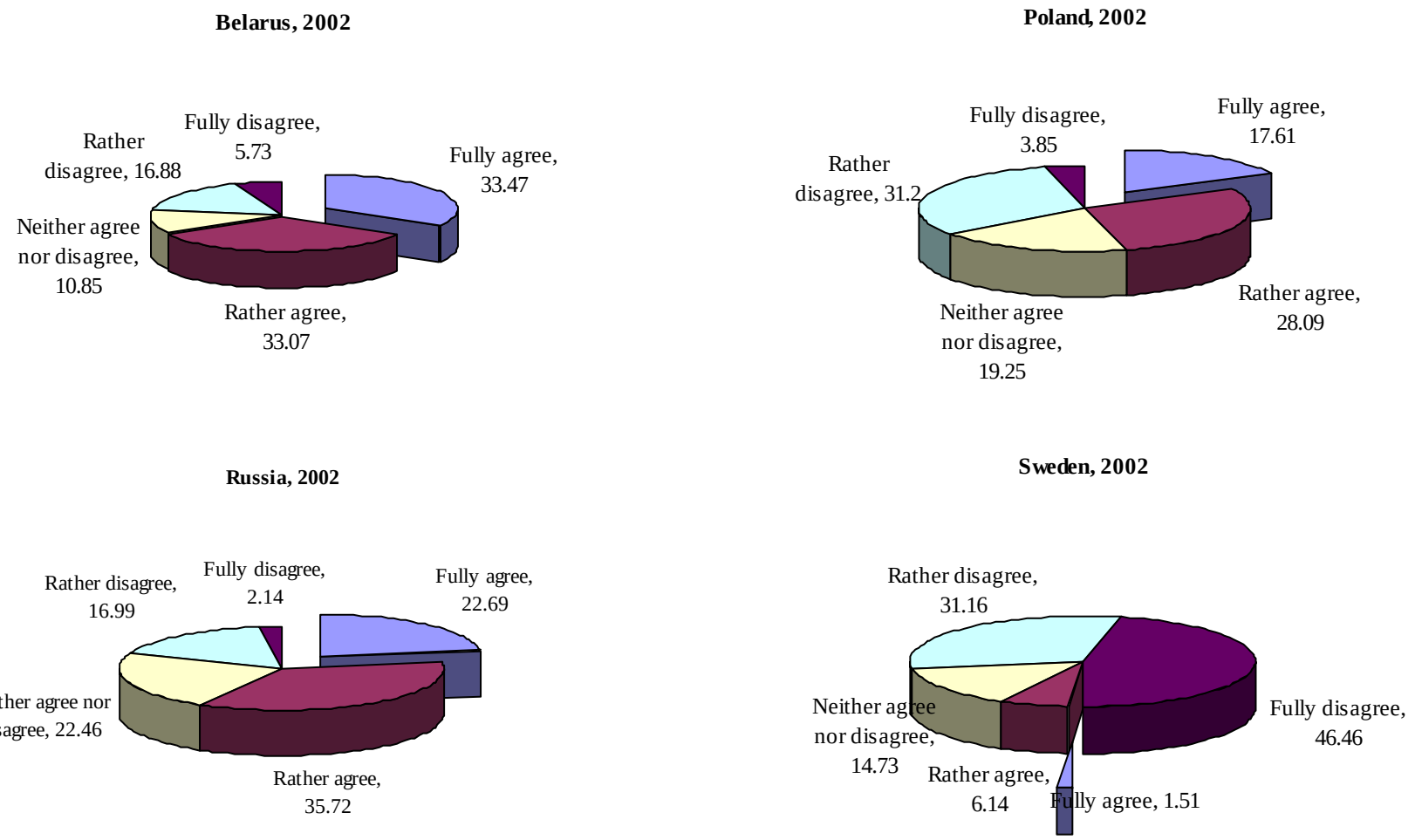
Table 13. Selected articles on gender from the Labour Code of the Republic of Belarus

Article 14 prohibits any kind of discrimination, including discrimination based on sex. Any person exposed to discrimination has the right to appeal to the court.
Article 184 deals with the special leave for pregnant women. The pre-natal leave is fixed at 70 calendar days and the post-natal leave is 56 calendar days. In cases of complications and birth of two and more children the post-natal leave is extended to 70 calendar days. During the leave women receive payments in accordance with state's social security plan. Women working on territories with nuclear (radioactive) pollution can request an extension of their pre-natal leave up to 90 calendar days. The total leave shall not be shorter than 146 (160) calendar days.
Article 185 regulates child-care leave granted until the child's third birthday. This leave shall be granted following a written application either by a mother, a father or other relative of the child who actually provides care instead of the mother, including the designated guardian. There is a child allowance in the amount stated by the law. It is prohibited to deny the possibility of employment due to the reasons of maternity or child caring…

Note: Unofficial translation into English.

Figure 1. Cross-country differences in attitudes towards the role of men and women

*Men should do a living and women should take care of the household**



Source: Own elaboration on the basis of ISSP data***** (http://www.issp.org/)

Appendix I.

Table A.1. Definition of variables

Variable name	Definition
Wage1	Net monthly wages, measured as an average value during the year.
Wage2	Total monthly labour income.
mmjhours	Monthly main job hours calculated on the basis of the declaired weekly hours worked at the main job multiplied by 4.3
lhwage0	Natural logarithm of hourly wage from the main job.
laurphd	= 1, if possess university or PhD degree
phd, Postgraduate degree (candidate or doctor of science; aspirantura and doctorantura);	= 1, if candidate or doctor of science; = 0, otherwise (equivalent on average to 20 years of schooling)
laurea, University degree	= 1, if University degree; = 0, otherwise (equivalent on average to 16 years of schooling)
techsec, Technical school (Technical or specialised high secondary school; technikum);	= 1, if diploma of technical secondary school; = 0, otherwise (equivalent on average to 13 years of schooling)
vocsec, Vocational education (Vocational Secondary Education; PTU, proftechuchilishche);	= 1, if diploma of vocational secondary school; = 0, otherwise (equivalent on average to 12 years of schooling)
gensec, General secondary education (General Secondary Education; obshcheobrazovatelanaya shkola)	= 1, if diploma of general secondary school; = 0, otherwise (equivalent on average to 11 years of schooling). Includes also special types of secondary school: Gymnasium, Lyceum etc.
compuls, Compulsory education (Low secondary school, baseline)	= 1, if diploma of basic school; = 0, otherwise (equivalent on average to 9 years of schooling)
newdegree	=1, if higher education was attained after reforms started.
age	Age of a person
Agegroups: age16t20, age21t30, age31t40, age41t50, age51t60, age60	Agegroups divide the sample into 6 categories: aged 16 to 20, 21 to 30, 31 to 40, 41 to 50, 51 to 60 and over 60.
awe	Actual (declared) work experience (in years).
awe2	Actual (declared(work experience squared.
pwe	Years of potential work experience= age – education – 6
pwe2	Potential work experience squared.
women	Dummy for women.
pwecor	Potential work experience correcting for the fact that women are allowed to have 3 years child leave on the birth of each of them: pwecor= age-years of education-number of children*3 -6.
marital	Marital status is represented by three dummy variables: married, single and divorced/widowed.
disabled	Dummy for disabled persons.
chernob	Dummy for persons who report to be Chernobyl influenced.
Sectors of employment: 1)jscomp; 2)prsector; 3) budgorg; 4)collfarm; 5)stenterp	Dummies for persons employed at 1) joint-stock companies, employed in 2)private sector or having their own private business, employed in 3)budget organizations, employed in 4)collective farms, employed at 5) state enterprises (baseline).
Branches of employment: 1)AgrForFish; 2)TrCom; 3)Constr; 4)TrCater; 5) Services; 6) SocPublServ; 7) HealthSoc; 8)Educat; 9)Managem; 10)Finance; 11) CultArtScien; 12) Industry (baseline branch)	1) Agriculture, Forestry and Fishing; 2)Transport and Communication; 3)Construction; 4) Trade and Catering; 5)Services; 6) Social and Public Services; 7) Health and Social Services; 8)Education; 9)Management; 10)Finance; 11)Culture, Art and Sciences; 12) Industry
Regional dummies: Brest_ru, Brest_sm, Brest_lar, Gomel_ru, Gomel_sm, Gomel_lar, Grodno_ru, Grodno_sm, Grodno_lar, Minsk_ru, Minsk_sm, Minsk_lar, Vitebsk_ru, Vitebsk_sm, Vitebsk_lar, Mogilev_ru, Mogilev_sm, Mogilev_lar, Minsk_city	Nineteen regional dummies are also constructed by dividing each of the six existing oblasts (Brest, Gomel, Grodno, Minsk, Vitebsk, Mogilev) into three sub-regions, relative to areas with large cities, small cities and rural areas. Minsk city is kept separately and represents a baseline.

Instruments

Household level data

Age when the first child was born: afch15t22, afch18t22, afch23t28	Dummy for the age when the first child was born: afch15t17 – from 15 to 17; afch18t22 – from 18 to 22; afch23t28 – from 23 to 28. The same, but considering only those women who are currently under 30: afch15t17_30; afch18t22_30; afch23t28_30
CH0_5	=1 if there are children in the family under 5 years old
numdepchild	Number of dependent children (nchild3 – if number of dependent children is greater than 3)
old60	=1, if in the household there are elderly over 60.
ltotalexp	Total household expenditures, in natural log terms
ldifer	The difference between the total household income and the respondent's total monthly income

Aggregate level data

preschool	Pre-school establishments, measure as % of children attending pre-school establishments, by regions
youngerwap	Percentage of the population younger than 16 in the overall population, in log terms.
olderwap	Percentage of the population older than the working age, which is 55 for women and 60 for men, in log terms
hbedsreg	Number of hospital beds per 10000 of population / regions, in log terms