REVIEW OF ECONOMIC PERSPECTIVES – NÁRODOHOSPODÁŘSKÝ OBZOR, VOL. 11, ISSUE 4, 2011, pp. 223–236, DOI: 10.2478/v10135-011-0014-y

GENDER PAY GAP – APPLICATION IN THE SPECIFIC ENTERPRISE

Veronika Hedija. Petr Musil

Department of Economic Studies, College of Polytechnics Jihlava, Tolstého 16, 586 01 Jihlava, Czech Republic, vhedija@seznam.cz, petrmusil1977@gmail.com

Abstract: The paper analyzes the size of the gender pay gap (GPG) in the specific enterprise. The goal of the paper is to identify factors which could explain a possible wage difference between men and women, and to find out if there exists a wage discrimination of women or not. In order to estimate the discrimination, part of the GPG was used with the Oaxaca-Blinder decomposition. The authors conclude that wage discrimination of women really exists here. Different characteristics of men and women explain only – 16.5% to 6.2% of GPG. The rest of the GPG can be labelled (with a bit of simplification) as the effect of discrimination.

Key words: gender, gender pay gap, gender wage discrimination, Oaxaca-Blinder decomposition, wage differences,

JEL Classification: J16, J24

DOI: 10.2478/v10135-011-0014-y

GENDER PAY GAP – APPLICATION IN THE SPECIFIC ENTERPRISE[1]

Veronika Hedija,[2] Petr Musil[3]

Introduction

The question of an even attitude between men and women and a potential discrimination in the labour market is still an up-to-date topic. According to Eurostat data, women in the Czech Republic earned 76.4 % of men´s average hour wage. This fact raises a lot of questions (especially in the public). Are women in the Czech labour market under the wage discrimination? Why is women´s wage is lower (in average) in comparison to the men´s wage? Where are the main factors of existing wage differences?

What do we mean by the term of wage discrimination? As wage discrimination we usually understand a situation if women earn without objective causes a lower wage than men (Ehrenberg, Smith 2003, p. 382). The objective causes usually are: education, experience, productivity, or responsibility. For example, a situation, when a woman (who earns 50% a man´s wage) worked the same number of hours as a man but her performance was by 50 % lower than the man´s, cannot be called wage discrimination. In thise case the wage difference can be explained with the different productivity, not with wage discrimination.

From the standard microeconomic theory point of view, the wage is dependent on productivity of an individual. An individual whose productivity is bigger earns significantly higher wage. Such a wage difference cannot be labelled as wage discrimination but it is natural and eligible.

Different productivity of men and women seems to be a possible factor of the wage differences mentioned above. The different productivity is probably a result of different characteristics of men and women. Wage differences are traditionally explained by different age, education, experience etc., which directly influences productivity of individuals (Becker, 1957). If there were women on average less educated, less experienced and younger than men, it would be natural for them to get lower wages than men. But there is no crucial difference of the average wage between men and women, and also the average level of education of men and women, or the number of years of practice is more or less the same. Conclusions of some empirical studies (see below) show that labour market segregation is the relevant factor of wage differences between men and women – a fact that women are generally concentrated on working positions

[1] This article is a part of the results of the project no. 402/09/2057 "Measurement and management of the intangible assets impact on enterprise performance" financed by the Czech Science Foundation

[2] Department of Economic Studies, College of Polytechnics Jihlava, Tolstého 16, 586 01 Jihlava, Czech Republic, vhedija@seznam.cz

[3] Department of Economic Studies, College of Polytechnics Jihlava, Tolstého 16, 586 01 Jihlava, Czech Republic, petrmusil1977@gmail.com

(or in industries) with lower responsibility and lower wages (i.e. European Commission, 2002).

There are other papers estimating the wage discrimination effect. For example Grimshaw and Rubery (2002) and Beblo et al. (2003) examined the discrimination component of GPG (Gender Pay Gap) in specific member states of the EU. There are also studies of rate of discrimination effect in the transition countries; i.e. Adamchik and Bedi (2001) searched for the discrimination effect in Poland; Jolliffe and Campos (2005) in Hungary, or Jurajda (2003) in Slovakia. Jurajda and Mysíková (i.e. Mysíková 2007) are well-known authors making the research in the field of wage discrimination in the Czech Republic. Jurajda (2003) concluded that two thirds of the pay gap can be explained neither by the means of different characteristics of men and women, nor by their employers. Mysíková (2007) uses the Oaxaca-Blinder decomposition to analyze the gender pay-gap in the Czech Republic in 2005. We can also mention one of the most up-to-date papers of Eriksson and Pytliková (2011). The authors search for the relationship between wage on one side, and productivity and company ownership on the other in the Czech Republic in 2006. They found out that 21 % of the gender pay gap cannot be explained with objective factors.

In order to enounce a conclusion about the possible women´s wage discrimination in the Czech Republic, we have to keep in mind relevant factors inducing natural differences in wages of men and women. Taking these factors into consideration and their quantification is not an easy task. Probably the best survey on the existence or absence of wage discrimination would be acquired if we could find some men and women with totally equal characteristics (wage, education, working position, experience, productivity, number of children, withdrawing from work), and find wage differences of those pairs. The entire eventual wage difference could be than labeled as discrimination. To find enough pairs with identical characteristics and across the whole national economy to generalize the conclusion is a mere vision. Economic research often uses the Oaxaca-Blinder decomposition to estimate the discrimination component of the gender pay gap (GPG). The estimation of GPG using this decomposition is very demanding on the data. The available data are not often detailed enough, especially data about the real working position (its real filling – competences, responsibility, wage policy etc.), which might lead to certain distortions.

The aim of the paper is to describe the size of the gender pay gap in the specific enterprise, identify factors that could be used to explain the wage differences between men and women in this enterprise, and to assess possible wage discrimination of women.

The size of the gender wage gap is estimated using the Oaxaca-Blinder decomposition. Making the decomposition, the authors worked with three alterations of the decomposition. Those alterations vary with the used equilibrium wage. Generally, the gender pay gap is understood as a differential of logarithm of the men´s and women´s average wage.[1]

[1] $GPG = \ln(W_m) - \ln(W_{f,})$, W_m = men´s average wage, $W_{f,}$ = women´s average wage.

Decomposition of gender pay gap

The Oaxaca-Blinder decomposition of gender pay gap (Oaxaca, 1973; Blinder, 1973) allows to spread out the existing wage gap into a part which could be explained with different characteristics of women and men, and a part which is not explained. The unexplained part of the wage difference could be pronounced as potentially discriminating.

Before we apply the Oaxaca-Blinder decomposition, we have to estimate the men´s and women´s wage functions, as follows:

$\ln(W_i)_m = \beta_m.(X_i´)_m + (u_i)_m$, for i = 1,…,n (1)

$\ln(W_i)_f = \beta_f.(X_i´)_f + (u_i)_f$, for i = 1,…,n (2)

$(W_i)_m$ ... the men´s wage, $(X_i´)_m$ ... the vector for men´s characteristics

$(W_i)_f$ ... the women´s wage, $(X_i´)_f$ the vector of women´s characteristics

β_m, β_f ... coefficient vectors of men´s and women´s wage functions

u_i ... random variable

The number of explanatory variables included into the wage function varies in different studies in the field of wage differences. The explanatory variables are mostly: wage, education, experience, working position, industry, responsibility, duty, the company size, number of years worked in the company, labour union membership, region, marital status and number of children (Hedija, Musil 2010).

In this paper we used the following as the explanatory variables:[1] education, practice, number of working years in the firm, working position, number of children, marital status. Wage differences are examined within one specific firm, so to use further variables like region, firm size, industry etc. is not relevant.

Education and experience are traditional factors determining the wage level. Higher education enables people to work on a position that is paid better. The wage also usually grows with growing experience or abilities leading to greater work achievements, and again to higher wage. We included the following 4 factors which more or less influence the level of wage in the wage function, and are possible to measure relatively well: number of years worked in the company, working position, marital status and the number of children. The number of years worked in the company is understood as the sum of experience. This variable tells us more about the experience in relation to the current working position than about the experience in general. If for example an individual works for 10 years as a driver, and he/she changes the working position, the experience of him as a driver seems not to be so useful for the new job; furthermore, the influence on the wage on the new working position is not so relevant either.

[1] We use variables that are standard used by the authors being engaged in the research of gender pay gap. Detailed list of variable usage see Hedija, Musil (2010).

The argument for including the “number of children” variable is based on the fact that we suppose people with children not to focus on their job to such an extent as people without them. The care of children may lead to more withdrawals from work, and finally, to less experience in comparison to the others.

The wage of an employee is a traditional variable. We did not include this variable as the explanatory one because of the multicolinearity. The correlation coefficient of wage and experience reached 0.99.

We estimated the following wage function of men and women:

$$\begin{aligned}\ln(W_i)_m &= \beta_O + \beta_1.(EDUCATION_i)_m + \beta_2.(EXPERIENCE_i)_m + \beta_3.(YEARSINFIRM_i)_m + \\ &+ \beta_4.(POSITION2_i)_m + \beta_5.(POSITION3_i)_m + \beta_6.(POSITION4_i)_m + \beta_7.(CHILDREN_i)_m + \\ &+ \beta_8.(MARSTATUS2_i)_m + \beta_9.(MARSTATUS3_i)_m + (u_i)_m\end{aligned} \quad (3)$$

$$\begin{aligned}\ln(W_i)_f &= \beta_O + \beta_1.(EDUCATION_i)_f + \beta_2.(EXPERIENCE_i)_f + \beta_3.(YEARSINFIRM_i)_f + \\ &+ \beta_4.(POSITION2_i)_f + \beta_5.(POSITION3_i)_f + \beta_6.(POSITION4_i)_f + \beta_7.(CHILDREN_i)_f + \\ &+ \beta_8.(MARSTATUS2_i)_f + \beta_9.(MARSTATUS3_i)_f + (u_i)_f\end{aligned} \quad (4)$$

W_i represents gross hourly wage which is computed as a ratio of the gross yearly wage and the number of hours worked in the specific year. Such a computed wage filters the different number of worked hours of particular employees.

Explanatory variable *EDUCATION* represents the number of years of studying according to the specific level of education. In the case of elementary education, this variable equals to 8, in the case of upper secondary education this variable equals to 12 etc.

The variable *EXPERIENCE* represents the years of experience of a particular employee. The variable is computed as a differential of the employee’s wage and studying years (according to the level of education). The years of experience among women are shortened by the number of years spent on maternity leave (number of children times 3). This takes into account the fact that some women may be less experienced as men of the same age.

YEARSINFIRM variable represents the number of working years in specific company. This variable is not shortened for women with children because we did not know when those women left for the maternity.

The *POSITION* variable is a dummy variable which represents the working position of a particular employee. There are 4 different positions. POISTION1 includes drivers, shop assistants and stock keepers. Employees on POSITION1 have no subordinates. POSITION2 includes accountants, technicians, officers, sales agents. These employees also have no subordinates, but bigger responsibility. POSITION3 includes head accountants and head stock keepers. These employees have a specific number of subordinates. POSITION4 includes top managers of a company. The variable *POSITION* is a dummy variable that assumes values 0 or 1. POSTION equals to 0 if an employee does not work at a specific position, and equals 1 if the employee does.

Explanatory variable *CHILDREN* represents the number of children of a particular employee, with no respect to the age of the children. It would be more relevant to include only children within 10 years of age but this data was not available.

Variable *MARSTATUS* is also a dummy variable which also assumes values 0 or 1, and there are three possible marital statuses: *MARSTATUS1* means that the employee is single, *MARSTATUS2* means that the employee is married, *MARSTATUS3* – employee is divorced or a widow/widower.

To estimate the discrimination component we used the extended Oaxaca-Blinder decomposition, which is:

$$\ln(\overline{W}_m)-\ln(\overline{W}_f)=(\overline{X}_m-\overline{X}_f).\beta^* +(\hat{\beta}_m-\beta^*).\overline{X}_m+(\beta^*-\hat{\beta}_f).\overline{X}_f \quad (5)$$

$\overline{W}_m$ ... men’s gross hourly average wage, $\overline{W}_f$ ... women´s gross hourly average wage

$\overline{X}_m$ ... men’s specific characteristics, $\overline{X}_f$ ... women´s specific characteristics

$\hat{\beta}_m, \hat{\beta}_f$ ... coefficients of men’s and women’s wage functions, β* coefficient vector of the equilibrium wage (non-discriminatory wage)

Expression $\ln(\overline{W}_m)-\ln(\overline{W}_f)$ represents the wage gap as a differential of logarithms of men’s and women’s average wage. Expression $(\overline{X}_m-\overline{X}_f).\beta^*$ represents the part of wage gap which is explained by different characteristics of men and women. This part of the wage gap explains the wage difference in the case without discrimination – we call this part “equipment effect”. Expression $(\hat{\beta}_m-\beta^*).\overline{X}_m+(\beta^*-\hat{\beta}_f).\overline{X}_f$ represents the unexplained part of the wage gap. The first part of the expression equals to the discrimination on men’s behalf, the second one the discrimination on women’s behalf. The sum of these parts was called “the discrimination effect”.

The men’s and women’s gross hourly wage in equation (5) is estimated on the basis of men’s and women’s wage functions:

$$\ln(\overline{W}_f)=\hat{\beta}_f.(\overline{X}')_f \quad (6)$$

$$\ln(\overline{W}_m)=\hat{\beta}_m.(\overline{X}')_m \quad (7)$$

$\overline{W}_m$ ... men’s gross hourly wage, $\overline{W}_f$ ... women’s gross hourly wage

$\overline{X}'_m$ ... vector of men’s average characteristics, $\overline{X}'_f$ ... vector of women’s average characteristics

$\hat{\beta}_m, \hat{\beta}_f$ ... vectors of estimated coefficients of men’s and women’s wage functions.

Several studies using the Oaxaca-Blinder decomposition understand the equilibrium wage differently. Blinder (1973) uses the men’s wage as the equilibrium wage. Oaxaca (1973) uses both, men’s and women’s wage as the equilibrium wage. Reimers (1983) weighs the regression coefficients of men's and women's wage functions equally ($\beta^*=(\beta_m+\beta_f)/2$). Cotton (1988) uses the weighted average of men's and women's wage, where the weights represent the share of men and women on the total employed population. Neumark (1988) estimates the equilibrium wage as the vector of wage function coefficients together for men and women (Hedija, Musil 2010).

We use three possible alterations of equilibrium wage. We apply the approach of Reimers (1983), Cotton (1988) and Neumark (1988). First, the equilibrium wage equals to the arithmetic average of men's and women's wage, secondly, as the weighted average of men's and women's wage, and finally, the equilibrium wage is understood as the wage of the entire sample of employees.

Concerning the first alteration, the arithmetic average of men's and women's wage, Reimers (1983) says that the equilibrium wage does not have to equal the men's or women's wage. Reimers (1983) says that discrimination may just lead to lower women's wage, or to higher men's wage in comparison to the average wage. He uses the equilibrium wage which results from the average of regression coefficients of men's and women's wage functions. Regression coefficients are set as the average of regression coefficients o men's and women's wage functions:

$$\beta^* = (\hat{\beta}_m + \hat{\beta}_f)/2 \quad (8)$$

β^*... vector of equilibrim wage coefficients, $\hat{\beta}_m, \hat{\beta}_f$ ... vectors of coefficients of men's and women's wage functions.

Cotton (1988) presents another approach to the equilibrium wage. He sets the regression coefficients of equilibrium wage as a weighted average of coefficients of men's and women's wage functions, and uses the shares of men and women on the employed population as the weights. We set the weights as shares of men and women on the total number of employees in the company:

$$\beta^* = [m/(m+f)]\hat{\beta}_m + [f/(m+f)]\hat{\beta}_f \quad (9)$$

β^*... vector of equilibrium wage coefficients,

$\hat{\beta}_m, \hat{\beta}_f$ ... vectors of coefficients of men´s and women´s wage functions,

m ... number of men in the sample of employees, f ... number of women in the sample of employees.

Finally, the third approach represents Neumark (1988). He estimates the equilibrium wage as a vector of coefficients of the wage function together for men and women. Coefficients of the equilibrium wage are estimated as:

$$\ln(W_i) = \beta^* . X_i' + u_i \text{, for i = 1,…,n} \quad (10)$$

W_i ... wage of particular employee,

β^* ... vector of coefficients of the employees´ wage function,

X_i' ... vector of specific characteristics of particular employee,

u_i ... random variable.

If we use the Neumark alteration of wage function, we acquire:

$$\ln(W_i) = \beta_O + \beta_1.EDUCATION_i + \beta_2.EXPERIENCE_i + \beta_3.YEARSINFIRM_i + \\ + \beta_4.POSITION2_i + \beta_5.POSITION3_i + \beta_6.POSITION4_i + \beta_7.CHILDREN_i + \\ + \beta_8.MARSTATUS2_i + \beta_9.MARSTATUS3_i + u_i \quad (11)$$

i... particular employee (no care if man or woman).

The Data

In this paper, the pay gap is estimated for a specific company. This company has been operating in the Czech market since 1991 as a wholeseller of electric material. We promised that all the data that could identify this company shall not be disclosed. The company is anyway similar to other companies in this industry, such as Elfetex, Qestel or Elkov.

The company employs 82 employees, the ratio of men and women is almost 50:50. There are also no relevant differences between the work of men and women, which make this company a suitable candidate for our research.

The pay gap is estimated on the basis of data of 2009. We got the following data: gross yearly wage, number of hours worked per employee and year, the type of employment, age, education, working position, the number of years worked in the company, number of children, and marital status. On the basis of the data, some employees were set aside the sample – mostly employees without full-time employment, because it was impossible to get the proper hourly wage. We also put aside one employee whose working position was too unique – it was a charwoman (she was retired and worked for a very “symbolic” salary). The final sample consists of 33 men and 29 women.

The Table 1 shows the gross average hourly wage of the men’s and women’s sample, and their wage median. We can see that the average men’s wage and the wage median is higher than that of women. The pay gap of average wage reaches 19 %, and the pay gap of wage median reaches 15 %.

Table 1: Average wage and wage median

	Gross average hourly wage	Wage median
Men	118.39 CZK	116.11 CZK
Women	97.93 CZK	99.84 CZK
GPG (%)	18.99%	15.09%

Source: own calculations

As mentioned above, we used education, experience, years in the company, working position, children and marital status as explanatory variables. The Table 2 shows the average characteristics of the sample of employees.

Table 2: Average characteristics of men and women of the sample of employees

	Men	Women
EDUCATION	12.03	11.86
EXPERIENCE	19.18	19.48
YEARS IN FIRM	6.61	6.21
POSITION_1	0.52	0.31
POSITION_2	0.33	0.59
POSITION_3	0.09	0.10
POSITION_4	0.06	0.00
CHILDREN	1.00	1.17
MARITAL STAT.(1)	0.33	0.24
MARITAL STAT.(2)	0.58	0.66
MARITAL STAT.3)	0.09	0.10

Source: own calculations

Men's and women's education, experience and years in the company are on average almost the same. Men and women spent on average 12 years in the education system, they have on average 19 years of experience, and have been working in the company for 6 years on average.

Very similar is also the family status of men and women. Men and women have on average 1 child, approximately 30 % men and women are single, 60 % married, and 10 % divorced or widowed.

The distribution of men and women among the working position is not uniform – 52 % of the men and 31 % of the women work on position 1 (driver, shop assistant or storekeeper), 33 % of the men and 59 % of the women work on position 2 (accountant, technician or sales agent), 9 % of the men and 10 % of the women work on position 3 (head accountant, head storekeeper), and 6 % of the men and no woman work on position 4 (top management).

Gender pay gap in the specific company

In the company we have selected, the gender pay gap reached approximately 19 %. In this part of the paper we use the Oaxaca-Blinder decomposition to disintegrate the existing pay gap on the equipment effect and the discrimination effect. In other words, we will purge the pay gap off the part which cannot be explained with the different characteristics of men and women, and which cannot be understood as the wage discrimination.

The estimation of wage functions of men and women for the specific sample of employees is the first step of the analysis. The wage functions are derived from the equations 3 and 4. For the decomposition we use step by step three alterations of Oaxaca-Blinder decomposition. To use the Neumark alteration we also had to estimate the wage function of the entire sample (equation 11). The table 3 shows the coefficients of the estimated wage functions. Standard deviations of the parameters estimation are in the brackets.

Table 3: Wage functions parameters

lnW	men	women	men and women
a constant	4.59449*** (0.433626)	5.46709*** (1.31311)	4.47365*** (0.415194)
EDUCATION	2.35E-05 (0.0369359)	-0.113268 (0.114710)	0.0009376 (0.0350809)
EXPERIENCE	-0.00337161 (0.00376226)	0.00530953 (0.00540961)	-0.0005246 (0.00338857)
YEARS IN FIRM	0.00912836 (0.00799846)	0.00995681 (0.00745930)	0.0088378 (0.00569243)
POSITION_2	0.150688** (0.0608484)	0.257155*** (0.0885249)	0.0909778* (0.0507088)
POSITION_3	0.0603585 (0.133120)	0.424791*** (0.125178)	0.176604* (0.0989646)
POSITION_4	0.663563*** (0.122801)	-	0.704027** (0.136801)
CHILDREN	-0.0894461 (0.0679024)	0.0451091 (0.0515334)	-0.0454179 (0.0444714)
MARIT. STAT(2)	0.236574* (0.128159)	0.0616352 (0.115773)	0.149097 (0.0928859)
MARIT. STAT(3)	0.151771 (0.131020)	-0.107462 (0.165224)	0.076873 (0.112458)
R^2	0.673678	0.591528	0.481727
$\ln(W_m) - \ln(W_f)$	0.202901332		

*Note: * 10% significance level. ** 5% significance level. *** 1% significance level.*
Source: own calculations

While we estimated the wage functions, not all the variables came out as statistically relevant – especially education, number of children and marital status were irrelevant. The irrelevance of number of children and marital status is not so surprising (we did not have the data of the children's age). Most of the employees probably have already children older than 10 years of age, so there is no need to take care of it in the case of illness. Caring about these children is also not so time-consuming. Another factor of the number of children irrelevance is the possibility that grand-parents could take care of them in the case of illness etc. That is probably why the number of children does neither influence the working performance of men and women, nor the level of wage.

The irrelevance of marital status can be explained with the nature of the job. In the company we analyzed, the work the most employees do is relatively well compatible with the 8 hours of working time. The job does mostly not influence the privacy of the employees. This can explain why singles do not work harder than married employees with children. We can then say that the marital status does not influence the level of wage.

What is relatively surprising is the irrelevance of the variable "education", which can be explained by stating that most of the employees reached the upper secondary level of education. Just two employees have a university degree. But the level of wage among employees with the same education quite differs. Thus these differences cannot be explained by the level of education.

We omitted statistically irrelevant variables and we found out that the variables that explain the wage difference are: "experience" and "working position". The table 4 shows the coefficients of the estimated wage functions. Standard deviations of the parameters estimation are in the brackets.

Table 4: Wage functions parameters

lnW	men	women	men and women
a constant	4.61280*** (0.0622380)	4.18894*** (0.0937903)	4.51311*** (0.0614251)
EXPERIENCE	0.000673520 (0.00262979)	0.00997808*** (0.00307273)	0.00240800 (0.0023242)
WORKING POSITION_2	0.178239*** (0.0585380)	0.187942*** (0.0622063)	0.106386** (0.0494623)
WORKING POSITION_3	0.225533** (0.0949453)	0.357390*** (0.0964850)	0.275793*** (0.0819802)
WORKING POSITION_4	0.680764*** (0.114317)	-	0.736225*** (0.133028)
R^2	0.598309	0.500607	0.428493
$\ln(W_m)$- $\ln(W_f)$	0.18131328		

*Note: * 10% significance level. ** 5% significance level. *** 1% significance level.*
Source: own calculations

The wage functions of men and women show that women earn lower wage than men regardless of their experience or working position. The constant of the men's wage function is higher than that of the women. On the other hand, the growth of experience and the higher working position increases the women's wage more than the men's wage. We can also see that the gender pay gap reaches 0.181. Women in the analyzed sample of employees earned 83.4 % of men´s gross hourly wage.

To find out if wage discrimination exists in the company, we disintegrated the existing pay gap using the Oaxaca-Blinder decomposition (equation 5) in three different approaches – Reimers's (equation 8), Cotton's (equation 9) and Neumark's (equation 10).

The table 5 shows results of the decomposition. Figure 1 shows the ratio of the equipment effect and the discrimination effect of the gender pay gap.

Table 5: Decomposition of the gender pay gap

$\ln(\overline{W}_f) - \ln(\overline{W}_m)$	Equilibrium wage	Equipment effect	Discrimination effect
0.181	Reimers	-0.030	0.211
	Cotton	-0.028	0.210
	Neumark	0.011	0.170

Source: own calculations

Figure 1: Equipment and discrimination effect (in % of GPG)

Source: own calculations

The equipment effect represents in the company –16.5 % to 6.2 % of existing GPG. The different characteristics of men and women, in this case different experience and working positions, explain –3 to 1.1 percent points of gender pay gap. We explain the negative values of equipment effect in the case of Reimers’s and Cotton’s approach to the decomposition by claiming that women have on average better characteristics than men, so women should earn higher wage in comparison to men.

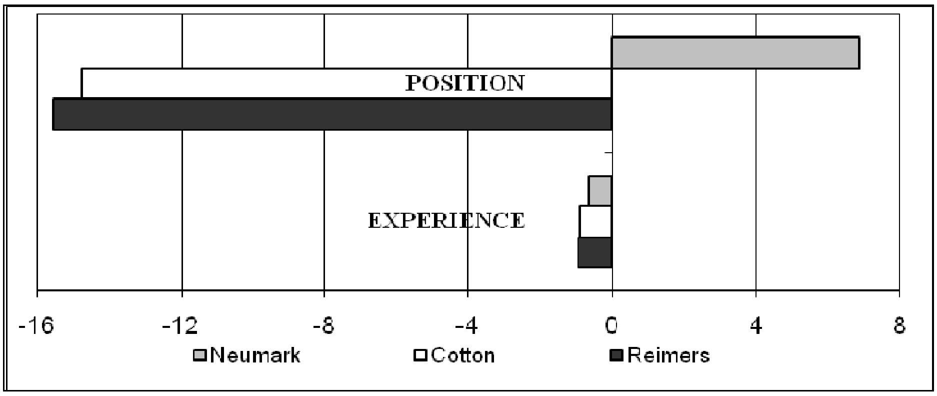
116.5 % to 93.8 % of the gender pay gap cannot be explained with different characteristics of women and men. This part of GPG can be labeled as the discrimination effect. With a bit of simplification we can say that due to discrimination, women earned 17 % to 21.1 % lower wage than men.

As we mentioned above, the size of equipment effect and discrimination effect depends on the approach used on the Oaxaca-Blinder decomposition. In the case of Reimers’s and Cotton’s alteration we get similar sizes of both effects. Based on Reimers, the equipment effect reaches – 16.5 % of GPG, discrimination effect 116.5 % of GPG. Based on Cotton, the equipment effect reaches – 15.7 % of GPG, the discrimination effect 115.7 % of GPG. Similar results of both alterations are not very surprising. It is due to very similar numbers of men and women in the analyzed sample of employees. The equilibrium wages of both approaches (arithmetic average – Reimers, weighted average – Cotton) do not differ too much.

Based on the Neumark's approach both effects differ – equipment effect is positive. We can explain 6.2 % of existing wage gap with different characteristics of men and women. From the point of view of this approach, men's characteristics are better than women's in average. There is a bigger weight of men's better characteristics in comparison to the Reimer's and Cotton's approach. The discrimination effect represents 93.8 % of GPG.

Let us look now how the existing GPG is explained by the different characteristics of women and men, and which of the characteristics plays the dominant role. The situation shows figure 2.

Figure 2: Influence of men´s and women´s characteristics on GPG (in % of GPG)



Source: own calculations

Here we can see that the results depend on the used method of the decomposition as well. The influence of different experience of men and women based on all of the alterations is negative, around 1 % of GPG. Women should then due to bigger experience earn a 1 % higher wage than men. In this respect, working position is more relevant. The influence of this variable is now more significant depending on the used approach. Based on Reimers and Cotton the impact of working position is negative, it explains approx. 15 % of GPG. That means that if there is no discrimination, women should due to working position earn a 15 % higher wage than men. Neumark shows different results. It explains 6.9 % of GPG.

Conclusion

The goal of the paper is to analyze the size of the gender pay gap in a specific enterprise, discover what factors explain the eventual gender pay gap, and find out if there exists a wage discrimination of women or not.

The gender pay gap computed as the difference of logarithms of average gross wage of men and women reaches 19 % in the analyzed company. Women earned there in 2009 in average 82.7 % of men´s gross hourly wage.

Having used the Oaxaca-Blinder decomposition, we can conclude that the existing wage difference cannot be fully explained with the different characteristics of men and women. It is very likely that wage discrimination of women does exist in the company. The estimated discrimination rate differs according to the used approach to the Oaxaca-Blinder decomposition. The relevant factors which could explain the pay gap are: experience and working position. These factors nevertheless explain only – 16.5 % to 6.2 % of GPG. The rest of the GPG can be (with a certain level of simplification) labelled as the effect of discrimination (93.8 % to 116.5 % of GPG).

References

BEBLO, M., BENINGER, D., HEINZE, A., LAISNEY, F. (2003). *Methodological Issues Related to the Analysis of Gender Gaps in Employment, Earnings and Career Prograssion*. Project carried out for the European Commission Employment and Social Affairs DG. Mannheim: Centre for European Economic Research.

ADAMCHIK, V. A., BEDI, A. S. (2001). Persistence of the Gender Pay Differential in a Transition Economy. *ISS Working Paper No. 349.* Hague: Institute of Social Studies.

BECKER, S. G. (1957). The economics of discrimination. 1st Edition. Chicago: The University of Chicago Press, (ISBN 0-226-04115-8)

BLINDER, A. (1973). Wage Discrimination: Reduced Form and Structural Estimates. *The Journal of Human Resources.* 8 (4), pp. 436–455.

COTTON, J. (1988). On the decomposition of Wage Differentials. *The Review of Economics and Statistics.* 70 (4), pp. 236–243.

EHRENBERG, R. G., SMITH, R. S. (2003). *Modern Labour Economics.* 8th Edition. London: Addison-Wesley, (ISBN 0-201-78577-3).

ERIKSSON, T., PYTLIKOVÁ, M. (2011). Foreign ownership wage premia in emerging economies. Evidence from the Czech Republic. *Economics of Transition*, vol. 19, No. 2, 2011, pp. 371–395.

EUROPEAN COMMISSION (2002). *Employment in Europe in 2002*. Lucembourg: European Commission.

GRIMSHAW, D., RUBERY, J. (2002). *The Adjusted Gender Pay Gap: A Critical Appraisal of Standard Decomposition Techniques*. Manchester: EWERC Manchester School of Management.

HEDIJA, V., MUSIL, P. (2010). *Genderová mzdová mezera*. Working Paper CVKS č.12/2010, Brno: Ekonomicko-správní fakulta MU, (ISSN 1801-4496).

JOLLIFFE, D., CAMPOS, N. F. (2005). Does Market Liberalization Reduce Gender Discrimination? Econometric Evidence from Hungary, 1986-1998. *Labour Economics* 12:1–22.

JURAJDA, Š. (2003). Gender Wage Gap and Segregation in Enterprises and the Public Sector in Late Transition Countries. *Journal of Comparative Economics* 31:199–222.

MYSÍKOVÁ, M. (2007). Trh práce žen: Gender Pay Gap a jeho determinanty. *IES Working Paper No. 13/2007*. Praha: IES FSV Charles University.

NEUMARK, D. (1988). Employers´ Discriminatory Behavior and the Estimation of Wage Discrimination. *The Journal of Human Resources*. 13 (3), pp. 279–295.

OAXACA, R. (1973). Male-Female Wage Differentials in Urban Labour Markets. *International Economic Review*. 14 (3), pp. 693–709.

REIMERS, C. (1983). Labour Market Discrimination Against Hispanics and Black Men. *Review of Economics and Statistics.* 65 (4), pp. 570–579.

GENDER PAY GAP – APPLICATION IN THE SPECIFIC ENTERPRISE

Veronika Hedija. Petr Musil

Department of Economic Studies, College of Polytechnics Jihlava, Tolstého 16, 586 01 Jihlava, Czech Republic, vhedija@seznam.cz, petrmusil1977@gmail.com

Abstract: The paper analyzes the size of the gender pay gap (GPG) in the specific enterprise. The goal of the paper is to identify factors which could explain a possible wage difference between men and women, and to find out if there exists a wage discrimination of women or not. In order to estimate the discrimination, part of the GPG was used with the Oaxaca-Blinder decomposition. The authors conclude that wage discrimination of women really exists here. Different characteristics of men and women explain only – 16.5 % to 6.2 % of GPG. The rest of the GPG can be labelled (with a bit of simplification) as the effect of discrimination.

Key words: gender, gender pay gap, gender wage discrimination, Oaxaca-Blinder decomposition, wage differences,

JEL Classification: J16, J24

DOI: 10.2478/v10135-011-0014-y