**DIFFERING CHARACTERISTICS OR DIFFERING REWARDS:
WHAT IS BEHIND THE GENDER WAGE GAP IN CROATIA?**

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Abstract

This paper aims at estimating the size of, changes in and main factors contributing to gender-based wage differentials in Croatia. It utilises microdata from the Labour Force Surveys in 1998 and 2005, and applies both OLS and quantile regression techniques to assess the gender wage gap across the wage distribution. It argues that employed women in Croatia possess higher-quality labour market characteristics, especially levels of education, but receive much lower rewards for these characteristics. Some evidence of a glass-ceiling effect and occupational segregation are found. The impact of having children on the wage prospects of women is also considered. The paper finds that private sector employment in Croatia, unlike the public sector, provides lower wages to mothers at higher-paid jobs, as compared to childless women.

Keywords: gender wage gap, glass ceiling, maternity leave, quantile regression,

JEL classification: J16, J31, J71

I. Introduction

One of the most challenging fields for attaining equal treatment of women and men is the labour market. In practically every country, women earn less than men. To explain this disparity, labour economists have usually looked at differences in human capital characteristics, such as education or experience. Since women, in many countries, have poorer education and less labour market experience than men do, productivity gains due to these attributes could explain a part of the gender wage gap. The role of job- and firm-specific factors has also been studied. However, the gap remains even after accounting for differences in observed characteristics. The unexplained part of the gender differential in wages is sometimes termed discrimination.

In transition countries, gender equality was a highly proclaimed policy goal during the socialist era and evidence shows that the difference in wages between women and men was rather low at that time (Brainerd, 2000). An egalitarian wage structure was a feature not only of centrally planned systems, but also of the worker's self-management system in the former Yugoslavia (Orazem and Vodopivec, 1995). In the transition period, huge changes in the structure of the overall economy have induced changes in the wage structure. Wage setting mechanism has been liberalised, which has mostly produced higher wage inequality. However, it seems that these changes have not contributed to a widening of the gender wage gap in the Central and Eastern European countries in the first phase of transition (Brainerd, 2000; Newell and Reilly, 2001). However, in the later stages of transition, the gender wage gap has become visible, although rather modest by international standards (Rutkowski, 2001).

The relatively low observed gender pay gap in most of the former socialist countries of Central and Eastern Europe (CEE) may be misleading in judging women's welfare status in the labour market in at least three aspects. The first is their relatively low employment rate; the second is the pronounced educational advantage of female employees over their male

counterparts; and the third is women's role in terms of family responsibilities.[1] A low employment rate points to certain barriers for women to enter the job market and find a job. Educational attainment of women which is higher than that of men means that the gender wage gap for comparable educational levels is larger than the average unadjusted gap. Further, this suggests that the productive characteristics of women may be much less appreciated than that of men. Lengthy absence from work due to child bearing may preclude women from earning more.

This paper examines the effects of various labour market characteristics, including the effects of having children, on the gender wag gap in a transition economy – Croatia. The female/male wage ratio in Croatia for 2005 was estimated at 0.88, showing the raw gender wage gap of 12 percent. This is one of the lowest unadjusted gaps in Europe. However, after taking into account differences in education, experience and some job related factors, Nestic (2005) found the gender wage gap to be somewhat wider, around 15 percent in 2003. Bisogno (2000) reported on a gap of 20 percent in 1998. The current study goes further in exploring the gender wage gap by using quantile regression technique in order to estimate the conditional wage gap at various points of the distribution, for example for low-paid workers at the 10th percentile or for high-paid workers at the 90th percentile. Machado-Mata decomposition analysis is employed to extract the part of the gap that is due to differing rewards to observed productive factors for women and men.

This paper also explores the possible impact of relatively generous entitlements for maternity leave and child-related sick leave on the wage prospects of women in Croatia. The effect of children and family obligations on the relative wages of women has been carefully studied for Nordic countries and major industrial countries such as the US or the UK (see for instance Data Gupta et. al., 2006 for an overview), but there is little evidence from transition countries. Relatively generous maternity and paternal leave entitlement has been introduced in many

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[1] For 2005, Eurostat reports (http://epp.eurostat.cec.eu.int) on unadjusted gender pay gap in Slovenia of 8%, in Poland 10%, Hungary 11%, Romania 13%, and Bulgaria 16%. The average for "old" EU members (EU15) was 15%, while Baltic States, Czech Republic and Slovakia experienced somewhat higher gap. Educational advantage of women in CEE countries can be illustrated by Eurostat data on the share of employees with tertiary education. For 10 former socialist countries and current EU member states, there was 28% of female worker with tertiary education, as compared to 19% among male workers in 2005 (unweighted average). In "old" EU15 countries the female educational advantage was lower than in the CEE countries, with 31% of highly educated female workers versus 26% among male workers (unweighted average). The evidence that many of CEE countries have relatively generous maternity and parental leaves can be found, for instance, on web pages of the European Industrial Relations Observatory (www.eurofound.europa.eu/eiro).

transition countries in a completely different environment from the Nordic countries. Croatia, for example, has comparable length of leave, but dissimilarly low compensation rate, low labour mobility, weak job creation, a poor child care system, and a relatively strong role of a traditional lifestyle. Although the significant effect of children on the relative wages of women in Nordic countries is not found (see for example, Roseholm and Smith, 1996; Datta Gupta and Smith, 2002), a transition country case may prove the opposite.

The rest of the paper is organized as follows. Section 2 presents the methodology used. Section 3 describes the data and presents preliminary evidence on the wage distribution in Croatia. Discussion of major findings of the gender wage gap estimates made by quantile regressions and decomposition analysis is provided in Section 4. Section 5 explores the gender gap faced by mothers, as compared to other women. Section 6 concludes.

II. Methodology

The raw (unadjusted) wage gap, calculated as the difference between average wage of male and female workers, is the first indication of the underlying gender wage inequality. However, the observed wage differential between male and female employees could be caused by differences in the stock of human capital, which further implies different productivity. Many other possible factors could also determine this differential, some of which could be justifiable from the economic point of view. Regression estimates of the earnings functions are employed to check for the impact of these various factors.

The applied wage functions follow the standard Mincer-type specification (Mincer, 1974), where the log wage rate is regressed to the set of variables representing individual human capital characteristics of workers such as education and experience. Other variables are added to control for the effects of job and employer characteristics. The estimated coefficient on the gender dummy in this setting gives an indication of the gender wage gap.

Apart from the models estimated by the OLS, the quantile regressions are run to enable further insights into the wage structure. The quantile regression technique provides a powerful

tool to estimate wage equations.[2] We also apply Machado-Mata decomposition analysis to distinguish a part of gap that is due to male/female differences in returns from a part that is due to differences in labour market characteristics.[3]

Quantile Regressions

The quantile regression technique allows exploring the effect of each of the explanatory variables across the whole distribution, rather than just the effect upon the mean as is the case with the least squares estimates. Estimation procedure in the quantile regression model can be viewed as the problem of minimizing a sum of absolute residuals. Basically, the solution at different quantiles is found by asymmetrical weighting of absolute residuals. For the estimation at lower quantiles, the higher weights are given to the negative residuals, and the opposite is done at upper quantiles. Unlike some other estimation procedures aimed to characterize different parts of distribution, here the estimation is performed using all available observations.

The quantile regression model is formulated as:

$$\ln W_i = X_i' \beta_\theta + u_{\theta i}, \qquad Quant_\theta (\ln W_i \mid X_i) = X_i' \beta_\theta, \tag{1}$$

where $\ln W_i$ denote the log wage of worker i, X_i is a vector of explanatory variables, $X_{i1} \equiv 1$, and β_θ is a vector of coefficients. $Quant_\theta (\ln W \mid X)$ denotes θth conditional quantile of $\ln W$, conditional on the regressor vector X. Partial derivative of the conditional quantile of $\ln W$ with respect to regressor j, $\partial Quant_\theta(\ln W \mid X) / \partial x_j$ could be interpreted as a marginal change in the θth conditional quantile due to a marginal change in the jth element of X. Each of these derivatives is given just by $\beta_{\theta j}$, measuring the marginal change mentioned above. An interesting case appears if the $\beta_{\theta j}$ coefficients vary systematically across θ's, indicating that the marginal effect of a particular explanatory variable is not uniform across different quantiles of the conditional distribution of $\ln W$.

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[2] Studies using the quantile regression approach include, for example, Bushinsky (1994, 1998) for the analysis of the US wage structure, Machado and Mata (2001) for the wage structure in Portugal, and Garcia et al. (2001) for Spain. Newell and Reilly (2001) used this technique for studying the gender wage gap in transition countries.

[3] In empirical studies, Machado-Mata approach was used for instance in Albrecht et al. (2003) for Sweden, Arulampalam, et al. (2004) for the EU countries, de la Rica at al. (2005) for Spain, and Kee (2006) for Australia.

With respect to varying coefficients indicating the gender gap, quantile regression approach enables to explore two potentially important phenomenons - *glass ceiling* and *sticky floor*. Glass ceiling is the term used in the literature to describe an unacknowledged barrier that prevents women from advancing to positions of power and responsibility, or more generally to better-paid jobs. In contrast, the sticky floor can be viewed as a situation where the gender pay gap is larger at the bottom of the wages distribution. If one could find evidence of a widening gap at the upper end of the wage distribution, that could signal the presence of a glass ceiling, and if the gap is wider at bottom end of the distribution, a sticky floor could be in place.

Decomposition of the Gender Wage Gap

Wage regressions that include the gender dummy (without interactive variables) assume equal returns to observable characteristics for women and men, which may not hold in reality. Coefficients from wage regressions that have been estimated separately for women and men, if substantially different, point to the unequal rewards to labour market characteristics. This situation allows us to go a step further in depicting the gender wage gap by isolating a part of the wage gap that could be explained by the difference in observable productive characteristics between women and men, for example, education and experience, from the part which is due to the difference in returns to these characteristics between women and men. The different returns cannot be easily explained in a competitive setting and they are supposedly due to labour market discrimination or some unobserved characteristics of employees or jobs.

In order to decompose the gap into these two parts, we employ the methodology proposed by Machado and Mata (2005), which extends the Oaxoca-Blinder wage decomposition method to quantile regressions. The general idea is to generate the female wage distribution that would emerge if women were given men's labour market characteristics, but remained to receive returns to those characteristics like women. Such counterfactual distribution is compared with estimated male wage distribution.[4] The gap between identical men and women in terms of their characteristics could then be attributed to the unequal gender treatment.

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[4] Note that the decomposition could also be made with the counterfactual distribution calculated for women if they retain their own labour market characteristics, but supposedly are paid like men.

The decomposition of the difference between male and female log wage distributions is given by:

$$X^{m'}\beta_\theta^m - X^{f'}\beta_\theta^f = (X^m - X^f)'\beta_\theta^f + X^{m'}(\beta_\theta^m - \beta_\theta^f), \qquad (2)$$

where superscripts m and f stand for male and female, respectively. The first term on the right-hand side describes a part of the gap due to differing characteristics, while the second term is a part of the gap due to differing returns.

In this study, Machado-Mata bootstrap technique is applied with certain simplifications, as suggested by Albrecht et al. (2003). The estimation procedure can be summarized as follows:

1) Using the male and female data sets separately, quantile regression coefficient vectors β_θ^m and β_θ^f are estimated for each single percentile ($\theta = 1, \dots 99$).

2) From the male data set, the sample of size $M=100$ is drawn at random with replacement for each percentile. Total of M x 99 draws is made.

3) For each percentile, characteristics of the sampled males are used to predict wages by using the estimated coefficient vectors β_θ^m and β_θ^f. This process generates two sets of 9900 predicted wages covering the whole distribution and enables to calculate the wage distribution for male from the one set and the counterfactual wage distribution for female if they have had male characteristics from the other set.

4) The counterfactual gap is estimated by taking the difference between the calculated male and female wage distributions.

The procedure has been repeated 200 times in order to estimate standard errors for the calculated distributions.

The gap estimated by described procedure at various points of the wage distribution is the second part of the decomposed gender wage gap from equation (2). It points to the wage difference which women would face even if they had the same characteristics as men. This wage difference is due to differing rewards to labour market characteristics and it is labelled counterfactual gender wage gap.

For comparison, we calculate *the mean* counterfactual gap by employing Oaxaca-Blinder technique (Blinder, 1973; Oaxaca, 1973). Accordingly, the mean counterfactual gap is calculated as the difference between predicted average wages for men and predicted counterfactual average wage for women. Both predicted wages are calculated as a product of the average male labour market characteristics and the gender specific OLS coefficient estimates.

II. Data

Data description

The data employed in this study were obtained from the Croatian Labour Force Survey (LFS) for 1998 and 2005.[5] The Survey was carried out by the Central Bureau of Statistics (CBS) and administered to a random sample of Croatians living throughout the country. It collects information on the activity status of population, including information on individual characteristics such as gender, age, work experience and education but also on employer and job characteristics, such as the company size, industry, ownership status, occupation and working conditions. And, importantly for this study, the survey includes information on monthly wages for the main job and hours of work performed per week.

The survey is conducted on a semi-annual basis but we have pooled the two adjacent survey data to construct annual observations so as to increase the precision of estimates. The sampling procedure applied by the CBS allows data pooling. Namely, the LFS sample is actually chosen once for the whole year and then divided in two parts, one for each half of the year.

The 1998 LFS covers 38,533 resident individuals of all ages and employment status, while the 2005 LFS recorded the information on 31,636 individuals. A lower number of surveyed individuals in the latter year is the result of a higher non-response rate. For the purpose of this study, the sample was restricted to the employed persons. More precisely, we included only those over 15 years of age, who were in paid employment and were not self-employed. The

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[5] The Labour Force Survey is a relatively new survey instrument in Croatia, established in 1996. In order to examine changes in the structure of wages, we decided to use data for the first and the last year for which comparable and detailed individual information on wages, human capital, job and employer characteristics were available (i.e. 1998 and 2005).

latter is so because entrepreneurial skills and capital invested in self-employment generate remuneration that cannot be separated from payment for work. Occasional and family workers were also excluded as their earnings exhibit an unclear link to human capital attributes. A total of 10,066 individuals remained in the 1998 sample, and a total of 9,202 individuals in the 2005 sample.

Table 1: Descriptive statistics

	1998		2005	
	Male	**Female**	**Male**	**Female**
Observations	5,354	4,712	5,062	4,140
Mean Log Hourly Wage	2.59	2.45	3.08	2.95
	(0.43)	(0.43)	(0.44)	(0.43)
Quantile				
q10	2.05	1.93	2.53	2.42
q25	2.30	2.17	2.79	2.62
q50	2.57	2.46	3.06	2.93
q75	2.88	2.75	3.34	3.24
q90	3.09	2.95	3.62	3.44
Dispersion				
q(90)-q(10)	1.04	1.02	1.10	1.02
q(75)-q(25)	0.58	0.58	0.55	0.62
Age	38.63	36.88	39.78	39.39
	(10.56)	(9.66)	(11.39)	(10.33)
Work Experience (years)	17.23	15.07	17.89	16.68
	(10.41)	(9.47)	(11.29)	(10.51)
Tenure (years)	10.97	10.69	11.25	11.41
	(9.95)	(9.35)	(10.49)	(10.22)
Public Sector	0.63	0.60	0.41	0.44
	(0.48)	(0.49)	(0.49)	(0.50)
Years of Schooling	11.51	11.84	11.65	12.11
	(2.65)	(2.72)	(2.30)	(2.48)
Education Attainment				
Primary or Less	0.19	0.18	0.14	0.14
	(0.39)	(0.38)	(0.34)	(0.34)
Secondary	0.64	0.61	0.70	0.62
	(0.48)	(0.49)	(0.46)	(0.49)
Tertiary	0.17	0.21	0.16	0.24
	(0.37)	(0.41)	(0.36)	(0.43)

Note: Standard deviations are in parentheses. Log hourly wages are expressed in the current values of a given year.
Source: Author's calculations based on the 1998 and 2005 Labour Force Surveys.

Figure 1: Kernel Density Estimates of (Log) Hourly Wage by Gender
a) 1998   b) 2005
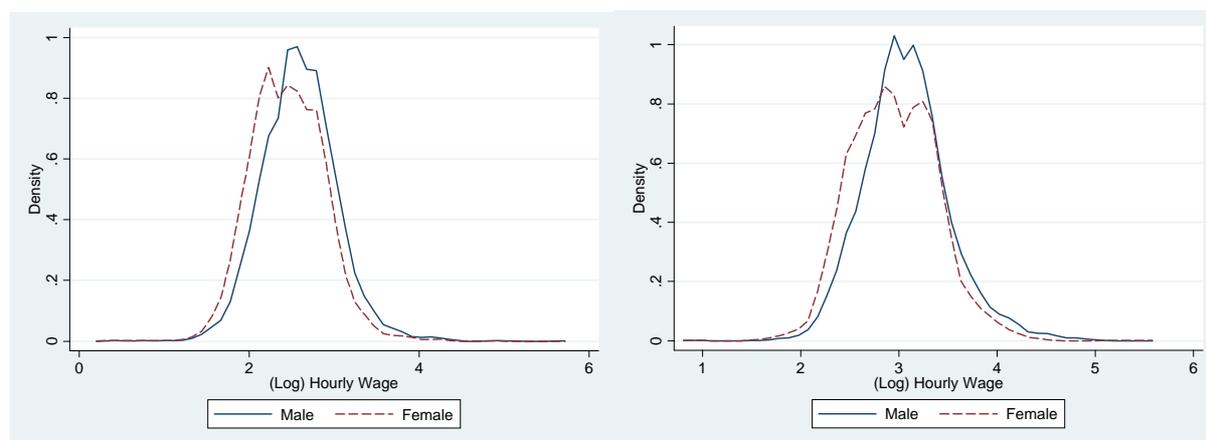
Table 1 presents the summary statistics of wage distribution for sampled individuals as well as the means and standard deviations of main variables used in the study. For 1998, there are 46.8% of women in the sample, while for 2005 their share was reduced to 45%. The difference between the mean log hourly wage for men and women in 1998 was 0.14 (2.59-2.45). This difference is called the raw gender gap and it will later be interpreted in terms of a percentage difference (14%) in spite of the fact that at larger values log wage differences deviates somewhat from the gap that can be calculated from the original values and expressed as a percentage. An increase in the average wage from 1998 to 2005 was higher for women then man, resulting in a slight decrease in the raw gender gap. A dispersion of male wages seems higher than that of female wages, if one looks at tails of the log hourly wage distribution such as the difference between the 90th and the 10th quantile (percentile) in both 1998 and 2005. But the opposite can be seen in 2005 in the middle of the distribution through a difference between the 75th and the 25th quantile, where female wages are more dispersed. Difference in the shape of male and female wage distributions in 1998 and 2005 are shown in Figure 1, where the density of observations is approximated by kernel density estimators.

The characteristics of employed men and women changed somewhat between 1998 and 2005. The average age of female workers increased by 2.5 years and came very close to that for male workers in 2005. That is somewhat surprising since retirement age for women is 5 years lower than that for men. Two explanations could be given here. One is the retirement of disabled persons due to war, prevailing in the male population, and the other is a longer

formal education of female population that postpones their labour market participation until the more advanced age. Better education attainment of employed women is seen in more years of schooling (12.1 against 11.6 in 2005), or in a higher portion of women with completed tertiary education (24% against 16% in 2005). Changes in the actual work experience follow those in average age. It should be noted that actual work experience for women is one year lower than that for men (in 2005) which could be considered a very low difference by international perspective. Tenure (the number of years with the same employer) increased between 1998 and 2005 for both male and female workers, reflecting a consolidation of the Croatian business sector. This also points to relatively weak labour flows. A decreasing share of employment in the public sector is a result of the ongoing process of privatization of the economy. It should be noted that the public/private sector distinction here is based here on the ownership status, where the public sector includes state-owned companies.

Preliminary Evidence on the Gender Wage Gap

An informative comparison between the wage distributions for men and women is provided by a quantile-quantile plot. This kind of graph relates quantiles of the variable on the vertical axis to quantiles of the variable on the horizontal axis. A point at the symmetry line indicates that a quantile of one distribution has the same value as the corresponding quantile of the other distribution. Figure 2 contains plots of male/female wage distributions for 1998 and 2005. The left panel of Figure 2 shows a quantile-quantile plot of the male and female log hourly wages in 1998. Most of the observations are slightly above the diagonal line, implying that wages for male workers are slightly higher than wages for female workers for comparable quantiles of the wage distributions. At lower to middle quantiles the difference is quite small, but when approaching higher quantiles, the male/female wage gap becomes larger. In other words, among higher-paid workers there is a larger relative discrepancy between male and female wages than among lower-paid workers. An even more pronounced effect is found in 2005. This evidence illustrates the importance of investigating wages at different points of the distribution.

Figure 2: Quantile-Quantile Plot of Log Wage Distribution by Gender

a) 1998   b) 2005
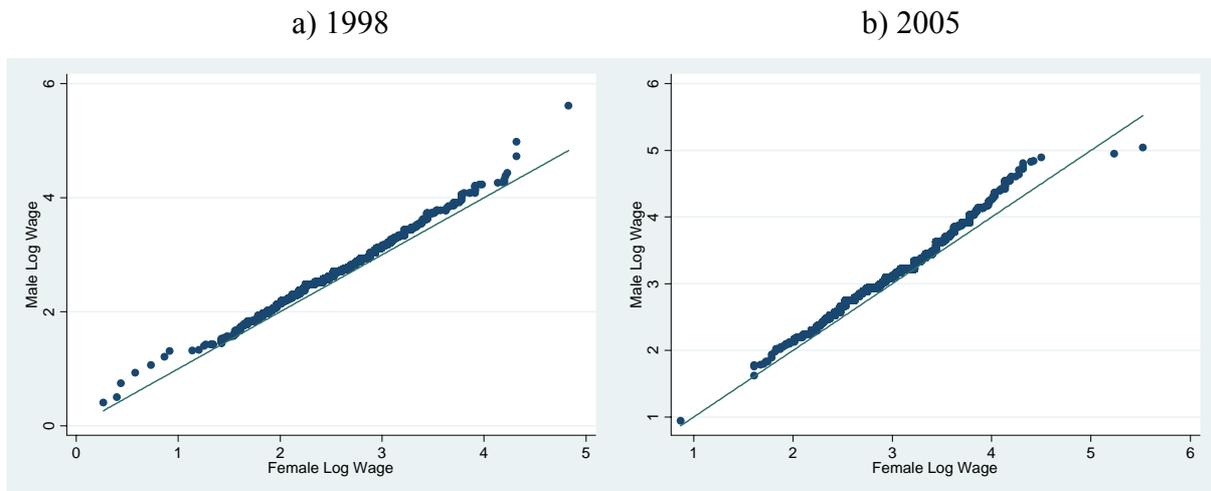
The raw gender wage gap is calculated as the difference in log hourly wages between female and male workers at various points of distribution. Selected results are presented in Table 2. At mean, the overall gap is a bit lower in 2005 than in 1998, and it is clearly higher in private sector than in public sector. The private/public sector discrepancy in the raw gender gap has increased from 1998 to 2005, when the gap in private sector reached 18.6%, as against 6.6% in public sector. In the public sector, the mean gap has reduced notably by 2005 due to its clearing from privatized firms and accordingly stronger influence of the budgetary part of the public sector which usually performs more equitable wage policy. The mean gender gap is generally lower as approaching higher levels of education. But, the gap for post-secondary education increased between 1998 and 2005. As economic background, Croatia has experienced stable economic growth in 2000s and entered the phase of mature transition after turbulent 1990s (including war of independence) that have caused stretching of the overall transition process. Wage setting mechanism in 2000s has become more and more market driven, where increased inequality in returns of various productive characteristics could be expected. Proximate stability of the mean raw gender gap is therefore good news in such environment.

Table 2: The Raw Gender Wage Gap by Sector and Education Level

	Mean	Quantile				
		10th	25th	50th	75th	90th
1998						
Total	-0.139	-0.123	-0.134	-0.116	-0.134	-0.145
Private sector	-0.169	-0.097	-0.134	-0.223	-0.223	-0.154
Public sector	-0.114	-0.203	-0.182	-0.093	-0.089	-0.092
Unfinished Primary	-0.198	-0.120	-0.141	-0.198	-0.239	-0.233
Primary (8-year)	-0.233	-0.173	-0.174	-0.203	-0.258	-0.300
Vocational secondary	-0.281	-0.182	-0.239	-0.304	-0.329	-0.357
General secondary	-0.119	-0.105	-0.148	-0.126	-0.113	-0.139
2-year college	-0.126	-0.031	-0.047	-0.087	-0.174	-0.154
College graduate	-0.147	-0.195	-0.105	-0.105	-0.174	-0.183
Postgraduate	-0.082	0.000	-0.065	-0.082	-0.043	-0.268
2005						
Total	-0.125	-0.105	-0.167	-0.134	-0.094	-0.182
Private sector	-0.186	-0.148	-0.174	-0.182	-0.182	-0.239
Public sector	-0.066	-0.123	-0.065	0.000	-0.090	-0.049
Unfinished primary	-0.152	-0.105	-0.152	-0.128	-0.159	-0.182
Primary (8-year)	-0.256	-0.134	-0.201	-0.261	-0.336	-0.288
Vocational secondary	-0.266	-0.211	-0.272	-0.231	-0.301	-0.308
General secondary	-0.138	-0.095	-0.134	-0.145	-0.118	-0.144
2-year college	-0.163	-0.033	-0.085	-0.112	-0.231	-0.375
College graduate	-0.167	-0.174	-0.118	-0.154	-0.223	-0.274
Postgraduate	-0.138	-0.041	-0.133	-0.121	-0.128	-0.377

Note: Raw gender wage gap is calculated as the difference of the log female and log male hourly wage.

The gender gap varies with the part of the distribution where it is observed. In the private sector, the gap is the lowest at the bottom end of the distribution and it increases as we move upward along the wage distribution (as an exception, in 1998 this is not observed at the 90th quintile). In 2005, the gap widens towards the upper tail of the wage distribution in the private sector, suggesting possible existence of a glass-ceiling effect. This effect needs to be confirmed in the analysis. In the public sector, the opposite tendency is found in 1998. In that respect, possible presence of sticky floor effects should be further explored. As for the gender wage gap at different levels of education, a larger gap is generally observed at higher quantiles of the wage distribution for all levels of education.

III.   Quantile Regression Estimates of the Gender Wage Gap

Wage regressions account for various factors that may explain differences in individual wages, including gender. The estimated coefficients for a gender dummy from wage regression captures the extent to which the wage gap between women and men remains

unexplained after checking for other individual, job and company differences. We refer to them as the gender wage gap. In this section, results from a series of quantile regressions on the pooled male and female datasets are presented first. Then, estimations from separate regressions for men and for women are shown in order to illustrate gender differences in returns to the labour market characteristics. Finally, results from the counterfactual decompositions are discussed.

Pooled Quantile Regressions

Table 3 presents regression results for the gender wage gap. Quantile regression estimates are shown at five points of the log hourly wage distribution; the 10th, 25th, 50th (median), 75th and 90th quantile. In order to take into account a correlation among the various quantile regressions, selected quantiles are estimated simultaneously, thus allowing a formal comparison of the coefficients describing different quantiles. Estimates of standard errors are obtained via bootstrapping, using 50 replications.[6] Ordinary least squares (OLS) regression estimates are presented for comparison.

The first row of Table 3 shows the gender gap in the regression specification without any control variables but gender. The coefficient estimated for the gender dummy is the raw gender gap and it is the same as the total log wage difference from Table 2. However, here we could assign standard errors to the estimated gap. Other results are organised around three models. Model (1) includes basic human capital control variables (education level, experience and experience squared). The extended model (2) aims to include other available variables representing the characteristics that count in the wage determination (employer size, sector, irregular working hours, rural area and immigrants) but without occupation.[7] The "full" model

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[6] In quantile regressions, the bootstrap standard errors could be preferable to those calculated analytically as suggested by Rogers (1992). In this study, estimation procedures are performed using the STATA software package.

[7] There are four dummies for company size, defined with respect to the number of employees. As immigrants we count persons who have come from abroad to the current place of residence after 1991, the year in which Croatia declared its independence. The dummy variable for non-regular working hours is defined in order to pick up the effect of unfavourable working conditions and takes the value 1 in two cases: (i) if one always works at nights, and (ii) if one sometimes works nights and sometimes on Saturdays and sometimes on Sundays. The public sector dummy variable is for individuals working in state-owned institutions and enterprises.

(3) is the same as extended one but including the set of occupational dummies.[8] Occupation is usually significant in accounting for the gender wage differences but it can be rather strongly linked to the educational attainment. Inclusion of occupation variables introduces potential problem with the endogeniety of explanatory variables. However, the advantage of having two otherwise identical models, one with and the other without occupation is that this enables us to account for the sole impact of occupational division on the gender wage gap.[9] Estimated coefficients for all the included variables in model (3) are presented in tables A1 and A2 in Appendix, while Table 3 presents coefficient estimates for the gender dummy i.e. the gender wage gap.

In the model that control for human capital variables, the mean gender wage gap (OLS estimate) is found higher than the raw gender wage gap, for both 1998 and 2005. The considerable increase is also found at 50th, 75th and 95th quantile. This result reflects much better educational attainment of employed women, especially among higher-paid jobs. In the situation where returns to education are the same for male and female workers (which is imposed by the pooled regression model) an educational advantage of employed women results in wider estimated gender wage gap as compared to the raw gap. Comparison of the gender gap in 1998 and 2005 once we control for education and experience points to its widening in 2000s at all observed points of the conditional wage distribution (for instance from 16.2% in 1998 to 18.2% in 2005, estimated at median)[10]. Further improvement in women's relative education attainment and narrowing of their experience disadvantage between 1998 and 2005 (see Table 1) did not contribute to considerable improvement in women's relative wages, as measured by the raw gender wage gap. This is not good news.

Inclusion of other control variables reduces somewhat the estimated mean gender wage gap in comparison with the model that includes basic controls. However, it appears that variations in

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[8] Occupation is actually represented by a set of dummy variables for each of the ten main occupation categories defined according to the standard (ISCO) classification.

[9] Some other control variables could be added too. Variables for industry affiliation are often considered in similar studies. Industry wage differentials might be substantial, but in Croatia it might be affected by ownership, since there are industries that are clearly dominated by state-ownership such as utilities, education, health care and public administration. Since this study is more interested in ownership effect that should be distinguished from industry effect, variables for industry affiliation are not incorporated in the analysis.

[10] A log-linear specification of the wage function allows us to treat the estimated coefficients (if multiplied by 100) as percentage changes in conditional hourly wage that is due to marginal change in regressor i.e. due to male/female switch.

other labour characteristics are important in explaining the gender wage gap, although not as much as education and experience. In 2005, inclusion of the broadest set of control variables in model (3) still leaves almost 17% of the gender wage differences unexplained on average, as compared to 19.3% in model (1) (OLS estimate). Occupation affected a portion of the gap in 2005, as indicated by notable narrowing of the gap between the model (2) and (3) at all observed parts of the distribution. For example, the gender gap at 10th quantile reduces from 12.9% to 10.4%. In spite of only 10 occupation categories considered, this result suggests that occupational segregation accounts for a part of the gender wage differential in Croatia.

Table 3: Gender Wage Gap Based on Pooled Quantile Regressions

	OLS	Quantile				
		10th	25th	50th	75th	90th
1998						
Raw Gender gap	-0.139	-0.123	-0.134	-0.116	-0.134	-0.145
	(0.009)	(0.018)	(0.011)	(0.021)	(0.010)	(0.019)
(1) Gap with education and experience as control variables	-0.163	-0.120	-0.132	-0.162	-0.180	-0.192
	(0.007)	(0.014)	(0.010)	(0.008)	(0.010)	(0.015)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.165	-0.121	-0.126	-0.153	-0.186	-0.210
	(0.007)	(0.014)	(0.009)	(0.008)	(0.008)	(0.015)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.160	-0.116	-0.130	-0.157	-0.177	-0.204
	(0.008)	(0.016)	(0.009)	(0.010)	(0.011)	(0.016)
2005						
Raw Gender gap	-0.125	-0.105	-0.167	-0.134	-0.094	-0.182
	(0.009)	(0.008)	(0.025)	(0.017)	(0.017)	(0.016)
(1) Gap with education and experience as control variables	-0.193	-0.146	-0.160	-0.182	-0.211	-0.235
	(0.007)	(0.012)	(0.010)	(0.009)	(0.009)	(0.015)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.184	-0.129	-0.158	-0.170	-0.206	-0.229
	(0.007)	(0.010)	(0.008)	(0.008)	(0.010)	(0.016)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.169	-0.104	-0.140	-0.168	-0.191	-0.217
	(0.007)	(0.011)	(0.009)	(0.010)	(0.011)	(0.016)

Note: Reported figures are the estimated coefficients for the gender dummy, followed by standard errors in parentheses. Statistics are computed using the bootstrap estimator. All the coefficients are statistically significant at a 1% level. Complete set of estimated coefficients for the specification (3) in the OLS and quantile regressions are presented in tables A1 and A2 in the Appendix.

Quantile regression results in Table 3 mostly show acceleration of the gender wage gap at higher quantiles, not depending much on the set of control variables included. For example, in 1998, at the 10th quantile, employed women earned about 11.6% less than men, but at the 90th quantile the gap widens to 20.4% in model with broadest set of control variables. In other words, in well-paid jobs, women are relatively more disadvantaged than in less well-paid jobs. An even higher disproportion between the gap in poorly-paid and well-paid jobs is observed for 2005.

To test if the differences in the estimated gender gap between various quintiles are statistically significant, we have run several interquantile regressions. Results are reported in Table 4. Differences in the gender dummy coefficients between the 90th and the 10th quantiles, as well as between the 75th and the 25th quantiles are statistically significant at 1% level for each model, suggesting that quantile regressions, in general, do a good job representing a range of effects along the wage distribution. By relying only on the average gender gap estimated by OLS we might have overlooked important features of the gap. The gender wage gap is shown higher at the upper tail of the distribution. The estimated difference between the gap at the 90th and 75th quantile of around 2.5% in 1998 and 2005 is significant at the 5% for the model that includes the broadest set of control variables, while statistical significance of the difference vanished in the model with basic human capital variables. Somewhat higher statistical confidence may be expressed for the differences in estimated coefficients on gender dummy at the 75th and 50th quantile. To a certain extent, the gender wage gap which is mostly shown significantly higher at the upper tail of the wage distribution confirms the presence of a glass-ceiling effect in Croatia.

Turning back to Table 3, we can now compare estimated gender wage gap in 1998 and 2005. There was only a minor increase in the gap from 1998 to 2005 in the model (3) on average as well as at most of the parts of the wage distribution (except at 10th quantile). However, in the model (2), which excludes the influence of occupational division, the gap is found to be notably higher in 2005 than in 1998 (18.4% vs. 16.5% on average). It appears that Croatian transition in 2000s has eventually brought certain increase in the gender wage gap adjusted for the number of labour market characteristics.

Table 4: Results of Interquantile Regressions

	90th -10th	75th – 25th	75th -50th	90th – 75th
1998				
(1) Gap with education and experience as control variables	-0.072***	-0.048***	-0.019**	-0.012
	(0.019)	(0.011)	(0.009)	(0.011)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.089***	-0.060***	-0.033***	-0.023*
	(0.020)	(0.010)	(0.009)	(0.012)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.089***	-0.046***	-0.019**	-0.028**
	(0.019)	(0.011)	(0.009)	(0.014)
2005				
(1) Gap with education and experience as control variables	-0.089***	-0.051***	-0.029***	-0.024
	(0.018)	(0.011)	(0.007)	(0.015)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.100***	-0.049***	-0.036***	-0.023*
	(0.020)	(0.010)	(0.008)	(0.013)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.112***	-0.051***	-0.023***	-0.025**
	(0.019)	(0.012)	(0.008)	(0.011)

Note: Reported figures are the estimated coefficients for the gender dummy, followed by standard errors in parentheses. Statistics are computed using the bootstrap estimator. * denotes statistical significance at the 10%. ** denotes statistical significance at the 5%. *** denotes statistical significance at the 1%.

Quantile Regressions by Gender

Rewards on the labour market characteristics may differ between for men and women rather than being equal as assumed in pooled quantile regressions. Quantile regression estimates performed separately for men and women can reveal this situation at various points in their respective distributions. Table 5 presents gender specific rewards to education and experience (i.e. their estimated coefficients) in the specification that also controls for firm size, occupation, and dummies for sector, urban/rural residence, non-regular working hours, and immigrants. Results are shown for 2005. Results for 1998 convey basically the same message and are not presented here to save space.

Table 5: Quantile Regressions by Gender, 2005

| | OLS | Quantile | | | | |
		10th	25th	50th	75th	90th
Women						
Experience	0.008***	0.009 ***	0.009 ***	0.008 ***	0.009 ***	0.008 ***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)
Exp sq. (/100)	-0.003	-0.011	-0.010 **	-0.003	-0.009 **	-0.006
	(0.004)	(0.006)	(0.005)	(0.003)	(0.004)	(0.008)
Primary	-0.026	0.017	-0.001	-0.023	-0.024	-0.017
	(0.059)	(0.078)	(0.074)	(0.046)	(0.071)	(0.249)
Voc. Secondary	0.056	0.142 *	0.074	0.056	0.038	0.025
	(0.059)	(0.080)	(0.071)	(0.046)	(0.069)	(0.246)
Gen. Secondary	0.122**	0.213 ***	0.116 *	0.132 ***	0.112 *	0.093
	(0.060)	(0.079)	(0.066)	(0.047)	(0.067)	(0.247)
2-year college	0.216***	0.335 ***	0.245 ***	0.221 ***	0.186 ***	0.183
	(0.061)	(0.089)	(0.069)	(0.051)	(0.072)	(0.242)
Uni. Graduate	0.305***	0.374 ***	0.333 ***	0.335 ***	0.280 ***	0.299
	(0.065)	(0.095)	(0.081)	(0.059)	(0.077)	(0.242)
Postgraduate	0.596***	0.610 ***	0.555 ***	0.594 ***	0.629 ***	0.560
	(0.088)	(0.115)	(0.107)	(0.107)	(0.101)	(0.372)
Constant	2.422***	2.004 ***	2.205 ***	2.400 ***	2.602 ***	2.768 ***
	(0.060)	(0.087)	(0.082)	(0.049)	(0.063)	(0.249)
Men						
Experience	0.017***	0.013 ***	0.015 ***	0.019 ***	0.020 ***	0.022 ***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Exp sq. (/100)	-0.033***	-0.022 ***	-0.028 ***	-0.038 ***	-0.039 ***	-0.041 ***
	(0.004)	(0.009)	(0.005)	(0.004)	(0.005)	(0.009)
Primary	0.069	0.127	0.111 ***	0.100 ***	0.060	0.102
	(0.060)	(0.085)	(0.047)	(0.044)	(0.057)	(0.119)
Voc. Secondary	0.160***	0.243 ***	0.232 ***	0.192 ***	0.131 **	0.154
	(0.060)	(0.086)	(0.044)	(0.044)	(0.056)	(0.123)
Gen. Secondary	0.233***	0.305 ***	0.272 ***	0.264 ***	0.222 ***	0.231 *
	(0.060)	(0.083)	(0.050)	(0.049)	(0.059)	(0.124)
2-year college	0.368***	0.392 ***	0.399 ***	0.390 ***	0.340 ***	0.434 ***
	(0.064)	(0.089)	(0.051)	(0.055)	(0.070)	(0.132)
Uni. Graduate	0.447***	0.538 ***	0.494 ***	0.436 ***	0.442 ***	0.515 ***
	(0.069)	(0.099)	(0.060)	(0.071)	(0.076)	(0.156)
Postgraduate	0.695***	0.713 ***	0.664 ***	0.597 ***	0.711 ***	0.933 ***
	(0.093)	(0.116)	(0.079)	(0.124)	(0.107)	(0.264)
Constant	2.461***	1.983 ***	2.224 ***	2.432 ***	2.645 ***	2.828 ***
	(0.059)	(0.086)	(0.054)	(0.049)	(0.057)	(0.122)

Note: Other control variables in regressions are firm size, occupation, and dummies for sector, urban/rural residence, non-regular working hours, and immigrants. Standard errors are in parentheses. * denotes statistical significance at the 10%. ** denotes statistical significance at the 5%. *** denotes statistical significance at the 1%.

The marginal returns to experience for men are considerably above the corresponding returns for women, and the difference grows at upper parts of the wage distribution, as suggested by the estimated coefficients on experience. First year of experience will bring a 1.7% higher wage on average to a man and 0.8% to a woman. At the 90th quantile, the corresponding rewards are 2.2% for men and 0.8% for women. However, at the actual work experience of

around 30 years men start to exhibit negative returns, while the wage-experience profile for women is found much flatter, as indicated by the estimated coefficients for experience squared. Therefore, women's experience at the later stages of working life is rewarded more than men's experience.

Women faced strikingly lower returns to education at all levels of education and at all points of the wage distribution. This is particularly the case for higher levels of education (i.e. post-secondary) and at the top of the wage distribution. For example, at the 90th quantile, the reward for a male employee who holds a university degree is estimated to be around 22% higher (i.e. 0.515-0.299) than the corresponding reward for a woman. Such a difference at median is estimated at about 10%.

Results presented in Table 5 suggest that returns to education and returns to experience are different for male and female in Croatia. This stresses the importance of accounting for gender specific returns to labour market characteristics in the gender wage gap estimation.

Counterfactual Gender Wage Gap

The counterfactual gender wage gap points to a part of the gap that is due to differing rewards to observed labour market characteristics. It is calculated as the difference between the male wage distribution and the counterfactual female wage distribution that would emerge if women were given men's labour market characteristics, but remained to receive returns to those characteristics like women. Table 6 shows estimates at various points of the wage distribution that are calculated following the Machado-Mata decomposition approach. Figure 3 portrays the main results for 1998 and 2005.

Firstly, we compare the raw gender gap (the first row for each year in the Table 6) with the estimated counterfactual gap calculated for the three regression specifications that are taken to be the same as in pooled regressions. The counterfactual gap for each specification is sizable. It is wider than the raw gap on average and at almost all observed points of the wage distribution (results at the 90th quantile are mixed). These findings indicates that i) there is a rather large "unjustifiable" gender wage gap which can be attributed to women's lower returns to labour market characteristics as compared to the men's returns, and ii) labour market characteristics of employed women are much better than that of employed men, which

explains way the raw (unadjusted) gap is lower than it would be case if women and men share the same distribution of characteristics as assumed when the counterfactual gap is estimated. For example, in 2005, at median and taking the broadest set of characteristics into the consideration, women earned around 22% less than men in spite of having the same characteristics as men. Women's higher-quality labour characteristics compensate for a part of the gap, so in unadjusted (raw) form we observe the gap of around 13% at median. The counterfactual gap that is wider than the raw one is not a common feature of advanced market economies and this reflects situations where women possess advantages in productive characteristics, mainly education, as it is often the case in the CEE economies.[11]

At the upper parts of the distribution, the counterfactual gap is more similar to the raw gender gap indicating that almost the entire raw gender gap can be accounted for by differing rewards. Also, there is now no evidence of glass-ceiling effect due to differing rewards by genders, which is seemingly in contrast with the finding based on the pooled regressions. Note, however, that the counterfactual gap assumes that women hold men's characteristics and that gender differences in characteristics cannot influence the result. Therefore, it appears that gender differences in education, experience and other observable factors in their combination with differing rewards account for the widening gender gap at the top of the distribution.

Comparison of the counterfactual gaps between 1998 and 2005, as calculated using the broadest set of control variables (Figure 3) shows modest changes, on average as well as in the shape of the gap across the wage distribution. In both years, average gender wage gap due to differing rewards on labour market characteristics is around 20%. The gap is somewhat higher at lower middle part of the distribution and it declines as we approach upper middle part of the distribution. This indicates that at relatively well-paid jobs, there is less "discriminatory" practice in giving different rewards for the same characteristics. In 2005, unlike in 1998, the counterfactual gap tends to increase a bit at the top of the distribution. Tentative explanation here can be that increasing role of private sector in observed transition period in Croatia has induced observed change since private sector usually penalizes women at upper parts of the distribution more than the public sector. Some more evidence can be found in the next section.

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[11] The counterfactual gap which is lower than the raw gap is found in Albrecht et al. (2003) for Sweden and de la Rica at al. (2005) for Spain.

The counterfactual gaps calculated for three specifications using different sets of control variables reveal the importance of occupation division in explaining the gap. There are notable differences in the estimated gap in model (2) and model (3), i.e. in specifications with and without the occupation dummy variables, as shown in Table 6. Adding the occupation increases the gender gap in low to middle part of the distribution, but decreases it a bit at the top of the distribution (90th quantile) in both 1998 and 2005. On average, the counterfactual gap increases after controlling for the occupation. This finding is counterintuitive at first sight and might indicate that the gender gap between occupations is less important than the gap observed within occupations. Clearly, the result is the function of the aggregations levels for occupations. We use 10 categories only and therefore within-occupation gap could be large.

Table 6: Counterfactual Gender Wage Gap

	OLS	10th	25th	50th	75th	90th
1998						
Raw Gender gap	-0.139	-0.123	-0.134	-0.116	-0.134	-0.145
	(0.009)	(0.018)	(0.011)	(0.021)	(0.010)	(0.019)
(1) Gap with education and experience as control variables	-0.167	-0.151	-0.180	-0.183	-0.158	-0.148
	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)	(0.010)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.167	-0.171	-0.182	-0.178	-0.155	-0.153
	(0.008)	(0.007)	(0.006)	(0.006)	(0.007)	(0.009)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.201	-0.221	-0.234	-0.235	-0.168	-0.109
	(0.010)	(0.008)	(0.006)	(0.007)	(0.009)	(0.010)
2005						
Raw Gender gap	-0.125	-0.105	-0.167	-0.134	-0.094	-0.182
	(0.009)	(0.008)	(0.025)	(0.017)	(0.017)	(0.016)
(1) Gap with education and experience as control variables	-0.200	-0.176	-0.209	-0.215	-0.181	-0.192
	(0.008)	(0.006)	(0.005)	(0.006)	(0.006)	(0.009)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as control variables	-0.187	-0.178	-0.188	-0.188	-0.172	-0.196
	(0.008)	(0.007)	(0.005)	(0.005)	(0.006)	(0.009)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation	-0.207	-0.201	-0.227	-0.223	-0.171	-0.182
	(0.010)	(0.009)	(0.007)	(0.006)	(0.008)	(0.011)

Note: Reported gap is based on female counterfactuals constructed by using male characteristics and female rewards. Standard errors are in parentheses. Statistics are computed using the bootstrap estimator. All the coefficients are statistically significant at the 1% level.

Figure 3: Counterfactual gender wage gap
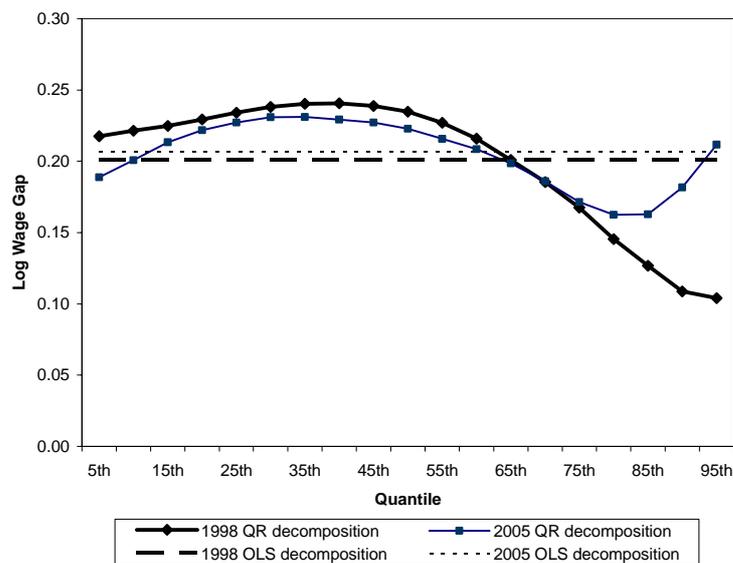
Note: Counterfactual gap calculated using the broadest set of control variables.

V. Gender Wage Gap for Women with Children

The gender wage gap could be affected by women's responsibility for children. From human capital point of view, wage effects of career interruption due to child bearing are connected with the loss of human capital accumulation or even depreciation in human capital during the period of absence. By expecting to take child-related leaves, women may choose jobs which both require less of continued skills upgrading and provide more family-friendly environment, but at the expense of lower wages. On the other side, employers may suffer from longer workers absence even if they do not cover compensations for child-related leaves, as it is the case in most countries. Employers face costs of hiring and training additional workers and may presumably expect less career commitment from their female employees. Therefore, they may be less willing to hire women and provide them high wages or offer them promotion. This effect may be more pronounced in countries with entitlements for long periods of child-related absence from work.

Empirical studies examining the wage effects of career interruption due to child bearing give mixed results. Some studies have found that career interruption and loss of human capital

accumulation due to lengthy leave have a negative impact on women's relative wages (Ruhm, 1998), while others find no permanent effect on the wage gap (Albrecht et al. 1999; Datta Gupta and Smith, 2002). The focus of these studies was on a comparison of wages between mothers and non-mothers. In the similar spirit, by comparing the gender wage gap between mothers and childless women, we explore whether women with children in Croatia are in a worse-off situation supposedly because of their extended absence from work due to child bearing.

Croatia is a country with relatively generous entitlement for child related leaves, more in terms of length of leaves and less in terms of compensations. Most women take one year leave after the childbirth. Mothers exclusively use the first six months of the leave (maternity leave), while the other six months (paternal leave) can be shared between the parents.[12] Mothers use virtually all parental leave and less than 1% is taken up by fathers. Women are often out of work for some time before childbirth, usually 45 days and possibly more, depending on medical considerations. In addition, mothers with young children can be absent from work as often as needed to take care of a sick child.[13] In all these circumstances, wages are compensated to a certain extent by the Health Insurance and by the State. However, compensation rate is rather low, up to 100% of the average Croatian wage for maternity leave, and even less for parental leave, up to 60% of the average.[14]

The wage effects of lengthy leaves have been studied for the Nordic countries where the overall system is generous, in terms of time, compensation rate and child care system. In Croatia only one part of the system is generous (length of leave), while the others are not so family-friendly (compensation rate and child-care system). Generous maternal and parental

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[12] For other features of the child birth related leave schemes in Croatia see Table A3 in Appendix.

[13] Lengthy absence from work in Croatia are reflected in the highest rate of health-related leave in Europe, almost 10 days per worker per year in 2004, as documented in European Foundation for Improving of Living and Working Conditions (2007). Gender division is not provided in the document, but it is highly possible that a notable part of that figure can be attributed to maternity and parental leaves, as well as leaves due to the care of sick child. Gender difference in absence from work can be illustrated by figures from the LFS data base. In 2005, in our sample of employees, there were 2.3% of man and 6.2% of women that were absent from work for more than one month at the time of the survey.

[14] Underdeveloped child day care schemes make labour market position of women with children even more vulnerable. Some 40% of children of pre-school age (0-6 years) are covered by child care (around 14% in 0-2 years age group), while relatively short opening hours is another limiting factor (Matkovic, 2007). School in Croatia starts typically at the age of 6-7 years and in-school child care arrangements are poorly developed. Schools have relatively short hours, and they often interchange the morning and early afternoon starts making day care of school age child even more complicated.

leave schemes have been found to increase women's participation in the labour market (see for instance Ruhm, 1998; Waldfogel, 1998; and Jaumotte, 2004). To a certain extent, the same seems to be true for Croatia (Table A4 in Appendix). In 2005, participation rate for women in prime child bearing age (25-40 years) is around 80% as compared with 90% for men in the same age group. There is only mildly lower participation rate for mothers than for childless women.[15]

We now turn to the gender wage gap and its relation to motherhood by looking for the evidence that mothers face different wage treatments compared to childless women Comparison of the wage gap between mothers and childless women cannot unambiguously confirm that the observed difference is due to child-related leave policies, but can illustrate possibly disadvantageous position of women with children.[16] It is also possible that private and public sector responses to lengthy leaves are different. The private sector is under stronger market pressures to economise and it is possible that employers, led by the efficiency consideration, compensate "inefficient" child-related leave of mothers by their lower wage and segmentation into poorly-paid jobs. Therefore, we distinguish private sector employers from the public sector employers.

Table 7 presents the gender wage gap for mothers with young children (less than 12 years old) and the gap for other women, both calculated against the male wages. The raw (unadjusted) gender gap in 2005 is around 23% on average for mothers with children and about 17% for non-mothers, both in the private sector. The substantial difference in the gap between these two groups of women is observed at different points of the wage distribution, where the gap considerably widens at the upper tail (at the 90th quantile). In the public sector, the raw gender gap was substantially smaller and there was virtually no difference in the gap for these two groups of women. At some points of the distribution an even better-off position of mothers is observed. These findings indicate the unequal wage treatment of mothers with young children in the private sector, especially at the upper part of the wage distribution.

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[15] Some other forms of mothers' self-selection seem weak in Croatia. In our sample of employees, only a fraction of women (0.5%) work less than 20 hours per week, and there is no significant difference between mothers and non-mothers. There is also no strong evidence for self-selection of mothers in public sector (Table A5 in Appendix).

[16] The leave scheme was roughly unchanged from 1998 to 2005 (the amount of allowance changed a bit, while student mothers and unemployed mothers are entitled for benefit only since mid-2004, too short period to be reflected in data for 2005) so we cannot look at differences in the wage gap which can be attached to changes in leave policy.

After controlling for education and experience in pooled OLS and quantile regressions with mother and non- mother dummies, the estimated gender wage gap for mothers working in the private sector increased a bit in 1998 and remained almost the same in 2005, both compared to the raw gap in the respective years (the second panel in Table 7). In both years, certain difference in the mean wage gap between mothers and other women is found in the private sector, but it is not statistically significant (at 5% level) either at mean, or at the 10th, 50th and 90th quantile. Inclusion of more control variables in the model resulted in mildly lower gender wage gap for both, mothers and non-mothers. In the "full" model (3), the wage disadvantage of mothers against non-mothers is mild on average, with widening at upper part of the distribution. However, the difference is statistically significant (at the 10%) only at 90th quantile in the private sector, in 1998 as well as in 2005, but not at the other observed points of the wage distribution. Results of pooled regression give us no clear evidence that employers in general impose a different wage treatment for mothers with small children, as against other women. However, private sector employers provide lower wages to mothers at the top of the distribution, as compared to childless women with otherwise comparable labour characteristics.

Decomposition analysis is a step further is exploring effects of children on women's wages by pointing to the gap that is due to the difference in returns to labour market characteristics. Figure 4 presents the results (see also Table A6 in Appendix). First of all, average gap for both mothers and childless women is lower in public sector than in the private sector in 1998 as well as in 2005. From 1998 to 2005, the average gap in private sector has increased, whereas it has substantially decreased in the public sector.

In the private sector, the counterfactual gap for mothers is higher that that for non-mothers all along the whole wage distribution in 1998, while in 2005 the opposite is found for the very low part of the distribution. On average, mothers are in the worse-off situation in both years, as compared to non-mothers. An increase in the wage gap for all women is found at the top of the distribution. In the public sector, relation between the gap for mothers and non-mothers is less clear. On average, the wage gap for mother is lower than the gap for non-mothers. However, the gap for women in general is found declining as we move up the wage distribution. A sticky floor for women in public sector might be in place due to their poor returns to the labour characteristics for low-paid jobs.

Table 7: Gender Gap Based on Pooled Quantile Regressions with Mother Dummy

	Private sector				Public sector			
	OLS	10th	50th	90th	OLS	10th	50th	90th
1998								
Raw gender gap								
Mother	-0.174	-0.087	-0.239	-0.154	-0.094	-0.105	-0.091	-0.118
	(0.018)	(0.029)	(0.010)	(0.043)	(0.015)	(0.033)	(0.032)	(0.037)
Non-Mother	-0.152	-0.087	-0.192	-0.154	-0.108	-0.154	-0.093	-0.077
	(0.016)	(0.029)	(0.021)	(0.027)	(0.012)	(0.034)	(0.025)	(0.025)
(1) Gap with education and experience								
Mother	-0.184	-0.123	-0.187	-0.265	-0.137	-0.110	-0.121	-0.159
	(0.016)	(0.032)	(0.018)	(0.030)	(0.013)	(0.018)	(0.011)	(0.018)
Non-Mother	-0.148	-0.096	-0.153	-0.214	-0.150	-0.108	-0.142	-0.181
	(0.014)	(0.028)	(0.015)	(0.021)	(0.010)	(0.017)	(0.009)	(0.019)
(2) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as controls								
Mother	-0.184	-0.122	-0.191	-0.264	-0.136	-0.096	-0.110	-0.177
	(0.016)	(0.038)	(0.019)	(0.033)	(0.013)	(0.021)	(0.011)	(0.025)
Non-Mother	-0.148	-0.102	-0.155	-0.217	-0.151	-0.111	-0.141	-0.196
	(0.014)	(0.026)	(0.013)	(0.021)	(0.010)	(0.019)	(0.010)	(0.016)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation								
Mother	-0.181	-0.127	-0.170	-0.271	-0.131	-0.089	-0.115	-0.159
	(0.016)	(0.034)	(0.017)	(0.028)	(0.012)	(0.021)	(0.016)	(0.027)
Non-Mother	-0.150	-0.113	-0.154	-0.199	-0.147	-0.109	-0.143	-0.169
	(0.015)	(0.027)	(0.019)	(0.031)	(0.010)	(0.017)	(0.013)	(0.022)
2005								
Raw gender gap								
Mother	-0.228	-0.174	-0.223	-0.357	-0.066	-0.088	0.000	-0.143
	(0.016)	(0.023)	(0.016)	(0.047)	(0.017)	(0.039)	(0.015)	(0.034)
Non-Mother	-0.166	-0.138	-0.182	-0.212	-0.066	-0.129	-0.025	0.000
	(0.014)	(0.023)	(0.004)	(0.050)	(0.013)	(0.034)	(0.021)	(0.028)
(1) Gap with education and experience								
Mother	-0.229	-0.160	-0.214	-0.294	-0.154	-0.092	-0.134	-0.182
	(0.014)	(0.026)	(0.015)	(0.023)	(0.014)	(0.028)	(0.016)	(0.026)
Non-Mother	-0.201	-0.127	-0.195	-0.261	-0.154	-0.107	-0.159	-0.204
	(0.012)	(0.016)	(0.010)	(0.028)	(0.010)	(0.018)	(0.013)	(0.020)
(1) Gap with education, experience, employer size, sector, immigrant, rural and non-regular working hours as controls								
Mother	-0.219	-0.165	-0.209	-0.246	-0.136	-0.088	-0.120	-0.176
	(0.014)	(0.026)	(0.018)	(0.033)	(0.014)	(0.027)	(0.014)	(0.023)
Non-Mother	-0.199	-0.140	-0.199	-0.229	-0.140	-0.098	-0.138	-0.191
	(0.012)	(0.017)	(0.012)	(0.021)	(0.010)	(0.020)	(0.010)	(0.019)
(3) Gap with education, experience, employer size, sector and other control variables incl. occupation								
Mother	-0.192	-0.131	-0.183	-0.251	-0.123	-0.053	-0.104	-0.171
	(0.014)	(0.022)	(0.019)	(0.023)	(0.014)	(0.020)	(0.017)	(0.020)
Non-Mother	-0.174	-0.127	-0.171	-0.209	-0.125	-0.068	-0.129	-0.180
	(0.012)	(0.021)	(0.015)	(0.024)	(0.011)	(0.019)	(0.012)	(0.015)

Note: Mother is defined by having at least one child under 12. Reported figures are the estimated coefficients for mother and gender dummies, followed by their standard errors in parentheses. Statistics are computed using the bootstrap estimator. All the coefficients are statistically significant at the 1% level.

Figure 4: Counterfactual Gender Wage Gaps for Mothers and Non-Mothers

1998

a) Private sector

b) Public sector

2005

c) Private sector

d) Public sector
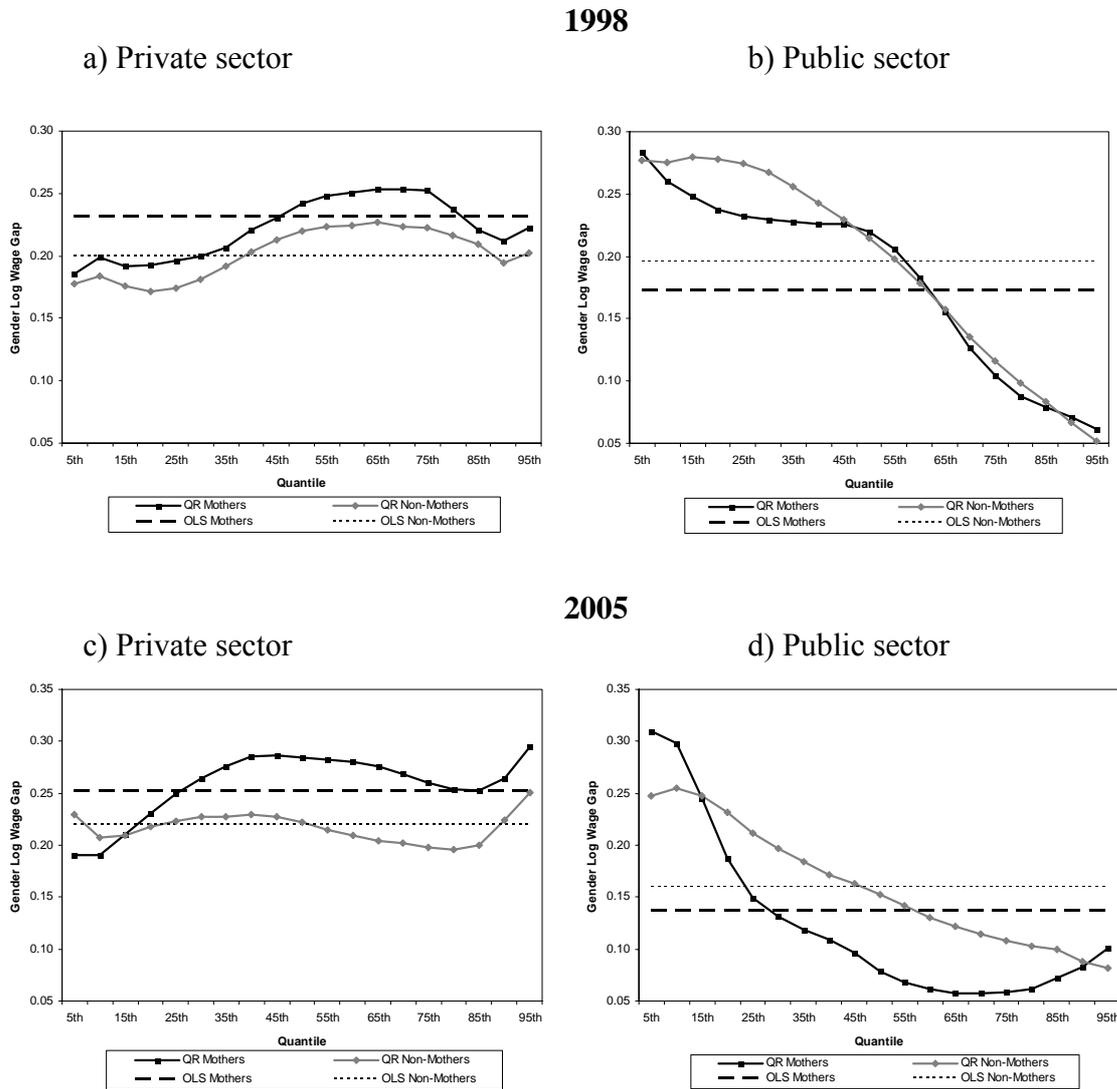
Figure 5: Difference in Counterfactual Gender Gaps between Mothers and Non-Mothers

a) Private sector

b) Public sector
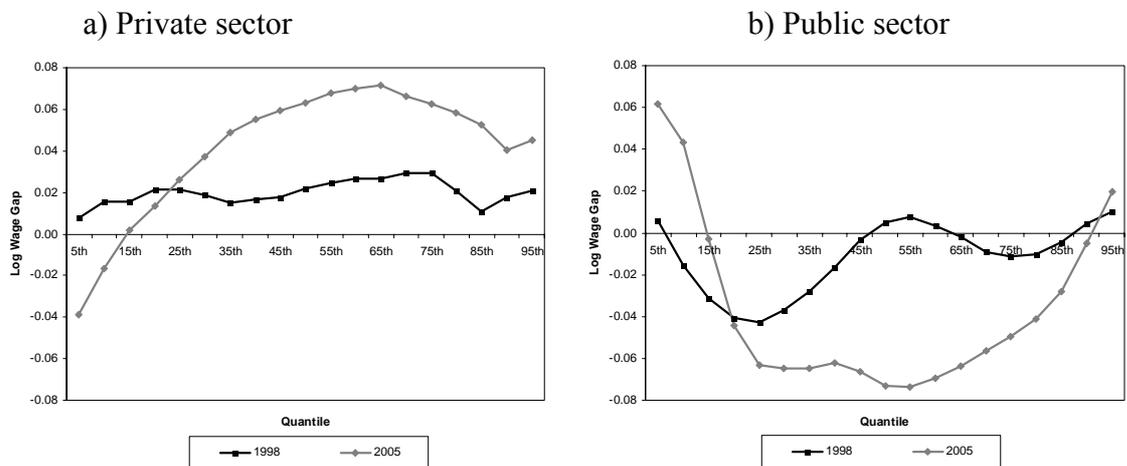
Difference between the counterfactual gaps for mothers and non-mothers that is shown in Figure 5 illustrates aforementioned findings. In 2005, mothers find themselves more disadvantaged than non-mothers in the private sector, especially at the central part of the wage distribution, while they are in comparatively better position in the public sector, notably at the middle of the distribution. In both sectors, the differences are more pronounced in 2005 than in 1998.

Private sector employers in Croatia are more restrained while providing wages for women with children. Lengthy absence from work might explain this finding. However, having in mind almost universal coverage of leave schemes in Croatia and situation where women take up almost all of the total leave period (share of men taking up parental leave is negligible), there may be negative effects of parental leave schemes on wages for all young women who are potential mothers, not only on mothers' wages, as pointed by Data Gupta and Smith (2002) for the case of Denmark. In separate set of gender wage gap estimates, we have compared the wage gaps calculated for young women (taken be of age under 40) with those for older women and find the same major findings as in comparison of the gap between mothers and non-mothers. Young women are faced with wider gap in the private sector, as compared with older women, while the situation in the public sector is less conclusive.[17] Therefore, we could speculate that it is not the actual absence from work due to child bearing that lowers women's relative wages, but their potential absence from work which leads to disadvantageous position for all the young women.

V. Conclusion

This paper provided a comprehensive profile of the gender wage gap in Croatia. The data employed in the study were taken from the Labour Force Survey for 1998 and 2005. Empirical evidence was based on utilization of quantile regression technique and the Machado-Mata counterfactual decomposition method. Our main finding is that women in Croatia have faced much lower market rewards to their human capital characteristics than men. In addition, employed women possess sizable educational advantage over men and

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[17] The results are not presented to save space. However, the complete set of the estimates are available from the author upon request.

relatively low and narrowing deficit in work experience. Therefore, relatively small raw (unadjusted) gender wage gap of 12.5% in 2005 hides much larger gender disparities.

The gender wage gap of around 19% on average in 2005 was estimated from the pooled regressions including control variables for education and experience Adding more control variables reduced the gap only modestly, to around 17%. This suggests that large part of the gender wage differences remains unexplained by observed individual, job and employer characteristics. In this setting, inclusion of occupation variables in the set of explanatory variables decreased the gap to a certain extent suggesting that occupational segregation might be important. The gender wage gap is relatively mild at the lower part of the wage distribution and is getting larger as we move towards the top of the distribution. Although of limited statistical significance, this finding indicates possible presence of a glass-ceiling in Croatia. It also appears that the gender wage gap adjusted for the labour market characteristics has increased between 1998 and 2005.

Regression estimates stratified by gender indicate that returns to education and experience are markedly different for men and women. Women face much lower returns and this kind of disparity is getting higher at upper parts of the wage distribution. Therefore, a counterfactual decomposition analysis has been undertaken in order to determine the part of the gap which results from the difference in returns to observed labour characteristics. It was found that the gap due to differing returns by gender is around 20% on average. This is probably the best measure of women's disadvantaged status in wage setting in Croatia since it is conditioned on the exactly the same characteristics for men and women. The gap due to differences in returns is largest at the middle of the distribution, relaxing thereby our previous finding on the presence of a glass ceiling. However, it seems that the interplay between differing returns and women's educational advantage at high-paid jobs produce a kind of a glass ceiling.

This paper has also explored the potential impact of motherhood on women's relative wages in Croatia. It was found that private sector employers provide lower wages to mothers with small children than to other women with the same observed labour characteristics. The difference was significant at the top of the wage distribution, but not otherwise. In the public sector, there was no clear evidence of different wage treatment between mothers and non-mothers.

The estimated gender wage gap for Croatia could be illustrative for many other countries in the Central and Eastern Europe. Relatively low raw gender wage gap widens after accounting for education, as women in many of these countries possess relative education advantage over men. Relatively generous parental leave policy gives women a strong incentive to participate in the labour market in their prime child bearing age. At the same time a strong career commitment is not easy to follow when the family policy is restricted to allow only for lengthy leaves, without other family-friendly measures for women's inclusion in the labour market, for instance affordable and flexible child day-care system. In situation where women take up almost all of the leave period and take the major responsibility for child rearing, the floor is open for wages for all young women to fall behind their male counterparts. Only more equitable sharing of family responsibilities between parents, including take up of parental leave, could significantly reduce the part of the gap that is due to child-related absence from work.

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APPENDIX

Table A1: OLS and Quantile Regressions, 1998

	OLS	10th	25th	50th	75th	90th
Female	**-0.160**	**-0.116**	**-0.130**	**-0.157**	**-0.177**	**-0.204**
	(0.008)	**(0.016)**	**(0.009)**	**(0.010)**	**(0.011)**	**(0.016)**
Experience	**0.007**	**0.006**	**0.006**	**0.008**	**0.008**	**0.009**
	(0.001)	**(0.002)**	**(0.001)**	**(0.001)**	**(0.001)**	**(0.002)**
Experience sq. (/100)	*-0.008*	-0.010	-0.006	**-0.009**	*-0.008*	**-0.009**
	(0.004)	(0.006)	(0.004)	**(0.003)**	*(0.003)*	**(0.006)**
Education (vs. unfin. primary)						
Primary	*0.056*	0.036	**0.074**	**0.082**	**0.090**	0.041
	(0.024)	(0.033)	**(0.027)**	**(0.027)**	**(0.025)**	(0.061)
Voc. Secondary	**0.134**	**0.106**	**0.144**	**0.152**	**0.174**	*0.128*
	(0.025)	**(0.032)**	**(0.029)**	**(0.029)**	**(0.027)**	*(0.060)*
Gen. Secondary	**0.212**	**0.181**	**0.224**	**0.246**	**0.262**	**0.227**
	(0.025)	**(0.033)**	**(0.027)**	**(0.030)**	**(0.026)**	**(0.060)**
2-year college	**0.333**	**0.392**	**0.370**	**0.330**	**0.327**	**0.313**
	(0.028)	**(0.044)**	**(0.030)**	**(0.033)**	**(0.032)**	**(0.068)**
University Graduate	**0.429**	**0.402**	**0.431**	**0.460**	**0.439**	**0.451**
	(0.032)	**(0.053)**	**(0.035)**	**(0.040)**	**(0.044)**	**(0.076)**
Postgraduate	**0.568**	**0.555**	**0.545**	**0.528**	**0.533**	**0.665**
	(0.051)	**(0.054)**	**(0.043)**	**(0.048)**	**(0.060)**	**(0.141)**
Occupation (vs. elementary)						
Plant/Machine Oper.	**0.044**	-0.018	*0.034*	**0.072**	**0.084**	0.039
	(0.015)	(0.032)	*(0.016)*	**(0.016)**	**(0.018)**	(0.029)
Craftsman	**0.067**	0.028	**0.056**	**0.071**	**0.092**	0.047
	(0.015)	(0.034)	**(0.016)**	**(0.015)**	**(0.021)**	(0.030)
Farming	-0.042	-0.077	-0.022	0.018	0.041	0.036
	(0.051)	(0.158)	(0.069)	(0.073)	(0.044)	(0.059)
Service&Sales	**0.036**	**0.011**	**0.045**	**0.050**	**0.072**	**0.013**
	(0.015)	**(0.029)**	**(0.015)**	**(0.014)**	**(0.019)**	**(0.031)**
Clerk	**0.204**	**0.203**	**0.209**	**0.212**	**0.226**	**0.178**
	(0.015)	**(0.027)**	**(0.015)**	**(0.015)**	**(0.019)**	**(0.029)**
Technician	**0.276**	**0.262**	**0.279**	**0.291**	**0.299**	**0.240**
	(0.016)	**(0.031)**	**(0.017)**	**(0.017)**	**(0.023)**	**(0.032)**
Professional	**0.381**	**0.374**	**0.385**	**0.371**	**0.438**	**0.353**
	(0.026)	**(0.044)**	**(0.026)**	**(0.027)**	**(0.035)**	**(0.056)**
Management &adm.	**0.566**	**0.519**	**0.506**	**0.514**	**0.659**	**0.756**
	(0.041)	**(0.062)**	**(0.035)**	**(0.041)**	**(0.069)**	**(0.111)**
Military	**0.593**	**0.521**	**0.627**	**0.639**	**0.623**	**0.542**
	(0.025)	**(0.075)**	**(0.050)**	**(0.042)**	**(0.022)**	**(0.052)**
Firm size (vs. <10 empl.)						
10-50 empl.	0.017	0.011	0.013	0.013	0.012	0.006
	(0.011)	(0.021)	(0.011)	(0.009)	(0.014)	(0.017)
50-200 empl.	0.005	-0.002	0.010	-0.008	-0.005	-0.003
	(0.011)	(0.018)	(0.012)	(0.011)	(0.012)	(0.017)
Over 200 empl.	**0.052**	**0.051**	**0.044**	**0.037**	*0.029*	0.026
	(0.011)	**(0.019)**	**(0.015)**	**(0.011)**	*(0.013)*	(0.019)
Public	**0.045**	**0.104**	**0.098**	**0.068**	**0.032**	*-0.025*
	(0.009)	**(0.012)**	**(0.009)**	**(0.008)**	**(0.011)**	*(0.012)*
Rural	**-0.058**	**-0.065**	**-0.062**	**-0.059**	**-0.061**	**-0.058**
	(0.008)	**(0.014)**	**(0.009)**	**(0.007)**	**(0.008)**	**(0.013)**
Non-regular hours	**0.059**	**0.058**	**0.049**	**0.046**	**0.084**	**0.085**
	(0.012)	**(0.020)**	**(0.013)**	**(0.010)**	**(0.013)**	**(0.020)**
Immigrant	-0.041	-0.074	-0.039	-0.011	-0.049	0.006
	(0.025)	(0.045)	(0.036)	(0.026)	(0.028)	(0.061)
Constant	**2.125**	**1.745**	**1.876**	**2.072**	**2.269**	**2.584**
	(0.026)	**(0.041)**	**(0.030)**	**(0.028)**	**(0.031)**	**(0.069)**
(Adj. R2) Pseudo R2	(0.3866)	0.1914	0.2379	0.2529	0.245	0.2316

Note: Bootstrap standard errors are in parentheses. Bold letters indicate statistical significance at the 1% level, whereas italics indicate statistical significance at the 5% level.

Table A2: OLS and Quantile Regressions, 2005

	OLS	10th	25th	50th	75th	90th
Female	**-0.169**	**-0.104**	**-0.140**	**-0.168**	**-0.191**	**-0.217**
	(0.007)	**(0.011)**	**(0.009)**	**(0.010)**	**(0.011)**	**(0.016)**
Experience	**0.013**	**0.010**	**0.011**	**0.014**	**0.015**	**0.015**
	(0.001)	**(0.002)**	**(0.002)**	**(0.001)**	**(0.001)**	**(0.002)**
Experience sq. (/100)	**-0.020**	**-0.015**	**-0.018**	**-0.022**	**-0.024**	**-0.023**
	(0.003)	**(0.006)**	**(0.005)**	**(0.003)**	**(0.003)**	**(0.006)**
Education (vs. unfin. primary)						
Primary	0.028	0.127	0.090	0.035	0.030	0.068
	(0.044)	(0.068)	(0.046)	(0.031)	(0.042)	(0.077)
Voc. Secondary	**0.128**	**0.240**	**0.204**	**0.138**	*0.113*	**0.131**
	(0.044)	**(0.070)**	**(0.047)**	**(0.032)**	*(0.046)*	**(0.079)**
Gen. Secondary	**0.201**	**0.303**	**0.244**	**0.219**	**0.196**	**0.211**
	(0.045)	**(0.070)**	**(0.049)**	**(0.031)**	**(0.046)**	**(0.077)**
2-year college	**0.320**	**0.442**	**0.378**	**0.330**	**0.292**	**0.331**
	(0.046)	**(0.077)**	**(0.049)**	**(0.036)**	**(0.053)**	**(0.084)**
University Graduate	**0.405**	**0.509**	**0.457**	**0.410**	**0.396**	**0.462**
	(0.050)	**(0.079)**	**(0.059)**	**(0.042)**	**(0.060)**	**(0.093)**
Postgraduate	**0.667**	**0.741**	**0.647**	**0.637**	**0.692**	**0.748**
	(0.066)	**(0.080)**	**(0.066)**	**(0.060)**	**(0.082)**	**(0.116)**
Occupation (vs. elementary)						
Plant/Machine Oper.	**0.042**	0.016	0.027	*0.046*	**0.072**	**0.077**
	(0.015)	(0.024)	(0.018)	*(0.019)*	**(0.021)**	**(0.029)**
Craftsman	**0.143**	**0.123**	**0.127**	**0.128**	**0.169**	**0.177**
	(0.016)	**(0.027)**	**(0.021)**	**(0.018)**	**(0.023)**	**(0.040)**
Farming	-0.001	-0.136	0.013	0.105	**0.137**	**0.203**
	(0.059)	(0.141)	(0.066)	(0.060)	**(0.028)**	**(0.062)**
Service&Sales	**0.063**	**0.073**	**0.057**	**0.071**	**0.093**	*0.086*
	(0.015)	**(0.020)**	**(0.016)**	**(0.016)**	**(0.020)**	*(0.034)*
Clerk	**0.221**	**0.220**	**0.231**	**0.217**	**0.246**	**0.276**
	(0.015)	**(0.029)**	**(0.022)**	**(0.017)**	**(0.024)**	**(0.034)**
Technician	**0.322**	**0.329**	**0.330**	**0.315**	**0.342**	**0.337**
	(0.016)	**(0.024)**	**(0.020)**	**(0.016)**	**(0.023)**	**(0.038)**
Professional	**0.464**	**0.427**	**0.402**	**0.413**	**0.512**	**0.544**
	(0.027)	**(0.043)**	**(0.039)**	**(0.032)**	**(0.042)**	**(0.046)**
Management &adm.	**0.676**	**0.522**	**0.576**	**0.662**	**0.857**	**0.864**
	(0.041)	**(0.046)**	**(0.053)**	**(0.031)**	**(0.066)**	**(0.057)**
Military	**0.344**	**0.454**	**0.344**	**0.321**	**0.285**	**0.336**
	(0.025)	**(0.042)**	**(0.037)**	**(0.029)**	**(0.037)**	**(0.077)**
Firm size (vs. <10 empl.)						
10-50 empl.	**0.062**	**0.096**	**0.061**	**0.050**	*0.028*	*0.039*
	(0.010)	**(0.016)**	**(0.012)**	**(0.011)**	*(0.011)*	*(0.017)*
50-200 empl.	**0.046**	**0.083**	**0.038**	**0.038**	*0.023*	0.035
	(0.011)	**(0.017)**	**(0.012)**	**(0.012)**	*(0.012)*	(0.019)
Over 200 empl.	**0.085**	**0.095**	**0.072**	**0.074**	**0.068**	**0.076**
	(0.011)	**(0.017)**	**(0.013)**	**(0.012)**	**(0.013)**	**(0.019)**
Public	**0.087**	**0.203**	**0.177**	**0.110**	**0.055**	**-0.020**
	(0.008)	**(0.013)**	**(0.012)**	**(0.010)**	**(0.011)**	**(0.015)**
Rural	**-0.056**	**-0.047**	**-0.056**	**-0.055**	**-0.054**	**-0.049**
	(0.007)	**(0.010)**	**(0.008)**	**(0.008)**	**(0.010)**	**(0.012)**
Non-regular hours	**0.087**	0.025	**0.066**	**0.084**	**0.100**	**0.154**
	(0.011)	(0.020)	**(0.015)**	**(0.010)**	**(0.015)**	**(0.023)**
Immigrant	*-0.050*	-0.055	**-0.064**	*-0.042*	-0.040	0.000
	(0.020)	(0.031)	**(0.024)**	*(0.020)*	(0.023)	(0.039)
Constant	**2.511**	**1.983**	**2.244**	**2.494**	**2.703**	**2.859**
	(0.044)	**(0.071)**	**(0.047)**	**(0.033)**	**(0.048)**	**(0.083)**
(Adj. R2) Pseudo R2	(0.4773)	0.2719	0.3096	0.3175	0.3053	0.3028

Note: Bootstrap standard errors are in parentheses. Bold letters indicate statistical significance at the 1% level, whereas italics indicate statistical significance at the 5% level.

Table A3: Maternity Leave, Paternity Leave and Parental Leave in Croatia, 2005

Length of Child Birth Related Leave	Benefits
Maternity: 45 days before the expected birth date (28 days mandated); 6 months after the birth (42 days mandated)	100% (min. HRK 1,663 per month, cca 40% of average wage; max. HRK 4,257 cca 100% of average wage)
Paternity: up to 7 days	100%
Parental: 6 months (with 2 additional months if the father takes at least 3 months leave);	Full-time fixed allowance of HRK 1,663-2,500 per month (cca. 40%-60% of average wage)
until 3 years of the child for twins, the third and any subsequent child;	Full-time fixed allowance of HRK 1,663 after the first year (cca. 40%of average wage)
until 3 years of the child	Unpaid (after the first year)

Note: Student mothers and unemployed mothers are entitled for 1 year maternity leave (or until 3 years of the child for twins, the third and any subsequent child) with fixed allowance of HRK 1,663 (cca. 40% of average monthly wage)

Table A4: Labour Force Participation (15-64 years)

	Men (25-40 years)	Other man	Mothers* (25-40 years)	Non-Mothers (25-40 years)	Other women
1998					
Participation rate	89.9%	60.7%	75.1%	83.4%	46.1%
Employment rate	80.8%	53.3%	66.7%	73.7%	40.0%
Unemployment rate	10.2%	12.2%	11.2%	11.7%	13.2%
2005					
Participation rate	89.3%	62.2%	78.5%	83.7%	47.7%
Employment rate	80.0%	54.3%	67.1%	70.5%	40.8%
Unemployment rate	10.4%	12.7%	14.5%	15.7%	14.4%

Note: *Refers to mothers with children of less than 12 years of age.
Source: Authors calculations based on the 1998 and 2005 LFS.

Table A5: Sector Composition of Employment

	Men (25-40 years)	Other man	Mothers* (25-40 years)	Non-Mothers (25-40 years)	Other women
1998					
Private sector (% of total)	39.0%	36.2%	40.4%	41.4%	38.6%
Public sector (% of total)	61.0%	63.8%	59.6%	58.6%	61.4%
No. of obs.	2,395	2,959	1,355	896	2,408
2005					
Private sector (% of total)	62.4%	57.3%	62.4%	62.1%	51.0%
Public sector (% of total)	37.6%	42.7%	37.6%	37.9%	49.0%
No. of obs.	1,978	3,084	977	760	2,403

Note: *Refers to mothers with children of less than 12 years of age.
Source: Authors calculations based on the 1998 and 2005 LFS.

Table A6: Counterfactual Gender Wage Gap for Mothers/Non-Mothers

	Private sector				Public sector			
	OLS	10th	50th	90th	OLS	10th	50th	90th
1998								
Raw gender gap								
Mother	-0.174	-0.087	-0.239	-0.154	-0.094	-0.105	-0.091	-0.118
	(0.018)	(0.029)	(0.010)	(0.043)	(0.015)	(0.033)	(0.032)	(0.037)
Non-Mother	-0.152	-0.087	-0.192	-0.154	-0.108	-0.154	-0.093	-0.077
	(0.016)	(0.029)	(0.021)	(0.027)	(0.012)	(0.034)	(0.025)	(0.025)
Gap with education, experience, employer size, sector and other control variables incl. occupation								
Mother	-0.233	-0.199	-0.242	-0.212	-0.173	-0.260	-0.220	-0.071
	(0.025)	(0.015)	(0.010)	(0.019)	(0.028)	(0.017)	(0.012)	(0.013)
Non-Mother	-0.199	-0.183	-0.220	-0.194	-0.196	-0.275	-0.214	-0.066
	(0.025)	(0.013)	(0.010)	(0.020)	(0.028)	(0.014)	(0.011)	(0.015)
2005								
Raw gender gap								
Mother	-0.228	-0.174	-0.223	-0.357	-0.066	-0.088	0.000	-0.143
	(0.016)	(0.023)	(0.016)	(0.047)	(0.017)	(0.039)	(0.015)	(0.034)
Non-Mother	-0.166	-0.138	-0.182	-0.212	-0.066	-0.129	-0.025	0.000
	(0.014)	(0.023)	(0.004)	(0.050)	(0.013)	(0.034)	(0.021)	(0.028)
Gap with education, experience, employer size, sector and other control variables incl. occupation								
Mother	-0.253	-0.190	-0.285	-0.264	-0.138	-0.298	-0.079	-0.083
	(0.027)	(0.013)	(0.010)	(0.025)	(0.042)	(0.020)	(0.010)	(0.013)
Non-Mother	-0.220	-0.207	-0.222	-0.224	-0.160	-0.255	-0.152	-0.088
	(0.027)	(0.012)	(0.009)	(0.018)	(0.042)	(0.014)	(0.008)	(0.016)

Note: Mother is defined by having at least one child under 12. Reported gap is based on counterfactuals constructed using male characteristics and female rewards. Standard errors are in parentheses. Statistics are computed using the bootstrap estimator. All the coefficients are statistically significant at the 1% level.