ESCIRRU
Economic and Social Consequences of Industrial Restructuring in Russia and Ukraine

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ESCIRRU Working Paper No. 17

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Berlin, January 2010

ESCIRRU • A European Research Project Funded by the 6th Framework Programme and Managed by DIW Berlin

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Abstract: Ukrainian women are on average much more educated than women in developing countries and they also tend to show higher participation rates, albeit smaller than men's. They are also at least as educated as Ukrainian men. Women and men with identical characteristics might show different patterns of participation to informality. This result reflects in different probabilities of women and men to move across states between the two periods under exam. This emerges clearly from the analysis of the transition matrices. Both men and women show higher propensity to go to the formal sector from the informal one than vice versa. However, contrary to what is predicted by segmented labor market theories we find a higher concentration of women in the informal sector.

On average, Ukrainian women do earn less than men and this is true both in the formal and in the informal sector. However, when we decompose the gender earnings differential we find evidence of two very different patterns between the formal and the informal sectors. In the formal sector, the earnings differential is entirely due to the unexplained component, usually indicated as an indicator of wage discrimination. In the informal sector, on the contrary, when the earnings differential is significantly different from zero, it is entirely due to differences in the explained component (personal, household and job characteristics).

Overall, these results can be interpreted as the evidence that the Ukrainian labor market is indeed segmented and that women suffer some sort of discrimination. This discrimination is not taking place through the segregation of women in the informal sector but, more likely, through different remuneration of characteristics in the formals sector and different career opportunities and the exclusion of women from the better remunerated jobs at the top of the hierarchy. This might also explain why women in the upper tier of the wage distribution experience higher earnings when they are self-employed compared than when they are salaried, both in the formal and in the informal sector.

[1] The author is grateful to Hartmut Lehmann for valuable discussions. Financial support from the European Commission within the framework 6 project "Economic and Social Consequences of Industrial Restructuring in Russia and Ukraine (ESCIRRU)" is also acknowledged.

1 Introduction

Segmentation of labor markets has been a subject of debate for labor and development economists for a long time. In his famous survey Cain(1976), summarizing the challenges raised by the theories of Segmented Labor Markets (SLM from here on) to the classical and neoclassical schools of labor economics, goes back until the end of the 19th century quoting John Stuart Mills as one of the first economists aknowledging the segmentation of the labor markets together with the existence of persistent wage differentials among different groups of workers.

Since then several of the issues raised by the SLM theorists' have stayed in the research agenda, as those issues remain important despite the historical and economic changes that have taken place all over the world. In particular, over the last decade there has been a revival of research on informal employment and labor market segmentation in developing countries, generating a lively debate about the interpretation of the nature of informal employment. At the same time, the persistence of the gender wage gap at the world level[2] has been indicated as one of the most important obstacles to the reduction of poverty.

These two different aspects of SLM theories might look , at a first glance, not so closely related. Indeed, the existing literature has studied them mostly independently from each other. However, there are reasons to believe that it might not be the case.

Labor market segmentation can be characterized as a situation in which people working in some jobs or in some sectors experience difference in earnings and enjoy different levels of protection and sets of opportunities with respect to others with similar productivity. To have labor market segmentation, however, we need also this situation to be "rigid", that is, these differences must persist and it must be difficult for the disadvantaged workers to move to the "good" jobs or segments of the market.

[2] A very recent ILO study finds that "in most economies, women still earn 90 per cent or less of what their male co-workers earn" ILO (2007) .

Segmentation translates then into dramatically different levels of vulnerability which make some individuals much more likely to end up in a state of poverty and deprivation than others, especially in less developed countries, as labor is the main source of income for most poor people in the developing world (Fields (2006))[3].

If labor markets are becoming more segmented , such increase in segmentation is then likely to affect negatively the most vulnerable groups among workers. Women are one of these groups[4]. Past research, in fact, tells us that women tend to be more vulnerable than men, showing lower participation rates and, even when they do enter the labor market, to earn less and to advance more slowly in their career.

It follows from this that, if we are to fully understand the nature and the reasons of the persistence of the gender wage gap we have to take into account also the impact that the existence of different sectors in the labor market (formal and informal) has on this measure.

Research on informal employment in transition countries has been very limited, above all because of a lack of appropriate data. On the other side, there have been several works studying the extent of of the gender gap in earnings, both at the beginning and in the subsequent phases of transition.

This paper is probably the first attempt to analyze jointly and thoroughly labor market segmentation and the gender wage gap in the context of a country in transition. Using the data of the two available waves of the ULMS (2003 and 2004) I am going to identify the patterns characterizing male and female employment, both in terms of mobility across labor market states and in terms of earnings, in an attempt to establish the extent to which labor market segmentation appears to

[3] This is an especially worrying consequence of segmentation, as a recent ILO report (ILO, 2006), the types of jobs that have been created worldwide in the last years have been mostly 'bad' jobs – insecure, low-paid, precarious – which fail to provide workers and their households enough income to escape poverty.

[4] It is not an accident that Standing (1999) referred to the 'downward' convergence of male and female employment patterns calling this process 'global feminization'.

influence the relative positions of the two genders in terms of wages. There might be reasons to believe that it might be insightful to study them jointly.

This paper begins with a description of the debate about the nature of the informal labor market; of how economic theory envisions the relationship between women and the informal sector and what are the hypotheses to be test. In section 3 we will introduce the data used. In section 4 we will see the determinants of informality and the patterns of mobility in the Ukrainian labor markets. In section 5 I will explore the links between earnings, employment status and gender differentials. Finally, in section 6, I will conclude.

2 The debate about the informal labor market under a gender perspective

2.1 The debate about the nature of the informal labor market

The discussion of labour market segmentation dates back to the post-World War II period (Roy, 1951; Lewis, 1954; Doeringer and Piore, 1971). In the last decade, it has been the subject of a renewed debate, mainly in the context of developing countries (see Fields, 2005, for a recent review) .

Traditionally, the formal sector has been characterized as the "good" sector, in which jobs give right to higher pay, more security, better working conditions and better opportunities for advancement. The primary/formal sector coexists, according to the "traditional" school with a secondary/informal one providing no benefits, protections or guarantees, little or no chances of promotion, poor working conditions and low pay. To have segmentation, limited (and asymmetrical) mobility has to exist between the "restricted access" formal sector and the "free entry" informal sector. In this traditional view, then, people in the secondary/informal sector find it extremely difficult to move to the formal sector. It is this separation that justifies different remuneration of factors in the two sectors. For example, the formal sector has always been associated with higher remuneration of human capital characteristics with respect to the informal one where human capital appears to be less remunerated.

The evolution of the debate, however, has led to a shift in the focus of the analysis from the comparison between formal and informal sector to a more detailed study of the features characterizing the informal part of the labor market. It is now recognized by most economists that informal jobs are not all identical and that some informal jobs might be actually preferable to some formal ones. The main debate now is on the extent to which informality is *chosen* rather than accepted as the only alternative to unemployment and on the freedom to move across the different sectors[5].

According to the first of the two "revisionist" schools of thought that have emerged, (see for example Maloney 1999, 2004), the movement across the two segments of the labor market (formal and informal) is generally believed to be free. If this is true, most workers are choosing informal employment instead of formal employment as they (given their personal characteristics and preferences) get higher utility from working in an informal job than in a formal one. According to this interpretation, then, taking into account worker characteristics and preferences, labor market segmentation would not exist or would be negligible and formal sector jobs would not be "superior" to informal ones.

The other main "revisionist" school argues instead that the freedom of movement between different segments of the labor market is still limited and the share of individuals forced to stay in "bad" jobs despite their personal characteristics and preferences is not negligible. The distinction between formal and informal jobs however does not correspond anymore to the distinction between "good" and "bad" jobs, as the informal sector itself is segmented, characterized by the simultaneous presence of "upper tier" (restricted access) jobs and "lower tier" (free entry) jobs. Upper tier informal jobs in terms of utility are now almost indistinguishable from (and sometimes preferable to) formal ones, while lower tier informal jobs constitute the "truly disadvantaged" segment (see, e.g., Fields, 1990, 2006).

[5] Here I will only sketch the main differences between the differents school of thoughts. For a more detailed exposition, see Lehmann and Pignatti (2007).

2.2 Informal labor market and gender

If labor market are segmented, with limited possibility of movement between the "free entry / low quality" jobs and the "restricted / high quality" jobs, men and women might be hit differently if they had different propensity to enter one or the other segment of the labor marked. Indeed, several possible explanations have been offered about why women might be more present in the informal sector than men. Among these we find supply side explanations and demand side explanations. An interesting development of the literature on gender differences in the labor markets distinguishes also between the horizontal and the vertical dimension of occupational segregation.

Supply side

It has been suggested that women may actually prefer working in the informal sector because it offers the flexibility they need (in terms of working time, work location, seasonal patterns, etc.) to be able to combine paid work and homework and nurturing activities. This argument goes back to the theory of compensating differentials. According to this theory, workers are ready to trade-off part of their wage for what they consider more desirable working conditions – in the case of women, for greater flexibility (Maloney, 2004). If this is the case, Maloney argues, the provision of social support to informal workers becomes less compelling than traditionally has been assumed.

A number of studies has shown that some variables such as marriage, the number of children and the presence of other women in the household affect the decision to work outside the household *vs.* at home for women and not for men (Amuedo-Dorantes, 2004; Das, 2003; Gallaway and Bernasek, 2002 among others). Marriage and the number of children decrease the probability of entering the labor force while the presence of other women or the lack of a male in the household increase this probability. The presence of children increases the probability of working in the informal sector for women but it is either non-significant or has a negative effect for men, while a higher number of adults in the household is generally associated with a lower probability of informal employment for women (Amuedo-Dorantes, 2004; Das, 2003; Funkhouser, 1996; Gallaway and Bernasek, 2002). This evidence suggests that women may be willing to participate in informal employment as a way

to better combine participation in the labor market and household responsibilities. However, this does not exclude that in an ideal world with a broader range of options (as the possibility to engage in flexible forms of *formal* employment or in the presence of family-friendly policies aiming at reconciling paid and unpaid work) they would still prefer to work in the informal sector, especially if this was associated with a wage penalty.

Demand side

There might also be demand-side motivations for a concentration of women in the informal sector. Traditional employers' discrimination theories are the "taste for discrimination" (Becker, 1957) and the "statistical discrimination" (Phelps, 1972). According to the former, employers prefer men to women, either because working with women creates a disutility to male employees, or because being served by a woman creates a disutility to customers. Statistical discrimination instead exists when employers, in a context where the productivity of each single worker is not known a-priori, prefer to hire men because they are on average more productive. Both types of discrimination can explain why men may be preferred to women for jobs in the formal sector but none of these explanations is compatible with persisting discrimination in the long-run, when competition favours employers who do not discriminate (in the case of the taste for discrimination theory) or better information allows employers to hire productive women (in the case of the statistical discrimination theory).

Other possible demand-side explanations of discrimination are based on the higher hiring costs of women with respect to men. Women could be forced to accept informal jobs because the employers in the formal labor market respond with cut in wages and employment discrimination practices to their higher costs, such as those related to mandatory leave legislation. Evidence of this type of legislation on the demand for women employees has been found in different works (World Bank, 2001; Paci, 2002). Finally, women can be also forced into the informal sector because of limited physical mobility because of social norms (Chen, 2001).

Horizontal versus vertical segregation and the "overcrowding"theory

So far we have seen reasons why women might be more likely to end up in the informal sector than men. However, this type of segregation (horizontal segregation) is not the only one possible. The most recent literature distinguishes between two types of occupational segregation, one being the horizontal one we have discussed so far and the other being vertical segregation. Vertical segregation refers to the hierarchy or status of women within each occupation or sector, in particular to the fact that men are more likely to be in supervision/managerial positions within each occupation or sector (Hakim, 1992; Blackburn et al., 2001; Charles and Grusky, 1995).

It might be then that, not only are women concentrated in the informal sector, but that gender segmentation exists also within formal and informal employment.

This view is compatible with the "overcrowding" theory (Zellner, 1972; Bergmann 1971 and 1974), according to which women tend to be more concentrated in relatively few "female" occupations mostly in the secondary segment of the market. This would explain the existence of gender wage differentials both in the informal and in the formal sector with different degrees of competition men and women have to face.

2.3 Specificities of transition countries

The theories exposed in the previous sector where essentially thought for developed or developing countries. There are, however, several reasons to believe that the results obtained for developing countries might not hold necessarily in the case of transition countries.

First of all, the structure of the economy at the beginning of transition is much different from that of developing countries. While in developing countries we have a very underdeveloped industrial sector and several possibilities to engage in entrepreneurial activities, in transition countries the industrial sector at the beginning of the transition was already developed and organized in very large industrial conglomerates, with a very rigid and centrally planned system. Even after several years of transition, the industrial base of the economy tends to remain large, despite the growing role of the service sector and large firms still employ a large number of people.

From the individual point of view, on one side, individuals enjoyed of secure, life-long employment, on the other they had (especially in the former Soviet Union) no possibility to engage independently in entrepreneurial activity. Moreover, the labor force in socialist countries start with much higher levels of human capital, with the large majority of the population having secondary education or higher education, a situation very different from the one we find in developing countries..

Looking more specifically at the situation of women in transition countries we find that females labor force were "encouraged" to participate to the labor force offering a "guarantee" of equal pay[6], generous maternity benefits and other incentives all aimed at this purpose. Even if this was only partially true in practice (there is evidence in the literature on transition countries that women tended to be segregated in some sectors of the economy and in certain types of occupation[7]), this led to participation rates much higher than those in developing, but also developed countries. Even nowadays, despite the reduction in female participation rates following the transition, levels of participation in ex-socialist countries remain relatively high. Generous maternity leave rules (allowing long periods of leave, more flexibility and monetary benefits to women with children) and protective legislation in general are still in place in several countries, together with anti-discriminatory legislation[8]. One might well argue that in the presence of such incentives and of a relatively small informal sector women might prefer a formal sector job rather than a job in the informal sector and that only those whose opportunities in the formal sector are extremely scarce might decide to move to the informal sector.

[6] In reality, also under state socialism female-male wage differentials existed. However, women in socialist countries were performing certainly better than their counterparts in developing countries.

[7] Brainerd (2000); Newell and Reilly (1996).

[8] Among which we also find Ukraine, where gender discrimination is prohibited by article 24 of the constitution as documented in Ganguli and Terrell (2005)

How might women in general and the gender wage differential be affected in the short or medium term when the control over the central planner breaks apart?

First of all we can expect a widening of the wage structure (with a change in the remuneration to observed and unobserved skills as well as rents), which is going to penalize those who occupy the lower part of the distribution[9]. However, since skills will be better remunerated than before the regime's switch and since women in general were generally more educated[10], this would tend to push the wage differential in the opposite direction.

A second channel through which the gender wage differential might be influenced is the changes in discriminatory behaviour by enterprises. Also in this case, however, it is unclear a priori whether discrimination should increase or decrease. On the one hand, employers might be more free to discriminate because of the end of state control. On the other hand, however, it might be true the opposite if market competition makes it too costly for them to discriminate.

A final differential effect could come from the existence of gender differences in risk-aversion. It is arguable that in a transition setting we might, expect on average a much lower average propensity to take up activities with riskier prospects (for example becoming self-employed or moving to the informal sector) than we would normally observe in a developing economy. This is due to the long-term experience of security and of lifetime employment during the Soviet era. Literature analyzing gender differences in risk aversion, women do appear to be more risk averse than men (see for example Chauvin and Ash (1994) , Powell, Ansic (1997) or Fehr-Duda, Gennaro, Schubert (2006)). If this is true, this should be reflected in patterns of mobility and, potentially, also on gender wage differentials as earnings dynamics differ in the two sectors. In this case, in contrast to what is predicted by theory in the case of developing countries, women could well prefer the security offered by the formal sector to the flexibility offered by the informal one.

[9] Brainerd (2000) suggests that this tended to be the case in socialist countries prior to the transition.

[10] Brainerd (2000).

2.4 Labor market segmentation on the gender wage gap in Ukraine: scope for analysis

The aim of this paper is to analyse the Ukrainian labor market from a gender perspective in order to understand:

- to what extent the evidence is in line with the predictions given by the theory about labor market segmentation in developing countries;
- how labor market segmentation, if it exists in Ukraine, contributes to the gender wage differential.

This appears to be particularly relevant as, in the years under analysis the growth in the Ukrainian employment rate is driven mainly by the growth of the informal sector.

A first important issue to be tested is the overall existence of labor market segmentation when we look at the two genders separately. In other words, do the determinants of informality differ between men and women; are the patterns of mobility and of labor force participation similar or different between the two groups; can we say, after controlling for observable characteristics, that women are more likely to end up in the informal sector than men as it is suggested by the theory on informal labor markets in developing countries?

After analysing these aspects, we will move to the analysis of the wage gap in Ukraine. Is the existing gender wage gap in Ukraine (Ganguli and Terrell, 2005; Lehmann and Pignatti, 2007) due to the higher concentration of women in the informal segment of the labor market, which pays on average lower wages? Or are other factors important in the determination of this gap? For example, do different labor market segments remunerate observable characteristics of men and women in the same way or differently? Is there any evidence of unexplained factors having an important roles in determining the gender earnings differential?

3 Data and data issues

This work is based on the ULMS, a nationally representative survey, undertaken for the first time in the spring of 2003, when it was comprised of around 4,000 households and approximately

8,500 individuals. The second wave was administered between May and July of 2004, when sample sizes fell to 3,397 and 7,200 respectively. The Ukrainian Longitudinal Monitoring Survey (ULMS) is a household panel established to monitor Ukraine's path of transition from Communism to a market-oriented economy. The target of the household survey is the working age population, spanning years of age 15 to 70.

The household questionnaire contains items on the demographic structure of the household, its income and expenditure patterns together with living conditions.

The central data used in this paper are those from the individual questionnaire for the two reference weeks in 2003 and 2004. We can identify salaried workers and self-employed workers. Informality for salaried workers and self-employed in the main job held during the reference week is identified by the answer to specific questions[11]. With registration, salaried workers acquire several fringe benefits, pension rights as well as substantial job security, the latter at least on paper. It should be emphasized that in my analysis I am looking at informal employment relationships (job not registered in either informal or formal sector firms) rather than to employment in the informal sector (individuals working in informal sector firms).

For consistency with the analysis that is going to follow, I have chosen to identify four major labor market states:

- Formal employment (including formal salaried and formal self-employed);
- Informal employment(including informal salaried and informal self-employed);

[11] The questions for the identification of informality are the following. For salaried workers the question is: "Tell me, please, are you officially registered at this job, that is, on a work roster, work agreement, or contract". Salaried workers are subsequently asked: "Why aren't you officially registered at this job"? If the answer is that the employer did not want to register him/her, then the worker is classified as involuntarily informally employed. If the answer instead is that it was the worker who choose not to register or that he decided together with the employer, he/she is classified as voluntarily informally employed. For the self-employed there is a question on whether the activity is registered or not, which again allows us to identify informality. Informal activities of the self-employed are, of course, considered voluntary.

- Unemployment;
- Out of the labor force.

Salaried employees are asked in the two reference weeks to give their last monthly net salary in Hryvnia. The self-employed are asked to give an estimate of net income for the last month preceding the reference week[12].

Like in all CIS countries, salaried workers in Ukraine have been confronted with wage arrears. While this phenomenon was less rampant in 2003 and 2004 than in the nineties, even in this period a substantial fraction of workers has reported to have received less than the contractual wage in the last month preceding the reference week. Some workers, on the other hand received more than the contractual wage in this month, since they were paid some of the previously withheld wages. In order to take into account the effects of these "disturbances", I include in the wage regressions a dummy variable for those whose last wage exceeds the contractual wage and a dummy variable for those whose last wage is less.

Another issue is represented by the non-normality of log hourly earnings. As in Lehmann and Pignatti (2007), Jarque-Bera (1980) tests of normality reject the null hypothesis in both years. This results remains true even when we disaggregate earnings by gender. With outliers trimmed the test rejects the null hypothesis of normality for 2003 and for 2004 for both genders. Consequently, in the wage regressions that I perform I still use the untrimmed log hourly earnings. To check whether the problem connected to non-normality is likely to affect significantly the results of the analysis I also estimate earnings functions using robust and quantile regressions. The main patterns remain broadly the same. However the results seem to indicate that at least in some case there might be some interesting difference between what happens in the center and the tails of the distribution. For

[12] Since in the ULMS is not available a measure of the capital used by the self-employed, I cannot include returns to capital in net monthly income. However, as suggested in Lehmann and Pignatti (2007) this component is not likely to be substantial in the Ukrainian context.

this reason I will not only discuss the OLS wage equations (with and without correcting for selection), but also the results for the quantile regressions calculated at the tenth percentile, at the median and at the ninetieth percentile. The tables for the robust regressions are available in the appendix.

4 Informality and mobility between labor market states: differences across genders

4.1. Descriptive analysis

In table 1 we can see a first set of indicators showing how the two genders are distributed across the four labor market states, their participation rates and their share of the sample. In the last two columns we can see the ratio Formal/Informal for each gender and (for 2004) the percentage change in the ratio from the previous year.

In the Ukrainian working age population, women are more numerous than men. This is obviously true both in 2003 and in 2004, with women representing about 58 percent of the sample in both periods. When we look at the distribution across labor market states we can immediately see that women tend to participate to the labor force significantly less than men (51% against 65 % in both periods). In this respect Ukraine tends to show a similar behaviour to other countries, even thought the level of participation for both genders remains a bit higher than in most developing countries and (not surprisingly) more in line with participation rates of transition countries. On the other side, when we compare employment rates, we cannot identify a clear difference between men and women, with both groups around 83% in the first period and above 85% in the second period[13]. In this case the pattern is clearly different from that we find in developing countries, where women tend also to have lower employment rates.

[13] 2003 and 2004 were years of a vigorous growth for Ukraine. This growth started already in 1998 but resulted in a reduction in unemployment only in 2004 (see Lehmann, Kupets and Pignatti, 2005).

Looking at the ratio of formal to informal employment by gender, we find a first interesting result indicating that the Ukrainian labor market behaves differently from what "standard" theories on gender would predict.

In Ukraine women show a greater Formal/Informal ratio than men in both the years under analysis and, even in a period where employment growth was mainly driven by the informal part of the economy (Lehmann, Kupets and Pignatti, 2005), they tend to move towards informality at roughly the same speed as men (the female F/I ratio drops by about 33% against 34% for men). This does not to indicate, at first sight, any preference for informality for women. We will investigate this issue further in the section on movements between labor market states.

When we look at the distribution of characteristics in the sample (table 2) we can notice that the age of women in our sample is slightly higher than that of men and their educational attainments appear to be almost always better than those of men (the only exception being the share of women with university degree or higher in the informal sector in 2003 – 9% against 12% for men)[14]. The same is true also for tenure (again, women show an higher average tenure than men in all cases except in the informal sector in 2003). If we look at how many men and women choose an informal employment (both as salaried and as self-employed) it emerges that women do choose to go informal less than men in both periods, with a larger preference for self-employment. However, in both periods, the share of women choosing voluntarily to be informally employed (over the total of the informally employed) is only about 55%, about five percentage points less than men. It is important to note, anyway, that the fraction of voluntarily informal is pretty low in both years (especially among the salaried).

If we look at the individuals choosing to be informal salaried and at the self-employed we find that the patterns that we identified for the whole sample are the similar only to those for those choosing voluntarily to be informal salaried. They are instead somehow different when we look at

[14] This is certainly a consequence of the investment in public education that has taken place in this country and of the large exit from the workforce of less skilled women as reported by Ganguli and Terrell (2005).

the self-employed. While it remains true that women's mean age and tenure are higher than those of men, when we look at education we find a more complex pattern. For example, an higher proportion of men tends to have an university degree or higher with respect to women, with the exception of formal self employed in 2004 where the share of women with a university degree is 35% against 30% for men. If we consider the share of individuals with secondary education or higher, the pattern we have identified before seems to be respected.

Women and men appear to behave differently when we compare their work choices with their level of education. For both groups it is true that the higher share of most educated individuals appears in the formal sector of the economy. However, when we look at the choice of being informal salaried versus the choice of being informally self-employed we find that the share of women with university degree or higher is much higher among the informal salaried who voluntarily chose to become informal than among the informally self-employed, especially in 2004. The opposite is true for men and it becomes also more evident when we look at what happens in the second period.

In table 3 I report the mean and median earnings for males an females at the aggregate level as well as disaggregated by sector (formal/informal) for 2003 and 2004. Women appear to experience negative wage differentials with respect to men in both the formal and the informal sector, with the wage gap being larger in the formal sector in 2003 and in the informal sector in 2004. The mean and median earning differentials range between 22 and 29 percent in 2003 and between 24 and 36 percent in 2004.

If we look at the distribution of men and women across sectors and occupations (tables 4 and 5), we find evidence that both groups tend to be more present in the sectors identified by the literature analyzing labor markets of transition countries after the fall of the Soviet Union (Fong and Paul, 1992; Brainerd, 2000). Employed women are concentrated in Services (which include Health and Education sectors) both in the informal sectors, while men are more evenly distributed. The second

largest sectors in terms of concentration of women are industry in the formal sector and agriculture in the informal sector. In particular, in the second period (2004) an unexpected change takes place, with the share of women employed in the informal service sector dropping from 55% of total employment to 49% and the share of women in informal agriculture rising from 24% to 34%. Men behave differently, with the shares in construction and industry increasing while other sectors were shrinking. In almost all sectors (with most significant exceptions being the formal agricultural sector and the "other services and activities" sector), women experience a negative wage differential.

There are differences in the distribution of men and women between the formal and the informal sector. In the formal sector women tend to be more concentrated in the occupations classifiable as "highly skilled" (ISCO categories 1 to 3) than men (45% against 28% in the first period and 46% against 27% in the second period). However, they are always less concentrated than men to the top (managerial positions) and more in the categories of professionals and technicians. The second category where women are more concentrated in the formal sector is category 9 "elementary occupations". Men are instead more concentrated in both periods the occupational category classified as "craft and related trades workers" (ISCO category 7) and, slightly less than women (18% against 20%), in category 9. If we look to the informal sector, women appear to be more concentrated in categories 5 and 9 (service workers and shop and market sales and elementary occupation). It is worth noting that the share of women in managerial positions in the informal sector is larger than men's. Looking at unconditional wages, however, we can see that despite this women in managerial position earn always less than men. Men's distribution among the different occupations inside the informal sector does not differ significantly from that in the formal one.

From this descriptive analysis already some interesting patterns emerge. Ukrainian women are not disproportionately found in the informal sector and that their human capital (as measured by the variables we have considered) is not considerably lower than that of men. However, there seem to

be clear (different) patterns in the distribution of both groups among different occupations and sectors and also evidence of the existence of unconditional wage differences among men and women across occupational groups and sectors.

4.2 Determinants of informality

We have just seen that women appear to be less informally employed than men. This result, however, does not control for the different individual characteristics that might be associated to an individual being formally rather than informally employed. In a recent paper, Lehmann and Pignatti (2007) have found the gender dummy to be insignificant when used to predict the likelihood to be informal. This tells us that, controlling for a number of observable characteristics, there does not appear to be on average a gender specific bias towards the informal sector. What this result cannot tell us, however, is whether the relation between individual characteristics and men's and women's probability to end up in the informal sector is the same or is somehow different[15]

In order to shed some light on this issue I adopt the following strategy. First, I run two sets (one for each year) of three probit regressions (one including all the employed, one only for the self-employed and the last only for the employees) having as dependent variable a dummy variable having value 1 when the individual is employed informally and 0 when he/she is employed formally. Then, in order to be able to test meaningfully if the different coefficients appearing in probit regressions for men and women are different, I perform a "seemingly unrelated estimation", combining the parameter estimates and associated (co)variance matrices of each couple of regressions (all men/all women, self-employed men/self-employed women, salaried men/salaried women) into a single parameter vector and simultaneous (co)variance matrix of the sandwich/robust type. Doing this allows me to test for the equality of the estimated coefficient across the two

[15] In the text I speak of correlation rather than of causal effects since some of the right-hand-side variables in the presented probit regressions are potentially endogenous.

genders, allowing for the distributions of the robust standard errors (clustered by household) to be different between between men and women.

Testing the hypothesis of all the coefficients of the regression taken jointly being identical between the two genders, I find that this hypothesis can be rejected in two cases out of three (at the 5% level, the exception being the equations for the salaried) in 2003 and in all cases in 2004 (at the 5% for the self-employed and to the 10% in the remaining cases - table 6). It seems, thus, that differences between men's and women's coefficients existed both 2003 and 2004. The probit regressions produced to implement this test are in tables 7 to 12.

I move then to test the same hypothesis (coefficients being identical for males and females) considering the coefficients individually. Not surprisingly, I am able to identify for all sets of equations, a number of situations in which men's and women's coefficients appear to be significantly different.

A first example is age, which in 2003 is negatively correlated (table 8) with the probability of self-employed women of being informal, while it is positively correlated with that of self-employed men. This is not the only case in which age is found to have different impacts on men and women. Also in 2004, both taking self-employed and salaried workers together (table 10) and self-employed alone (table 11), men's and women's coefficients differ, with age being positively correlated with informality for men and negatively for women.

The impact of education variables on the probability of being informal does not appear to differ very much between the two genders. In 2003, taking all employed together (table 7), we find university education to be more strongly (negatively) correlated with the probability of being informal for women than for men. However, when we take the self-employed and the salaried workers salaried, we cannot reject anymore the hypothesis that the coefficients for men and women are the same. In 2003 the coefficients for secondary education do not appear to differ significantly between men and women. In 2004, the only educational attainment that appears to have a different

impact on the probability of being informal is secondary education among the self-employed (table 11), having a much stronger negative impact on the probability of being informal for men than for women.

In 2003, being single seems to have had different implications for men and women in Ukraine, taking all the employed together (table 7) but especially among the self-employed (table 8). While for self-employed women it is associated with a reduction in the probability to be informal, in the case of self-employed men the relation is positive. While we do not find other regressions where the fact of being single has a negative relation with women's probability of being informally employed, in several cases it remains positively associated with men's probability of being informal (maybe due to a lower risk-aversion characterizing single man) while for women it is always insignificant.

Having at least a child less than six year old is significantly positively correlated the probability of self-employed men to be informal, both in tables 8 and 11. In one case (2003) our test rejects the hypothesis that the coefficients for men and women are identical. This happens also in 2004 in the regressions for the salaried workers. This time the probability of being informal is negatively correlated with having a child aged less than six, while for women the relation is positive but insignificant. It is surprising that the having at least a child aged less than six do not seem to affect significantly women's probability to be informal in any of the regressions, as theory would predict women behaviour to be more influenced by the presence of young children in the household than men.

In 2003, a higher number of members of the household working in the formal sector is negatively associated with the probability of working informally among the salaried, both for men and women. This might indicate the existence of some form of comparative advantage for those having other household members in the formal sector, when they look for a formal job. Among the self-employed, however men and women behave differently (table 8). Our test confirms that coefficients for men and women for the self-employed are indeed different (for women we have a

negative correlation with informality while for men the relation turns out to be insignificant). This pattern is confirmed also in 2004. In the other cases no significant difference arises between genders. However, it is worth noting that all coefficients that before were significant and negative now become insignificant.

Working part-time is always associated with an higher probability of being informal. However, while in 2003 men and women coefficients were similar (the hypothesis of identical coefficients is never rejected), in 2004 this relation appears to become much stronger for men than for women (tables 10 and 12) and the test always reject the hypothesis of identical coefficients.

Of the variables that were included in the probit regressions because thought to be related with the probability of being formal, tenure is the only one for which we have never found evidence of significant differences between men and women. The link between tenure and informality appears always to be negative for salaried workers and negative or insignificant for the self-employed, a result we could expect knowing that informality is a relatively new phenomenon in Ukraine.

These results confirm that, overall, the hypothesis that men and women are linked to the informal sector in the same way has to be rejected. This becomes even more evident in 2004, where the informal sector is gaining space and the economy is starting to change faster. Causes for these differences might be several. Among those, the presence of different risk-aversion between the two gender groups or the existence of different sets of opportunities available to them. In the next section we will see if and how this reflects in the patterns of mobility of the two genders across different labor market states.

4.3. Gender differences in mobility across the different labor market states.

Looking at patterns of mobility across labor market states is particularly important in an analysis of labor market segmentation, as one of the characteristics of a SLM is limited mobility, especially from the secondary sector of the economy to the primary one.

Exploiting the panel structure of the ULMS we are going to look at these patterns using the same set of matrices used by Maloney (1999) and Lehmann and Pignatti (2007), with reference to the Mexican and Ukrainian labor markets. In this case, however I will split the sample in two, to test whether there are diverging patterns between males and females.

As in standard transition matrices we have unconditional mean transition probabilities, to take into account compositional effects, I also produce mean transition probabilities conditioned on a set of observable characteristics. After calculating these "predicted" transition probabilities for men and women, I will produce counterfactual tables reporting predicted probabilities obtained applying "female coefficients" to men's characteristics and "male coefficients" to women's characteristics.

Theory of SLM would seem to suggest that the segmentation effect – if it exists – should be stronger for women than for men, also due to self selection, to the potential existence of discriminating behaviour from employers and to other factors. We would also expect very limited mobility between the two sectors, especially for women.

In the upper panel of table 13 I report the raw transition probabilities across four states (formal employment, informal employment, unemployment, out of the labor force) for females and males in the period 2003-2004. These probabilities assume that movements between states are governed by a Markov process[16] and are calculated as the ratio of the outflows from the origin state in 2003 to the destination state in 2004 over the total stock in the origin state in 2003[17].

From the observation of raw transition probabilities we see, contrary to our expectations, that women in Ukraine tend to have higher probability to remain in the formal sector and less in the

[16] As argued in Bellmann et al.(1995), the assumption that movements between states are governed by a Markov process seems appropriate for an economy subject to sudden structural shocks, where individual work histories become of lesser importance. This is indeed the case for Ukraine, which, despite having started the transition process almost a decade ago is still in an early phase of transition in the period under exam.

[17] One potential problem with these estimated probabilities might raise if "round tripping" problems were relevant. However, as discussed in Lehmann and Pignatti (2007) in this dataset round tripping is minimal.

informal sector. This reflects a lower share of women moving from formal to informal jobs, even more so if we consider that a higher percentage of women leaving formal employment move out of the labor force compared to men. A lower share of women leaving informal employment moves to formal employment relative to men. Women instead move more than men towards unemployment and out the labor force, indicating perhaps higher barriers to entry into the formal segment for women coming from informality. Looking at transitions from unemployment, we can identify another diverging pattern between men and women. Most men (about two thirds) flowing out of unemployment tend to enter either the formal or the informal sector. Women flowing out of unemployment instead tend to go back to work only in about half of the cases while the remaining half moves out of the labor force. Indeed, this is just another confirmation of the worldwide tendency of women's participation rates to be lower than those of men. What is striking however is that most of the difference between men and women appears to be due to a much lower fraction of women going back to work in the informal sector (9.4%) with respect to men (17.4%) while the fractions of the two groups of unemployed flowing back to work in the formal sector is very similar (25.3% for men against 24.8% for women).

The raw probabilities we have just seen, however, do not take into account the fact that departure and destination states may differ very much in terms of relative size and that labor market states' shares might grow and shrink at different paces in the period under exam (within the same group and/or between the two groups). In our case, for example, the size of the formal sector remains much larger in both periods for both males and females, but the relative importance of these sectors is different for the two groups, with formal employment being the state where more men can be found in both periods while out of the labor force is the state with the number of women in both periods. Informal employment's share is growing faster for men than for women. To take into account of these effects in my analysis, I standardize the raw probabilities by the share of the destination state at the end of the period (P.j) obtaining the Q matrices (Maloney, 1999).

Even adjusting for the size of the terminal state, men show a higher probability to move from formal to informal employment, but also a higher probability to move from informality to formality. Women show instead a much higher probability to move to unemployment from informality rather than to go formal.

If we want to compare the results obtained and attempt to identify the "disposition" of individuals to move across sectors, however, we need to take into account how likely is an individual to leave the state he comes from and how difficult it can be finding an "opening" in a different state. This is the intuition behind the V matrix that we find at the bottom panel of the table. In practice, I multiply the values of the Q matrix by the reciprocal of the outflow rate from the origin and destination states[18].

Both Ukrainian men and women show a higher disposition to move from the informal sector to the formal sector than vice versa. However, this effect appears to be stronger for women than for men. If we look at the unemployed, again men seem more likely to move to informality than formality, while for women the result is the opposite. Only when we look at individuals flowing back from out of the labor force, we see a common pattern (much stronger for females than for males, this time), that is, a higher propensity to enter in the informal sector rather than in the formal one. This result might indicate that individuals (especially women) with lower attachment to the labor force, when they decide to go back to work might prefer informal employment to formal employment (arguably for the same reasons that cause their low attachment).

The results we have discussed so far, however, are based on unconditional mean transition probabilities between the various states that do not take into account compositional effects. For this reason, I decided to predict individual transition probabilities for males and females after estimating two sets of multinomial logit regressions (one for each gender) to control for a set of observable

[18] Under Markovian assumptions, this corresponds to the duration of state occupancy (exponentially distributed). For a more detailed description of Q and V matrices, please see Lehmann and Pignatti (2007) or Maloney (1999).

characteristics. I always choose the origin state as the default category. The interesting advantage of the multinomial logit model is that, once I have the estimated parameters, I can predict the probability that a new individual with a specified set of characteristics will be in one of the *j* categories available. I use this property also in my prediction of the counterfactual transition probabilities[19].

In table 14 we find the new P, Q and V matrices based on predicted probabilities. The first thing we observe is that the predicted probability of remaining in the origin state is higher for both groups. However, when we look at the differences across genders we see that now the pattern is exactly the opposite than it was before. Once we control for observable characteristics, men's probability to stay in the formal sector is higher than women's, while the opposite becomes true for informal employment. Women appear to be more represented in the formal sector (and less in the informal sector) mainly because of the different characteristics they have. This, however, has the effect to strengthen the results we found before. Now women show an even higher disposition to move from the informal sector to the formal sector compared to the disposition towards the opposite movement (matrix V). This time, this becomes more evident also for men. We confirm that individuals in Ukraine seem to prefer moving from informal to formal than vice-versa (the only exception being the high propensity of women out of the labor force to move to informality).

To conclude the analysis of mobility across labor market states, in the effort to disentangle the effects due to the different distribution of characteristics across genders from those due to different coefficients I calculated two counterfactuals. First, I calculated the predicted transition probabilities for men applying women's coefficients to their characteristics. Then, I applied men's coefficients to women's characteristics. The results are in table 15.

Counterfactual transition probabilities confirm that, keeping characteristics constant, men would be more likely to stay in formal employment and less in the informal one if they "behaved" as

[19] The results of the multinomial logit regressions are in the appendix.

women (had women's coefficients). They would also be more "keen" to move from the informal sector to the formal one and less to move in the opposite direction. On the other side, women, keeping characteristics constant and applying men's coefficients show the opposite tendency, i.e. an increased disposition to move from formal to informal and smaller disposition to move in the opposite direction. We can conclude that women in Ukraine seem not only to have characteristics making them more likely to stay in formal employment than men, but also a strong "preference" for that form of employment, both in absolute terms and relative to men.

5 Wages, employment status and gender differentials

After analysing labor market mobility, we also also at the way in which labor is remunerated in the formal and informal sectors and if the same mechanisms seem to hold for both men and women. Lehmann and Pignatti (2007) find evidence supporting the second "revisionist" school of labor market segmentation. First of all, they find that the formal sector remunerates education and tenure while the informal sector does not. They also find some evidence of the fact that wages tend to grow less for individuals moving from the formal to the informal sector, compared to those staying in the formal sector, with the notable exception of those who choose voluntarily an informal job. Finally, they find that female workers in the formal sector are disadvantaged in both years with respect to men. This is also true for the informal sector, but only for the first period.

Their results, however do not tell us anything about the determinants of this differential. In their model, in fact, coefficients for men and women are forced to be the same. It might be that coefficients for men and women are indeed the same, or that, instead, similar characteristics are remunerated differently according to the gender of the worker (this could be true, for example, if one of the two groups was discriminated against).

In this section I intend to test two hypotheses: whether this wage differential is due to a different remuneration of similar characteristics (coefficients) or to a difference in endowments (characteristics). I will also try to identify the determinants of the log earnings in the two periods

and in the two sectors of the labor market for men and for men and women, looking for additional evidence for or against labor market segmentation. To test for the relevance on non-normality on the results, also estimate robust regressions and median regressions. However, as the main patterns identified do not seem to differ from those identified with OLS regressions, I will mainly base my analysis on OLS results.

To decompose the wage differential, I will perform a twofold Oaxaca decomposition (Oaxaca, 1973) of the difference in mean predicted wages, choosing males as the "non-discriminated group". This is, in fact, the usual assumption in literature studying the gender wage differential. This procedure decomposes the difference in the mean predicted wages in an explained component (due in our case to differences in endowments between men and women) and an unexplained one (due to differences in coefficients and to the interaction of coefficients and endowments). Using the results obtained by separate wage regressions for men and women in both sectors and in both years, I perform the Oaxaca decomposition of the gender earnings differential. In order to take into account for the possible presence of selection I perform also the Oaxaca decomposition correcting for selection as suggested in the literature (see for example Neuman and Oaxaca, 2004). The results of the OLS regressions (with and without correcting for selection) are reported in tables 16 to 19.

The simple OLS regressions I perform show the existence of some common trends, but also some differences across genders. Both in 2003 and 2004, for example, the formal sector remunerates more individuals (men and women) with higher human capital, while in the informal sector this does not seem to happen. In one case, (table19), to higher age (my proxy for experience) was associated a wage penalty. Another interesting result is represented by the dummy for the self employed in the informal sector that becomes significant and positive for both men and women in 2004. For women, also having chosen to work informally in 2004 leads to an increase in expected wage. Unfortunately, however, when we look at median and robust regressions (tables 20 to 27), the effect for women becomes insignificant. I suspect that this, coherently with the most recent versions

of the theory on market segmentation, might hide radically different behaviours in the top of the distribution with respect to the bottom. For this reason, in addition to robust and median regressions, I perform two sets of quantile regression. calculated at the 10th percentile, and at the 90th percentile. The results of these regressions, at least for 2004, indeed show different patterns not only between genders but also within the genders themselves[20].

The first difference is related to the significance of the variables choice to be informal and self-employed. In the regression for males the coefficient remains significant at the median but it is not significant anymore in the tails of the distribution (10th and 90th percentile). The opposite is true for women. The effect of these variables at the 10th percentile and at the median is insignificant. However, when we look at the upper tier of women working in the informal sector we find that both the choice of being informal salaried and that of being self-employed increases significantly the expected wage. This is a very interesting result, in line with what segmentation theories suggest: informal sector segmented in itself, with an upper and a lower tier. Women choosing to be informal in the upper tier of the wage distribution appear to reap the (monetary) benefits of being informal, while those of the lower tiers do not. It is interesting to note that also in the formal sector the variable relative to self-employment is significantly positive only for the upper tier women distribution, while it is not so for men.

Going back to OLS, gender differences emerge also in other cases. For example, women working part-time experience in most cases (except in the formal sector in 2004), *ceteris paribus*, higher hourly salaries than women working full time, while this is not true for men[21]. Again, women seem to gain more from having university degree or higher. Looking at quantile regressions

[20] This does not happen for 2003. For completeness, even thought they will not be discussed here, I add also the tables for median and robust regressions relative to 2003.

[21] This is confirmed by robust regressions, but it does not appear to be significant in quantile regressions.

we see that these gains are larger for those at the top of the distribution and lower for those at the bottom[22].

To control for selection, I also run a second set of OLS regressions, where the selection equation was estimated with a multinomial logit model, following the methodology suggested by Lee (1983). The results in columns 3 and 4 of tables 16 to 19, however, do not differ significantly from those of the OLS regressions without selection. Only in one case, does the selection term become significant, in the case of men working in the formal sector in 2004.

After estimating wage equations, I can implement the Oaxaca decomposition of the earning differential between men and women. As we are trying to test if earnings dynamics differ, not only between genders in general, but also within the different sectors, I apply the Oaxaca decomposition separately to the two sectors. The results of the Oaxaca decomposition (adjusted and not adjusted for selection) are in table 28[23].

We immediately notice some differences between the results for the formal and those for the informal sector. Looking at the decomposition not adjusted for selection we see that in both sectors the difference in the mean predicted earnings is fairly similar (slightly higher in the formal sector in 2003 and in the informal sector in 2004). However, when we look at the decomposition of the differential, a big difference emerges. While in the informal sector the positive differential of men is almost entirely due to differences in characteristics (personal characteristics, job characteristics or sector characteristics) , in the formal sector the differential appears to be due to unexplained factors (we can think of this as evidence of discrimination against women in the formal sector). When we adjust for selection, the main conclusions do not change for the formal sector (despite the fact that we have seen the selection term being significantly different from zero only for the formal sector in

[22] In 2004 most sectorial coefficients turn out to be insignificant in the informal sector, except the coefficient for Other services and activities for women, showing a significant and positive effect on wages.

[23] The standard errors are calculated using the procedure developed by Jann (2005) for STATA.

2004) result remain valid, with an increase in the predicted differential in 2003 and a reduction in the predicted differential for 2004. For the informal sector, instead, the estimated gender differential becomes insignificant. However, given the increase of the imprecision of the predicted differential because of the introduction of the selection term in the regression and taking into account that the selection term is never significant in our regressions for the informal sector, we cannot rule out the possibility that the correct decomposition results are unadjusted ones.

Overall, these results seem to confirm the existence of gender "discrimination" in the formal sector. For the informal sector instead, maybe because of stronger competition between employers, earnings differentials appear to be in line with the different characteristics associated with the individual and with the type of job. This means that, if discriminatory behaviours take place, they might be in the form of vertical segregation, that is allowing men to have a faster career progression with respect to women and segregating women at the lower levels of the hierarchy[24]. This however might also be simply the consequence of the greater desire of flexibility by women, self selecting themselves in positions characterized by lower responsibilities.

6 Conclusions

My aim in this work was twofold:

- verify to what extent the evidence is in line with the predictions given by the theory about labor market segmentation in developing countries;
- see how labor market segmentation, if it existed in Ukraine, contributed to the gender wage differential.

In this work I have identified several differences in the patterns characterizing the participation of men and women to the labor market. These results, however, appear to show a picture of the

[24] The literature on gender differences in risk aversion, for example, gives a possible explanation of why employers might discriminate women when they have to fill the higher ranks of the hierarchy. See Chauvin and Ash (1994) and Powell and Ansic (1997).

labor market that is very different from the one that characterizes labor markets of developing countries. Ukrainian women are on average much more educated than women in developing countries and they also tend to show higher participation rates, albeit smaller than men's. They are also at least as educated as Ukrainian men. This explains why I find that a large share of women is working as manager, professional of technician. Looking at the determinants of informality I have found that women and men with identical characteristics might show different patterns of participation to informality with respect to men. This means that gender has an influence on the choice between formality and informality.

This result reflects in different probabilities of women and men to move across states between the two periods under exam. This emerges clearly from the analysis of the transition matrices. Both men and women show higher propensity to go to the formal sector from the informal one than vice versa. However, this effect is much stronger for women than for men and this appears to depend both from different endowments than from different "behavioural" patterns. This result is surprising, as segmented labor market theories predict an higher concentration of women in the informal sector, both for demand side and supply side reasons.

How does this translate in terms of gender earnings differential? Ukrainian women do not appear to earn less than Ukrainian men because of horizontal segregation, as the proportion of women in the informal sector is lower than that of men. This excludes that Ukrainian women might earn less because of a concentration in the "disadvantaged" informal sector. We find evidence of the fact that women actually choosing to be informal in the "upper tier" of the wage distribution (either as salaried or as self employed) earn more than those involuntarily informal, suggesting that informal labor market for women might be segmented in an "upper tier and a lower tier".

On average, Ukrainian women do earn less than men and this is true both in the informal and in the informal sector. However, when we decompose the gender earnings differential we find evidence of two very different patterns between the informal and the informal sectors. In the formal

sector, the earnings differential is entirely due to the unexplained component, usually indicated as an indicator of wage discrimination. In the informal sector, on the contrary, when the earnings differential is significantly different from zero, it is entirely due to differences in the explained component (personal, household and job characteristics). I interpret this as an indication that, probably because of the greater competition, in the informal sector it might be more difficult to discriminate women paying them less than men doing the same job and having the same characteristics.

Overall, these results can be interpreted as the evidence that the Ukrainian labor market is indeed segmented and that women suffer some sort of discrimination. This discrimination is not taking place through the segregation of women in the informal sector but, more likely, through different remuneration of characteristics in the formals sector and different career opportunities and the exclusion of women from the better remunerated jobs at the top of the hierarchy. This might also explain why women in the upper tier of the wage distribution experience higher earnings when they are self-employed compared than when they are salaried, both in the formal and in the informal sector.

The Ukrainian government is officially fighting a battle to ensure that no discrimination takes place in the Ukrainian labor market. From the results of this paper, it appears that this battle is not unjustified. But government intervention alone cannot really change things, at least not in a short time. In the short to medium run, the increased competition for workers with higher skills, or the possibility to become self-employed are probably the two best opportunities for the women to see a reduction in the earnings gap.

References

Amuedo-Dorantes, Catalina (2004), "Determinants of Poverty and Implications of Informal Sector Work in Chile" *Economic Development and Cultural Change*, 52, 2, pp. 347-368.

Becker, Gary S. (1957), *The Economics of Discrimination*, Chicago: University of Chicago Press.

Bellman et al. (1995), "The Eastern German Labor Market in Transition: Gross Flows Estimates from Panel Data". *Journal of Comparative Economics*, 20, pp. 139-170.

Bera, Anil K.; Jarque Carlos M (1980). "Efficient tests for normality, homoscedasticity and serial independence of regression residuals". *Economics Letters* 6 (3), 255–259.

Bergmann, Barbara (1971), "The Effect on White Incomes of Discrimination in Employment", *Journal of Political Economy*, 79, pp. 103-110.

Bergmann, Barbara R. (1974), "Occupational segregation, wages and profits when employers discriminate by race and sex", *Eastern Economic Journal*, 1, 1-2, pp. 103-110.

Blackburn, Robert M., Bradley Brooks, and Jennifer Jarman (2001), "Occupational Stratification: The Vertical Dimension of Occupational Segregation", *Work, Employment and Society*, 15, 3, pp. 511-38.

Brainerd E. (2000), "Women in Transition: Changes in Gender Wage Differentials in Eastern Europe and the Former Union". *Industrial and Labor Relations Review*, 54, pp. 138-162

Cain, G. (1976), "The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey", *Journal of Economic Literature*, 14, pp. 1215-1257

Charles, Maria and David B. Grusky (1995), "Models for Describing the Underlying Structure of Sex Segregation", *American Journal of Sociology*, 100, pp. 931-971.

Chen, Martha and Donald Snodgrass (2001), *Managing Resources, Activities, and Risk in Urban India: The Impact of SEWA Bank.* Washington, D.C.: Agency for International Development (USAID) AIMS Project.

Chauvin, Keith W., Ash, Ronald A.(1994)."Gender Earnings Differentials in Total Pay, Base Pay, and Contingent Pay", *Industrial and Labor Relations Review*, 47, pp. 634-649.

Das, Maitreyi Bordia (2003), "The Other Side of Self-Employment: Household Enterprises in India", *Social Protection Discussion Paper Series*, Report no. 27873, Washington D.C.: The World Bank.

Doeringer, Peter B. and Michael J. Piore (1971), *Internal labor markets and manpower analysis*, Lexington, MA, D.C.: Heath and Co.

Fehr-Duda, Helga; Gennaro, Manuele; Schubert, Renate (2006), "Gender, Financial Risk, and Probability Weights", *Theory and Decision*, 60, pp. 283-313

Fields Gary S. (1990), "Labour Market Modeling and the Urban Informal Sector: Theory and Evidence," in David Turnham, Bernard Salomé, and Antoine Schwarz, eds., *The Informal Sector Revisited*. (Paris: Development Centre of the Organisation for Economic Co-Operation and Development).

Fields, G.S. (2005), "A Guide to Multisector Labor Market Models," *World Bank Discussion Paper*

Fields Gary S. (2007). "Modeling Labor Market Policy in Developing Countries: A Selective Review of the Literature and Needs for the Future". *World Bank Policy Research Working Paper No. 4362*

Fong, M.S. and Paul, G. (1992). "The Changing Role of Women in Employment in Eastern Europe". *World Bank Population and Human Resources Division, Report No. 8213*

Funkhouser, Edward (1996), "The Urban Informal Sector in Central America: Household Survey Evidence", *World Development*, 24, 11, pp. 1737-51.

Gallaway, Julie H. and Alexandra Bernasek (2002), "Gender and Informal Sector Employment in Indonesia", *Journal of Economic Issues*, 36, 2, pp. 313-21.

Ganguli, I. and Terrell, K. (2005), "Wage Ceilings and Floors: The Gender Gap in Ukraine's Transition". *IZA DP No. 1776*

Hakim, Catherine (1992), "Explaining Trends in Occupational Segregation: The Measurement, Causes and Consequences of the Sexual Division of Labour", *European Sociological Review*, 8, 2, pp. 127-152.

ILO (2006), Key Indicators of the Labour Markets, 4th Edition, Geneva: International Labour Office.

ILO (2007), Global Employment Trends for Women Brief 2007, Geneva: International Labour Office.

Jann, B. (2005). Standard Errors for the Blinder–Oaxaca Decomposition: http://repec.org/dsug2005/oaxaca_se_handout.pdf.

Lee, L. (1983), "Generalized Econometric Models with Selectivity", *Econometrica*, 51, pp. 507-512.

Lehmann H., Kupets O. and Pignatti N. "(2005), "Labor Market Adjustment in Ukraine: An Overview", Background Paper prepared for the World Bank Study on the Ukrainian Labor Market, Bologna and Kiev, mimeo.

Lehmann H. and Pignatti N. (2007), "Informal Employment Relationships and Labor Market Segmentation in Transition Economies: Evidence from Ukraine". *IZA DP. N. 3269*

Lewis, W . Arthur (1954). "Economic Development with Unlimited Supplies of Labour". *Manchester School of Economic and Social Studies*, 22, ppp.139-91

Maloney William F. (1999). “Does Informality Imply Segmentation in Urban Labor Markets? Evidence from Sectoral Transitions in Mexico”. *The World Bank Economic Review*, Vol.. 13 (2), 275-302

Maloney William F. (2004). “Informality Revisited”. *World Development,* Volume 32 (7), 1159-1178.

Neuman S. and Oaxaca R.L. (2004), Wage decompositions with selectivity-corrected wage equations: a methodological note, *Journal of Economic Inequality,* 2, pp. 3–10.

Newell, A. and Reilly, B. (1996). “The Gender Wage Gap in Russia: Some Empirical Evidence”. *Labour Economics*, 3, pp. 337-356

Oaxaca, R. (1973). “Male-Female Wage Differentials in Urban Labor Markets” *International Economic Review*, Vol. 14, 3 , pp. 693-709.

Paci, Pierella (2002), *Gender in Transition*, Washington D.C.: The World Bank.

Phelps, Edmund S. (1972), “The Statistical Theory of Racism and Sexism”, *American* Economic *Review*, 62, 4, pp.659-661.

Powell, M. and D. Ansic (1997). “Gender Differences in Risk Behavior in Financial Decision-Making: An Experimental Analysis”. *Journal of Economic Psychology*, 18, pp. 605-28.

Roy, A.D. (1951). “Some thoughts on the distribution of earnings”. *Oxford Economic Paper*s 3, pp. 135-146

Standing, Guy (1999), “Global Feminization Through Flexible Labor: A Theme Revisited”, *World Development*, 27, 3, 583-602.

World Bank (2001), *Engendering Development: Through Gender Equality in Rights, Resources, and Voice*, World Bank Policy Research Report, Washington D.C. and New York City: The World Bank and Oxford University Press.

Zellner, Harriet (1972), “Discrimination against Women, Occupational Segregation, and the Relative Wage”, *American Economic Review*, 62, 2, pp. 157-60.

Tables

Table 1. Labor market status, participation rate and employment rate by gender										
	Formal	Informal	Unemployed	OLF	Participation rate	Employment rate	Sample		Ratio F/I	% Δ from previous year of F/I ratio
							Share	N		
2003										
Women	0.383	0.038	0.084	0.495	0.505	0.833	0.579	4739	10.197	
Men	0.483	0.057	0.111	0.350	0.650	0.830	0.421	3446	8.442	
2004										
Women	0.378	0.055	0.074	0.492	0.508	0.853	0.584	3974	6.863	-0.327
Men	0.469	0.084	0.095	0.352	0.648	0.854	0.416	2826	5.571	-0.340
Source:ULMS										

Table 2. Distribution of characteristics in the sample										
	2003					2004				
	Total	Formal		Informal		Total	Formal		Informal	
		Females	Males	Females	Males		Females	Males	Females	Males
All										
N. obs.	3853	1815	1663	178	197	3392	1537	1356	242	257
age	40.18	40.68	40.66	36.79	34.65	39.96	40.71	40.65	37.80	33.81
secondary	0.61	0.61	0.60	0.72	0.54	0.63	0.61	0.65	0.64	0.60
university	0.21	0.26	0.18	0.09	0.12	0.21	0.27	0.19	0.10	0.06
tenure	9.76	11.23	9.61	2.99	3.34	8.98	11.16	8.78	2.99	2.09
choice	0.02			0.22	0.20	0.03			0.17	0.20
self	0.07	0.03	0.05	0.34	0.43	0.09	0.03	0.06	0.38	0.39
Choice of being informal										
nobs	79			40	39	94			42	52
age	32.90			33.85	31.92	33.33			35.29	31.75
secondary	0.66			0.75	0.56	0.66			0.62	0.69
university	0.10			0.10	0.10	0.11			0.21	0.02
tenure	2.25			1.99	2.52	1.29			1.71	0.93
Self-employed										
nobs	282	50	88	60	84	318	46	80	92	100
age	38.26	38.36	37.73	40.18	37.39	39.51	39.61	38.95	42.91	36.79
secondary	0.63	0.68	0.53	0.82	0.57	0.63	0.54	0.68	0.65	0.61
university	0.18	0.22	0.27	0.08	0.14	0.17	0.35	0.30	0.07	0.08
tenure	4.73	4.76	5.05	4.64	4.44	4.81	5.03	5.01	4.21	3.51
Source:ULMS										

Table 3. Mean and median earning differentials

2003									
	Total			Formal			Informal		
	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]
Mean earnings[a]	1.684	2.257	-25.4%	1.681	2.261	-25.7%	1.722	2.215	-22.2%
Median earnings[a]	1.333	1.875	-28.9%	1.333	1.875	-28.9%	1.250	1.708	-26.8%
N. Obs.	1746	1498		1609	1362		137	136	
2004									
	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]
Mean earnings[a]	2.166	2.889	-25.0%	2.213	2.891	-23.5%	1.840	2.878	-36.0%
Median earnings[a]	1.634	2.294	-28.7%	1.720	2.294	-25.0%	1.318	1.946	-32.3%
N. Obs.	1568	1344		1371	1160		197	184	

Source:ULMS

[a] Real hourly earnings.

[b]The % earnings differential is calculated as follows: (wf-wm)/wm. A negative number indicates that women earn less than men.

Table 4. Distribution of employed by sector (within gender) and gender differentials between median earningsa by sector

	2003				2004			
	Formal		Informal		Formal		Informal	
	Females	Males	Females	Males	Females	Males	Females	Males
Agrriculture	0.08	0.15	0.24	0.25	0.08	0.14	0.34	0.21
Industry	0.22	0.38	0.08	0.12	0.23	0.40	0.08	0.16
Construction	0.02	0.07	0.01	0.23	0.02	0.06	0.02	0.28
Services	0.59	0.34	0.55	0.29	0.59	0.33	0.47	0.25
Other services and activities	0.09	0.07	0.12	0.11	0.08	0.07	0.09	0.10

	Females	Males	% earnings differential[b].	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]	Females	Males	% earnings differential[b]
Agrriculture	1.13	0.90	0.25	0.63	0.92	-0.31	1.38	1.38	0.00	0.76	0.94	-0.18
Industry	1.56	2.19	-0.29	1.88	2.34	-0.20	1.91	2.68	-0.29	1.67	2.29	-0.27
Construction	1.77	2.00	-0.11	3.22	2.06	0.57	2.61	2.87	-0.09	2.87	2.39	0.20
Services	1.28	1.75	-0.27	1.36	1.79	-0.24	1.59	2.29	-0.31	1.41	1.91	-0.26
Other services and activities	1.30	1.56	-0.17	1.61	1.15	0.41	1.61	1.86	-0.14	1.94	1.92	0.01

Source:ULMS

[a] Real hourly earnings.

[b]The % earnings differential is calculated as follows: (wf-wm)/wm. A negative number indicates that women earn less than men.

Table 5. Distribution of employed by occupation (within gender) and gender differentials between median earningsa by sector

	2003				2004			
	Formal		Informal		Formal		Informal	
	Females	Males	Females	Males	Females	Males	Females	Males
Managers	0.03	0.06	0.16	0.13	0.05	0.08	0.14	0.12
Professionals	0.21	0.11	0.02	0.04	0.20	0.11	0.01	0.01
Technicians	0.21	0.11	0.01	0.03	0.21	0.08	0.00	0.02
Clerks	0.11	0.03	0.03	0.03	0.11	0.03	0.03	0.01
Service workers and shop and market sales	0.10	0.04	0.36	0.12	0.10	0.03	0.38	0.06
Skilled agricultural, forestry, and fishery	0.01	0.04	0.03	0.03	0.01	0.04	0.01	0.01
Craft and related trades workers	0.10	0.32	0.04	0.21	0.10	0.31	0.06	0.27
Plant and machine operators and assemblers	0.03	0.11	0.00	0.04	0.03	0.15	0.00	0.06
Elementary occupations	0.20	0.18	0.35	0.38	0.20	0.16	0.37	0.44

	Females	Males	Diff.	Females	Males	Diff.	Females	Males	Diff.	Females	Males	Diff.
Managers	1.88	2.44	-0.23	1.48	2.82	-0.47	2.80	3.44	-0.19	0.49	2.25	-0.78
Professionals	1.89	2.20	-0.14	6.39	1.29	3.97	2.76	2.87	-0.04	2.87	5.10	-0.44
Technicians	1.25	2.00	-0.38	1.72	2.42	-0.29	1.51	2.24	-0.33		5.73	
Clerks	1.38	1.50	-0.08	1.82	1.91	-0.05	1.81	2.09	-0.13	2.68	4.25	-0.37
Service workers and shop and market sales	1.13	1.56	-0.28	1.25	1.15	0.09	1.27	1.72	-0.26	1.37	1.72	-0.20
Skilled agricultural, forestry, and fishery	1.13	0.94	0.20	0.59	1.58	-0.62	1.26	1.15	0.10	0.84	1.15	-0.27
Craft and related trades workers	1.37	2.03	-0.32	2.44	2.00	0.22	1.72	2.68	-0.36	2.46	2.87	-0.14
Plant and machine operators and assemblers	1.81	1.88	-0.03		3.00		1.90	2.18	-0.13	0.82	2.87	-0.71
Elementary occupations	1.10	1.25	-0.12	1.07	1.14	-0.06	1.18	1.43	-0.18	1.06	1.37	-0.23

Source:ULMS

[a] Real hourly earnings.

[b]The % earnings differential is calculated as follows: (wf-wm)/wm. A negative number indicates that women earn less than men.

Table 6. Testing hypothesis of identical coefficients in female-male regressions						
	2003			2004		
	All employed	Self-employed	Salaried	All employed	Self-employed	Salaried
All coefficients jointly	reject**	reject**	not reject	reject*	reject***	reject*
Individual coefficients						
Age		reject***		reject*	reject**	
Secondary					reject**	
University	reject**					
Tenure			reject*			
Single	reject**	reject***				
Divorced & others						
Children <6		reject**				reject*
Children 6-14						
Number of formal in household		reject**			reject***	
Working part time[a]				reject**		reject*

Source:ULMS

[a] working part time is not included in self employment regressions

Table 7. Determinants of informality - All employed - 2003

	Females	Males
Age	0.009	0.030
	(0.029)	(0.027)
Age^2	-0.000	-0.000
	(0.000)	(0.000)
Secondary	-0.195	-0.224
	(0.129)	(0.098)**
University	-0.779	-0.332
	(0.166)***	(0.140)**
Tenure	-0.082	-0.038
	(0.028)***	(0.025)
$Tenure^2/100$	-0.118	-0.167
	(0.166)	(0.143)
Single	0.001	0.476
	(0.154)	(0.166)***
Divorced & other	-0.103	0.145
	(0.121)	(0.168)
Children<6	0.049	0.196
	(0.168)	(0.152)
Children>6	-0.174	0.095
	(0.118)	(0.130)
Formal in household	-0.239	-0.167
	(0.068)***	(0.062)***
Part-time	0.572	0.545
	(0.149)***	(0.184)***
Center-North	0.045	0.409
	(0.200)	(0.200)**
South	0.263	0.593
	(0.199)	(0.202)***
East	0.209	0.306
	(0.186)	(0.193)
West	-0.042	0.278
	(0.198)	(0.205)
Constant	-0.687	-1.715
	(0.594)	(0.572)***
Observations	3828	

Source:ULMS
Robust standard errors in parentheses.
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 8. Determinants of informality – Self-employed - 2003

	Females	Males
Age	-0.334	0.192
	(0.129)***	(0.072)***
Age^2	0.004	-0.002
	(0.002)***	(0.001)**
Secondary	0.113	-0.188
	(0.423)	(0.276)
University	-0.767	-0.607
	(0.537)	(0.338)*
Tenure	0.001	-0.223
	(0.128)	(0.076)***
$Tenure^2/100$	-0.208	1.492
	(0.927)	(0.512)***
Single	-1.507	1.804
	(0.781)*	(0.486)***
Divorced & other	-0.436	0.228
	(0.418)	(0.380)
Children<6	-0.715	1.004
	(0.775)	(0.366)***
Children>6	-0.332	0.272
	(0.388)	(0.299)
Formal in household	-0.435	0.013
	(0.172)**	(0.145)
Center-North	-0.173	0.236
	(0.852)	(0.757)
South	0.285	0.597
	(0.836)	(0.784)
East	0.358	0.146
	(0.816)	(0.764)
West	0.126	0.284
	(0.860)	(0.782)
Constant	6.741	-4.373
	(2.915)**	(1.680)***
Observations	273	

Source:ULMS
Robust standard errors in parentheses
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 9. Determinants of informality – Salaried - 2003

	Females	Males
Age	0.050	-0.023
	(0.033)	(0.032)
Age^2	-0.001	0.000
	(0.000)	(0.000)
Secondary	-0.337	-0.278
	(0.143)**	(0.114)**
University	-0.859	-0.452
	(0.190)***	(0.175)***
Tenure	-0.136	-0.036
	(0.038)***	(0.041)
$Tenure^2/100$	0.055	-0.394
	(0.296)	(0.310)
Single	0.171	0.292
	(0.167)	(0.203)
Divorced & other	0.150	0.070
	(0.135)	(0.212)
Children<6	0.164	0.060
	(0.181)	(0.189)
Children>6	-0.108	0.083
	(0.137)	(0.168)
Formal in household	-0.142	-0.181
	(0.074)*	(0.075)**
Part-time	0.474	0.236
	(0.177)***	(0.285)
Center-North	-0.087	0.155
	(0.221)	(0.224)
South	-0.024	0.327
	(0.226)	(0.226)
East	0.093	0.172
	(0.201)	(0.210)
West	-0.190	0.057
	(0.217)	(0.231)
Constant	-1.310	-0.550
	(0.674)*	(0.657)
Observations	3555	

Source:ULMS
Robust standard errors in parentheses
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 10. Determinants of informality – All-employed - 2004

	Females	Males
Age	-0.009	0.056
	(0.026)	(0.026)**
Age^2	0.000	-0.001
	(0.000)	(0.000)***
Secondary	-0.508	-0.462
	(0.119)***	(0.109)***
University	-0.992	-0.924
	(0.152)***	(0.178)***
Tenure	-0.110	-0.129
	(0.013)***	(0.019)***
$Tenure^2/100$	0.165	0.230
	(0.029)***	(0.051)***
Single	0.086	0.220
	(0.161)	(0.161)
Divorced & other	-0.004	0.224
	(0.113)	(0.165)
Children<6	0.104	-0.156
	(0.177)	(0.164)
Children>6	0.044	-0.073
	(0.121)	(0.138)
Formal in household	-0.040	0.002
	(0.027)	(0.008)
Part-time	0.319	0.909
	(0.166)*	(0.191)***
Center-North	-0.265	0.168
	(0.233)	(0.280)
South	0.159	0.594
	(0.243)	(0.296)**
East	-0.170	0.116
	(0.230)	(0.274)
West	-0.451	0.152
	(0.248)*	(0.285)
Constant	0.167	-1.218
	(0.568)	(0.558)**
Observations	2988	

Source:ULMS
Robust standard errors in parentheses
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 11. Determinants of informality – Self employed - 2004

	Females	Males
Age	-0.202	0.141
	(0.114)*	(0.094)
Age^2	0.003	-0.002
	(0.001)**	(0.001)
Secondary	-0.109	-1.299
	(0.395)	(0.408)***
University	-1.813	-2.092
	(0.558)***	(0.485)***
Tenure	-0.102	-0.134
	(0.085)	(0.055)**
$Tenure^2/100$	0.616	0.778
	(0.381)	(0.302)**
Single	0.889	1.398
	(0.824)	(0.600)**
Divorced & other	-0.617	0.126
	(0.534)	(0.421)
Children<6	0.097	0.810
	(0.875)	(0.479)*
Children>6	0.535	-0.166
	(0.515)	(0.309)
Formal in household	-0.413	0.001
	(0.152)***	(0.017)
Center-North	-7.056	0.273
	(0.433)***	(0.756)
South	-6.874***	0.330
	(0.610)	(0.783)
East	-7.127	0.122
	(0.508)***	(0.768)
West	-8.300	0.329
	(0.573)***	(0.808)
Constant	11.427	-1.729
	(2.488)***	(2.001)
Observations	243	

Source:ULMS
Robust standard errors in parentheses
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 12. Determinants of informality – Salaried - 2004

Age	0.043	0.052
	(0.034)	(0.032)
Age^2	-0.001	-0.001
	(0.000)	(0.000)**
Secondary	-0.428	-0.469
	(0.140)***	(0.126)***
University	-0.826	-0.934
	(0.180)***	(0.210)***
Tenure	-0.165	-0.203
	(0.024)***	(0.033)***
$Tenure^2/100$	0.246	0.405
	(0.041)***	(0.072)***
Single	0.198	0.053
	(0.174)	(0.180)
Divorced & other	0.224	0.251
	(0.134)*	(0.190)
Children<6	0.179	-0.338
	(0.190)	(0.198)*
Children>6	0.014	-0.162
	(0.139)	(0.175)
Formal in household	-0.030	-0.002
	(0.023)	(0.009)
Part-time	0.111	0.762
	(0.196)	(0.275)***
Center-North	-0.414	0.182
	(0.273)	(0.338)
South	0.029	0.485
	(0.282)	(0.351)
East	-0.088	0.178
	(0.263)	(0.329)
West	-0.323	0.263
	(0.285)	(0.342)
Constant	-0.833	-1.045
	(0.680)	(0.659)
Observations	2745	

Source:ULMS
Robust standard errors in parentheses
*significant at 10%** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, married or cohabiting, Kyiv city

Table 13. P, Q and V matrices built using observed transition probabilities

MALES

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.855**	0.042	0.035	0.067	0.492
Informal	0.271	**0.583**	0.069	0.076	0.054
Unemployed	0.253	0.174	0.368	0.205	0.107
Not in labor force	0.072	0.037	0.097	0.795	0.347
P.j	0.488	0.083	0.094	0.335	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.508**	0.371	0.201
Informal	**0.555**		0.739	0.228
Unemployed	0.520	2.079		0.612
Not in labor force	0.148	0.438	1.030	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**8.428**	4.058	6.779
Informal	**9.214**		2.808	2.667
Unemployed	5.686	7.897		4.716
Not in labor force	4.973	5.117	7.939	

FEMALES

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.865**	0.022	0.036	0.077	0.384
Informal	0.200	**0.572**	0.117	0.110	0.038
Unemployed	0.248	0.094	0.313	0.345	0.080
Not in labor force	0.055	0.038	0.061	0.846	0.498
P.j	0.387	0.056	0.074	0.483	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.382**	0.493	0.159
Informal	**0.517**		1.589	0.229
Unemployed	0.642	1.657		0.715
Not in labor force	0.141	0.682	0.824	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**6.629**	5.325	7.672
Informal	**8.966**		5.408	3.474
Unemployed	6.929	6.133		6.762
Not in labor force	6.799	10.358	7.795	

Source:ULMS

Note: **Pi.** is the relative size of a sector at the beginning of the period; **P.j** is the relative size of a sector at the end of a period.

Table 14. P, Q and V matrices built using observed transition probabilities

MALES

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.899**	0.022	0.030	0.048	0.492
Informal	0.262	**0.683**	0.034	0.020	0.054
Unemployed	0.249	0.168	0.378	0.205	0.107
Not in labor force	0.045	0.024	0.060	0.871	0.347
P.j	0.499	0.074	0.078	0.349	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.302**	0.388	0.139
Informal	**0.526**		0.441	0.058
Unemployed	0.499	2.268		0.586
Not in labor force	0.091	0.327	0.764	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**9.424**	6.168	10.641
Informal	**16.387**		2.237	1.424
Unemployed	7.933	11.509		7.304
Not in labor force	6.947	7.980	9.518	

FEMALES

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.889**	0.012	0.031	0.067	0.384
Informal	0.199	**0.702**	0.065	0.034	0.038
Unemployed	0.252	0.068	0.326	0.353	0.080
Not in labor force	0.019	0.032	0.025	0.923	0.498
P.j	0.379	0.053	0.053	0.515	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.229**	0.590	0.131
Informal	**0.526**		1.218	0.067
Unemployed	0.665	1.296		0.686
Not in labor force	0.051	0.616	0.468	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**6.937**	7.921	15.409
Informal	**15.929**		6.062	2.925
Unemployed	8.920	6.986		13.288
Not in labor force	6.060	26.938	9.066	

Source:ULMS

Note: **Pi.** is the relative size of a sector at the beginning of the period; **P.j** is the relative size of a sector at the end of a period.

Table 15. Counterfactual P, Q and V matrices built using predicted transition probabilities

MALES characteristics and FEMALE coefficients

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.911**	0.017	0.028	0.043	0.492
Informal	0.270	**0.676**	0.036	0.018	0.054
Unemployed	0.255	0.159	0.382	0.204	0.107
Not in labor force	0.055	0.028	0.075	0.842	0.347
P.j	0.510	0.072	0.083	0.336	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.242**	0.338	0.129
Informal	**0.529**		0.435	0.054
Unemployed	0.500	2.225		0.606
Not in labor force	0.108	0.391	0.908	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**8.417**	6.169	9.194
Informal	**18.428**		2.175	1.045
Unemployed	9.125	11.118		6.195
Not in labor force	7.711	7.621	9.278	

FEMALES with MALEScoefficients

TRANSITION PROBABILITIES : Pij

	F	I	U	NLF	**Pi.**
Formal	**0.874**	0.014	0.033	0.080	0.384
Informal	0.215	**0.699**	0.055	0.030	0.038
Unemployed	0.260	0.068	0.323	0.349	0.080
Not in labor force	0.016	0.029	0.021	0.934	0.498
P.j	0.373	0.052	0.051	0.525	

Q MATRIX: Pij/P.j - "Probability standardized by size of the destination state at the end of the period"

	F	I	U	NLF
Formal		**0.267**	0.643	0.152
Informal	**0.578**		1.069	0.058
Unemployed	0.699	1.317		0.665
Not in labor force	0.043	0.566	0.411	

V MATRIX: Pij / (P.j*(1-Pii)*(1-Pjj)) - "Disposition to move to a sector"

	F	I	U	NLF
Formal		**7.028**	7.507	18.227
Informal	**15.216**		5.256	2.927
Unemployed	8.158	7.088		14.869
Not in labor force	5.099	28.542	9.198	

Source:ULMS

Note: **Pi.** is the relative size of a sector at the beginning of the period; **P.j** is the relative size of a sector at the end of a period.

Table 16. Log hourly earnings – Females - 2003

	OLS Without Selection		OLS With Selection	
	Informal	Formal	Informal	Formal
Age	-0.021	0.014	-0.072	-0.007
	(0.046)	(0.007)*	(0.071)	(0.015)
Age^2	0.000	-0.000	0.001	0.000
	(0.001)	(0.000)**	(0.001)	(0.000)
Secondary	-0.103	0.090	-0.137	0.059
	(0.145)	(0.041)**	(0.158)	(0.045)
University	0.246	0.408	0.488	0.334
	(0.276)	(0.049)***	(0.372)	(0.068)***
Tenure	0.036	0.006	0.020	0.006
	(0.060)	(0.004)	(0.069)	(0.004)
$Tenure^2/100$	-0.314	-0.008	-0.173	-0.007
	(0.413)	(0.011)	(0.446)	(0.011)
Positive Δ^a	0.620	0.428	0.660	0.426
	(0.180)***	(0.112)***	(0.179)***	(0.111)***
Negative Δ^b	-0.710	-0.604	-0.662	-0.611
	(0.464)	(0.069)***	(0.459)	(0.069)***
Choice Informality	0.061		0.108	
	(0.132)		(0.135)	
Self Employed	0.062	0.202	0.084	0.197
	(0.219)	(0.164)	(0.225)	(0.163)
Part time	0.446	0.147	0.435	0.144
	(0.211)**	(0.057)**	(0.210)**	(0.057)**
occupation4	-0.087	-0.054	-0.020	-0.056
	(0.381)	(0.040)	(0.367)	(0.040)
occupation5	-0.362	-0.215	-0.315	-0.212
	(0.245)	(0.048)***	(0.236)	(0.048)***
occupation6	-0.386	-0.102	-0.363	-0.103
	(0.605)	(0.154)	(0.605)	(0.153)
occupation7	0.171	-0.068	0.440	-0.070
	(0.391)	(0.055)	(0.415)	(0.055)
occupation8		0.040		0.041
		(0.082)		(0.082)
occupation9	-0.350	-0.181	-0.284	-0.179
	(0.300)	(0.037)***	(0.286)	(0.037)***
Industry	0.944	0.291	0.969	0.288
	(0.308)***	(0.060)***	(0.313)***	(0.060)***
Construction	1.493	0.264	1.276	0.256
	(0.266)***	(0.111)**	(0.297)***	(0.111)**
Services	0.786	0.081	0.815	0.079
	(0.260)***	(0.051)	(0.258)***	(0.051)
Other services and activities	0.731	0.113	0.698	0.111
	(0.298)**	(0.066)*	(0.310)**	(0.066)*
State	0.739	-0.196	0.847	-0.195
	(0.317)**	(0.043)***	(0.327)**	(0.043)***
Privatized	-0.355	-0.148	-0.439	-0.148
	(0.235)	(0.058)**	(0.239)*	(0.059)**
Cooperative		-0.643	-0.779	-0.635
		(0.142)***	(0.329)**	(0.139)***
Center North	-0.144	-0.336	-0.113	-0.334
	(0.340)	(0.053)***	(0.350)	(0.053)***
South	-0.089	-0.224	-0.011	-0.227
	(0.276)	(0.057)***	(0.285)	(0.057)***
East	-0.253	-0.312	-0.171	-0.313
	(0.242)	(0.051)***	(0.252)	(0.051)***
West	-0.249	-0.237	-0.218	-0.235
	(0.318)	(0.053)***	(0.318)	(0.053)***

lambda021			-0.698	
			(0.665)	
lambda011				-0.132
				(0.081)
Constant	0.301	0.316	2.430	0.825
	(0.956)	(0.163)*	(2.561)	(0.360)**
Observations	131	1573	131	1572
R-squared	0.34	0.29	0.35	0.29

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 17. Log hourly earnings – Females - 2004

	OLS Without Selection		OLS With Selection	
	Informal	Formal	Informal	Formal
Age	0.031	0.001	-0.002	-0.019
	(0.032)	(0.008)	(0.048)	(0.019)
Age^2	-0.001	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)
Secondary	0.051	0.120	0.143	0.082
	(0.145)	(0.050)**	(0.155)	(0.058)
University	0.148	0.536	0.370	0.458
	(0.191)	(0.068)***	(0.258)	(0.092)***
Tenure	-0.022	0.012	-0.026	0.012
	(0.035)	(0.004)***	(0.034)	(0.004)***
$Tenure^2/100$	0.006	-0.022	0.024	-0.021
	(0.125)	(0.009)**	(0.121)	(0.009)**
Positive Δ^a		0.599		0.593
		(0.130)***		(0.128)***
Negative Δ^b	-0.814	-0.559	-0.725	-0.559
	(0.469)*	(0.133)***	(0.539)	(0.132)***
Choice Informality	0.266		0.280	
	(0.150)*		(0.151)*	
Self Employed	0.435	0.277	0.446	0.267
	(0.260)*	(0.253)	(0.266)*	(0.250)
Part time	0.511	0.054	0.515	0.066
	(0.243)**	(0.079)	(0.244)**	(0.081)
occupation4	0.542	-0.094	0.566	-0.103
	(0.418)	(0.051)*	(0.420)	(0.052)**
occupation5	0.216	-0.277	0.261	-0.274
	(0.352)	(0.067)***	(0.349)	(0.068)***
occupation6		-0.222		-0.220
		(0.139)		(0.138)
occupation7	0.956	-0.018	1.030	-0.019
	(0.363)***	(0.058)	(0.354)***	(0.058)
occupation8		0.069		0.071
		(0.095)		(0.095)
occupation9	0.275	-0.260	0.314	-0.260
	(0.302)	(0.048)***	(0.296)	(0.048)***
Industry	0.467	0.193	0.486	0.191
	(0.313)	(0.057)***	(0.321)	(0.057)***
Construction	0.614	0.199	0.654	0.218
	(0.412)	(0.100)**	(0.420)	(0.103)**
Services	0.393	0.151	0.395	0.149
	(0.282)	(0.050)***	(0.281)	(0.050)***
Other services and activities	0.825	0.102	0.833	0.106
	(0.340)**	(0.072)	(0.342)**	(0.072)
State	-0.584	-0.057	-0.483	-0.050
	(0.248)**	(0.049)	(0.294)	(0.049)
Privatized	-0.081	0.030	-0.096	0.032
	(0.180)	(0.056)	(0.184)	(0.056)
Cooperative		0.106		0.111
		(0.301)		(0.294)
Center North	-0.511	-0.184	-0.550	-0.183
	(0.285)*	(0.072)**	(0.292)*	(0.072)**
South	-0.243	-0.100	-0.279	-0.093
	(0.277)	(0.079)	(0.278)	(0.079)
East	-0.442	-0.268	-0.478	-0.269
	(0.252)*	(0.068)***	(0.258)*	(0.068)***
West	-0.390	-0.237	-0.420	-0.235
	(0.294)	(0.072)***	(0.294)	(0.072)***

lambda021			-0.445	
			(0.386)	
lambda011				-0.127
				(0.103)
Constant	-0.425	0.479	0.830	0.989
	(0.649)	(0.191)**	(1.411)	(0.470)**
Observations	162	1222	161	1213
R-squared	0.38	0.27	0.36	0.27

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 18. Log hourly earnings – Males - 2003

	OLS Without Selection		OLS With Selection	
	Informal	Formal	Informal	Formal
Age	-0.017	0.007	0.018	-0.021
	(0.037)	(0.010)	(0.052)	(0.017)
Age^2	0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)
Secondary	0.142	0.086	0.031	0.052
	(0.201)	(0.043)**	(0.215)	(0.046)
University	0.267	0.238	0.156	0.156
	(0.277)	(0.073)***	(0.276)	(0.083)*
Tenure	0.066	0.013	0.070	0.013
	(0.059)	(0.006)**	(0.060)	(0.006)**
$Tenure^2/100$	-0.699	-0.028	-0.730	-0.028
	(0.384)*	(0.016)*	(0.388)*	(0.016)*
Positive Δ^a		0.487		0.483
		(0.141)***		(0.142)***
Negative Δ^b	-0.523	-0.674	-0.551	-0.679
	(0.440)	(0.088)***	(0.435)	(0.088)***
Choice Informality	-0.002		0.040	
	(0.191)		(0.199)	
Self Employed	0.145	0.185	0.159	0.192
	(0.198)	(0.155)	(0.204)	(0.155)
Part time	0.220	0.097	0.173	0.097
	(0.290)	(0.113)	(0.291)	(0.114)
occupation4	-0.353	-0.280	-0.253	-0.270
	(0.457)	(0.100)***	(0.466)	(0.100)***
occupation5	-0.926	-0.170	-0.845	-0.166
	(0.314)***	(0.111)	(0.335)**	(0.110)
occupation6	-0.086	-0.422	-0.090	-0.424
	(0.681)	(0.128)***	(0.672)	(0.128)***
occupation7	-0.383	-0.088	-0.393	-0.089
	(0.325)	(0.059)	(0.319)	(0.059)
occupation8	-0.084	-0.085	-0.097	-0.089
	(0.279)	(0.069)	(0.282)	(0.069)
occupation9	-0.262	-0.319	-0.285	-0.316
	(0.270)	(0.067)***	(0.265)	(0.067)***
Industry	0.887	0.615	0.883	0.619
	(0.283)***	(0.067)***	(0.286)***	(0.067)***
Construction	0.512	0.473	0.502	0.480
	(0.309)	(0.093)***	(0.303)	(0.092)***
Services	0.781	0.418	0.754	0.417
	(0.292)***	(0.068)***	(0.292)**	(0.067)***
Other services and activities	0.545	0.400	0.542	0.401
	(0.337)	(0.093)***	(0.332)	(0.092)***
State	-0.599	0.032	-0.752	0.031
	(0.416)	(0.056)	(0.378)**	(0.056)
Privatized	-0.615	0.000	-0.566	-0.004
	(0.253)**	(0.065)	(0.260)**	(0.064)
Cooperative		-0.492	-0.402	-0.476
		(0.176)***	(0.471)	(0.176)***
Center North	-0.848	-0.362	-0.852	-0.355
	(0.357)**	(0.070)***	(0.360)**	(0.070)***
South	-0.640	-0.324	-0.638	-0.314
	(0.364)*	(0.075)***	(0.358)*	(0.074)***
East	-0.507	-0.208	-0.537	-0.206
	(0.357)	(0.067)***	(0.354)	(0.066)***
West	-0.317	-0.301	-0.339	-0.302
	(0.380)	(0.070)***	(0.375)	(0.070)***

lambda021			0.686	
			(0.669)	
lambda011				-0.238
				(0.117)**
Constant	0.969	0.370	-0.712	1.066
	(0.891)	(0.198)*	(1.943)	(0.396)***
Observations	131	1312	131	1311
R-squared	0.34	0.31	0.34	0.31

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 19. Log hourly earnings – Males - 2004

	OLS Without Selection		OLS With Selection	(4)
	Informal	Formal	Informal	Formal
Age	-0.075	0.025	-0.096	0.011
	(0.034)**	(0.010)**	(0.046)**	(0.017)
Age^2	0.001	-0.000	0.001	-0.000
	(0.000)*	(0.000)***	(0.001)*	(0.000)
Secondary	0.202	0.147	0.186	0.129
	(0.135)	(0.051)***	(0.191)	(0.056)**
University	0.066	0.341	0.130	0.297
	(0.287)	(0.076)***	(0.389)	(0.092)***
Tenure	-0.027	0.009	-0.020	0.009
	(0.045)	(0.006)	(0.047)	(0.006)
$Tenure^2/100$	0.168	-0.011	0.135	-0.012
	(0.183)	(0.015)	(0.189)	(0.015)
Positive Δ^a		0.119		0.115
		(0.209)		(0.211)
Negative Δ^b	-0.942	-0.767	-0.858	-0.721
	(0.289)***	(0.134)***	(0.294)***	(0.132)***
Choice Informality	0.100		0.141	
	(0.153)		(0.163)	
Self Employed	0.366	0.010	0.424	0.010
	(0.173)**	(0.148)	(0.178)**	(0.148)
Part time	0.055	-0.044	-0.001	-0.049
	(0.325)	(0.141)	(0.335)	(0.148)
occupation4	0.250	-0.136	0.882	-0.152
	(0.472)	(0.091)	(0.315)***	(0.095)
occupation5	-0.138	-0.189	-0.187	-0.187
	(0.315)	(0.115)	(0.315)	(0.116)
occupation6	0.437	-0.583	0.473	-0.597
	(0.336)	(0.148)***	(0.343)	(0.150)***
occupation7	0.004	-0.099	0.015	-0.105
	(0.251)	(0.056)*	(0.251)	(0.056)*
occupation8	0.064	-0.142	0.068	-0.137
	(0.343)	(0.070)**	(0.350)	(0.071)*
occupation9	-0.566	-0.427	-0.563	-0.434
	(0.232)**	(0.078)***	(0.237)**	(0.078)***
Industry	0.237	0.464	0.255	0.478
	(0.267)	(0.074)***	(0.272)	(0.074)***
Construction	0.252	0.419	0.263	0.437
	(0.273)	(0.092)***	(0.278)	(0.094)***
Services	0.184	0.223	0.174	0.246
	(0.266)	(0.070)***	(0.266)	(0.070)***
Other services and activities	0.041	0.156	0.263	0.157
	(0.311)	(0.094)*	(0.349)	(0.092)*
State	0.044	0.106	0.077	0.101
	(0.264)	(0.062)*	(0.259)	(0.062)
Privatized	0.264	0.005	0.292	0.005
	(0.178)	(0.066)	(0.192)	(0.066)
Cooperative	0.800	-0.157	0.725	-0.207
	(0.282)***	(0.212)	(0.310)**	(0.246)
Center North	-0.668	-0.498	-0.683	-0.501
	(0.262)**	(0.113)***	(0.271)**	(0.113)***
South	-1.020	-0.456	-1.061	-0.461
	(0.318)***	(0.116)***	(0.324)***	(0.116)***
East	-0.539	-0.392	-0.585	-0.396
	(0.239)**	(0.106)***	(0.246)**	(0.106)***
West	-0.502	-0.440	-0.458	-0.435
	(0.307)	(0.112)***	(0.316)	(0.112)***

lambda021			-0.077	
			(0.410)	
lambda011				-0.130
				(0.115)
Constant	2.524	0.500	2.978	0.848
	(0.761)***	(0.224)**	(1.285)**	(0.416)**
Observations	164	1020	156	1004
R-squared	0.30	0.29	0.33	0.29

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 20. Quantile regressions 10th , median and and 90th percentile – Females - 2003

	Informal			Formal		
	P10	Median	P90	P10	Median	P90
Age	0.003	0.025	-0.019	0.011	0.013	0.015
	(0.058)	(0.060)	(0.072)	(0.010)	(0.010)	(0.014)
Age^2	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Secondary	0.140	0.001	-0.182	0.013	0.097	0.125
	(0.254)	(0.228)	(0.325)	(0.046)	(0.040)**	(0.077)
University	0.244	0.179	0.143	0.188	0.432	0.454
	(0.335)	(0.336)	(0.591)	(0.051)***	(0.055)***	(0.097)***
Tenure	-0.006	-0.000	0.047	0.007	0.004	0.014
	(0.092)	(0.080)	(0.112)	(0.006)	(0.005)	(0.007)**
$Tenure^2/100$	0.030	0.159	-0.741	-0.014	-0.003	-0.022
	(0.841)	(0.759)	(1.409)	(0.018)	(0.013)	(0.019)
Positive Δ^a	0.678	0.619	0.101	0.337	0.406	0.602
	(0.480)	(0.299)**	(0.234)	(0.129)***	(0.148)***	(0.339)*
Negative Δ^b	-0.834	-0.775	-1.345	-0.956	-0.507	-0.496
	(0.813)	(0.749)	(0.791)*	(0.127)***	(0.077)***	(0.105)***
Choice Informality	-0.088	0.125	0.173			
	(0.211)	(0.209)	(0.279)			
Self Employed	-0.151	-0.018	0.326	-0.015	0.131	1.170
	(0.350)	(0.276)	(0.419)	(0.312)	(0.176)	(0.387)***
Part time	1.089	0.621	0.018	0.009	0.097	0.214
	(0.429)**	(0.273)**	(0.375)	(0.061)	(0.081)	(0.095)**
occupation4	0.782	-0.030	-0.962	-0.027	-0.074	-0.056
	(0.563)	(0.573)	(0.725)	(0.059)	(0.050)	(0.082)
occupation5	0.428	-0.220	-1.203	-0.251	-0.202	-0.257
	(0.455)	(0.375)	(0.568)**	(0.073)***	(0.059)***	(0.092)***
occupation6	-0.037	0.135	-0.906	-0.781	-0.073	-0.202
	(0.668)	(0.997)	(1.016)	(0.601)	(0.102)	(0.277)
occupation7	1.024	0.387	-0.503	-0.210	-0.075	0.145
	(0.695)	(0.679)	(0.974)	(0.070)***	(0.069)	(0.093)
occupation8		-0.065		-0.124	-0.238	-0.015
		(0.442)		(0.111)	(0.075)***	(0.224)
occupation9	0.297		-1.148	-0.163	0.092	-0.211
	(0.444)		(0.554)**	(0.045)***	(0.133)	(0.091)**
Industry	0.445	-0.202	0.555	0.438	-0.181	0.167
	(0.575)	(0.418)	(0.591)	(0.128)***	(0.039)***	(0.087)*
Construction	1.538	0.914	0.760	0.482	0.206	0.157
	(0.832)*	(0.480)*	(0.749)	(0.216)**	(0.061)***	(0.155)
Services	0.685	1.491	0.696	0.242	0.220	-0.002
	(0.391)*	(0.696)**	(0.401)*	(0.123)**	(0.124)*	(0.074)

Other services and activities	-0.044	0.735	0.586	0.296	-0.015	-0.004
	(0.617)	(0.351)**	(0.487)	(0.141)**	(0.040)	(0.094)
State	1.133	0.609	-0.298	-0.047	0.019	-0.259
	(0.774)	(0.463)	(0.654)	(0.076)	(0.068)	(0.077)***
Privatized	-1.053	0.985	-0.820	-0.025	-0.221	-0.035
	(0.515)**	(0.537)*	(0.556)	(0.096)	(0.069)***	(0.119)
Cooperative		-0.227		-0.016	-0.226	-0.735
		(0.349)		(0.155)	(0.076)***	(0.287)**
Center North	-1.000		0.281	-0.168	-0.719	-0.455
	(0.670)		(0.698)	(0.059)***	(0.269)***	(0.113)***
South	-0.590	-0.151	-0.494	-0.135	-0.300	-0.304
	(0.698)	(0.427)	(0.502)	(0.047)***	(0.077)***	(0.112)***
East	-0.521	0.042	-0.442	-0.172	-0.199	-0.411
	(0.613)	(0.406)	(0.502)	(0.052)***	(0.084)**	(0.115)***
West	-0.942	-0.239	-0.208	-0.095	-0.288	-0.287
	(0.667)	(0.372)	(0.597)	(0.048)**	(0.073)***	(0.130)**
Constant	-0.732	-0.603	1.901	-0.420	0.392	0.966
	(1.332)	(1.332)	(1.346)	(0.247)*	(0.231)*	(0.301)***
Observations	131	131	131	1573	1573	1573

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 21. Quantile regressions 10th , median and and 90th percentile – Females - 2004

	Informal			Formal		
	P10	Median	P90	P10	Median	P90
Age	-0.000	0.032	0.048	-0.001	0.008	0.011
	(0.048)	(0.037)	(0.050)	(0.009)	(0.009)	(0.018)
Age^2	0.000	-0.000	-0.001	0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Secondary	-0.168	-0.078	0.097	0.192	0.071	0.062
	(0.206)	(0.161)	(0.223)	(0.113)*	(0.045)	(0.125)
University	-0.184	-0.052	-0.420	0.440	0.454	0.663
	(0.327)	(0.257)	(0.364)	(0.131)***	(0.058)***	(0.173)***
Tenure	-0.067	-0.014	-0.084	0.007	0.008	0.015
	(0.059)	(0.056)	(0.072)	(0.005)	(0.004)**	(0.009)*
$Tenure^2/100$	0.149	-0.053	0.203	-0.007	-0.017	-0.032
	(0.244)	(0.207)	(0.301)	(0.011)	(0.009)*	(0.022)
Positive Δ^a				0.528	0.802	0.246
				(0.194)***	(0.265)***	(0.135)*
Negative Δ^b	-1.932	-1.476	-0.078	-1.217	-0.520	-0.009
	(0.791)**	(0.798)*	(0.721)	(0.247)***	(0.115)***	(0.324)
Choice Informality	0.137	0.266	0.605			
	(0.216)	(0.192)	(0.255)**			
Self Employed	-0.441	0.169	1.479	-0.487	0.310	1.228
	(0.449)	(0.321)	(0.611)**	(0.325)	(0.266)	(0.723)*
Part time	-0.295	0.497	0.279	-0.074	0.099	0.081
	(0.456)	(0.393)	(0.512)	(0.081)	(0.095)	(0.160)
occupation4	1.183	0.809	0.631	-0.194	-0.103	-0.003
	(0.789)	(0.644)	(0.908)	(0.056)***	(0.057)*	(0.158)
occupation5	0.995	0.162	0.472	-0.325	-0.283	-0.376
	(0.626)	(0.490)	(0.735)	(0.121)***	(0.059)***	(0.113)***
occupation6				-0.361	-0.246	-0.230
				(0.199)*	(0.170)	(0.384)
occupation7	1.688	0.803	0.596	-0.072	-0.088	0.008
	(0.690)**	(0.544)	(0.686)	(0.076)	(0.062)	(0.108)
occupation8				-0.025	-0.043	0.164
				(0.152)	(0.112)	(0.233)
occupation9	0.465	0.223	0.358	-0.238	-0.259	-0.293
	(0.591)	(0.433)	(0.670)	(0.064)***	(0.041)***	(0.106)***
Industry	0.009	0.296	1.252	0.066	0.275	0.264
	(0.600)	(0.423)	(0.663)*	(0.077)	(0.056)***	(0.132)**
Construction	-0.424	0.660	1.361	0.232	0.240	0.144
	(0.755)	(0.620)	(0.928)	(0.146)	(0.127)*	(0.184)
Services	-0.426	0.275	0.485	0.016	0.131	0.278

	(0.537)	(0.367)	(0.552)	(0.058)	(0.047)***	(0.114)**
Other services and activities	-1.068	0.394	1.321	0.007	0.116	0.207
	(0.643)*	(0.556)	(0.591)**	(0.097)	(0.073)	(0.158)
State	-0.041	-0.464	-0.419	0.041	-0.082	-0.063
	(0.687)	(0.537)	(0.824)	(0.086)	(0.052)	(0.106)
Privatized	-0.014	-0.194	0.349	0.046	0.050	0.002
	(0.305)	(0.249)	(0.381)	(0.114)	(0.058)	(0.101)
Cooperative				-0.295	0.375	0.043
				(0.627)	(0.322)	(0.233)
Center North	-0.289	-0.690	-0.315	-0.146	-0.119	-0.035
	(0.475)	(0.467)	(0.523)	(0.086)*	(0.096)	(0.149)
South	0.159	-0.430	0.221	-0.144	-0.003	0.080
	(0.490)	(0.466)	(0.500)	(0.085)*	(0.118)	(0.178)
East	-0.264	-0.547	-0.342	-0.258	-0.166	-0.221
	(0.480)	(0.429)	(0.445)	(0.081)***	(0.094)*	(0.135)
West	-0.508	-0.421	-0.507	-0.179	-0.182	-0.205
	(0.556)	(0.487)	(0.473)	(0.084)**	(0.099)*	(0.152)
Constant	-0.274	-0.078	-0.724	0.020	0.291	0.831
	(0.961)	(0.828)	(1.202)	(0.230)	(0.225)	(0.388)**
Observations	162	162	162	1222	1222	1222

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 22. Quantile regressions 10th , median and and 90th percentile –Males - 2003

	Informal			Formal		
	P10	Median	P90	P10	Median	P90
Age	-0.041	-0.044	0.005	-0.008	0.024	0.034
	(0.077)	(0.055)	(0.066)	(0.013)	(0.011)**	(0.015)**
Age^2	0.001	0.000	-0.000	0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)***	(0.000)***
Secondary	0.165	-0.029	-0.013	0.017	0.109	0.047
	(0.363)	(0.278)	(0.221)	(0.071)	(0.043)**	(0.077)
University	0.262	0.016	-0.008	0.117	0.241	0.193
	(0.551)	(0.403)	(0.394)	(0.073)	(0.071)***	(0.122)
Tenure	0.006	0.040	0.120	0.016	0.009	0.000
	(0.137)	(0.098)	(0.093)	(0.010)	(0.007)	(0.007)
$Tenure^2/100$	0.014	-0.555	-0.979	-0.036	-0.008	-0.002
	(1.009)	(0.716)	(0.806)	(0.032)	(0.019)	(0.019)
Positive Δ^a				0.512	0.447	0.725
				(0.208)**	(0.176)**	(0.359)**
Negative Δ^b	-1.219	-0.427	0.644	-1.048	-0.650	-0.419
	(0.848)	(0.726)	(0.871)	(0.193)***	(0.102)***	(0.110)***
Choice Informality	-0.241	0.027	-0.124			
	(0.358)	(0.313)	(0.290)			
Self Employed	-0.096	0.247	0.378	-0.371	0.119	0.602
	(0.375)	(0.286)	(0.334)	(0.210)*	(0.199)	(0.359)*
Part time	-0.109	0.140	0.422	0.111	-0.057	0.400
	(0.570)	(0.425)	(0.420)	(0.133)	(0.078)	(0.342)
occupation4	-0.811	0.302	-0.659	-0.319	-0.277	-0.208
	(0.917)	(0.803)	(0.688)	(0.100)***	(0.114)**	(0.163)
occupation5	-0.888	-0.843	-1.426	-0.060	-0.130	-0.296
	(0.551)	(0.544)	(0.553)**	(0.176)	(0.147)	(0.196)
occupation6	-0.929	-0.100	-0.270	-0.562	-0.420	-0.427
	(1.268)	(1.060)	(0.656)	(0.262)**	(0.106)***	(0.237)*
occupation7	-0.310	-0.163	-0.461	-0.154	-0.073	-0.102
	(0.661)	(0.474)	(0.407)	(0.077)**	(0.056)	(0.092)
occupation8	0.278	0.095	-0.573	-0.200	-0.055	-0.092
	(0.513)	(0.466)	(0.463)	(0.106)*	(0.075)	(0.113)
occupation9	-0.512	-0.352	-0.487	-0.415	-0.335	-0.367
	(0.562)	(0.432)	(0.344)	(0.083)***	(0.064)***	(0.114)***
Industry	1.247	0.496	0.421	0.749	0.510	0.555
	(0.686)*	(0.426)	(0.395)	(0.108)***	(0.060)***	(0.118)***
Construction	0.565	0.413	0.660	0.580	0.319	0.453
	(0.666)	(0.442)	(0.329)**	(0.125)***	(0.146)**	(0.137)***
Services	1.359	0.550	1.085	0.528	0.278	0.409

	(0.570)**	(0.445)	(0.285)***	(0.111)***	(0.063)***	(0.125)***
Other services and activities	0.480	0.606	0.759	0.477	0.212	0.485
	(0.661)	(0.490)	(0.573)	(0.148)***	(0.101)**	(0.197)**
State	-0.154	-0.678	-0.916	0.095	-0.056	0.028
	(0.985)	(0.704)	(1.084)	(0.091)	(0.072)	(0.102)
Privatized	-0.642	-0.494	-0.860	0.154	-0.052	-0.068
	(0.623)	(0.406)	(0.374)**	(0.084)*	(0.079)	(0.113)
Cooperative		-0.788		-0.164	-0.372	-0.771
		(0.555)		(0.285)	(0.073)***	(0.288)***
Center North	-1.361		-0.375	-0.125	-0.294	-0.371
	(0.764)*		(0.542)	(0.097)	(0.294)	(0.157)**
South	-0.148	-0.847	-0.888	-0.058	-0.399	-0.308
	(0.683)	(0.558)	(0.511)*	(0.109)	(0.082)***	(0.168)*
East	-0.515	-0.443	-0.474	-0.093	-0.185	-0.199
	(0.649)	(0.536)	(0.561)	(0.102)	(0.075)**	(0.149)
West	-0.072	-0.142	-0.037	-0.159	-0.308	-0.269
	(0.794)	(0.544)	(0.469)	(0.103)	(0.082)***	(0.159)*
Constant	0.283	1.717	1.584	-0.228	0.225	0.667
	(1.750)	(1.390)	(1.382)	(0.269)	(0.231)	(0.373)*
Observations	131	131	131	1312	1312	1312

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 23. Quantile regressions 10th , median and and 90th percentile –Males - 2004

	Informal			Formal		
	P10	Median	P90	P10	Median	P90
Age	-0.093	-0.102	0.020	0.019	0.029	0.036
	(0.071)	(0.044)**	(0.062)	(0.016)	(0.011)***	(0.019)*
Age^2	0.001	0.001	-0.000	-0.000	-0.000	-0.001
	(0.001)	(0.001)**	(0.001)	(0.000)	(0.000)***	(0.000)**
Secondary	-0.094	0.247	0.483	0.189	0.131	0.248
	(0.257)	(0.180)	(0.272)*	(0.090)**	(0.055)**	(0.123)**
University	0.474	0.137	-0.052	0.313	0.313	0.599
	(0.626)	(1.436)	(1.337)	(0.116)***	(0.078)***	(0.173)***
Tenure	0.067	-0.035	-0.001	0.008	0.016	0.015
	(0.114)	(0.105)	(0.127)	(0.010)	(0.006)***	(0.015)
$Tenure^2/100$	-0.200	0.176	-0.003	-0.014	-0.022	-0.026
	(0.832)	(0.998)	(1.034)	(0.024)	(0.018)	(0.036)
Positive Δ^a				-0.145	0.180	-0.252
				(0.433)	(0.368)	(0.229)
Negative Δ^b	-0.352	-0.376	-2.190	-1.151	-0.749	-0.273
	(0.420)	(0.549)	(0.864)**	(0.170)***	(0.204)***	(0.183)
Choice Informality	0.085	0.046	-0.171			
	(0.353)	(0.204)	(0.295)			
Self Employed	0.104	0.393	0.325	-0.294	0.126	0.157
	(0.441)	(0.230)*	(0.240)	(0.372)	(0.127)	(0.313)
Part time	0.308	0.134	-0.177	-0.188	-0.020	0.578
	(0.844)	(0.489)	(0.518)	(0.152)	(0.225)	(0.425)
occupation4	0.276	0.612	-0.570	-0.143	-0.123	-0.299
	(0.691)	(0.611)	(0.606)	(0.134)	(0.105)	(0.284)
occupation5	0.412	-0.469	0.327	-0.187	-0.283	-0.076
	(0.471)	(0.535)	(0.806)	(0.293)	(0.135)**	(0.217)
occupation6	1.415	0.807	-0.607	-0.806	-0.437	-0.737
	(0.800)*	(0.478)*	(0.634)	(0.299)***	(0.175)**	(0.270)***
occupation7	0.101	0.082	-0.138	-0.107	-0.042	-0.227
	(0.557)	(0.388)	(0.437)	(0.086)	(0.063)	(0.103)**
occupation8	-0.032	0.133	0.253	-0.203	-0.168	-0.037
	(0.675)	(0.501)	(0.633)	(0.098)**	(0.073)**	(0.156)
occupation9	-0.310	-0.457	-0.661	-0.530	-0.400	-0.419
	(0.403)	(0.352)	(0.442)	(0.122)***	(0.077)***	(0.127)***
Industry	0.516	0.485	0.016	0.528	0.446	0.442
	(0.445)	(0.387)	(0.431)	(0.124)***	(0.072)***	(0.170)***
Construction	0.244	0.511	-0.334	0.320	0.399	0.374
	(0.396)	(0.390)	(0.473)	(0.183)*	(0.098)***	(0.198)*
Services	0.314	0.489	0.049	0.173	0.291	0.156

	(0.432)	(0.417)	(0.452)	(0.121)	(0.072)***	(0.156)
Other services and activities	-0.117	0.408	-0.736	0.179	0.089	0.214
	(0.586)	(0.485)	(0.571)	(0.177)	(0.114)	(0.195)
State	0.474	0.343	0.303	0.089	0.027	0.097
	(0.592)	(0.427)	(0.637)	(0.101)	(0.060)	(0.130)
Privatized	0.450	0.243	-0.033	0.026	-0.014	-0.044
	(0.423)	(0.265)	(0.315)	(0.111)	(0.068)	(0.127)
Cooperative	1.422	1.100	-0.130	0.194	-0.193	0.241
	(0.786)*	(0.499)**	(0.414)	(0.300)	(0.297)	(0.545)
Center North	-1.042	-0.905	0.157	-0.456	-0.521	-0.301
	(0.590)*	(0.548)	(0.503)	(0.257)*	(0.088)***	(0.196)
South	-1.298	-1.062	-0.691	-0.299	-0.574	-0.097
	(0.736)*	(0.585)*	(0.521)	(0.247)	(0.090)***	(0.233)
East	-0.659	-0.567	-0.228	-0.353	-0.426	-0.212
	(0.612)	(0.533)	(0.492)	(0.258)	(0.082)***	(0.199)
West	-0.739	-0.617	0.217	-0.407	-0.544	-0.227
	(0.653)	(0.569)	(0.537)	(0.252)	(0.094)***	(0.223)
Constant	2.156	2.573	1.686	-0.119	0.493	0.796
	(1.634)	(1.109)**	(1.127)	(0.426)	(0.240)**	(0.486)
Observations	164	164	164	1020	1020	1020

Source:ULMS

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 24. Robust regression – Females - 2003

	Informal	Formal
Age	-0.001	0.012
	(0.042)	(0.007)*
Age^2	-0.000	-0.000
	(0.001)	(0.000)**
Secondary	-0.068	0.095
	(0.181)	(0.037)***
University	0.074	0.399
	(0.277)	(0.045)***
Tenure	0.006	0.006
	(0.058)	(0.004)
$Tenure^2/100$	0.019	-0.008
	(0.447)	(0.010)
Positive Δ^a		0.357
		(0.082)***
Negative Δ^b	-0.669	-0.515
	(0.442)	(0.048)***
Choice Informality	0.023	
	(0.178)	
Self Employed	-0.089	0.008
	(0.204)	(0.084)
Part time	0.605	0.080
	(0.229)***	(0.046)*
occupation4	-0.114	-0.073
	(0.444)	(0.039)*
occupation5	-0.247	-0.245
	(0.253)	(0.043)***
occupation6	-0.692	-0.041
	(0.400)*	(0.111)
occupation7	0.161	-0.044
	(0.446)	(0.045)
occupation8	0.000	0.084
	(0.000)	(0.076)
occupation9	-0.298	-0.198
	(0.236)	(0.036)***
Industry	0.896	0.190
	(0.326)***	(0.049)***
Construction	1.459	0.264
	(0.557)**	(0.088)***
Services	0.722	0.006
	(0.207)***	(0.043)
Other services and activities	0.705	0.026
	(0.277)**	(0.056)
State	0.822	-0.201
	(0.547)	(0.040)***
Privatized	-0.245	-0.138
	(0.296)	(0.053)***
Cooperative		-0.669
		(0.184)***
Center North	-0.411	-0.288
	(0.310)	(0.045)***
South	-0.124	-0.187
	(0.312)	(0.048)***
East	-0.322	-0.273
	(0.278)	(0.043)***
West	-0.503	-0.213
	(0.306)	(0.045)***

Constant	0.207	0.389
	(0.808)	(0.149)***
Observations	131	1573
R-squared	0.38	0.29

Source:ULMS
Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 25. Robust regression – Females - 2004

	Informal	Formal
Age	0.006	0.005
	(0.029)	(0.008)
Age^2	-0.000	-0.000
	(0.000)	(0.000)
Secondary	0.026	0.117
	(0.137)	(0.046)**
University	0.148	0.487
	(0.220)	(0.055)***
Tenure	0.008	0.010
	(0.031)	(0.004)**
$Tenure^2/100$	-0.096	-0.019
	(0.122)	(0.010)*
Positive Δ^a	0.000	0.647
	(0.000)	(0.156)***
Negative Δ^b	-1.014	-0.558
	(0.330)***	(0.081)***
Choice Informality	0.177	
	(0.142)	
Self Employed	0.212	0.093
	(0.217)	(0.113)
Part time	0.415	0.046
	(0.208)**	(0.060)
occupation4	0.532	-0.086
	(0.348)	(0.046)*
occupation5	0.145	-0.278
	(0.240)	(0.053)***
occupation6	0.000	-0.222
	(0.000)	(0.137)
occupation7	0.960	-0.012
	(0.310)***	(0.054)
occupation8	0.000	0.015
	(0.000)	(0.088)
occupation9	0.173	-0.259
	(0.222)	(0.043)***
Industry	0.304	0.241
	(0.278)	(0.055)***
Construction	0.466	0.240
	(0.420)	(0.111)**
Services	0.301	0.149
	(0.234)	(0.048)***
Other services and activities	0.745	0.146
	(0.246)***	(0.068)**
State	-0.592	-0.084
	(0.337)*	(0.045)*
Privatized	0.000	0.440
	(0.000)	(0.200)**
Cooperative	-0.140	0.019
	(0.183)	(0.052)
Center North	-0.654	-0.171
	(0.277)**	(0.073)**
South	-0.319	-0.100
	(0.277)	(0.079)
East	-0.480	-0.254
	(0.254)*	(0.072)***
West	-0.409	-0.235
	(0.297)	(0.075)***
Constant	0.238	0.371

	(0.646)	(0.180)**
Observations	162	1222
R-squared	0.39	0.30

Source:ULMS
Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 26. Robust regression – Males - 2003

	Informal	Formal
Age	-0.047	0.015
	(0.038)	(0.009)*
Age^2	0.000	-0.000
	(0.001)	(0.000)**
Secondary	-0.111	0.098
	(0.170)	(0.040)**
University	0.014	0.229
	(0.259)	(0.060)***
Tenure	0.105	0.009
	(0.057)*	(0.005)*
$Tenure^2/100$	-0.742	-0.014
	(0.435)*	(0.014)
Positive Δ^a		0.396
		(0.117)***
Negative Δ^b	-0.222	-0.616
	(0.352)	(0.059)***
Choice Informality	0.003	
	(0.208)	
Self Employed	0.261	0.045
	(0.202)	(0.103)
Part time	0.228	-0.030
	(0.295)	(0.089)
occupation4	-0.357	-0.322
	(0.451)	(0.088)***
occupation5	-0.912	-0.138
	(0.330)***	(0.101)
occupation6	0.186	-0.390
	(0.472)	(0.105)***
occupation7	-0.531	-0.083
	(0.282)*	(0.050)*
occupation8	0.003	-0.073
	(0.389)	(0.063)
occupation9	-0.384	-0.320
	(0.244)	(0.056)***
Industry	0.702	0.570
	(0.319)**	(0.056)***
Construction	0.649	0.415
	(0.255)**	(0.082)***
Services	0.702	0.350
	(0.254)***	(0.056)***
Other services and activities	0.550	0.307
	(0.298)*	(0.079)***
State	-0.787	-0.019
	(0.651)	(0.049)
Privatized	-0.386	-0.053
	(0.334)	(0.060)
Cooperative		-0.467
		(0.239)*
Center North	-0.777	-0.373
	(0.359)**	(0.067)***
South	-0.903	-0.360
	(0.357)**	(0.070)***
East	-0.709	-0.199
	(0.359)*	(0.063)***
West	-0.309	-0.327
	(0.384)	(0.066)***
Constant	1.967	0.329

	(0.817)**	(0.185)*
Observations	131	1312
R-squared	0.37	0.30

Source:ULMS
Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 27. Robust regression – Males - 2004

	Informal	Formal
Age	-0.086	0.023
	(0.035)**	(0.009)**
Age^2	0.001	-0.000
	(0.000)**	(0.000)***
Secondary	0.230	0.166
	(0.147)	(0.051)***
University	0.030	0.336
	(0.421)	(0.073)***
Tenure	-0.029	0.012
	(0.044)	(0.006)**
$Tenure^2/100$	0.181	-0.015
	(0.219)	(0.016)
Positive Δ^a	0.000	0.161
	(0.000)	(0.232)
Negative Δ^b	-0.801	-0.818
	(0.588)	(0.095)***
Choice Informality	0.124	
	(0.173)	
Self Employed	0.395	0.006
	(0.168)**	(0.102)
Part time	0.389	-0.148
	(0.252)	(0.107)
occupation4	0.289	-0.159
	(0.600)	(0.098)
occupation5	-0.240	-0.223
	(0.318)	(0.109)**
occupation6	0.582	-0.500
	(0.838)	(0.126)***
occupation7	0.013	-0.082
	(0.239)	(0.058)
occupation8	0.015	-0.142
	(0.336)	(0.066)**
occupation9	-0.516	-0.368
	(0.208)**	(0.069)***
Industry	0.519	0.462
	(0.246)**	(0.063)***
Construction	0.541	0.448
	(0.227)**	(0.088)***
Services	0.409	0.244
	(0.240)*	(0.062)***
Other services and activities	0.125	0.180
	(0.308)	(0.090)**
State	0.057	0.025
	(0.408)	(0.054)
Privatized	0.240	-0.053
	(0.278)	(0.058)
Cooperative	0.809	-0.221
	(0.814)	(0.222)
Center North	-0.678	-0.448
	(0.385)*	(0.093)***
South	-0.852	-0.452
	(0.397)**	(0.101)***
East	-0.508	-0.352
	(0.374)	(0.091)***
West	-0.502	-0.470
	(0.399)	(0.095)***
Constant	2.377	0.514

	(0.761)***	(0.210)**
Observations	164	1020
R-squared	0.35	0.31

Source:ULMS
Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Default categories are: Elementary and less, highly skilled (ISCO 1 to 3), agriculture, hunting and fishing, newly established enterprises, Kyiv city

Table 28. Gender wage gap – Oaxaca decomposition not adjusted and adjusted for selection – 2003 and 2004

	2003			
	Formal		Informal	
	Not adjusted	Adjusted	Not adjusted	Adjusted
Difference	0.234***	0.298***	0.195*	-2.540
Explained[a]	-0.003	0.013	0.221**	0.222*
Unexplained[b]	0.236***	0.285***	-0.027	-2.762
	2004			
	Formal		Informal	
	Not adjusted	Adjusted	Not adjusted	Adjusted
Difference	0.238***	0.228**	0.280***	-0.436
Explained	-0.005	0.011	0.286**	0.268***
Unexplained	0.243***	0.218*	-0.006	-0.704

Source:ULMS
Notes:
Reference (non-discriminated) group is males.
[a] Endowments
[b] Coefficients and interaction between coefficients and endowments
* significant at 10%; ** significant at 5%; *** significant at 1%