Occupational Wage Structure and Gender Inequality in Ukraine

by

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Abstract

This paper explores the wage structure and investigates factors that influence the wage rates and cause male/female earnings inequality for different occupations and groups of occupations in Ukraine. The data for the research has been taken from the ULMS (Ukrainian Longitudinal Monitoring Survey), the first nationally representative survey of Ukrainian households. All occupations have been classified into two sets of groups. The first set includes predominantly male occupations, predominantly female occupations and mixed occupations. The second set of occupational groups includes highly paid occupations and low paid occupations. The findings show that the raw gender pay gap grows in the low paid and predominantly female occupational groups and falls in predominantly male and highly paid occupational groups in 2004 comparing to 2003. However, in predominantly female and low paid groups the gender pay gap is better explained than the gender pay gap in predominantly male and highly paid groups. In general, the analysis indicates the presence of large male/female earnings inequality in all occupational groups.

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1. Introduction

In the recent decades the gender inequality issue became broadly investigated in many developed and transitional countries all over the world. A considerable number of prominent researchers discussed the existence of differentials in male and female wages and proposed various theories, which could explain why women are paid less than men. Gender differences in human capital characteristics, concentration of females in the low paid occupations and, finally, discrimination are the factors that contribute to the explaining of the gender pay gap.

The presence of discrimination at the labor market is an exceptionally important question in the context of gender inequality. Although discrimination is legally prohibited, it is practically one of the realities in the transitional economies.

Different treatment of males and females, exclusion of females from the "male" jobs leads to their overcrowding in the female jobs, where in general, they get low wages.

Francine D. Blau and Lawrence M. Kahn (2000, p. 82) suggest that "even the small initial discriminatory differences in wages may accumulate to large ones as men and women make decisions about human capital investments and time allocation in the market and the home on the basis of these wage differentials."

However, the unexplained part of the gender gap may not only contain discrimination, but also reflect the other factors different for men and women. Jane Waldfogel (1998) stresses the negative impact of children on the female wages, as children can negatively influence female labor market experience.

This paper explores the gender inequality and puts the particular accent on the role of occupations in defining the gender pay gap between male and female workers in Ukraine. All occupations have been categorized into two sets. The first set includes

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predominantly male, predominantly female and mixed occupations. The second set of groups includes highly paid and low paid occupations.

The methodology used for the investigation consists of the estimation of basic and augmented Mincerian earnings functions for the whole sample and for defined sets of occupations, Oaxaca decomposition of the gender pay gap, computation of the occupational segregation and both wage dispersion between occupations and within occupations.

The analysis demonstrates the large advantage of males over females in wages both in the whole sample and in all sets of occupations. Moreover, the women are mostly segregated in the low paid occupations and men in the main work in the highly paid occupations. The investigation of the dynamics of the gender inequality reveals that in 2004 comparing to 2003 the raw gender pay gap grows in the low paid and predominantly female occupational groups and falls in the highly paid and predominantly male occupational groups. The results of Oaxaca decomposition define the large unexplained residual in the gender pay gap in all classified sets of occupations. However, comparatively to the highly paid and predominantly male occupations, the gender pay gap is better explained in the low paid and predominantly female groups.

The paper is structured as follows: the literature review is presented in the Chapter 2, the data and methodology are described in the Chapter 3, Chapter 4 gives the main results of the investigation, conclusion follows in the Chapter 5, the tables with estimation results are situated in the Appendix A, Appendix B contains the graphs and the final Appendix C refers to the sources of computer programs.

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2. Literature Review

The analysis of the wage structure and wage differentials in the context of wage determination had a significant place in the economic discussion in the last several decades.

Blau and Kahn (2000) define the wage structure as the array of prices determined for labor market skills and the rewards to employments in the particular sectors. Exploring the occupational wage structure can be considered as a momentous step in the investigation of the gender inequality. J De Beyer and John Knight (1989, p. 595) define several ways according to which occupation itself may influence wage:

> Firstly, wage differences compensate for the non-pecuniary characteristics of different jobs. Secondly, occupational wage differences can stem from the barriers to movement and from the institutional factors, which hinder the market equalization of wages. Thirdly, since additional pay is needed to compensate for training costs incurred by workers, occupational wages differ according to the amount of vocational skill involved in the job. Fourthly, the value of personal characteristics such as natural ability and cognitive skill can vary among occupations, and these characteristics can also assist vocational skill acquisition.

Furthermore, several factors can influence the differences in wages between women and men.

Human capital theory states that the differences in the individual characteristics, such as education and experience, can partially explain the differences in wages. Analyzed by Jacob Mincer and Solomon Polachek (1974), Gary S. Becker (1985) and other researchers, the differences in the male and female human capital investments appear to be connected with social traditions. Women who spend more time on the housework and have shorter work histories have fewer incentives to invest in the education and on-job training than men do.

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Labor market discrimination is also an extremely weighty factor that influences wage structure and occupational structure.

Gary S. Becker (1957) states that discrimination may arise due to the discriminatory tastes of employers, colleagues or clients. Statistical discrimination accounts for average differences in productivities between women and men. By discrimination women may be overcrowded in the female jobs and under-represented in the male occupations (Barbara Bergmann, 1974).

The theory of occupational segregation relates gender pay gap to the different occupational composition of men and women.

Blau and Kahn (2000) argue that on the US labor market for many decades women had tendency to work in the small number of low-paying, predominantly female jobs. Consequently, till 1970 women were especially concentrated in administrative support (including clerical) and service occupations. Women were underrepresented in blue-collar jobs, including higher-paying precision production and craft occupations. However, since 1970 the situation changed and significant amount of women has moved into the traditional male jobs.

The economists dealing with gender pay gap in the transitional economies stated different theories how the male-female differences in wages should change after the collapse of socialism. Increased gender differentials could be expected after transition from socially egalitarian system or decreased gender differentials could occur if the competition in the market system was effective.

The researchers of gender pay gap in Ukraine, Ina Ganguli and Katherine Terrell (2005) analyze the male-female differences in earnings during the communist time and in the transition period and find that the raw mean gender gap remained the same from 1986

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to 1991 but declined in 2003. Moreover, they find that a difference in rewards is the most important factor explaining the gender gap at the mean and throughout the distribution.

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3. *Data and Methodology*

3.1. Data Description

For this paper the data from the first and second waves of the Ukrainian Longitudinal Monitoring Survey (ULMS) is used. The first wave of the ULMS was conducted in the period from March till June 2003, the second wave of ULMS was carried out in the period from May till August 2004. The household panel contains the information about 8641 individuals in 2003 and 7200 individuals in 2004. The first wave of ULMS also has the retrospective questions about 1986, 1991 and continuously from 1997 to 2002.

In the current research the data for 1997, 1998, 2000, 2002, 2003 and 2004 have been explored. For the investigation of the occupation wage structure and occupational gender inequality only years 2003 and 2004 have been used, as the rest of the years in reality do not contain information about occupational attainment of individuals.

The basic and extended lists of occupations are given in the Table 1 of the Appendix A.

The first column of the Table 1 contains the basic occupations of individuals and the second column contains the additional occupations, which correspond to the particular basic occupation.

The variables used in the analysis and their descriptions are given in the Table 2 of the Appendix A. The sample is restricted to the full-time workers older than 14 years and younger than 60 years.

To explore the dynamics in changes of the nominal and real wages, 1997 has been chosen as a base and the nominal wages in the other years have been converted into the real wages according to the changes in the consumer price index.

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3.2. Division into Sets of Occupations

According to the statistics of all individuals in the sample and separately male and female workers, all occupations can be divided into two sets. The first set of occupations includes predominantly male, predominantly female and mixed occupations. The second set of occupations includes highly paid and low paid occupations.

In case of dividing the set of occupations only into predominantly male and predominantly female occupations, the researchers compare the share of women in every occupation and the share of women at the whole labour market. For example, Valerie K. Oppenheimer (1970) considers an occupation disproportionately female when the occupation contains a higher proportion of female workers than the labor market as a whole.

Catherine Hakim (1993) defines predominantly male occupations as occupations in which the shares of female workers are less than 25% in each year with a mid-point of 40% female workers. Predominantly female occupations are defined as occupations in which the shares of female workers are more than 55%. Mixed occupations are occupations where the shares of female workers are more than 25%, but less than 55%.

Applying the similar scheme, with a mid-point around 50% of female in 2003 and 2004, allows to define predominantly male occupations as occupations which contain less than 35% of females, predominantly female occupations as occupations which contain more than 65% of females and mixed occupations as occupations which contain between 35% and 65% of female workers.

The second set of occupations includes the highly paid and low paid occupations. The particular occupation is considered a highly paid occupation if its mean log wage is

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larger than overall mean log wage. The occupation is thought to be a low paid occupation if the mean log wage in it is smaller than overall mean log wage.

The list of predominantly female, predominantly male and mixed occupations is given in the Table 3 of the Appendix A. The list of highly paid and low paid occupations is given in the Table 4 of the Appendix A.

It is easy to notice that basically the occupational groups do not change between years. The only change in the defined sets of occupations stems from the individuals with missing occupations.

3.3. Models of Estimation

At the first step of estimation, in order to analyse how particular occupations can influence the wage rate, the following models have been estimated.

Basic Mincerian Earnings Function:

$$ln\ w_{it} = \beta_0 + \beta_1 sch_{it} + \beta_2 exp_{it} + \beta_3 exp^2_{it} + \beta_4 female_{it} + \beta_5 capital_{it} + \varepsilon_{it}, (1)$$

Augmented Mincerian Earnings Functions:

$$ln\ w_{it} = \beta_0 + \beta_1 sch_{it} + \beta_2 exp_{it} + \beta_3 exp^2_{it} + \beta_4 female_{it} + \beta_5 capital_{it} + \sum_n \alpha_n own_{n,it} + \sum_m \gamma_m firm\_size_{m,it} + \varepsilon_{it}, (2)$$

$$ln\ w_{it} = \beta_0 + \beta_1 sch_{it} + \beta_2 exp_{it} + \beta_3 exp^2_{it} + \beta_4 female_{it} + \beta_5 capital_{it} + \sum_n \alpha_n own_{n,it} + \sum_m \gamma_m firm\_size_{m,it} + \sum_k \delta_k occ_{k,it} + \varepsilon_{it}, (3),$$

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where i indexes individual, t indexes time, w_{it} is monthly wage, sch_{it} is adjusted years of schooling, exp_{it} is years of potential labor market experience, $female_{it}$ is a dummy variable indicating if an individual is female, $capital_{it}$ is a dummy variable indicating if an individual i lives in the capital city, $own_{n,it}$ is a set of dummies for state, private, and missed ownership types, $firm\_size_{m,it}$ is a set of dummies for the firm size categories, $occ_{k,it}$ is a set of dummies indicating different occupations and ε_{it} is an error term.

At the second step, the following basic and augmented Mincerian earnings functions have been estimated separately for defined predominantly male, predominantly female, mixed, highly paid and low paid occupations:

Basic Mincerian Earnings Function (analogical to equation (1)):

$$\ln w_{it} = \beta_0 + \beta_1 sch_{it} + \beta_2 exp_{it} + \beta_3 exp^2_{it} + \beta_4 female_{it} + \beta_5 capital_{it} + \varepsilon_{it},$$

Augmented Mincerian Earnings Function:

$$\ln w_{it} = \beta_0 + \beta_1 sch_{it} + \beta_2 exp_{it} + \beta_3 exp^2_{it} + \beta_4 female_{it} + \beta_5 capital_{it} + \sum_n \alpha_n own_{n,it} + \sum_m \gamma_m firm\_size_{m,it} + \varepsilon_{it}, \quad (4),$$

where i indexes individual, t indexes time, w_{it} is monthly contractual wage, sch_{it} is adjusted years of schooling, exp_{it} is years of potential labor market experience, $female_{it}$ is a dummy variable indicating if an individual is female, $capital_{it}$ is a dummy variable

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indicating if an individual i lives in the capital city, $own_{n,it}$ is a set of dummies for state, private, and missed ownership types, $firm\_size_{m,it}$ is a set of dummies for the firm size categories and ε_{it} is an error term.

3.4. Decomposition of the Gender Pay Gap

Since simple estimation of Mincerian earnings functions can not fully explain the gender inequality, the Ronald Oaxaca (1973) and Alan S. Blinder (1973) decomposition has been provided for different groups of occupations. The Oaxaca-Blinder method allows decomposition of the differential between male and female wages into two parts – the first part can be explained by the different productivity in the investigated groups and is called the "endowment effect", the second part is the "unexplained residual", which may contain the discrimination of one group in favor of another one.

The three-fold division was established by Halliman H. Winsborough and Peter J. Dickinson (1971) and is based on the regression model:

$$Y_j = X_j \beta_j + \varepsilon_j, \; E(\varepsilon_j)=0, \; j=1,2 \quad (6)$$

The mean outcome difference $$R = \bar{Y}_1 - \bar{Y}_2 = \bar{X}_1' \hat{\beta}_1 - \bar{X}_2' \hat{\beta}_2 \quad (7)$$

can be decomposed as:

$$R = (\bar{X}_1 - \bar{X}_2)' \hat{\beta}_2 + \bar{X}_2' (\hat{\beta}_1 - \hat{\beta}_2) + (\bar{X}_1 - \bar{X}_2)' (\hat{\beta}_1 - \hat{\beta}_2) \quad (8),$$

where $(\bar{X}_1 - \bar{X}_2)' \hat{\beta}_2$ is the part of the gap which corresponds to the differences in the endowments,

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$(\bar{X}_2)' (\hat{\beta}_1 - \hat{\beta}_2)$ corresponds to the differences in the coefficients

$(\bar{X}_1 - \bar{X}_2)' (\hat{\beta}_1 - \hat{\beta}_2)$ is due to the interaction.

$\bar{Y}$ is a sample mean of outcome variable and $\bar{X}$ is a mean vector of the regressors.

The two-fold division can be stated in a following way:

$$R = (\bar{X}_1 - \bar{X}_2)' \beta^* + [\bar{X}_1' (\hat{\beta}_1 - \beta^*) + \bar{X}_2' (\beta^* - \hat{\beta}_2)] \quad (9),$$

where β^* are the coefficients from the non-discriminatory model. Oaxaca (1973) and Blinder (1973) assumed that

$\beta^* = \hat{\beta}_1$ or $\beta^* = \hat{\beta}_2$

3.5. Occupational Segregation

Special technique is used to measure the amount of the occupational segregation. According to Cristina Jonung (1984), occupational gender segregation is said to exist when women and men are differently distributed across occupations than they are in employment overall, regardless of the nature of job allocation. An index of gender segregation can be viewed as measuring the extent to which men and women are unevenly distributed across occupations (Douglas S. Massey and Nancy A. Denton, 1988).

In his paper Martin Watts (1998) appeals to several indices of occupational segregation. One of the most famous indices of occupational segregation is the index of dissimilarity. The index of dissimilarity can be written as:

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$$D=1/2\Sigma_j |F_j/F - M_j/M| \quad (10),$$

where F_j and M_j denote the number of female and male employees in the j_{th} occupation, and F and M are total female and male employment, respectively. Charles F. Cortese, Frank Falk and Jack K. Cohen (1976) demonstrate that the D index represents the share of either group that must be removed, without replacement**,** to achieve zero segregation.

3.6. Wage Dispersion

Finally, to assess the degree of wage dispersion between occupations and within occupations, the method of Christopher H. Wheeler (2005) is used. Wheeler uses the following decomposition to explore the between-industry and within-industry inequality.

$$V_t^w = (1/N_t) \Sigma_{i=1..It} \Sigma_{j=1..Ni,t} (w_{j,i,t} - \hat{w}_{i,t})^2 \quad (11)$$

$$V_t^b = (1/N_t) \Sigma_{i=1..It} \Sigma_{j=1..Ni,t} (\hat{w}_{i,t} - \hat{w}_t)^2 \quad (12),$$

where V_t^w is a "within-industry" component of wage dispersion and V_t^b is a "between-industry" component of wage dispersion, $w_{j,i,t}$ is wage of worker j in industry i, $\hat{w}_t$ is the overall mean wage, $N_{i,t}$ is the number of workers in industry i, I_t is the number of industries, N_t is the total number of workers, $\hat{w}_{i,t}$ is the mean wage among workers of industry i, all for the year t.

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Following the Wheeler technique, the "between-occupational" and "within-occupational" components of wage dispersion have been counted, according to formulas:

$$V_t^w = (1/N_t) \sum_{i=1..It} \sum_{j=1..Ni,t} (w_{j,i,t} - \hat{w}_{i,t})^2 \quad (13)$$

$$V_t^b = (1/N_t) \sum_{i=1..It} \sum_{j=1..Ni,t} (\hat{w}_{i,t} - \hat{w}_t)^2 \quad (14),$$

where V_t^w is a "within-occupation" component of wage dispersion and V_t^b is a "between-occupation" component of wage dispersion, $w_{j,i,t}$ is wage of worker j in occupation i, $\hat{w}_t$ is the overall mean wage, $N_{i,t}$ is the number of workers in occupation i, I_t is the number of occupations, N_t is the total number of workers, $\hat{w}_{i,t}$ is the mean wage among workers of occupation i, all for the year t.

The "between-occupational" component of wage dispersion captures the variation of earnings between occupations. Consequently, the "within-occupational" component of wage dispersion shows how much earnings vary in the concrete occupation.

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4. Results

The tables with the main results are given in the Appendix A. The Appendix B goes after the Appendix A with the graphs, which provide the visual demonstration of the findings. Finally, the Appendix C contains the source codes of the two programs for the calculation of the segregation indices and wage dispersion.

The Appendix A commences with a group of the descriptive tables, which contain the explanatory data on the separate occupations, estimation variables and sets of occupations.

The following group of tables in the Appendix A provides the statistics of the variables. This group includes Table 5 with statistics for the whole sample of workers and also separately for males and females for all years, Table 6 and Table 8 with statistics only for male workers for different occupations in 2003 and 2004 and, finally, Table 7 and Table 9 with statistics only for female workers for different occupations in 2003 and 2004.

The group of tables from Table 10 to Table 14 contains the estimation results. Consequently, Table 10 shows the estimates from the basic and augmented Mincerian earnings functions for the whole sample for 2003 and 2004. Table 11 and Table 13 have the results of estimation of the basic and augmented Mincerian equations for predominantly male, predominantly female and mixed occupational groups for 2003 and 2004. Analogically, Table 12 and Table 14 show the results for highly paid and low paid occupational groups.

The group with decomposition results comes next after the group with estimation outcomes. Table 15 provides the results of the Oaxaca decomposition for predominantly male, predominantly female and mixed occupations, and Table 16 demonstrates the findings for highly paid and low paid occupations.

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The last group of tables in the Appendix A contains the calculated between-occupational and within-occupational earnings variance, given in the Table 17.

Using the similar descriptive technique, the graphs in the Appendix B can also be divided into three groups. The first group includes the Graph 1, which describes the evolution of the nominal and real wages by gender from 1997 until 2004.

The Graph 2, Graph 3 and Graph 4 demonstrate the occupational structure of all the workers and males and females separately in 2003-2004.

The last group of graphs, from Graph 5 to Graph 14, visually shows the male/female inequality aspects.

Finally, the source codes of the programs for the calculation of the segregation indices and wage dispersion, as stated above, are given in the Appendix C.

There follows the detail description of the main results.

The descriptive statistics of the variables can be the first indicator of the gender earnings inequality. The fact that women have better statistical figures than men but still get lower wages can be the first sign of the presence of the female discrimination. Looking at the statistics in Table 5 of the Appendix A, it is possible to notice that male wages both in 2003 and 2004 have been much higher than female wages. If in 2003 mean log wage for women is 4.687, then mean log wage for men is 4.999. At the same time, in the sample, women have larger means of adjusted years of schooling and potential experience than men do. Almost the same percentage of women and men work in the foreign firms, although in the private firms more men work and in the state firms more females are employed. Women more often than men have jobs in the small firms, men tend to work in large firms and corporations.

The occupational structure of all workers and separately males and females can be observed on the Graph 2, Graph 3 and Graph 4 of the Appendix B. It is easy to notice that

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"Skilled manual workers" (21-22%), 'Unskilled occupations" (18-19%) and "Technicians and associate professionals" (16-14%) account for more than 50% of all workers in the sample. The forth most popular occupation is "Professionals", which has from 15% in 2003 to 12% in 2004 of all employees.

For the male workers the most employed occupations are "Skilled manual workers" (33-34%), "Unskilled occupations" (19-17%), "Plant and machine operators and assemblers" (11-15%), "Professionals" (11-8%) and "Technicians and associate professionals" (10-8%).

For the female workers the most popular occupations are "Technicians and associate professionals" (21-20%), "Unskilled occupations" (18-21%), "Professionals" (19-15%), "Service workers and shop and market sales workers" (13-14%) and "Clerks" (11-11%).

It is evident that most popular female occupations are mainly low paid and most popular male occupations are usually highly paid occupations. However, the wage of male workers in all sets of occupations and in all occupations, even in predominantly female occupations, is higher than the wage of female workers. As well, people in female dominated occupations have higher number of adjusted years of schooling than in predominantly male or mixed occupations. It might be connected with a specificity of the concrete occupations – in fact, from the extended list of occupations it could be noticed that predominantly male occupations are usually manual and craft occupations, which do not demand a lot of education.

At the same time, the adjusted years of schooling and potential experience of males are in general greater in highly paid occupations than in low paid occupations. Females in highly paid occupations also have better or equal human capital characteristics comparatively to females in low paid occupations.

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On the Graph 5 and Graph 6 of the Appendix B the differences between mean log wages (so called the raw gender pay gap) and female/male wage ratios for different occupation are depictured. For the majority of occupations the differences increased in 2004 comparatively to 2003. The largest female/male wage ratios in both years are in the agricultural sector and for the plant machine operators and assemblers, which are the predominantly male occupations.

On the Graph 7-8 of the Appendix B the differences in the means of male/female log wages (the raw gender pay gaps) and female/male wage ratios for predominantly male, predominantly female and mixed occupations are depicted. In 2003 the raw gender pay gaps are close to each other, although from the female/male ratio it could be seen that women in predominantly female and predominantly male groups had the "worst" figures. In 2004 the differences in the predominantly female group are the largest, females in this group have the smallest female/male ratio. Such striking inequality says that females in the predominantly female group can have worse labor outcomes than females in other groups.

From the Graph 9-10 it is possible to tell that the raw gender gap increased for low paid group and decreased for highly paid group in 2004. Consequently, the women in the highly paid group have higher female/male wage ratio and women in the low paid group have lower female/male wage ratio in 2004.

The estimates from basic and augmented Mincerian earnings functions show the differences in wages between males and females with the same human capital and firm characteristics. The results of estimation of Mincerian functions, given in the Table 10 of the Appendix A, point out that having the same human capital and capital city characteristics, women get wages 36% lower in 2003 and 40% lower in 2004 than men do. After including into the Mincerian earnings functions such firm characteristics as

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ownership and firm size, the wage difference between a man and a woman with similar personal and firm characteristics lowers to 32% in 2003 and almost 36% in 2004. Furthermore, including into the model the occupational dummies makes the gap equal to 27% in 2003 and 30% in 2004.

From the augmented Mincerian function (3), estimated with controlling for occupation, it is possible to follow which occupations are better or worse for workers. Occupations "Plant and machine operators and assemblers", "Managers and self-employed", "Professionals", "Armed forces", "Skilled manual workers" positively and significantly influence the wage and "Unskilled occupations", "Skilled agricultural, forestry, and fishery workers " and "Service workers and shop and market sales workers" negatively significantly influence the wage of the workers.

The estimates of basic and augmented Mincerian earnings functions separately for predominantly male, predominantly female and mixed occupation are given in the Table 11 and the Table 13 of the Appendix A. They show that in 2003 the largest wage difference in wages between male and female workers with identical characteristics is in the predominantly male occupations and consists of almost 35% from the basic Mincerian estimates and 34% from the augmented Mincerian estimates. However, in 2004 the women in the predominantly female occupations are in the worst situation, getting almost 34% smaller wage.

Looking at the estimates for highly paid and low paid occupations, given in the Table 12 and the Table 14 of the Appendix A, it is possible to mark that differences between male and female wages are larger in highly paid occupations in 2003 and greater in low paid occupations in 2004. Consequently, the situation changed from 2003 to 2004. The reason of wage difference inconsistency could be the increase of minimum wage, which occurred in the December 2003. It could provoke the disproportional increase in wage, so

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that the male workers in predominantly female occupations, who previously got larger wages than female workers in these occupations, became even better off. In such way, predominantly female, low paid occupations could have been more affected than predominantly male occupations with highly paid male workers.

Table 15 of Appendix A contains the results from Oaxaca decomposition for predominantly male, predominantly female and mixed occupations. The Oaxaca decomposition allows establishing to what extent the male/female wage differences can be explained by the different characteristics of women and men.

The results of the Oaxaca decomposition corroborate the presence of large amount of unexplained residuals in the gender pay gap. Although in the predominantly female occupations the gender gap is partially explained by the human capital or firm-specific characteristics, the largest percent of explained part of the gap does not exceed 22%.

The predominantly male occupational group in both years has the gender gap which cannot be explained by the human capital or firm-related characteristics. Indeed, women in these occupations often have more adjusted years of schooling and potential experience than men do. More women live in the capital or work in the large firms, which should positively influence their wages. Still, female wages are much lower than male wages.

Looking at the Table 16 of the Appendix A and the Graph 13-14 of the Appendix B, it is possible to see that the gender pay gap in the low paid occupations can be partially explained in 2004. Nonetheless, the amount of unexplained part both for highly paid and low paid occupations is tremendously large in both years.

Therefore, the Oaxaca decomposition support the statement that the large unexplained part in the gender pay gap may contain the discrimination against women.

Table 17 of the Appendix A contains counted between-occupational and within-occupational variances. In both years, within-occupational variance is larger for the whole

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sample and for females and males separately. It means that inequality mainly comes from the difference in wages inside of the particular occupations and not from the different wages in different occupations.

Finally, the accounting of segregation in the sample helps to define the level of concentration of male and female workers in the particular groups of occupations. The index of dissimilarity accounts for 0.36 in 2003 and 0.407 in 2004, which is quite a substantial figure. Therefore, the sample is sufficiently segregated and as a result, it can influence the differences in earnings between male and female workers.

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5. Conclusion

In this paper the gender inequality in the occupational context was analyzed for Ukrainian workers. All occupations have been divided into predominantly female, predominantly male and mixed for the first set of occupations and into highly paid and low paid occupations for the second set of occupations.

Most of the predominantly female occupations are low paid occupations and most of the predominantly male occupations are highly paid occupations. These results contribute to the hypothesis that women more often constitute the higher percentage of workers in the low paid occupations.

In reality, female wages in all sets of occupations are much lower than male wages. In 2003 the raw mean gender pay gaps in predominantly male, predominantly female groups are very close to each other. However, in 2004 the situation becomes worse for the females in the predominantly female group and better for the females in the predominantly male group. Comparatively to 2003, in 2004 gender pay gap increases in the whole sample, in the predominantly female, mixed and low paid occupations and decreases in the predominantly male and highly paid occupations.

The reason of the changes in the percents of differences between male and female wages can descend from different personal qualifications of workers, increased amount of workers segregation and macroeconomic changes in the whole country.

Females in the 2004 in the highly paid occupations have better characteristics than in the 2003. 2004 was a year of elections. As a consequence, the increase in minimum wage and the wish of large state employers to equalize workers could make the gender pay gap larger in the low and predominantly female occupations and smaller in the highly paid and predominantly male occupations.

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In such way the situation in 2004 becomes worse for people who work in the low paid occupations, and consequently, it worsens for the great number of females. Moreover, for the most groups, between-occupational wage dispersion is also larger in 2004 than in 2003.

However, the results of Oaxaca decomposition show that in spite of the large size of the male-female earnings differences, in the female and low paid occupations the gender pay gap can be explained to the greater extent than in the male and highly paid occupations. The difference in qualifications and firm-specific characteristics explains the gender pay gap in the predominantly female occupations up to 22% in 2004.

Nevertheless, an extremely large amount of unexplained part of the gender pay gap, especially in the predominantly male, highly paid occupations, can be the sign of the huge female discrimination on the Ukrainian labor market.

Consequently, the issue of the gender pay gap in Ukraine and the role of occupational characteristics in the defining the differences in wages between male and female workers constitute an extremely interesting and important topic for the future investigation.

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7. Appendices

7.1. Appendix A. Tables

Table 1. Basic and Extended Lists of Occupations, 2003-2004

Basic List of Occupations	Extended List of Occupations
Managers, self-employed	Legislators and senior officials
	Corporate managers (directors and managers of big enterprises)
	General managers (directors and managers of small enterprises)
	Entrepreneurs (small enterprises), self-employed
Professionals	Physical, mathematical, and engineering science professionals
	Biological, agricultural, life science, and health professionals
	Teaching professionals
	Other professionals
Technicians and associate professionals	Physical and engineering science associate professionals
	Biological, agricultural, life science, and health associate professionals
	Teaching associate professionals
	Other associate professionals (financial, economic, administration)
Clerks	Office clerks
	Customer service clerks
Service workers and shop and market sales workers	Personnel and protective services workers
	Models, salespersons, and demonstrators

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Skilled agricultural, forestry, and fishery workers	Skilled agricultural, forestry, and fishery workers
Skilled manual workers	Extraction and building trade workers
	Metal, machinery, and related trades workers
	Precision, handicraft, printing, and related trades workers
	Other craft and related trades workers
Plant and machine operators and assemblers	Stationary plant and related operator
	Machine operators and assemblers
	Drivers and mobile plant operators
Unskilled occupations	Sales and services elementary occupations
	Agricultural, fishery, and related laborers
	Laborers in mining, construction, manufacturing, and transport
Armed forces	Armed forces

Table 2. Definition of variables

Variable	Description
Wage	Monthly wage of full-time workers after taxes at the primary job or net income for self-employed. All wages are converted into hryvnyas.
Adjusted Years of Schooling	Education status from the survey has been converted into a continuous variable representing adjusted years of schooling. Adjusted years of schooling were taken as 4 for 1-6 grades, 8 for 7-9 grades, 10 for 10-12 secondary school grades, 9 for a vocational non-secondary school diploma, 11.5 for a vocational secondary school diploma, 13 for a technical school diploma and incomplete higher education, 14 for a bachelor degree, 15 for a diploma of specialist, 16 for a master degree, and 18 for a Ph.D. degree. Educational histories are used to compute adjusted years of schooling for previous years.
Female	=1 if female.
Potential Labor Market Experience	Age minus years of schooling minus 6.
Capital	=1 if resides in Kyiv.
Foreign	=1 if primary employer is domestically owned with some foreign capital or foreign-owned (including international organizations).

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Private	=1 if primary employer is a privatized enterprise, a newly established private enterprise, or a cooperative (with no foreign participation); or if an individual is self-employed.
State	=1 if primary employer is a budgetary organization, a state enterprise, a local municipal enterprise, a state farm, or a collective farm.
Ownership Missing	=1 if ownership missing.
Firm Size	Number of persons working at enterprise (workplace for self-employed) of primary job: 1-10, 11-50, 51-100, 101-500, 501-1000, 1001+, and no information.
Occupation	Dummies for different occupations: managers and self-employed; professionals; technicians and associate professionals; clerks; service workers and shop and market sales workers; skilled agricultural, forestry, and fishery workers; skilled manual worker; plant and machine operators and assemblers; unskilled occupations; armed forces; occupation missing.

Table 3. Groups of Occupations: Predominantly Male, Predominantly Female and Mixed Occupations, 2003-2004

Predominantly Male	Predominantly Female	Mixed
2003		
Plant and machine operators and assemblers Skilled agricultural, forestry, and fishery workers Armed forces Skilled manual worker Occupation is missing	Clerks Professionals Technicians and associate professionals Service workers and shop and market sales workers	Unskilled occupations Managers, self-employed
2004		
Plant and machine operators and assemblers Skilled agricultural, forestry, and fishery workers Armed forces Skilled manual worker	Clerks Professionals Technicians and associate professionals Service workers and shop and market sales workers	Unskilled occupations Managers, self-employed Occupation is missing

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Table 4. Groups of Occupations: Highly Paid and Low Paid Occupations, 2003-2004

Highly Paid	Low Paid
2003	
Plant and machine operators and assemblers Managers, self-employed Armed forces Professionals Skilled manual worker	Unskilled occupations Clerks Skilled agricultural, forestry, and fishery workers Technicians and associate professionals Service workers and shop and market sales workers Occupation is missing
2004	
Plant and machine operators and assemblers Managers, self-employed Armed forces Professionals Skilled manual worker Occupation is missing	Unskilled occupations Clerks Skilled agricultural, forestry, and fishery workers Technicians and associate professionals Service workers and shop and market sales workers

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Table 5. Statistics, 2003 – 2004[1]

Variable	2003		2004		2003		2004		2003		2004	
	All Sample				Males				Females			
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Lwage	4.837337	0.606330	4.995649	0.564342	4.999023	0.648298	5.177367	0.584974	4.687487	0.521918	4.827172	0.487560
Female	0.518997	0.499737	0.518905	0.499751	----------	----------	----------	----------	----------	----------	----------	----------
Adjusted years of schooling	11.89992	2.180050	11.96436	2.053372	11.49471	2.182993	11.62873	2.021786	12.27547	2.109709	12.27554	2.034148
Potential experience	21.31825	10.78032	21.22990	11.13906	21.13314	11.20986	20.79223	11.51439	21.48981	10.36766	21.63568	10.76837
Capital (Kyiv)	0.070114	0.255388	0.057366	0.232592	0.063518	0.243992	0.049684	0.217389	0.076226	0.265460	0.064489	0.245725
Foreign ownership	0.032902	0.178416	0.025641	0.158096	0.034202	0.181822	0.030714	0.172619	0.031698	0.175261	0.020938	0.143237
Private ownership	0.405014	0.490991	0.244676	0.429989	0.461726	0.498736	0.271003	0.444678	0.352453	0.477914	0.220268	0.414601
State ownership	0.527615	0.499335	0.543677	0.498197	0.473127	0.499481	0.480578	0.499848	0.578113	0.494047	0.602178	0.489654
Ownership missing	0.034469	0.182467	0.186006	0.389196	0.030945	0.173238	0.217706	0.412873	0.037736	0.190629	0.156616	0.363591
Firm size < 10	0.104975	0.306581	0.130378	0.336792	0.075733	0.264678	0.092141	0.289356	0.132075	0.338701	0.165829	0.372083
Firm size > 10 and < 50	0.212691	0.409291	0.226858	0.418891	0.187296	0.390308	0.202349	0.401932	0.236226	0.424923	0.249581	0.432952
Firm size > 50 and < 100	0.128476	0.334685	0.112125	0.315589	0.121336	0.326650	0.115628	0.319923	0.135094	0.341953	0.108878	0.311616
Firm size > 100 and < 500	0.212299	0.409016	0.205997	0.404516	0.219870	0.414327	0.215899	0.411630	0.205283	0.404061	0.196817	0.397760
Firm size > 500 and < 1000	0.070897	0.256703	0.066058	0.248438	0.072476	0.259379	0.069557	0.254515	0.069434	0.254287	0.062814	0.242730
Firm size > 1000	0.178222	0.382774	0.163842	0.370212	0.222313	0.415970	0.195122	0.396474	0.137358	0.344355	0.134841	0.341697
No information about firm size	0.010576	0.102313	0.094741	0.292921	0.013029	0.113446	0.109304	0.312162	0.008302	0.090770	0.081240	0.273317
Plant and machine operators and assemblers	0.070114	0.255388	0.089092	0.284938	0.114007	0.317949	0.152665	0.359827	0.029434	0.169083	0.030151	0.171074
Unskilled occupations	0.184489	0.387958	0.191656	0.393689	0.184853	0.388337	0.171635	0.377233	0.184151	0.387754	0.210218	0.407634
Clerks	0.076381	0.265658	0.079531	0.270624	0.037459	0.189962	0.04336	0.203759	0.112453	0.316042	0.113065	0.316805
Managers, self-employed	0.029585	0.138596	0.031725	0.175306	0.017915	0.132698	0.036134	0.186707	0.021132	0.143879	0.027638	0.164003
Skilled agricultural, forestry, and fishery workers	0.021152	0.143918	0.02086	0.142948	0.029316	0.168759	0.03252	0.177458	0.013585	0.115804	0.01005	0.099788

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[1] The sample is limited to the individuals with age > 14 and age < 60

Armed forces	0.016843	0.128708	0.012169	0.109662	0.031759	0.175429	0.02439	0.154327	0.003019	0.054882	0.000838	0.02894
Professionals	0.147278	0.354452	0.116471	0.320859	0.105049	0.306741	0.084011	0.277529	0.186415	0.389588	0.146566	0.353821
Technicians and associate professionals	0.155895	0.362827	0.142981	0.35013	0.101792	0.302497	0.079494	0.270631	0.206038	0.404611	0.201843	0.401543
Service workers and shop and market sales workers	0.08539	0.279516	0.086919	0.281777	0.032573	0.177589	0.028004	0.165058	0.13434	0.341146	0.141541	0.348725
Occupation is missing	0.010184	0.100421	0.006519	0.080494	0.013844	0.116889	0.006323	0.079304	0.006792	0.082167	0.0067	0.081614
Skilled manual worker	0.212691	0.409291	0.222077	0.415733	0.331433	0.47092	0.341463	0.474415	0.102642	0.303605	0.11139	0.314747
N observations	2553		2301		1228		1107		1325		1194	

Table 6. Statistics: Males. All Occupations, 2003

	Plant and machine operators and assemblers		Unskilled occupations		Clerks		Managers, self-employed		Skilled agricultural, forestry, and fishery workers		Armed forces	
Variable	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**
Lwage	5.100685	0.552297	4.706716	0.640149	4.932666	0.657433	5.456768	0.618460	4.501212	0.904409	5.387664	0.493890
Adjusted years of schooling	10.68929	1.608731	10.60132	1.792523	11.98913	2.242244	14.20455	1.722810	10.45833	2.112463	12.17949	2.119729
Potential experience	23.85357	10.82006	20.39868	11.47336	16.11957	10.96519	26.47727	9.271664	26.79167	11.29246	13.89744	7.317229
Capital (Kyiv)	0.014286	0.119092	0.066079	0.248970	0.173913	0.383223	0.181818	0.394771	0.083333	0.280306	0.051282	0.223456
Foreign ownership	0.042857	0.203262	0.026432	0.160770	0.108696	0.314696	0.000000	0.000000	0.027778	0.166667	0.025641	0.160128
Private ownership	0.492857	0.501744	0.533040	0.500010	0.478261	0.505047	0.409091	0.503236	0.722222	0.454257	0.102564	0.307355
State ownership	0.435714	0.497631	0.400881	0.491160	0.391304	0.493435	0.590909	0.503236	0.166667	0.377964	0.846154	0.365518
Ownership missing	0.028571	0.167197	0.039648	0.195561	0.021739	0.147442	0.000000	0.000000	0.083333	0.280306	0.025641	0.160128
Firm size < 10	0.092857	0.291274	0.110132	0.313746	0.065217	0.249637	0.272727	0.455842	0.000000	0.000000	0.025641	0.160128
Firm size > 10 and < 50	0.150000	0.301077	0.264317	0.441943	0.260870	0.443961	0.363636	0.492366	0.250000	0.439155	0.102564	0.307355
Firm size > 50 and < 100	0.121429	0.327797	0.176211	0.381842	0.152174	0.363158	0.136364	0.351250	0.305556	0.467177	0.076923	0.269953
Firm size > 100 and < 500	0.242857	0.430349	0.149780	0.357644	0.282609	0.455243	0.090909	0.294245	0.305556	0.467177	0.205128	0.409074
Firm size > 500 and < 1000	0.078571	0.270035	0.052863	0.224255	0.065217	0.249637	0.000000	0.000000	0.027778	0.166667	0.179487	0.388776
Firm size > 1000	0.242857	0.430349	0.105727	0.308167	0.086957	0.284885	0.090909	0.294245	0.083333	0.280306	0.205128	0.409074

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No information about firm size	0.014286	0.119092	0.013216	0.114450	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.025641	0.160128
N observations	140		227		46		22		36		39	

Table 6. Statistics: Males. All Occupations, 2003. Continuation

	Professionals		Technicians and associate professionals		Service workers and shop and market sales workers		Occupation is missing		Skilled manual worker	
Variable	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**
Lwage	5.199194	0.612430	5.031327	0.718035	4.766203	0.580303	4.921288	0.542371	5.069397	0.577643
Adjusted years of schooling	14.58915	1.432668	12.45600	1.776886	11.23750	1.996752	12.44118	2.098231	10.80344	1.719760
Potential experience	20.15504	11.53575	20.80800	10.20511	17.33750	11.84103	18.91176	11.33197	21.95332	11.07193
Capital (Kyiv)	0.085271	0.280374	0.072000	0.259528	0.075000	0.266747	0.000000	0.000000	0.051597	0.221484
Foreign ownership	0.015504	0.124027	0.048000	0.214626	0.000000	0.000000	0.117647	0.332106	0.031941	0.176060
Private ownership	0.302326	0.461056	0.408000	0.493441	0.850000	0.361620	0.294118	0.469668	0.459459	0.498967
State ownership	0.635659	0.483121	0.520000	0.501610	0.150000	0.361620	0.588235	0.507300	0.481572	0.500275
Ownership missing	0.046512	0.211411	0.024000	0.153665	0.000000	0.000000	0.000000	0.000000	0.027027	0.162362
Firm size < 10	0.031008	0.174014	0.024000	0.153665	0.325000	0.474342	0.117647	0.332106	0.056511	0.231190
Firm size > 10 and < 50	0.162791	0.370614	0.224000	0.418600	0.475000	0.505736	0.117647	0.332106	0.130221	0.336961
Firm size > 50 and < 100	0.155039	0.363353	0.112000	0.316636	0.025000	0.158114	0.000000	0.000000	0.081081	0.273296
Firm size > 100 and < 500	0.302326	0.461056	0.256000	0.438178	0.050000	0.220721	0.294118	0.469668	0.221130	0.415519
Firm size > 500 and < 1000	0.062016	0.242124	0.072000	0.259528	0.000000	0.000000	0.176471	0.392953	0.085995	0.280702
Firm size > 1000	0.224806	0.419082	0.240000	0.428802	0.000000	0.000000	0.235294	0.437237	0.331695	0.471402
No information about firm size	0.023256	0.151302	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.017199	0.130172
N observations	129		125		40		17		407	

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Table 7. Statistics: Females. All Occupations, 2003

Variable	Plant and machine operators and assemblers		Unskilled occupations		Clerks		Managers, self-employed		Skilled agricultural, forestry, and fishery workers		Armed forces	
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Lwage	4.907859	0.481851	4.440619	0.494127	4.736490	0.479701	4.979466	0.421221	4.368108	0.626960	5.093140	0.416251
Adjusted years of schooling	11.30769	1.467254	10.69057	1.571857	12.25168	1.989520	13.80357	1.279028	10.75000	1.742632	11.12500	1.436141
Potential experience	26.43590	9.139402	25.22746	10.00249	19.86242	11.36389	25.51786	8.704492	26.80556	8.970768	27.62500	7.630804
Capital (Kyiv)	0.051282	0.223456	0.061475	0.240694	0.147651	0.355950	0.000000	0.000000	0.000000	0.000000	0.250000	0.500000
Foreign ownership	0.025641	0.160128	0.024590	0.155191	0.013423	0.115465	0.000000	0.000000	0.055556	0.235702	0.000000	0.000000
Private ownership	0.358974	0.485971	0.352459	0.478718	0.295302	0.457717	0.357143	0.487950	0.444444	0.511310	0.000000	0.000000
State ownership	0.564103	0.502356	0.598361	0.491237	0.637584	0.482319	0.642857	0.487950	0.388889	0.501631	1.000000	0.000000
Ownership missing	0.051282	0.223456	0.024590	0.155191	0.053691	0.226168	0.000000	0.000000	0.111111	0.323381	0.000000	0.000000
Firm size < 10	0.051282	0.223456	0.098361	0.298414	0.100671	0.301908	0.107143	0.314970	0.166667	0.383482	0.000000	0.000000
Firm size > 10 and < 50	0.153846	0.365518	0.258197	0.438542	0.261745	0.441067	0.321429	0.475595	0.388889	0.501631	0.000000	0.000000
Firm size > 50 and < 100	0.076923	0.269953	0.106557	0.309184	0.140940	0.349133	0.142857	0.356348	0.055556	0.235702	0.000000	0.000000
Firm size > 100 and < 500	0.205128	0.409074	0.180328	0.385251	0.208054	0.407284	0.285714	0.460044	0.222222	0.427793	0.750000	0.500000
Firm size > 500 and < 1000	0.102564	0.307355	0.065574	0.248044	0.093960	0.292757	0.071429	0.262265	0.111111	0.323381	0.250000	0.500000
Firm size > 1000	0.333333	0.477567	0.122951	0.329056	0.134228	0.342047	0.035714	0.188982	0.055556	0.235702	0.000000	0.000000
No information about firm size	0.025641	0.160128	0.012295	0.110426	0.006711	0.081923	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
N observations	39		244		149		28		18		4	

Table 7. Statistics: Females. All Occupations, 2003. Continuation

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Variable	Professionals		Technicians and associate professionals		Service workers and shop and market sales workers		Occupation is missing		Skilled manual worker	
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Lwage	4.977168	0.495461	4.624284	0.402550	4.583793	0.469558	4.408357	0.582653	4.738689	0.629240
Adjusted years of	14.62551	1.309920	12.77656	1.248337	11.61798	1.949971	13.00000	2.598076	10.88235	1.741897

schooling										
Potential experience	20.34211	9.255814	19.31136	10.43045	18.63483	9.920379	23.55556	6.306963	23.49265	10.25472
Capital (Kyiv)	0.105263	0.307515	0.058608	0.235321	0.039326	0.194917	0.111111	0.333333	0.080882	0.273662
Foreign ownership	0.024291	0.154265	0.036630	0.188197	0.022472	0.148631	0.000000	0.000000	0.088235	0.284685
Private ownership	0.263158	0.441241	0.175824	0.381370	0.691011	0.463380	0.222222	0.440959	0.492647	0.501794
State ownership	0.676113	0.468908	0.754579	0.431127	0.241573	0.429244	0.777778	0.440959	0.375000	0.485913
Ownership missing	0.036437	0.187756	0.032967	0.178878	0.044944	0.207765	0.000000	0.000000	0.044118	0.206116
Firm size < 10	0.044534	0.206698	0.084249	0.278271	0.460674	0.499857	0.333333	0.500000	0.066176	0.249509
Firm size > 10 and < 50	0.259109	0.439035	0.212454	0.409796	0.241573	0.429244	0.222222	0.440959	0.161765	0.369596
Firm size > 50 and < 100	0.198381	0.399590	0.168498	0.374996	0.095506	0.294741	0.111111	0.333333	0.080882	0.273662
Firm size > 100 and < 500	0.251012	0.434476	0.263736	0.441467	0.078652	0.269954	0.000000	0.000000	0.191176	0.394681
Firm size > 500 and < 1000	0.056680	0.231700	0.080586	0.272698	0.011236	0.105700	0.222222	0.440959	0.095588	0.295113
Firm size > 1000	0.157895	0.365383	0.120879	0.326585	0.039326	0.194917	0.000000	0.000000	0.279412	0.450369
No information about firm size	0.000000	0.000000	0.018315	0.134334	0.000000	0.000000	0.000000	0.000000	0.007353	0.085749
N observations	247		273		178		9		136	

Table 8. Statistics: Males. All Occupations, 2004

	Plant and machine operators and assemblers		Unskilled occupations		Clerks		Managers, self-employed		Skilled agricultural, forestry, and fishery workers		Armed forces	
Variable	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**
Lwage	5.083279	0.547417	4.830095	0.589316	5.194710	0.514327	5.557710	0.582926	4.597515	0.759729	5.420449	0.378254
Adjusted years of schooling	10.86391	1.595884	10.57105	1.583297	12.04167	2.108325	14.17500	1.734085	10.29167	1.494633	12.53704	1.985166
Potential experience	22.39231	10.69184	21.09737	12.33697	17.45833	11.12589	24.25000	10.39970	25.95833	10.58731	15.38889	7.681563
Capital (Kyiv)	0.085917	0.076923	0.036842	0.188872	0.125000	0.334219	0.100000	0.303822	0.000000	0.000000	0.000000	0.000000
Foreign ownership	0.011834	0.108461	0.052632	0.223887	0.041667	0.201941	0.025000	0.158114	0.000000	0.000000	0.000000	0.000000
Private ownership	0.260355	0.440132	0.336842	0.473879	0.312500	0.468417	0.225000	0.422902	0.444444	0.503953	0.000000	0.000000
State ownership	0.467456	0.500422	0.384211	0.487693	0.562500	0.501328	0.600000	0.496139	0.388889	0.494413	0.925926	0.266880
Ownership missing	0.260355	0.440132	0.226316	0.419551	0.083333	0.279310	0.150000	0.361620	0.166667	0.377964	0.074074	0.266880
Firm size < 10	0.065089	0.247415	0.126316	0.333083	0.041667	0.201941	0.100000	0.303822	0.027778	0.166667	0.000000	0.000000

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Firm size > 10 and < 50	0.177515	0.383239	0.247368	0.432623	0.291667	0.459340	0.375000	0.490290	0.277778	0.454257	0.037037	0.192450
Firm size > 50 and < 100	0.142012	0.350100	0.136842	0.344589	0.125000	0.334219	0.175000	0.384808	0.055556	0.232311	0.074074	0.266880
Firm size > 100 and < 500	0.248521	0.433440	0.184211	0.388680	0.291667	0.459340	0.175000	0.384808	0.500000	0.507093	0.259259	0.446576
Firm size > 500 and < 1000	0.041420	0.199852	0.052632	0.223887	0.062500	0.244623	0.000000	0.000000	0.083333	0.280306	0.037037	0.192450
Firm size > 1000	0.213018	0.410657	0.094737	0.293625	0.062500	0.244623	0.150000	0.361620	0.000000	0.000000	0.148148	0.362014
No information about firm size	0.112426	0.316829	0.157895	0.365606	0.125000	0.334219	0.025000	0.158114	0.055556	0.232311	0.444444	0.506370
N observations	169		190		48		40		36		27	

Table 8. Statistics: Males. All Occupations, 2004. Continuation

	Professionals		Technicians and associate professionals		Service workers and shop and market sales workers		Occupation is missing		Skilled manual worker	
Variable	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**
Lwage	5.388841	0.525111	5.317166	0.543635	5.055590	0.492768	5.323445	0.347247	5.312105	0.506011
Adjusted years of schooling	14.62366	1.138878	12.75000	1.801978	11.33871	1.859153	11.00000	1.707825	11.28042	1.568739
Potential experience	18.56989	11.48406	20.43182	11.03682	13.24194	10.90938	27.85714	12.61188	20.85979	11.50909
Capital (Kyiv)	0.107527	0.311461	0.113636	0.319188	0.000000	0.000000	0.000000	0.000000	0.044974	0.207521
Foreign ownership	0.053763	0.226773	0.022727	0.149887	0.000000	0.000000	0.000000	0.000000	0.031746	0.175556
Private ownership	0.204301	0.405375	0.170455	0.378187	0.645161	0.486373	0.142857	0.377964	0.256614	0.437343
State ownership	0.548387	0.500351	0.636364	0.483802	0.096774	0.300537	0.714286	0.487950	0.462963	0.499287
Ownership missing	0.193548	0.397220	0.170455	0.378187	0.258065	0.444803	0.142857	0.377964	0.248677	0.432819
Firm size < 10	0.021505	0.145848	0.079545	0.272139	0.387097	0.495138	0.142857	0.377964	0.100529	0.301103
Firm size > 10 and < 50	0.215054	0.413087	0.181818	0.387905	0.354839	0.486373	0.142857	0.377964	0.156085	0.363417
Firm size > 50 and < 100	0.161290	0.369792	0.159091	0.367857	0.096774	0.300537	0.142857	0.377964	0.074074	0.262239
Firm size > 100 and < 500	0.279570	0.451220	0.238636	0.428693	0.064516	0.249731	0.000000	0.000000	0.177249	0.382385
Firm size > 500 and < 1000	0.053763	0.226773	0.125000	0.332614	0.032258	0.179605	0.142857	0.377964	0.092593	0.290245
Firm size > 1000	0.182796	0.388594	0.147727	0.356863	0.032258	0.179605	0.285714	0.487950	0.306878	0.461810

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No information about firm size	0.086022	0.281916	0.068182	0.253502	0.032258	0.179605	0.142857	0.377964	0.092593	0.290245
N observations	93		88		31		7		378	

Table 9. Statistics: Females. All Occupations, 2004

	Plant and machine operators and assemblers		Unskilled occupations		Clerks		Managers, self-employed		Skilled agricultural, forestry, and fishery workers		Armed forces	
Variable	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**	**Mean**	**St. dev.**
Lwage	5.018156	0.463844	4.525603	0.398896	4.926769	0.460219	5.398755	0.457671	4.597372	0.462342	5.146334	NA
Adjusted years of schooling	11.56944	1.474317	10.78088	1.640059	12.59259	1.730095	14.19697	1.435811	11.04167	1.959340	15.00000	NA
Potential experience	24.23611	9.647713	25.36255	9.902628	19.99259	12.25430	23.25758	7.864200	25.70833	9.131510	13.00000	NA
Capital (Kyiv)	0.027778	0.166667	0.047809	0.213788	0.133333	0.341201	0.000000	0.000000	0.000000	0.000000	0.000000	NA
Foreign ownership	0.000000	0.000000	0.007968	0.089086	0.022222	0.147955	0.000000	0.000000	0.083333	0.288675	0.000000	NA
Private ownership	0.111111	0.318728	0.223108	0.417162	0.200000	0.401490	0.151515	0.364110	0.416667	0.514929	0.000000	NA
State ownership	0.583333	0.500000	0.589641	0.492882	0.666667	0.473160	0.727273	0.452267	0.416667	0.514929	1.000000	NA
Ownership missing	0.305556	0.467177	0.179283	0.384355	0.111111	0.315440	0.121212	0.331434	0.083333	0.288675	0.000000	NA
Firm size < 10	0.055556	0.232311	0.167331	0.374017	0.162963	0.370707	0.060606	0.242306	0.083333	0.288675	0.000000	NA
Firm size > 10 and < 50	0.055556	0.232311	0.266932	0.443241	0.251852	0.435693	0.272727	0.452267	0.333333	0.492366	1.000000	NA
Firm size > 50 and < 100	0.138889	0.350736	0.087649	0.283349	0.096296	0.296096	0.151515	0.364110	0.000000	0.000000	0.000000	NA
Firm size > 100 and < 500	0.277778	0.454257	0.207171	0.406089	0.177778	0.383750	0.393939	0.496198	0.416667	0.514929	0.000000	NA
Firm size > 500 and < 1000	0.111111	0.318728	0.067729	0.251782	0.059259	0.236989	0.030303	0.174078	0.000000	0.000000	0.000000	NA
Firm size > 1000	0.305556	0.467177	0.063745	0.244786	0.177778	0.383750	0.090909	0.291937	0.166667	0.389249	0.000000	NA
No information about firm size	0.055556	0.232311	0.139442	0.347100	0.074074	0.262867	0.000000	0.000000	0.000000	0.000000	0.000000	NA
N observations	36		251		135		33		12		1	

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Table 9. Statistics: Females. All Occupations, 2004. Continuation

Variable	Professionals		Technicians and associate professionals		Service workers and shop and market sales workers		Occupation is missing		Skilled manual worker	
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Lwage	5.180809	0.457873	4.773929	0.360955	4.674711	0.444498	4.902989	0.405616	4.940178	0.488732
Adjusted years of schooling	14.66000	1.202297	12.94813	1.133030	11.58876	2.035648	12.25000	1.752549	11.09774	1.490448
Potential experience	18.88286	10.23189	20.62863	10.79516	18.72485	10.72768	21.00000	13.16923	24.04511	9.762416
Capital (Kyiv)	0.108571	0.311993	0.037344	0.189999	0.065089	0.247415	0.000000	0.000000	0.052632	0.224141
Foreign ownership	0.028571	0.167077	0.012448	0.111105	0.005917	0.076923	0.000000	0.000000	0.075188	0.264691
Private ownership	0.177143	0.382885	0.095436	0.294427	0.485207	0.501266	0.125000	0.353553	0.218045	0.414479
State ownership	0.674286	0.469986	0.780083	0.415052	0.295858	0.457784	0.875000	0.353553	0.503759	0.501876
Ownership missing	0.120000	0.325894	0.112033	0.316064	0.213018	0.410657	0.000000	0.000000	0.203008	0.403759
Firm size < 10	0.062857	0.243402	0.136929	0.344488	0.473373	0.500774	0.250000	0.462910	0.022556	0.149046
Firm size > 10 and < 50	0.285714	0.453050	0.244813	0.430871	0.278107	0.449398	0.000000	0.000000	0.187970	0.392165
Firm size > 50 and < 100	0.142857	0.350931	0.153527	0.361245	0.047337	0.212990	0.125000	0.353553	0.105263	0.308052
Firm size > 100 and < 500	0.222857	0.417357	0.228216	0.420556	0.047337	0.212990	0.375000	0.517549	0.195489	0.398076
Firm size > 500 and < 1000	0.068571	0.253449	0.066390	0.249481	0.023669	0.152466	0.000000	0.000000	0.097744	0.298091
Firm size > 1000	0.154286	0.362259	0.116183	0.321111	0.035503	0.185597	0.250000	0.462910	0.315789	0.466587
No information about firm size	0.062857	0.243402	0.053942	0.226373	0.094675	0.293635	0.000000	0.000000	0.075188	0.264691
N observations	175		241		169		8		133	

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Table 10. Estimation: All Sample. Basic and Augmented Mincerian Earnings Functions, 2003 – 2004[2]

Dependent Variable: Lwage	2003						2004					
	Basic MF		Augmented MF		Augmented MF with Occupations		Basic MF		Augmented MF		Augmented MF with Occupations	
Variables	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	4.308304*** (0.075255)	0.0000	4.117800*** (0.079581)	0.0000	4.399480*** (0.098451)	0.0000	4.321981*** (0.072957)	0.0000	4.059232*** (0.080237)	0.0000	4.526167*** (0.094355)	0.0000
Female	-0.362278*** (0.023117)	0.0000	-0.321799*** (0.023217)	0.0000	-0.270623*** (0.025413)	0.0000	-0.402576*** (0.021537)	0.0000	-0.358045*** (0.021219)	0.0000	-0.303692*** (0.022809)	0.0000
Adjusted years of schooling	0.055175*** (0.005593)	0.0000	0.056626*** (0.005595)	0.0000	0.032413*** (0.006734)	0.0000	0.070465*** (0.005450)	0.0000	0.069728*** (0.005321)	0.0000	0.034410*** (0.006008)	0.0000
Potential experience	0.009302** (0.003829)	0.0152	0.009758*** (0.003723)	0.0088	0.008706** (0.003677)	0.0180	0.006890* (0.003657)	0.0597	0.008565** (0.003533)	0.0154	0.007244** (0.003432)	0.0349
Square of potential experience	-0.275663*** (0.089121)	0.0020	-0.276128*** (0.087104)	0.0015	-0.254672*** (0.085912)	0.0031	-0.221077** (0.086785)	0.0109	-0.250837*** (0.083840)	0.0028	-0.211441*** (0.080757)	0.0089
Capital (Kyiv)	0.277984*** (0.044294)	0.0000	0.271025*** (0.043234)	0.0000	0.265473*** (0.043149)	0.0000	0.353439*** (0.043821)	0.0000	0.339079*** (0.043873)	0.0000	0.317760*** (0.043195)	0.0000
Foreign ownership	----------	------	0.255660*** (0.063143)	0.0001	0.279747*** (0.063627)	0.0000	----------	------	0.240177*** (0.066349)	0.0003	0.253853*** (0.064836)	0.0001
Private ownership	----------	------	0.099826*** (0.023696)	0.0000	0.125468*** (0.024278)	0.0000	----------	------	0.126827*** (0.028437)	0.0000	0.147824*** (0.027536)	0.0000
Ownership missing	----------	------	-0.057915 (0.079967)	0.4690	-0.034181 (0.080456)	0.6710	----------	------	0.001344 (0.028559)	0.9625	0.014656 (0.028162)	0.6028
Firm size > 10 and < 50	----------	------	0.008370 (0.035136)	0.8117	0.007819 (0.034404)	0.8202	----------	------	0.087767** (0.036082)	0.0151	0.061483* (0.034667)	0.0763
Firm size > 50 and < 100	----------	------	-0.002726 (0.041984)	0.9482	-0.010943 (0.040496)	0.7870	----------	------	0.138505*** (0.043083)	0.0013	0.099512** (0.041883)	0.0176
Firm size > 100 and < 500	----------	------	0.113292*** (0.036844)	0.0021	0.078708** (0.037022)	0.0336	----------	------	0.222323*** (0.036950)	0.0000	0.192369*** (0.036518)	0.0000
Firm size > 500 and < 1000	----------	------	0.171285*** (0.045609)	0.0002	0.125776*** (0.044315)	0.0046	----------	------	0.300659*** (0.047528)	0.0000	0.261624*** (0.047136)	0.0000

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[2] in all tables: *** - variable is significant at 1% significance level, ** - variable is significant at 5% significance level, * - variable is significant at 10% significance level ; in all tables dummies for state ownership, firm size <10 and clerks' occupation are omitted

Firm size > 1000	----------	------	0.315686*** (0.036093)	0.0000	0.262302*** (0.036862)	0.0000	----------	------	0.461555*** (0.038016)	0.0000	0.377452*** (0.038291)	0.0000
No information about firm size	----------	------	0.238121** (0.102245)	0.0199	0.172317* (0.102395)	0.0925	----------	------	0.175905*** (0.047081)	0.0002	0.159232*** (0.045290)	0.0004
Plant and machine operators and assemblers	----------	------	----------	------	0.160206*** (0.055501)	0.0039	----------	------	----------	------	-0.044160 (0.050654)	0.3834
Unskilled occupations	----------	------	----------	------	-0.202017*** (0.044856)	0.0000	----------	------	----------	------	-0.288293*** (0.039735)	0.0000
Managers, self-employed	----------	------	----------	------	0.347064*** (0.083664)	0.0000	----------	------	----------	------	0.381426*** (0.069187)	0.0000
Skilled agricultural, forestry, and fishery workers	----------	------	----------	------	-0.366597*** (0.114662)	0.0014	----------	------	----------	------	-0.462381*** (0.103660)	0.0000
Armed forces	----------	------	----------	------	0.405823*** (0.082741)	0.0000	----------	------	----------	------	0.219062*** (0.076169)	0.0041
Professionals	----------	------	----------	------	0.169490*** (0.048396)	0.0005	----------	------	----------	------	0.142618*** (0.044467)	0.0014
Technicians and associate professionals	----------	------	----------	------	-0.050021 (0.044308)	0.2590	----------	------	----------	------	-0.055668 (0.038603)	0.1494
Service workers and shop and market sales workers	----------	------	----------	------	-0.105820** (0.050443)	0.0360	----------	------	----------	------	-0.133675*** (0.046239)	0.0039
Occupation is missing	----------	------	----------	------	-0.164491 (0.116639)	0.1586	----------	------	----------	------	0.109891 (0.086609)	0.2046
Skilled manual worker	----------	------	----------	------	0.066396 (0.046852)	0.1566	----------	------	----------	------	0.075923* (0.040575)	0.0615
R-squared	0.128630		0.176641		0.231592		0.195055		0.258867		0.331758	
N observations	2553		2553		2553		2301		2301		2301	

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Table 11. Estimation: All Sample. Basic and Augmented Mincerian Earnings Functions for Predominantly Male, Predominantly Female and Mixed Groups of Occupations, 2003

Dependent Variable: Lwage	Basic MF						Augmented MF					
	Predominantly Male		Predominantly Female		Mixed		Predominantly Male		Predominantly Female		Mixed	
Variables	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	4.553017*** (0.149778)	0.0000	4.122212*** (0.125168)	0.0000	4.133228*** (0.192710)	0.0000	4.511827*** (0.157427)	0.0000	3.893810*** (0.126633)	0.0000	3.930644*** (0.207336)	0.0000
Female	-0.346209*** (0.048401)	0.0000	-0.307712*** (0.038455)	0.0000	-0.259510*** (0.051807)	0.0000	-0.342629*** (0.047255)	0.0000	-0.256882*** (0.038223)	0.0000	-0.249254*** (0.053919)	0.0000
Adjusted years of schooling	0.041908*** (0.011923)	0.0005	0.066590*** (0.008676)	0.0000	0.061938*** (0.013581)	0.0000	0.038774*** (0.012114)	0.0014	0.062953*** (0.008512)	0.0000	0.069738*** (0.013482)	0.0000
Potential experience	0.012871* (0.007121)	0.0710	0.005008 (0.005142)	0.3303	-0.001599 (0.009740)	0.8697	0.012686* (0.007148)	0.0763	0.005372 (0.004899)	0.2730	-0.000445 (0.009704)	0.9635
Square of potential experience	-0.418582*** (0.155637)	0.0073	-0.108495 (0.130451)	0.4058	-0.052401 (0.207377)	0.8006	-0.396593** (0.157918)	0.0122	-0.091900 (0.124755)	0.4615	-0.054068 (0.205779)	0.7929
Capital (Kyiv)	0.497371*** (0.072657)	0.0000	0.171170*** (0.058541)	0.0035	0.349332*** (0.103107)	0.0008	0.522567*** (0.076733)	0.0000	0.138104** (0.056367)	0.0144	0.304723*** (0.099368)	0.0023
Foreign ownership	----------	----------	----------	--------	----------	--------	0.049548 (0.098324)	0.6144	0.402924*** (0.098394)	0.0000	0.436058*** (0.141793)	0.0022
Private ownership	----------	----------	----------	--------	----------	--------	-0.018710 (0.040997)	0.6482	0.205101*** (0.034017)	0.0000	0.136924** (0.057075)	0.0168
Ownership missing	----------	----------	----------	--------	----------	--------	-0.066883 (0.106907)	0.5317	-0.027719 (0.135278)	0.8377	-0.167522 (0.107555)	0.1200
Firm size > 10 and < 50	----------	----------	----------	--------	----------	--------	-0.029087 (0.074396)	0.6959	0.066556 (0.048785)	0.1727	-0.002576 (0.066585)	0.9692
Firm size > 50 and < 100	----------	----------	----------	--------	----------	--------	-0.231501** (0.100372)	0.0213	0.172438*** (0.050178)	0.0006	-0.051553 (0.089559)	0.5651
Firm size > 100 and < 500	----------	----------	----------	--------	----------	--------	0.077462 (0.067878)	0.2541	0.185450*** (0.050886)	0.0003	-0.051302 (0.087820)	0.5594
Firm size > 500 and < 1000	----------	----------	----------	--------	----------	--------	0.141927* (0.083219)	0.0885	0.172067*** (0.062738)	0.0062	0.123349 (0.099112)	0.2139

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Firm size > 1000	----------	----------	----------	--------	----------	--------	0.231877*** (0.065187)	0.0004	0.353848*** (0.053905)	0.0000	0.259355*** (0.080426)	0.0013
No information about firm size	----------	----------	----------	--------	----------	--------	0.201370 (0.176881)	0.2553	0.138218 (0.095468)	0.1479	0.469037* (0.247230)	0.0584
R-squared	0.115470		0.129892		0.119535		0.165650		0.194333		0.173187	
N observations	845		1187		521		845		1187		521	

Table 12. Estimation: All Sample. Basic and Augmented Mincerian Earnings Functions for Highly Paid and Low Paid Groups of Occupations, 2003

Dependent Variable: Lwage	Basic MF				Augmented MF			
	Highly Paid		Low Paid		Highly Paid		Low Paid	
Variables	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	4.521794*** (0.106116)	0.0000	4.338520*** (0.111445)	0.0000	4.363827*** (0.116172)	0.0000	4.120631*** (0.116247)	0.0000
Female	-0.310488*** (0.036209)	0.0000	-0.249874*** (0.034255)	0.0000	-0.294100*** (0.035538)	0.0000	-0.207070*** (0.034171)	0.0000
Adjusted years of schooling	0.043290*** (0.007666)	0.0000	0.043306*** (0.008369)	0.0000	0.046814*** (0.007888)	0.0000	0.044277*** (0.008169)	0.0000
Potential experience	0.015834*** (0.006019)	0.0086	0.000935 (0.004809)	0.8458	0.016791*** (0.005895)	0.0045	0.001757 (0.004654)	0.7059
Square of potential experience	-0.429631*** (0.137119)	0.0018	-0.118657 (0.112725)	0.2927	-0.439291*** (0.134936)	0.0012	-0.109933 (0.110053)	0.3180
Capital (Kyiv)	0.246108*** (0.064504)	0.0001	0.315867*** (0.059077)	0.0000	0.255265*** (0.064789)	0.0001	0.284774*** (0.055367)	0.0000
Foreign ownership	----------	---------	----------	--------	0.137180 (0.091690)	0.1349	0.394438*** (0.084463)	0.0000
Private ownership	----------	---------	----------	--------	0.022196 (0.034447)	0.5195	0.184250*** (0.032816)	0.0000
Ownership missing	----------	---------	----------	--------	-0.072882 (0.093532)	0.4360	-0.032033 (0.119489)	0.7887

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Firm size > 10 and < 50	----------	---------	----------	--------	0.001352 (0.062691)	0.9828	0.020425 (0.040505)	0.6142
Firm size > 50 and < 100	----------	---------	----------	--------	-0.026274 (0.066148)	0.6913	0.007295 (0.054273)	0.8931
Firm size > 100 and < 500	----------	---------	----------	--------	0.069270 (0.060828)	0.2550	0.094849** (0.046596)	0.0420
Firm size > 500 and < 1000	----------	---------	----------	--------	0.131671** (0.068450)	0.0546	0.152895** (0.062361)	0.0143
Firm size > 1000	----------	---------	----------	--------	0.225131*** (0.057571)	0.0001	0.303200*** (0.050278)	0.0000
No information about firm size	----------	---------	----------	--------	0.120536 (0.147276)	0.4133	0.273208** (0.139224)	0.0499
R-squared	0.090632		0.093228		0.120622		0.150546	
N observations	1191		1362		1191		1362	

Table 13. Estimation: All Sample. Basic and Augmented Mincerian Earnings Functions for Predominantly Male, Predominantly Female and Mixed Groups of Occupations, 2004

Dependent Variable: Lwage	**Basic MF**						**Augmented MF**					
	Predominantly Male		**Predominantly Female**		**Mixed**		**Predominantly Male**		**Predominantly Female**		**Mixed**	
Variables	**Coef.**	**Pr.**	**Coef.**	**Pr.**	**Coef.**	**Pr.**	**Coef.**	**Pr.**	**Coef.**	**Pr.**	**Coef.**	**Pr.**
C	4.670782*** (0.146171)	0.0000	4.330028*** (0.117743)	0.0000	3.796043*** (0.155107)	0.0000	4.532371*** (0.178812)	0.0000	4.034949*** (0.117429)	0.0000	3.849323*** (0.171038)	0.0000
Female	-0.289057*** (0.043321)	0.0000	-0.392876*** (0.036130)	0.0000	-0.320514*** (0.047816)	0.0000	-0.314669*** (0.042041)	0.0000	-0.338563*** (0.034923)	0.0000	-0.321923*** (0.047486)	0.0000
Adjusted years of schooling	0.040589*** (0.012016)	0.0008	0.070102*** (0.008203)	0.0000	0.111681*** (0.011780)	0.0000	0.034194*** (0.011800)	0.0039	0.064623*** (0.007793)	0.0000	0.103156*** (0.011633)	0.0000
Potential experience	0.013561** (0.006739)	0.0445	0.004433 (0.004938)	0.3696	-0.006589 (0.008875)	0.4581	0.017208** (0.006706)	0.0105	0.005040 (0.004641)	0.2778	-0.005101 (0.008804)	0.5626
Square of	-0.371753**	0.0155	-0.163679	0.1837	0.084499	0.6702	-0.443551***	0.0034	-0.128932	0.2647	0.013669	0.9440

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potential experience	(0.153225)		(0.123036)		(0.198331)		(0.150982)		(0.115528)		(0.194643)	
Capital (Kyiv)	0.486154*** (0.093571)	0.0000	0.339328*** (0.055220)	0.0000	0.274660*** (0.090571)	0.0025	0.516833*** (0.101094)	0.0000	0.297796*** (0.052045)	0.0000	0.254521*** (0.097827)	0.0095
Foreign ownership	----------	----------	----------	--------	----------	--------	0.251473*** (0.091308)	0.0060	0.358098*** (0.122324)	0.0035	0.027532 (0.119337)	0.8176
Private ownership	----------	----------	----------	--------	----------	--------	0.045826 (0.054921)	0.4043	0.250264*** (0.036156)	0.0000	-0.006663 (0.063676)	0.9167
Ownership missing	----------	----------	----------	--------	----------	--------	-0.054837 (0.045949)	0.2331	0.156214*** (0.041987)	0.0002	-0.178941*** (0.060733)	0.0034
Firm size > 10 and < 50	----------	----------	----------	--------	----------	--------	0.009109 (0.092652)	0.9217	0.151945*** (0.043252)	0.0005	-0.000738 (0.075375)	0.9922
Firm size > 50 and < 100	----------	----------	----------	--------	----------	--------	0.046211 (0.097318)	0.6350	0.230150*** (0.051151)	0.0000	0.030339 (0.096421)	0.7532
Firm size > 100 and < 500	----------	----------	----------	--------	----------	--------	0.102069 (0.085457)	0.2327	0.294234*** (0.049139)	0.0000	0.174164** (0.083965)	0.0386
Firm size > 500 and < 1000	----------	----------	----------	--------	----------	--------	0.270676*** (0.095606)	0.0048	0.265468*** (0.066670)	0.0001	0.228181** (0.114974)	0.0477
Firm size > 1000	----------	----------	----------	--------	----------	--------	0.372970*** (0.082325)	0.0000	0.453445*** (0.054078)	0.0000	0.391738*** (0.100960)	0.0001
No information about firm size	----------	----------	----------	--------	----------	--------	0.218392** (0.098179)	0.0264	0.218899*** (0.070095)	0.0018	0.034325 (0.084381)	0.6843
R-squared	0.089725		0.232498		0.243086		0.160636		0.318878		0.293697	
N observations	792		980		529		792		980		529	

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Table 14. Estimation: All Sample. Basic and Augmented Mincerian Earnings Functions for Highly Paid and Low Paid Groups of Occupations, 2004

Dependent Variable: Lwage	Basic MF				Augmented MF			
	Highly Paid		Low Paid		Highly Paid		Low Paid	
Variables	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	4.647082*** (0.101063)	0.0000	4.295240*** (0.101184)	0.0000	4.351362*** (0.124155)	0.0000	4.122886*** (0.108384)	0.0000
Female	-0.263013*** (0.032727)	0.0000	-0.319067*** (0.032857)	0.0000	-0.260050*** (0.031889)	0.0000	-0.284313*** (0.032100)	0.0000
Adjusted years of schooling	0.049379*** (0.007533)	0.0000	0.062776*** (0.007425)	0.0000	0.054191*** (0.007527)	0.0000	0.059901*** (0.007331)	0.0000
Potential experience	0.007378 (0.005541)	0.1833	0.001669 (0.004688)	0.7219	0.010520* (0.005388)	0.0511	0.002768 (0.004564)	0.5444
Square of potential experience	-0.199892 (0.127318)	0.1167	-0.145182 (0.113161)	0.1998	-0.258189** (0.123184)	0.0363	-0.156559 (0.110282)	0.1560
Capital (Kyiv)	0.303001*** (0.062840)	0.0000	0.409160*** (0.058443)	0.0000	0.307823*** (0.065668)	0.0000	0.373638*** (0.055824)	0.0000
Foreign ownership	----------	-------	----------	----	0.201570** (0.085221)	0.0182	0.229460** (0.093760)	0.0145
Private ownership	----------	-------	----------	----	0.119682*** (0.043008)	0.0055	0.128387*** (0.035811)	0.0004
Ownership missing	----------	-------	----------	----	-0.049232 (0.039249)	0.2100	0.032105 (0.040285)	0.4256
Firm size > 10 and < 50	----------	-------	----------	----	0.072387 (0.071812)	0.3137	0.051855 (0.040357)	0.1991
Firm size > 50 and < 100	----------	-------	----------	----	0.051616 (0.077971)	0.5081	0.133660*** (0.051450)	0.0095
Firm size > 100 and < 500	----------	-------	----------	----	0.185370*** (0.069956)	0.0082	0.166357*** (0.044609)	0.0002
Firm size > 500 and < 1000	----------	-------	----------	----	0.247631*** (0.081963)	0.0026	0.248206*** (0.060767)	0.0000
Firm size > 1000	----------	-------	----------	----	0.338902*** (0.069500)	0.0000	0.435093*** (0.052972)	0.0000

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No information about firm size	----------	-------	----------	----	0.216148** (0.085369)	0.0115	0.080049 (0.053201)	0.1327
R-squared	0.093212		0.174504		0.143179		0.231297	
N observations	1100		1201		1100		1201	

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Table 15. Oaxaca Decomposition for Predominantly Male, Predominantly Female and Mixed Groups of Occupations, 2003-2004

	2003						2004					
	Predominantly Male		Predominantly Female		Mixed		Predominantly Male		Predominantly Female		Mixed	
	basic	augmented	basic	augmented	basic	augmented	basic	augmented	basic	augmented	basic	augmented
Difference	0.3194565		0.3256632		0.2914697		0.2770674		0.4108163		0.3328505	
2-fold												
Explained	-0.0088361	-0.0059286	0.0011017	0.057254	0.0204714	0.0595687	-0.0098876	-0.0375197	0.0163192	0.0886124	0.0220645	-0.0048295
Unexplained	0.3282927	0.3253851	0.3245616	0.2684092	0.2709983	0.231901	0.286955	0.3145871	0.3944971	0.3222039	0.310786	0.33768
3-fold												
Endowments	-0.0402781	-0.043223	0.0102764	0.0794558	0.0186658	0.0159475	-0.0308253	-0.0520041	0.0190614	0.0728687	-0.0000215	0.0261867
Coefficients	0.3282927	0.3253851	0.3245616	0.2684092	0.2709983	0.231901	0.286955	0.3145871	0.3944971	0.3222039	0.310786	0.33768
Interaction	0.031442	0.0372953	-0.0091748	-0.0222018	0.0018056	0.0436212	0.0209377	0.0144844	-0.0027422	0.0157437	0.0220859	-0.0310162
%unexplained	102.77	101.86	99.66	82.42	92.98	79.56	103.57	113.54	96.03	78.43	93.37	101.45

Table 16. Oaxaca Decomposition for Highly Paid and Low Paid Groups of Occupations, 2003-2004

	2003				2004			
	Highly Paid		Low Paid		Highly Paid		Low Paid	
	basic	augmented	basic	augmented	basic	augmented	basic	augmented
Difference	0.2355886		0.2314522		0.1903926		0.281195	
2-fold								
Explained	-0.0792254	-0.0603033	-0.0258602	0.0169619	-0.0661555	-0.0617501	-0.0409592	-0.0033114
Unexplained	0.3148139	0.2958919	0.2573125	0.2144904	0.2565482	0.2521427	0.3221542	0.2845065
3-fold								
Endowments	-0.0975211	-0.08833	-0.0098144	0.0467328	-0.0872086	-0.0880197	-0.0367392	0.0046767
Coefficients	0.3148139	0.2958919	0.2573125	0.2144904	0.2565482	0.2521427	0.3221542	0.2845065

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Interaction	0.0182957	0.0280267	-0.0160459	-0.0297709	0.0210531	0.0262696	-0.00422	-0.0079881
%unexplained	133.63	125.6	111.17	92.67	134.75	132.43	114.57	101.18

Table 17. Between-occupational and Within-occupational Variance

All Sample	Men	Women	All Sample	Men	Women
Predominantly Male, Predominantly Female and Mixed Occupations			**Highly Paid and Low Paid Occupations**		
2003					
Variance between occupations					
0.006592	0.005002	0.004260	0.015180	0.009737	0.010463
Variance within occupations					
0.144448	0.154823	0.116303	0.136119	0.151051	0.110043
2004					
Variance between occupations					
0.007875	0.005392	0.005430	0.019714	0.008897	0.015293
Variance within occupations					
0.128771	0.136239	0.099973	0.116932	0.132734	0.090110

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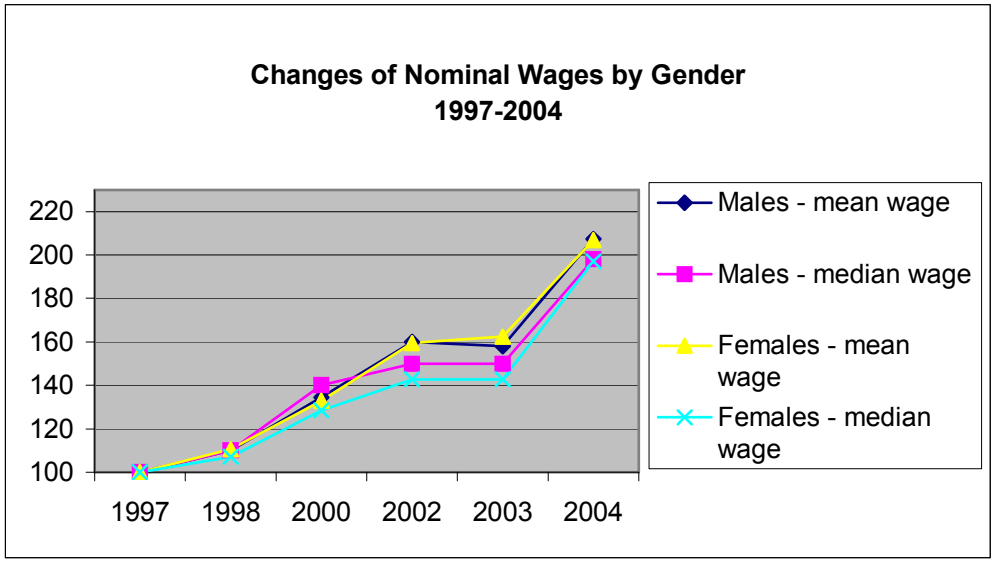
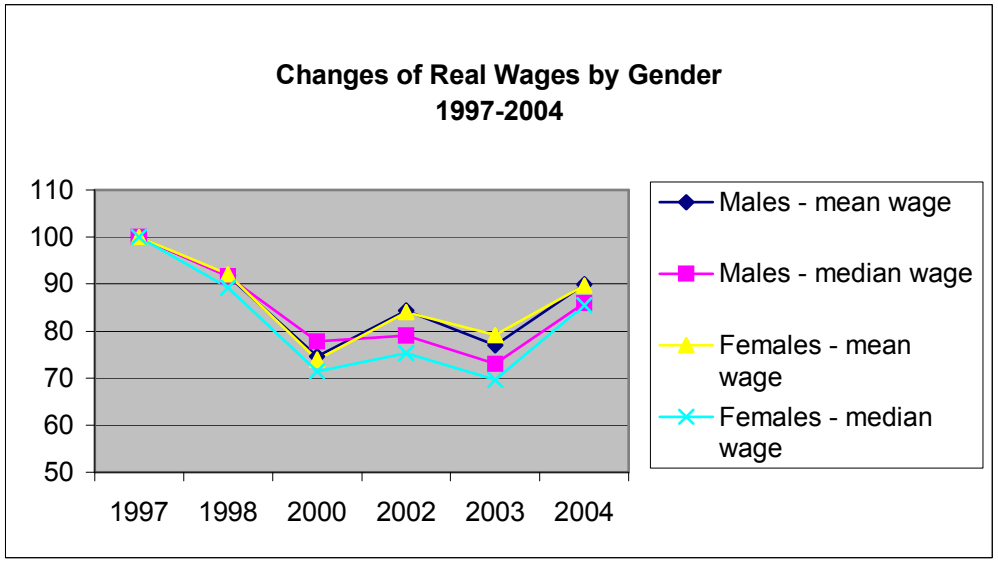
7.2. Appendix B. Graphs

Graph 1. Evolution of Female and Male Wages, 1997-2004[3]





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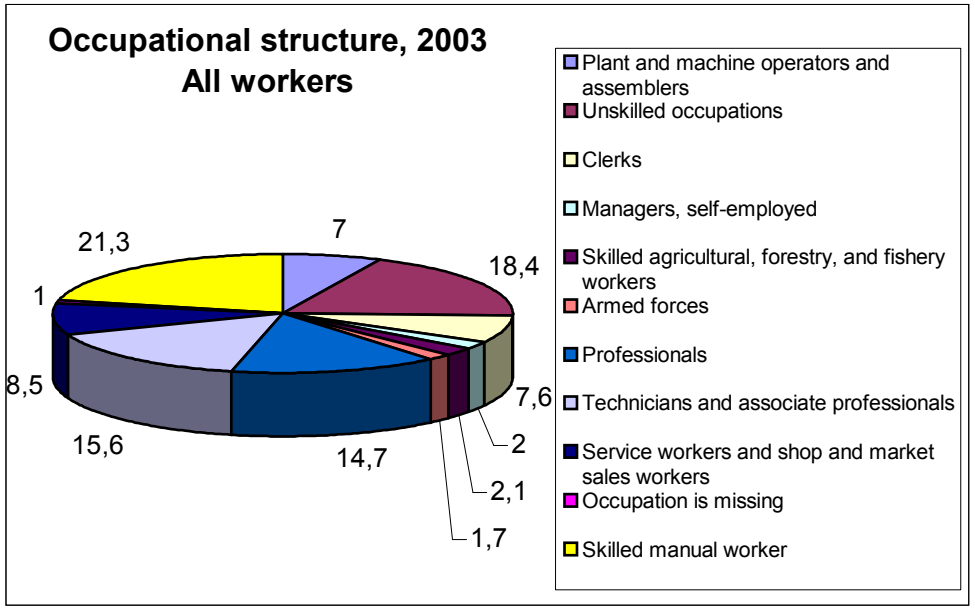
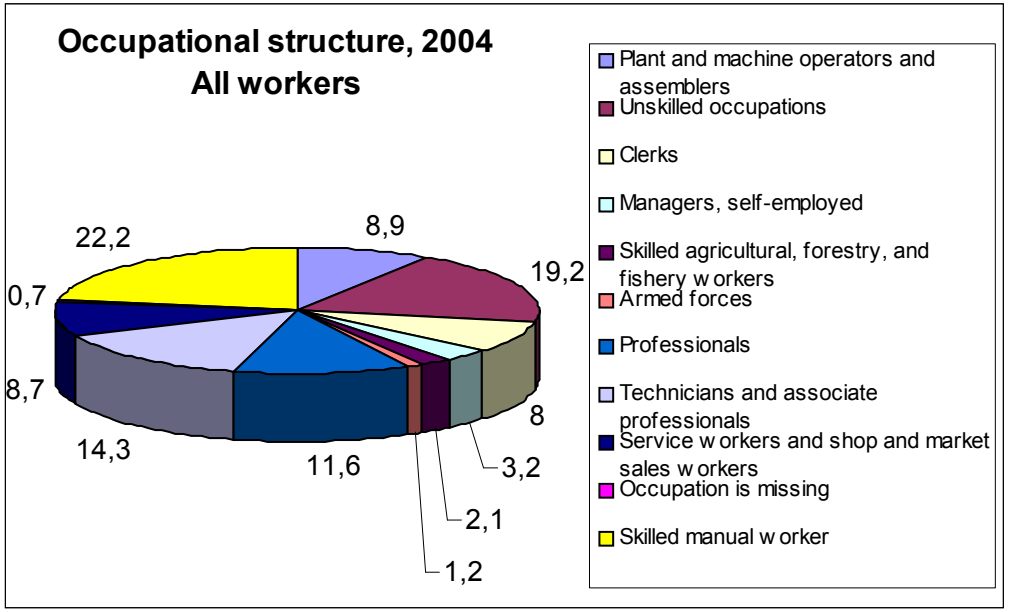
[3] 1997=100

Graph 2. Occupational structure: All Workers, 2003-2004





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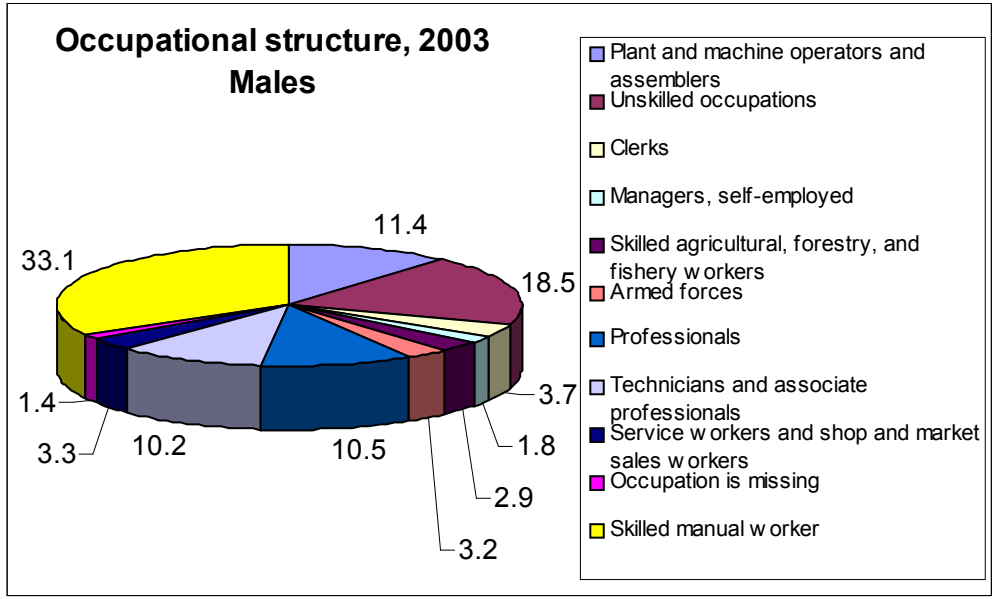
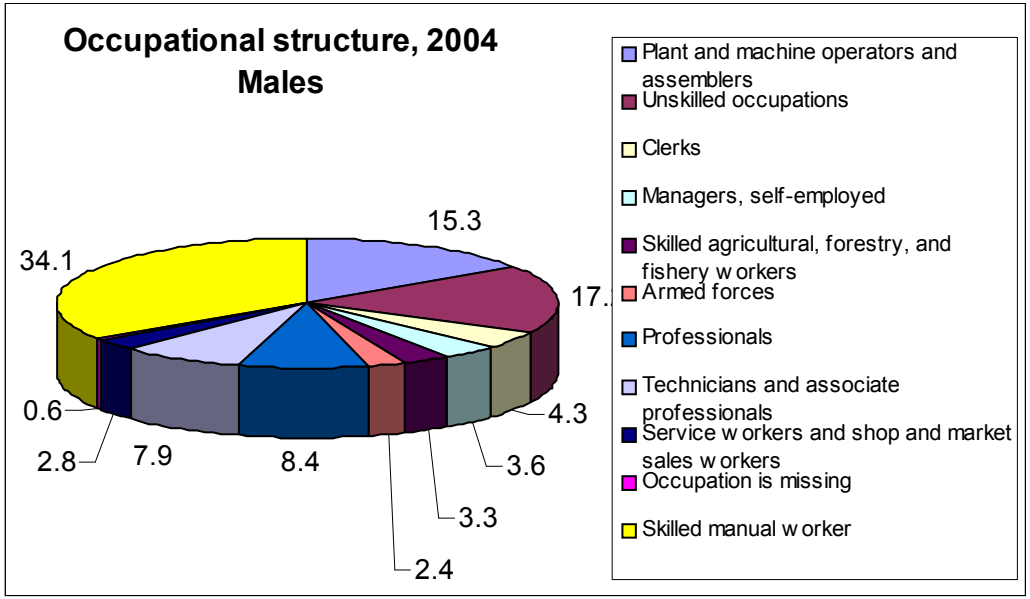
Graph 3. Occupational structure: Males, 2003-2004





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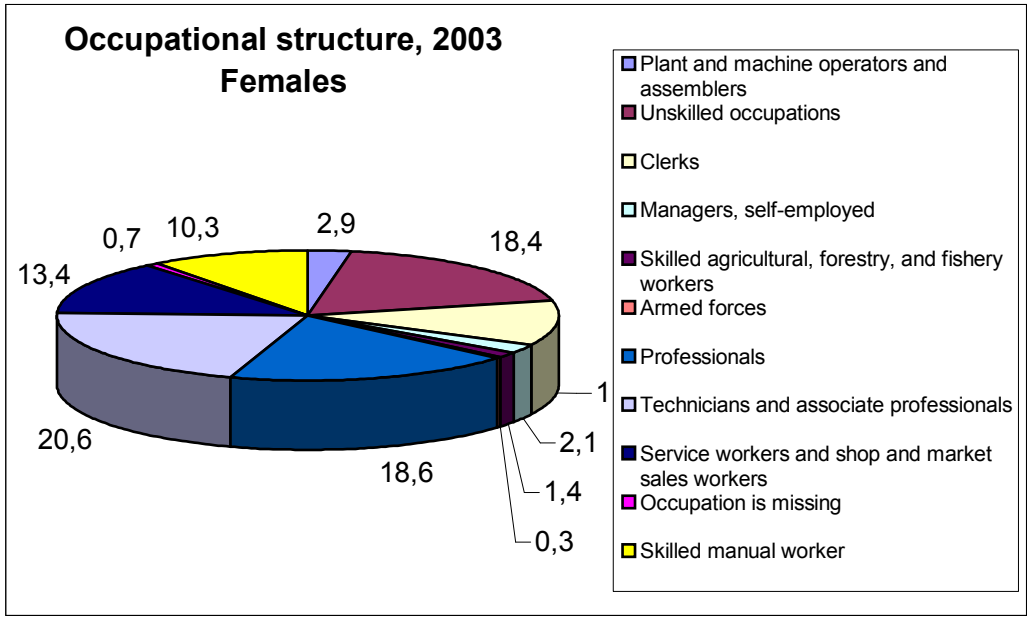
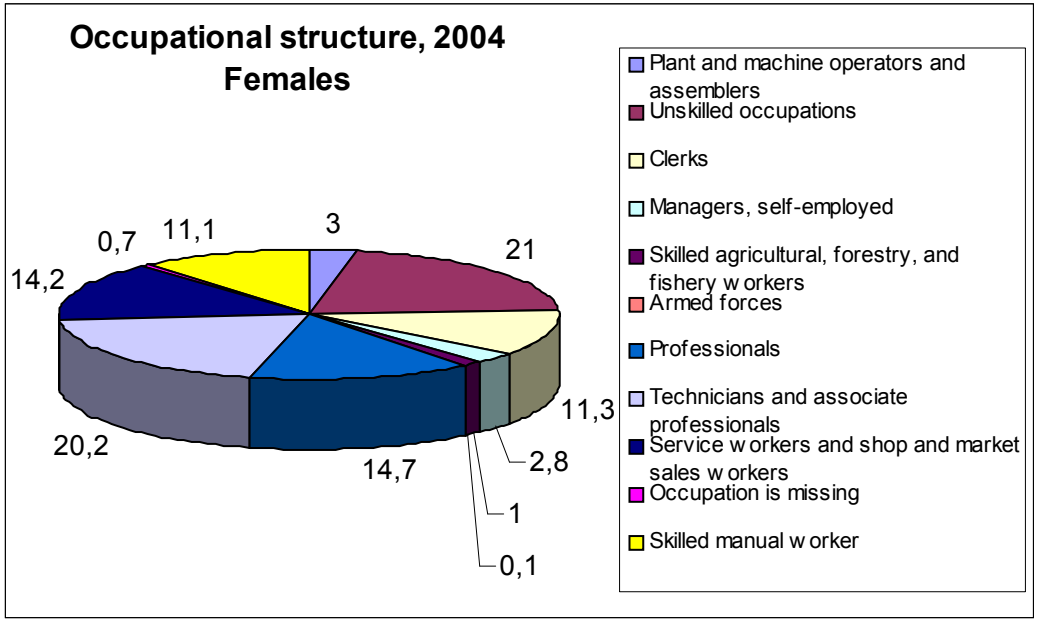
Graph 4. Occupational structure: Females, 2003-2004





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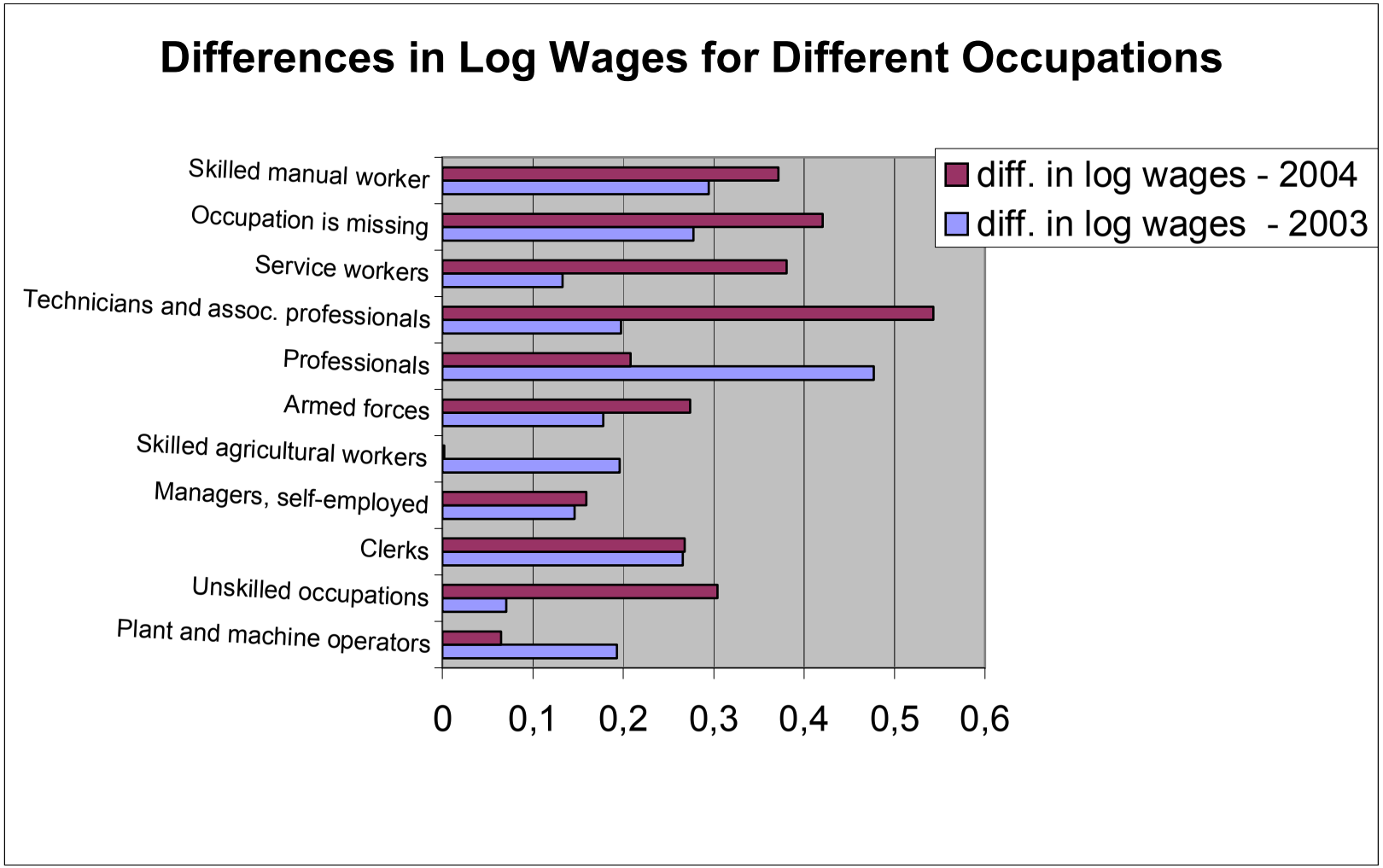
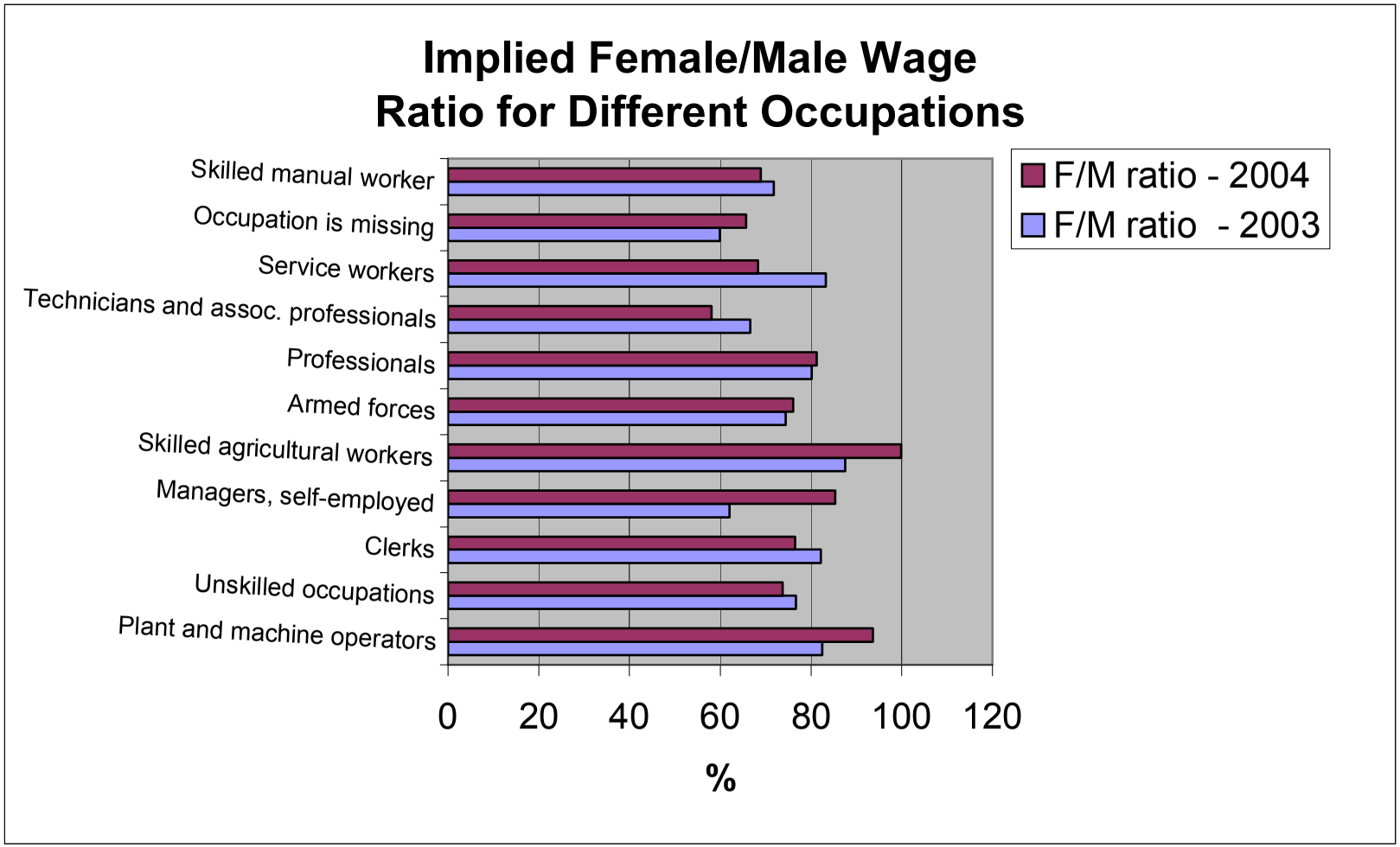
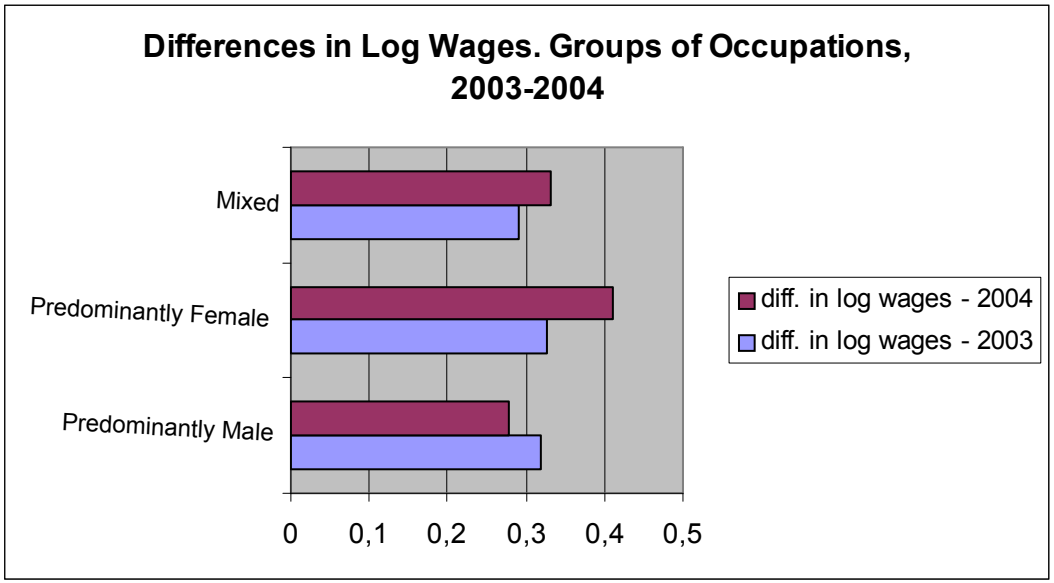
Graph 5. Differences in Log Wages for Different Occupations

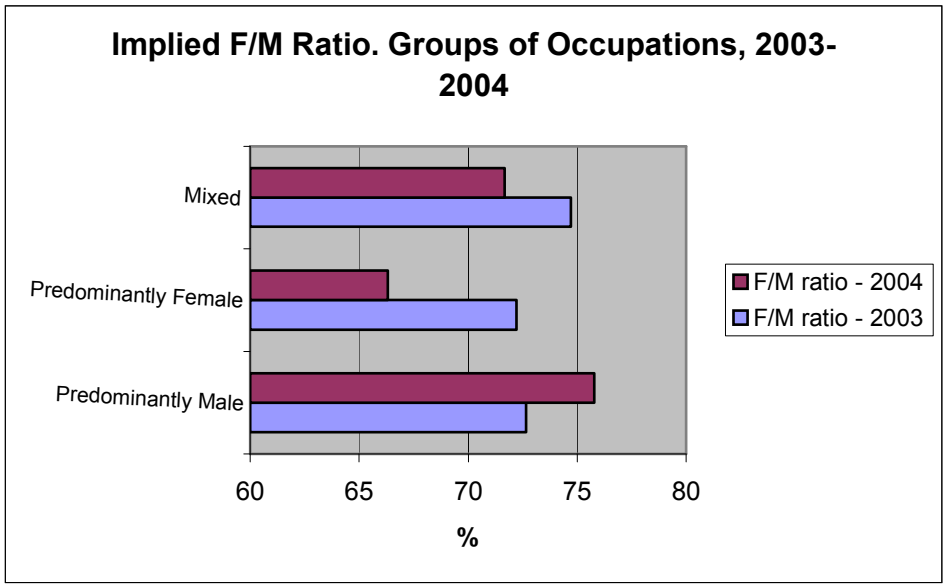


Graph 6. Implied Female/ Male Wage Ratio for Different Occupations



Graph 7-8. Differences in Log Wages and Implied Female/ Male Wage Ratio for Predominantly Male, Predominantly Female and Mixed Occupations, 2003-2004





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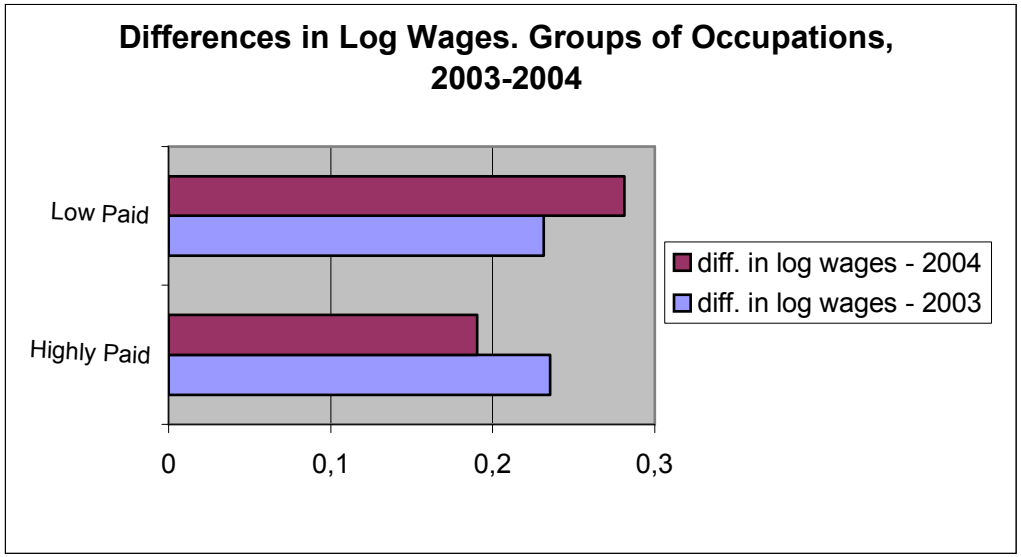
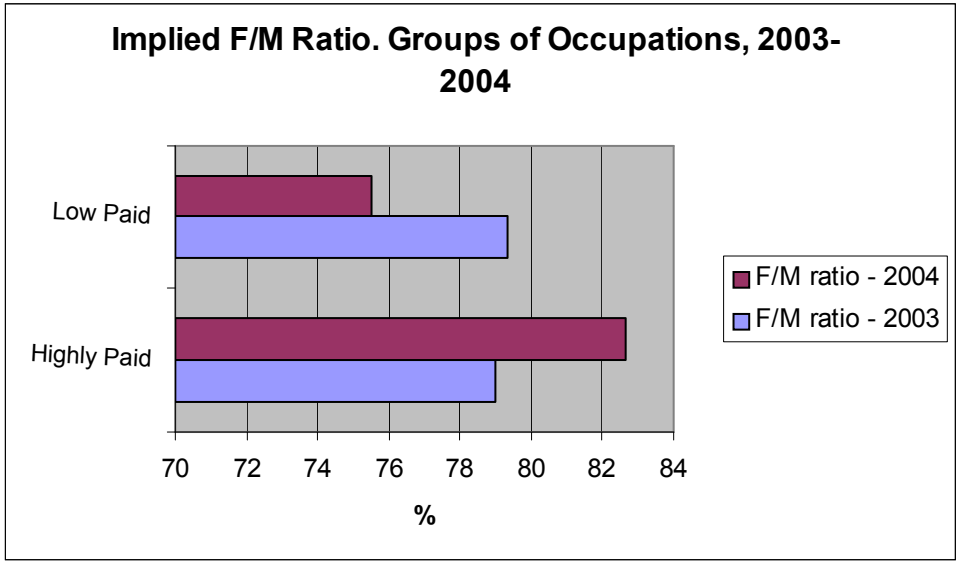
Graph 9-10. Differences in Log Wages and Implied Female/ Male Wage Ratio for Highly Paid and Low Paid Occupations, 2003-2004





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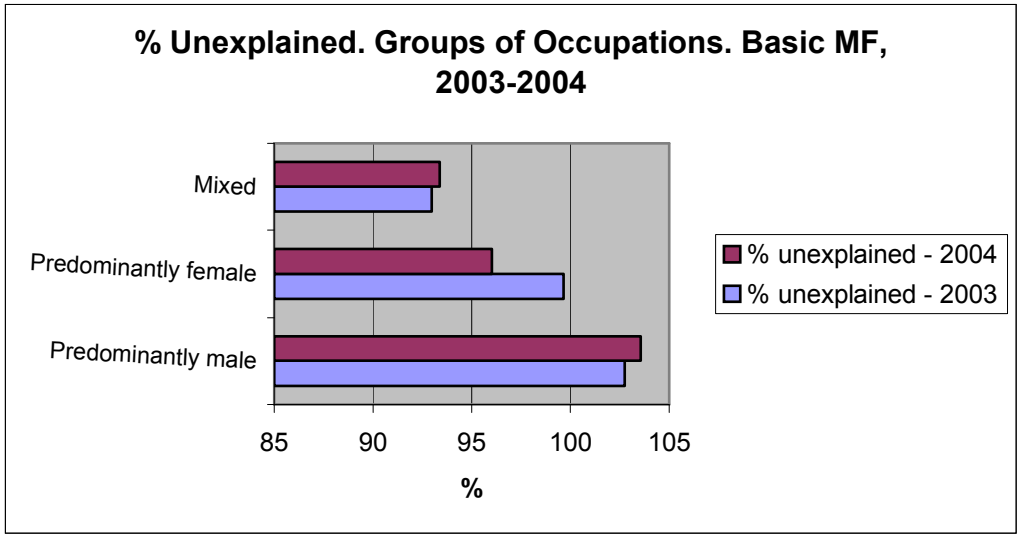
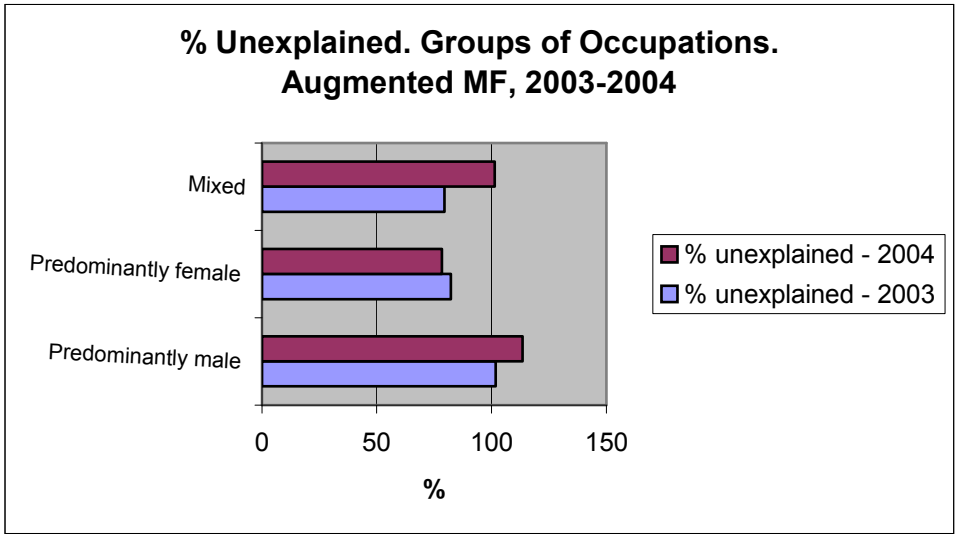
Graph 11-12. Unexplained Part of Gender Gap for Predominantly Male, Predominantly Female and Mixed Occupations, 2003-2004





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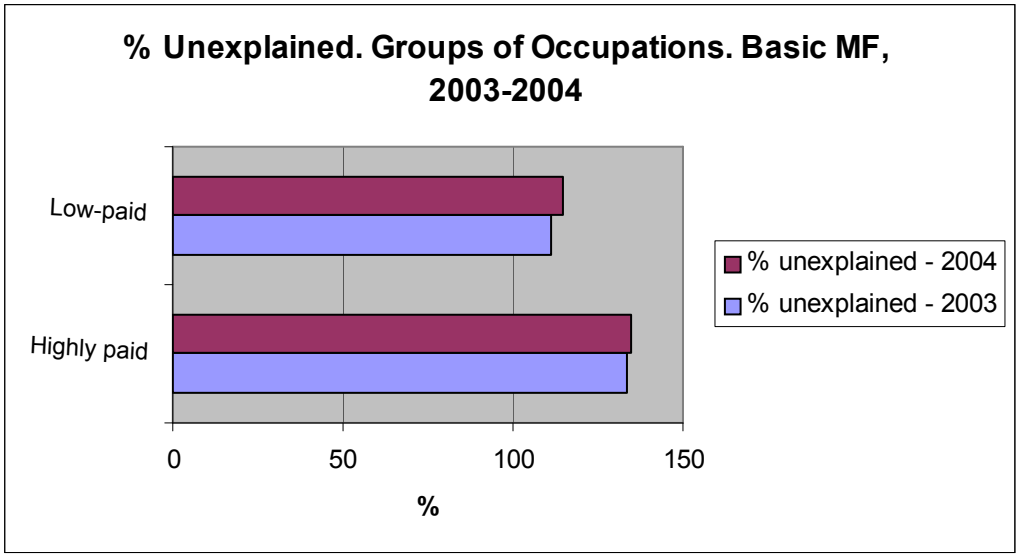
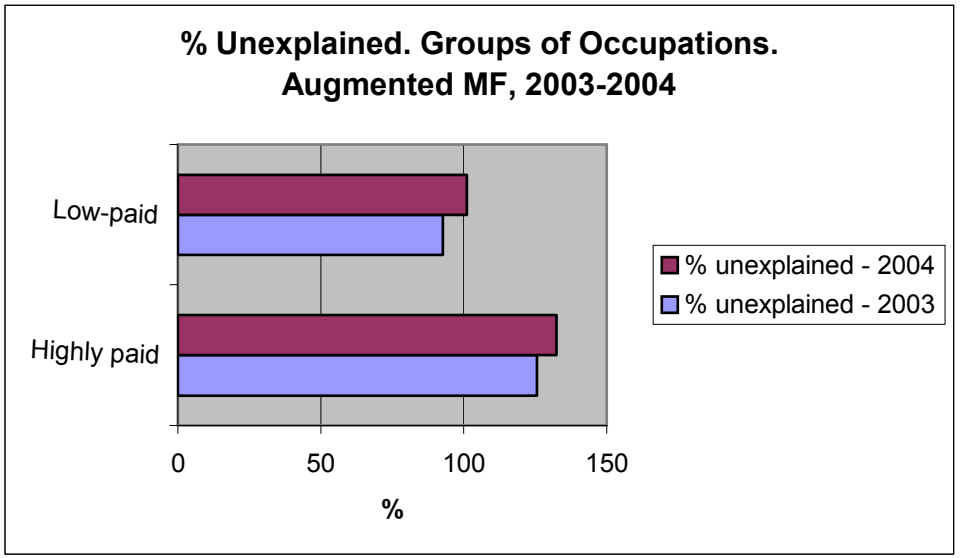
Graph 13-14. Unexplained Part of Gender Gap for Highly Paid and Low Paid Occupations, 2003-2004





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7.3. Appendix C. Programs

Program 1. Calculation of Variance, 2003.

```
'dum_occ_opp_2003
'dum_occ_nql_wrk_2003
'dum_occ_of_wrk_2003
'dum_occ_mn_seml_2003
'dum_occ_ql_a_wrk_2003
'dum_occ_mil_wrk_2003
'dum_occ_sp_hl_2003
'dum_occ_sp_mdl_2003
'dum_occ_srv_wrk_2003
'dum_occ_missing_2003
'dum_occ_qual_mn_wrk_2003

'predom. male
'dum_occ_opp_2003
'dum_occ_ql_a_wrk_2003
'dum_occ_mil_wrk_2003
'dum_occ_missing_2003
'dum_occ_qual_mn_wrk_2003

'predom. female
'dum_occ_of_wrk_2003
'dum_occ_sp_hl_2003
'dum_occ_sp_mdl_2003
'dum_occ_srv_wrk_2003

'mixed
'dum_occ_nql_wrk_2003
'dum_occ_mn_seml_2003


'highly paid
'dum_occ_opp_2003
'dum_occ_mn_seml_2003
'dum_occ_mil_wrk_2003
'dum_occ_sp_hl_2003
'dum_occ_qual_mn_wrk_2003

'low paid
'dum_occ_nql_wrk_2003
'dum_occ_of_wrk_2003
'dum_occ_ql_a_wrk_2003
'dum_occ_sp_mdl_2003
'dum_occ_srv_wrk_2003
'dum_occ_missing_2003


scalar n_all_2003=0
scalar n_all_m_2003=0
scalar n_all_f_2003=0

scalar n_prmale_2003=0
scalar n_prmale_m_2003=0
scalar n_prmale_f_2003=0
```

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```
scalar n_prfemale_2003=0
scalar n_prfemale_m_2003=0
scalar n_prfemale_f_2003=0

scalar n_mixed_2003=0
scalar n_mixed_m_2003=0
scalar n_mixed_f_2003=0

scalar n_hpaid_2003=0
scalar n_hpaid_m_2003=0
scalar n_hpaid_f_2003=0


scalar n_lpaid_2003=0
scalar n_lpaid_m_2003=0
scalar n_lpaid_f_2003=0


smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
scalar m_lwage_2003=@mean(lwage_2003_cpi)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA  and dum_female=1
scalar m_lwage_f_2003=@mean(lwage_2003_cpi)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
scalar m_lwage_m_2003=@mean(lwage_2003_cpi)

'************************************************************

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA) and (dum_occ_opp_2003=1 or
dum_occ_ql_a_wrk_2003=1 or dum_occ_mil_wrk_2003=1 or dum_occ_missing_2003=1 or
dum_occ_qual_mn_wrk_2003=1)
scalar m_lwage_prm_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1) and
(dum_occ_of_wrk_2003=1 or dum_occ_sp_hl_2003=1 or dum_occ_sp_mdl_2003=1 or
dum_occ_srv_wrk_2003=1)
scalar m_lwage_prm_f_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0) and
(dum_occ_of_wrk_2003=1 or dum_occ_sp_hl_2003=1 or dum_occ_sp_mdl_2003=1 or
dum_occ_srv_wrk_2003=1)
scalar m_lwage_prm_m_2003=@mean(lwage_2003_cpi)

'************************************************************
smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA) and (dum_occ_of_wrk_2003=1 or
dum_occ_sp_hl_2003=1 or dum_occ_sp_mdl_2003=1 or dum_occ_srv_wrk_2003=1)
scalar m_lwage_prf_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1) and
(dum_occ_of_wrk_2003=1 or dum_occ_sp_hl_2003=1 or dum_occ_sp_mdl_2003=1 or
```

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```
dum_occ_srv_wrk_2003=1)
scalar m_lwage_prf_f_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0) and
(dum_occ_of_wrk_2003=1 or dum_occ_sp_hl_2003=1 or dum_occ_sp_mdl_2003=1 or
dum_occ_srv_wrk_2003=1)
scalar m_lwage_prf_m_2003=@mean(lwage_2003_cpi)

'*****************************************************************
smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA) and (dum_occ_nql_wrk_2003=1 or
dum_occ_mn_seml_2003=1)
scalar m_lwage_mix_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1) and
(dum_occ_nql_wrk_2003=1 or dum_occ_mn_seml_2003=1)
scalar m_lwage_mix_f_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0) and
(dum_occ_nql_wrk_2003=1 or dum_occ_mn_seml_2003=1)
scalar m_lwage_mix_m_2003=@mean(lwage_2003_cpi)


'*****************************************************************
smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA) and (dum_occ_opp_2003=1 or
dum_occ_mn_seml_2003=1 or dum_occ_mil_wrk_2003=1 or dum_occ_sp_hl_2003=1 or
dum_occ_qual_mn_wrk_2003=1)
scalar m_lwage_hp_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1) and
(dum_occ_opp_2003=1 or dum_occ_mn_seml_2003=1 or dum_occ_mil_wrk_2003=1 or
dum_occ_sp_hl_2003=1 or dum_occ_qual_mn_wrk_2003=1)
scalar m_lwage_hp_f_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0) and
(dum_occ_opp_2003=1 or dum_occ_mn_seml_2003=1 or dum_occ_mil_wrk_2003=1 or
dum_occ_sp_hl_2003=1 or dum_occ_qual_mn_wrk_2003=1)
scalar m_lwage_hp_m_2003=@mean(lwage_2003_cpi)

'*****************************************************************
smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA) and (dum_occ_nql_wrk_2003=1 or
dum_occ_of_wrk_2003=1 or dum_occ_ql_a_wrk_2003=1 or dum_occ_sp_mdl_2003=1 or
dum_occ_srv_wrk_2003=1 or dum_occ_missing_2003=1)
scalar m_lwage_lp_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1) and
(dum_occ_nql_wrk_2003=1 or dum_occ_of_wrk_2003=1 or dum_occ_ql_a_wrk_2003=1 or
dum_occ_sp_mdl_2003=1 or dum_occ_srv_wrk_2003=1 or dum_occ_missing_2003=1)
scalar m_lwage_lp_f_2003=@mean(lwage_2003_cpi)

smpl if (age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0) and
```

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```
(dum_occ_nql_wrk_2003=1 or dum_occ_of_wrk_2003=1 or dum_occ_ql_a_wrk_2003=1 or
dum_occ_sp_mdl_2003=1 or dum_occ_srv_wrk_2003=1 or dum_occ_missing_2003=1)
scalar m_lwage_lp_m_2003=@mean(lwage_2003_cpi)


'*****************************************************************
smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
n_prmale_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_ql_a_wrk_2003) +
@sum(dum_occ_mil_wrk_2003)  + @sum(dum_occ_missing_2003) + @sum(dum_occ_qual_mn_wrk_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
n_prmale_m_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_ql_a_wrk_2003) +
@sum(dum_occ_mil_wrk_2003)  + @sum(dum_occ_missing_2003) + @sum(dum_occ_qual_mn_wrk_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1
n_prmale_f_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_ql_a_wrk_2003) +
@sum(dum_occ_mil_wrk_2003)  + @sum(dum_occ_missing_2003) + @sum(dum_occ_qual_mn_wrk_2003)


smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
n_prfemale_2003=@sum(dum_occ_of_wrk_2003) + @sum(dum_occ_sp_hl_2003) +
@sum(dum_occ_sp_mdl_2003) +  @sum(dum_occ_srv_wrk_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
n_prfemale_m_2003=@sum(dum_occ_of_wrk_2003) + @sum(dum_occ_sp_hl_2003) +
@sum(dum_occ_sp_mdl_2003) +  @sum(dum_occ_srv_wrk_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1
n_prfemale_f_2003=@sum(dum_occ_of_wrk_2003) + @sum(dum_occ_sp_hl_2003) +
@sum(dum_occ_sp_mdl_2003) +  @sum(dum_occ_srv_wrk_2003)


smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
n_mixed_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_mn_seml_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
n_mixed_m_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_mn_seml_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1
n_mixed_f_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_mn_seml_2003)


smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
n_hpaid_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_mn_seml_2003) +
@sum(dum_occ_mil_wrk_2003) +  @sum(dum_occ_sp_hl_2003) + @sum(dum_occ_qual_mn_wrk_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
n_hpaid_m_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_mn_seml_2003) +
@sum(dum_occ_mil_wrk_2003) +  @sum(dum_occ_sp_hl_2003) + @sum(dum_occ_qual_mn_wrk_2003)
```

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```
smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1
n_hpaid_f_2003=@sum(dum_occ_opp_2003) + @sum(dum_occ_mn_seml_2003) +
@sum(dum_occ_mil_wrk_2003) +  @sum(dum_occ_sp_hl_2003) + @sum(dum_occ_qual_mn_wrk_2003)


smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA
n_lpaid_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_of_wrk_2003) +
@sum(dum_occ_ql_a_wrk_2003) +  @sum(dum_occ_sp_mdl_2003) + @sum(dum_occ_srv_wrk_2003) +
@sum(dum_occ_missing_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=0
n_lpaid_m_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_of_wrk_2003) +
@sum(dum_occ_ql_a_wrk_2003) +  @sum(dum_occ_sp_mdl_2003) + @sum(dum_occ_srv_wrk_2003) +
@sum(dum_occ_missing_2003)

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003>0 and job_kyiv_2003<>NA and dum_female=1
n_lpaid_f_2003=@sum(dum_occ_nql_wrk_2003) + @sum(dum_occ_of_wrk_2003) +
@sum(dum_occ_ql_a_wrk_2003) +  @sum(dum_occ_sp_mdl_2003) + @sum(dum_occ_srv_wrk_2003) +
@sum(dum_occ_missing_2003)


n_all_2003=n_prmale_2003 + n_prfemale_2003 + n_mixed_2003 + n_hpaid_2003 + n_lpaid_2003
n_all_m_2003=n_prmale_m_2003 + n_prfemale_m_2003 + n_mixed_m_2003 + n_hpaid_m_2003 +
n_lpaid_m_2003
n_all_f_2003=n_prmale_f_2003 + n_prfemale_f_2003 + n_mixed_f_2003 + n_hpaid_f_2003 + n_lpaid_f_2003

'*************************************************************************
scalar within_occ_var1_2003=0
scalar between_occ_var1_2003=0

scalar within_occ_var1_m_2003=0
scalar between_occ_var1_m_2003=0

scalar within_occ_var1_f_2003=0
scalar between_occ_var1_f_2003=0

scalar within_occ_var2_2003=0
scalar between_occ_var2_2003=0

scalar within_occ_var2_m_2003=0
scalar between_occ_var2_m_2003=0

scalar within_occ_var2_f_2003=0
scalar between_occ_var2_f_2003=0
'*************************************************************************
smpl @all


for !j=1 to 8641
        if age_2003(!j)>14 and age_2003(!j)<60 and hours_week(!j)>30 and lwage_2003_cpi(!j)>0 and
adj_years_school_2003(!j)>0 and pot_exper_2003(!j)>0 and job_kyiv_2003(!j)<>NA then
'all
                if (dum_occ_opp_2003(!j)=1 or dum_occ_ql_a_wrk_2003(!j)=1 or
dum_occ_mil_wrk_2003(!j)=1  or dum_occ_missing_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var1_2003=between_occ_var1_2003 + ((m_lwage_prm_2003 -
```

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```
m_lwage_2003)^2)/n_all_2003
                        within_occ_var1_2003= within_occ_var1_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prm_2003)^2)/n_all_2003
                endif

                if (dum_occ_of_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or
dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1)  then
                        between_occ_var1_2003=between_occ_var1_2003 + ((m_lwage_prf_2003 -
m_lwage_2003)^2)/n_all_2003
                        within_occ_var1_2003= within_occ_var1_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prf_2003)^2)/n_all_2003
                endif

                if (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1)  then
                        between_occ_var1_2003=between_occ_var1_2003 + ((m_lwage_mix_2003 -
m_lwage_2003)^2)/n_all_2003
                        within_occ_var1_2003= within_occ_var1_2003 + ((lwage_2003_cpi(!j) -
m_lwage_mix_2003)^2)/n_all_2003
                endif
'male
            if  dum_female(!j)=0 and (dum_occ_opp_2003(!j)=1 or dum_occ_ql_a_wrk_2003(!j)=1 or
dum_occ_mil_wrk_2003(!j)=1  or dum_occ_missing_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var1_m_2003=between_occ_var1_m_2003 + ((m_lwage_prm_m_2003
- m_lwage_m_2003)^2)/n_all_m_2003
                        within_occ_var1_m_2003= within_occ_var1_m_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prm_m_2003)^2)/n_all_m_2003
                endif

                if dum_female(!j)=0 and (dum_occ_of_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or
dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1)  then
                        between_occ_var1_m_2003=between_occ_var1_m_2003 + ((m_lwage_prf_m_2003 -
m_lwage_m_2003)^2)/n_all_m_2003
                        within_occ_var1_m_2003= within_occ_var1_m_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prf_m_2003)^2)/n_all_m_2003
                endif

                if dum_female(!j)=0 and (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1)
then
                        between_occ_var1_m_2003=between_occ_var1_m_2003 + ((m_lwage_mix_m_2003
- m_lwage_m_2003)^2)/n_all_m_2003
                        within_occ_var1_m_2003= within_occ_var1_m_2003 + ((lwage_2003_cpi(!j) -
m_lwage_mix_m_2003)^2)/n_all_m_2003
                endif

'female
            if  dum_female(!j)=1 and (dum_occ_opp_2003(!j)=1 or dum_occ_ql_a_wrk_2003(!j)=1 or
dum_occ_mil_wrk_2003(!j)=1  or dum_occ_missing_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var1_f_2003=between_occ_var1_f_2003 + ((m_lwage_prm_f_2003 -
m_lwage_f_2003)^2)/n_all_f_2003
                        within_occ_var1_f_2003=within_occ_var1_f_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prm_f_2003)^2)/n_all_f_2003
                endif

                if dum_female(!j)=1 and (dum_occ_of_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or
dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1)  then
                        between_occ_var1_f_2003=between_occ_var1_f_2003 + ((m_lwage_prf_f_2003 -
m_lwage_f_2003)^2)/n_all_f_2003
                        within_occ_var1_f_2003= within_occ_var1_f_2003 + ((lwage_2003_cpi(!j) -
m_lwage_prf_f_2003)^2)/n_all_f_2003
                endif
```

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```
                if dum_female(!j)=1 and (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1)
then
                        between_occ_var1_f_2003=between_occ_var1_f_2003 + ((m_lwage_mix_f_2003 -
m_lwage_f_2003)^2)/n_all_f_2003
                        within_occ_var1_f_2003= within_occ_var1_f_2003 + ((lwage_2003_cpi(!j) -
m_lwage_mix_f_2003)^2)/n_all_f_2003
                endif
'*************************************************************************
'all
                if (dum_occ_opp_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1  or
dum_occ_mil_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var2_2003=between_occ_var2_2003 + ((m_lwage_hp_2003-
m_lwage_2003)^2)/n_all_2003
                        within_occ_var2_2003= within_occ_var2_2003 + ((lwage_2003_cpi(!j) -
m_lwage_hp_2003)^2)/n_all_2003
                endif

                if (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_of_wrk_2003(!j) =1 or
dum_occ_ql_a_wrk_2003(!j)=1  or dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1 or
dum_occ_missing_2003(!j)=1)  then
                        between_occ_var2_2003=between_occ_var2_2003 + ((m_lwage_lp_2003 -
m_lwage_2003)^2)/n_all_2003
                        within_occ_var2_2003= within_occ_var2_2003 + ((lwage_2003_cpi(!j) -
m_lwage_lp_2003)^2)/n_all_2003
                endif

'male
                if dum_female(!j)=0 and (dum_occ_opp_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1  or
dum_occ_mil_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var2_m_2003=between_occ_var2_m_2003 + ((m_lwage_hp_m_2003 -
m_lwage_m_2003)^2)/n_all_m_2003
                        within_occ_var2_m_2003= within_occ_var2_m_2003 + ((lwage_2003_cpi(!j) -
m_lwage_hp_m_2003)^2)/n_all_m_2003
                endif

                if dum_female(!j)=0 and (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_of_wrk_2003(!j) =1 or
dum_occ_ql_a_wrk_2003(!j)=1  or dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1 or
dum_occ_missing_2003(!j)=1)  then
                        between_occ_var2_m_2003=between_occ_var2_m_2003 + ((m_lwage_lp_m_2003 -
m_lwage_m_2003)^2)/n_all_m_2003
                        within_occ_var2_m_2003= within_occ_var2_m_2003 + ((lwage_2003_cpi(!j) -
m_lwage_lp_m_2003)^2)/n_all_m_2003
                endif


'female
                if dum_female(!j)=1 and (dum_occ_opp_2003(!j)=1 or dum_occ_mn_seml_2003(!j)=1  or
dum_occ_mil_wrk_2003(!j)=1 or dum_occ_sp_hl_2003(!j)=1 or dum_occ_qual_mn_wrk_2003(!j)=1)  then
                        between_occ_var2_f_2003=between_occ_var2_f_2003 + ((m_lwage_hp_f_2003 -
m_lwage_f_2003)^2)/n_all_f_2003
                        within_occ_var2_f_2003= within_occ_var2_f_2003 + ((lwage_2003_cpi(!j) -
m_lwage_hp_f_2003)^2)/n_all_f_2003
                endif

                if dum_female(!j)=1 and (dum_occ_nql_wrk_2003(!j)=1 or dum_occ_of_wrk_2003(!j) =1 or
dum_occ_ql_a_wrk_2003(!j)=1  or dum_occ_sp_mdl_2003(!j)=1 or dum_occ_srv_wrk_2003(!j)=1 or
dum_occ_missing_2003(!j)=1)  then
                        between_occ_var2_f_2003=between_occ_var2_f_2003 + ((m_lwage_lp_f_2003 -
m_lwage_f_2003)^2)/n_all_f_2003
```

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```
                        within_occ_var2_f_2003= within_occ_var2_f_2003 + ((lwage_2003_cpi(!j) -
m_lwage_lp_f_2003)^2)/n_all_f_2003
                    endif

'*************************************************************************
endif
next
```

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```
'dum_occ_opp_2003
'dum_occ_nql_wrk_2003
'dum_occ_of_wrk_2003
'dum_occ_mn_seml_2003
'dum_occ_ql_a_wrk_2003
'dum_occ_mil_wrk_2003
'dum_occ_sp_hl_2003
'dum_occ_sp_mdl_2003
'dum_occ_srv_wrk_2003
'dum_occ_missing_2003
'dum_occ_qual_mn_wrk_2003

scalar n_all_2003=0
scalar m_all_2003=0
scalar f_all_2003=0

scalar n_opp_2003=0
scalar m_opp_2003=0
scalar f_opp_2003=0

scalar n_nql_wrk_2003=0
scalar m_nql_wrk_2003=0
scalar f_nql_wrk_2003=0

scalar n_of_wrk_2003=0
scalar m_of_wrk_2003=0
scalar f_of_wrk_2003=0

scalar n_mn_seml_2003=0
scalar m_mn_seml_2003=0
scalar f_mn_seml_2003=0

scalar n_ql_a_wrk_2003=0
scalar m_ql_a_wrk_2003=0
scalar f_ql_a_wrk_2003=0

scalar n_mil_wrk_2003=0
scalar m_mil_wrk_2003=0
scalar f_mil_wrk_2003=0

scalar n_sp_hl_2003=0
scalar m_sp_hl_2003=0
scalar f_sp_hl_2003=0

scalar n_sp_mdl_2003=0
scalar m_sp_mdl_2003=0
scalar f_sp_mdl_2003=0

scalar n_srv_wrk_2003=0
scalar m_srv_wrk_2003=0
scalar f_srv_wrk_2003=0

scalar n_missing_2003=0
scalar m_missing_2003=0
scalar f_missing_2003=0

scalar n_qual_mn_wrk_2003=0
scalar m_qual_mn_wrk_2003=0
```

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```
scalar f_qual_mn_wrk_2003=0

'*****************************
scalar i_dissm=0
scalar i_charles=0
scalar i_charles_sum1=0
scalar i_charles_sum2=0
scalar i_karm_mclach=0

'*****************************
vector(11) vn_occ_2003
vector(11) vm_occ_2003
vector(11) vf_occ_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
n_opp_2003=@sum(dum_occ_opp_2003)
n_nql_wrk_2003=@sum(dum_occ_nql_wrk_2003)
n_of_wrk_2003=@sum(dum_occ_of_wrk_2003)
n_mn_seml_2003=@sum(dum_occ_mn_seml_2003)
n_ql_a_wrk_2003=@sum(dum_occ_ql_a_wrk_2003)
n_mil_wrk_2003=@sum(dum_occ_mil_wrk_2003)
n_sp_hl_2003=@sum(dum_occ_sp_hl_2003)
n_sp_mdl_2003=@sum(dum_occ_sp_mdl_2003)
n_srv_wrk_2003=@sum(dum_occ_srv_wrk_2003)
n_missing_2003=@sum(dum_occ_missing_2003)
n_qual_mn_wrk_2003=@sum(dum_occ_qual_mn_wrk_2003)
n_all_2003= n_opp_2003 +  n_nql_wrk_2003 + n_of_wrk_2003 + n_mn_seml_2003 +  n_ql_a_wrk_2003 +
n_mil_wrk_2003 +   n_sp_hl_2003 + n_sp_mdl_2003 + n_srv_wrk_2003 + n_missing_2003 +
n_qual_mn_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30  and lwage_2003_cpi>0 and
adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_all_2003 = @sum(dum_female)
m_all_2003 = n_all_2003 - f_all_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_opp_2003=1 and dum_female=1 and
lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_opp_2003=@sum(dum_occ_opp_2003)
m_opp_2003=n_opp_2003-f_opp_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_nql_wrk_2003=1 and dum_female=1
and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_nql_wrk_2003=@sum(dum_occ_nql_wrk_2003)
m_nql_wrk_2003=n_nql_wrk_2003-f_nql_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30  and dum_occ_of_wrk_2003=1 and dum_female=1
and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_of_wrk_2003=@sum(dum_occ_of_wrk_2003)
m_of_wrk_2003=n_of_wrk_2003-f_of_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_mn_seml_2003=1     and
dum_female=1  and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and
job_kyiv_2003<>na
f_mn_seml_2003=@sum(dum_occ_mn_seml_2003)
m_mn_seml_2003=n_mn_seml_2003-f_mn_seml_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_ql_a_wrk_2003=1     and
dum_female=1 and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and
job_kyiv_2003<>na
```

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```
f_ql_a_wrk_2003=@sum(dum_occ_ql_a_wrk_2003)
m_ql_a_wrk_2003=n_ql_a_wrk_2003-f_ql_a_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_mil_wrk_2003=1      and
dum_female=1 and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and
job_kyiv_2003<>na
f_mil_wrk_2003=@sum(dum_occ_mil_wrk_2003)
m_mil_wrk_2003=n_mil_wrk_2003-f_mil_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_sp_hl_2003=1 and dum_female=1
          and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and
job_kyiv_2003<>na
f_sp_hl_2003=@sum(dum_occ_sp_hl_2003)
m_sp_hl_2003=n_sp_hl_2003-f_sp_hl_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_sp_mdl_2003=1 and dum_female=1
and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_sp_mdl_2003=@sum(dum_occ_sp_mdl_2003)
m_sp_mdl_2003=n_sp_mdl_2003-f_sp_mdl_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_srv_wrk_2003=1 and dum_female=1
and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_srv_wrk_2003=@sum(dum_occ_srv_wrk_2003)
m_srv_wrk_2003=n_srv_wrk_2003-f_srv_wrk_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_missing_2003=1 and dum_female=1
and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and job_kyiv_2003<>na
f_missing_2003=@sum(dum_occ_missing_2003)
m_missing_2003=n_missing_2003-f_missing_2003

smpl if age_2003>14 and age_2003<60 and hours_week>30 and dum_occ_qual_mn_wrk_2003=1 and
dum_female=1 and lwage_2003_cpi>0 and adj_years_school_2003>0 and pot_exper_2003<>na and
job_kyiv_2003<>na
f_qual_mn_wrk_2003=@sum(dum_occ_qual_mn_wrk_2003)
m_qual_mn_wrk_2003=n_qual_mn_wrk_2003-f_qual_mn_wrk_2003

'*********************************************
vn_occ_2003.fill n_opp_2003, n_nql_wrk_2003, n_of_wrk_2003, n_mn_seml_2003, n_ql_a_wrk_2003,
n_mil_wrk_2003, n_sp_hl_2003,  n_sp_mdl_2003, n_srv_wrk_2003, n_missing_2003, n_qual_mn_wrk_2003

vm_occ_2003.fill m_opp_2003, m_nql_wrk_2003, m_of_wrk_2003, m_mn_seml_2003, m_ql_a_wrk_2003,
m_mil_wrk_2003, m_sp_hl_2003,  m_sp_mdl_2003, m_srv_wrk_2003, m_missing_2003,
m_qual_mn_wrk_2003


vf_occ_2003.fill f_opp_2003, f_nql_wrk_2003, f_of_wrk_2003, f_mn_seml_2003, f_ql_a_wrk_2003,
f_mil_wrk_2003, f_sp_hl_2003,  f_sp_mdl_2003, f_srv_wrk_2003, f_missing_2003, f_qual_mn_wrk_2003
'*********************************************

smpl @all

for !i=1 to 11

          i_dissm = i_dissm + (1/2) * (@abs( vf_occ_2003(!i)/f_all_2003 - vm_occ_2003(!i)/m_all_2003))
          i_charles_sum1 =i_charles_sum1 + (1/11)*@log(vf_occ_2003(!i)/vm_occ_2003(!i))
          i_karm_mclach = i_karm_mclach + (1/n_all_2003)*@abs(vf_occ_2003(!i) -
(f_all_2003/n_all_2003)*vn_occ_2003(!i))
next

for !i=1 to 11
```

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```
        i_charles_sum2 =i_charles_sum2 + (1/11)*((@log(vf_occ_2003(!i)/vm_occ_2003(!i)) -
i_charles_sum1)^2)
next
        i_charles=@exp(i_charles_sum2^(1/2))
```

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