SP DISCUSSION PAPER NO. 0837

46851

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December 2008

Social Protection & Labor

THE WORLD BANK

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Abstract

This paper relies on simple framework to understand the gender wage gap in FYR Macedonia and then simulates how the gender wage gap would behave after the introduction of a minimum wage. First, it presents a new – albeit simple –decomposition of the wage gap into three factors: (i) a wage level factor, that measures the extent to which the gender gap is driven by differences in wage levels among low-skilled workers of opposite sex; (ii) an skills endowment factor, that quantifies the extent to which the gender wage gap is driven because the share of high-skilled workers differs by gender; and a (iii) returns to education factor, that measures the extent to which the gender gap exists is driven by differences by gender in returns to education. Second, the paper presents simple set of simulations that indicate that the introduction of a minimum wage in FYR Macedonia could contribute to decrease the gender wage gap by up to 23%. Nevertheless, in order to get a significant improvement in the wage gap a rather high minimum wage may required, which may contribute to reductions in employment.

JEL classification: J38, J23, J71, I32

Key words: Minimum wages, Gender Gap, Wage Differentials, FYR Macedonia.

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[*] The author acknowledges support from grant TF094614 from the Gender Action Plan at the World Bank, as well as comments and suggestions from Victor Macias, Arvo Kuddo, Jan J. Rutkowski, Jane Armitage, and Gordon Betcherman. The views expressed here are those of the author and need not reflect those of the World Bank, its Executive Directors or the countries they represent.

1. Introduction

This paper relies on simple framework to understand the gender wage gap in FYR Macedonia and then simulates how the gender wage gap would behave after the introduction of a minimum wage.

A recent labor market assessment conducted in the country by the World Bank (Angel-Urdinola and Macias, 2008) indicates that female labor force participation in FYR Macedonia (at 49%) is one of the lowest in the ECA region (an significantly lower than that of males, at 75%). The authors find that low labor force participation for women is mainly explained by very low participation rates among women with low levels of education. While there are cultural values affecting the choice of low-educated women to engage in domestic production, especially among women from Albanian origin; low market wages, high reservation wages, and harsh employment conditions seem to be important exclusion determinants influencing uneducated women to stay at home (CRPM, 2008). According to the law (Article 108 in the labor relations law of 2005) employers shall be obliged to pay equal salary to employees for equal work with equal responsibilities at the position, regardless of their gender. However, estimates in this paper indicate that a large wage gap exist between men and women that is not necessarily explained by labor segmentation (whereby women enter sectors offering lower-pay) nor by differences in return to education by gender, but more likely by discrimination (whereby men in similar sectors, with similar education, and doing similar jobs earn higher wages than their female counterparts).

Angel-Urdinola and Macias (2008) find that low labor mobility, especially among low skilled women, strengthens the sense of "local" (and non-convergent) labor markets whereby differences in employment outcomes across regions are quite large. Nevertheless, workers – especially women – seem not to move from worse to better performer regions in order to seek better job opportunities. These combined factors are generally prevalent in labor markets where firms have monopsonistic power. The implication of this is that firms may be paying women workers below their marginal product of labor, which causes the supply of labor to be below that in a competitive setting (a feature that may be affecting women disproportionally). Indeed, in some regions in FYR Macedonia, a large share of working women is employed by a few large textile companies. These women claim having to accept jobs with very precarious conditions (in terms in pay, safety, and working hours) due to lack of alternative employment opportunities (CRPM, 2008).

If indeed low-educated workers in FYR Macedonia, especially women, face a monopsonistic market; standard economic theory would indicate that the introduction of a minimum wage above the monopolistic wage but below the competitive market wage would likely increase employment without causing additional unemployment (Aaronson et al., 2008; Kaas and Madden, 2008; Joshi and Paci, 1998). While the introduction of a minimum wage in the private sector has been a policy already considered in FYR Macedonia, it has not been introduced.[1] This is because minimum wage policy is heavily

[1] Article 107 in the labor relations law specifies that an employee's salary for carrying out full-time work may not be lower than the minimum salary determined by law and collective agreement. However,

influenced by political factors, such as aggressive lobbing by the textile industries (which strive to remain competitive in the global textile market) and fears that the level of the minimum wage, once introduced, would tend to increase rapidly to the point that it may create negative effects in employment growth (Angel-Urdinola, 2008; Brown et al., 1982; Horrigan and Mincy, 1993; Machin and Manin, 1994; and Card and Ashenfelter, 1999). Furthermore, the introduction of a minimum wage in FYR Macedonia, being it the country with the highest unemployment in Europe (at 36%), seems a risky move; especially at a time when the government is moving towards making its labor market more flexible by reducing labor costs and tax wedges (Leibfritz, 2008). On the other hand, FYR Macedonia is the process to accession to the EU and thus looks to comply with the Lisbon Agenda, which targets female labor force participation rates of 60% for EU-member countries. As such, the introduction of a minimum wage as a tool to increase low wages and thus female labor supply – especially among low-skilled women – constitutes a policy option.

This paper has two main contributions. First, it presents a new – albeit simple – framework that decomposes the wage gap into three factors: (i) a wage level factor, that measures the extent to which the gender gap is driven by differences in wage levels among low-skilled workers of opposite gender; (ii) an skills endowment factor, that quantifies the extent to which the gender wage gap is driven because the share of high-skilled workers differs by gender; and a (iii) returns to education factor, that measures the extent to which the gender gap is driven by differences in returns to education by gender. Second, the paper presents simple set of simulations that suggest that the introduction of a minimum wage could contribute to a decrease in the gender wage gap of up to 23%. The intuition of this result is very simple: low-skilled women earn much less than low-skilled men, despite rather low segmentation and higher returns to education. A simple Oaxaca decomposition indicates that most of the wage gap among low-educated workers is due to unexplained factors (generally associated with discrimination; among other unobservable factors). The introduction of a minimum wage will likely be more binding for low-skilled/low-pay female workers and thus would contribute to increase their wages relative to those of males. However, these results should be treated with care. In particular, results in this paper indicate that in order to obtain a reduction in the wage gap that is statistically significant, a rather high level of the minimum wage (close the median wage) may be needed. A high minimum wage (set above the market-clearing price of labor) could lead employers to move back along their demand curves, causing a reduction in employment.

The paper is structured as follows. Section 2 describes the data used and presents simple descriptive statistics to quantify labor market segregation and discrimination. Section 3 presents a simple decomposition, which serves as a descriptive tool to analyze the gender wage gap. Section 4 discusses the results of the decomposition and quantifies (through simulations) the effects of introducing a minimum wage in the wage gap. A brief conclusion follows.

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minimum wages are not enforced in the private sector and are currently set unilaterally by the Ministry of Labor and Social Protection as benchmark to determine the salary grid for public servants.

2. Data and descriptive Statistics

This paper uses data for year 2006 from the national Labor Force Survey (LFS) conducted by the FYR Macedonian State Statistical Office (SSO). The Survey includes a rotational panel, whereby households are interviewed more than one time during a year. The sampling frame, based on the 2002 Census, is stratified, rotational, two stage random and nationally representative. The data contains basic information on demographics, education, and labor market outcomes for individuals 15 years old and plus. Our sample includes approximately 6,536 working men and 4,445 employees between 15 and 64 years old. Due to the nature of the study, unpaid and self-employed workers are not included in the sample. About 77% of the sample is made of low-skilled workers, as defined as those with less than complete tertiary education. Most workers in the sample work in manufacturing (28%), wholesale (12%), public administrations (10%), and education/health/social services (16%); which constitute the largest industries providing employment in FYR Macedonia. More detailed descriptive statistics by gender, age-group, region, education, and industry of employment are presented in Table 1.

An interesting feature of the labor market in FYR Macedonia is the existence of a large wage gap between men and women. Figure 1 plots the cumulative density function (CDF) of hourly wages for both men and women. The figure illustrates that the men's CDF stochastically dominates that of women, suggesting that at all points of the wage distribution males earn higher wage rates than their female counterparts. On average, unconditional estimates indicate than men earn wages that are 25% higher than women.[2]

Table 2 provides descriptive statistics on population shares and wage rates by gender and education for all employees. An interesting result is that gender wage differentials between men and women are large, especially among low-skilled workers in the private sector. A simple Oaxaca decomposition (Oaxaca, 1973) indicates that only 17.4% of the gender gap among low-skilled workers is explained by differences in endowments between men and women while the remaining 82.6% of the gap is unexplained; which is generally attributed to the existence of discrimination (and/or other unobservable factors) in the labor market.

Large gender wage gaps among less skilled workers could be explained by labor market segregation (Becker, 1971; Bergman, 1974; Johnson and Stafford, 1998) to the extent that women are more likely to work in low-pay sectors than men. Table 3 provides simple descriptive statistics on wage differentials and gender segregation by industry of employment. Results in Table 3 indicate that while there is some gender segregation in FYR Macedonia – with men (women) being more segregated in the manufacturing and construction (education/heath/and social services) – overall segregation is not high. Indeed, the index of dissimilarity (one of the most used statistic for segmentation) by

[2] Similar results using a standard Mincer equation on the natural logarithm hourly wages – controlling for gender, age, age squared, education, region, and industry of employment and other interaction terms between a gender dummy and education categories – indicate that the gender gender wage gap for employees is about 27.3%. These results are available upon request. Also refer to Angel-Urdinola and Macias (2008) for similar estimates.

industry is only at 0.33.[3] Results indicate that the gender wage gap is quite high in segregated industries such as manufacturing and construction (at 32% and 58% respectively), as well as in non-segregated industries such as wholesale, hotels/ restaurants, and agriculture (oscillating between 15 and 56%). Finally, the gender wage gap is rather small (5 to 7%) among employees working in utilities (electricity, water, and gas) and transport and communications, both which are generally men-segregated industries. The aforementioned results indicate a rather weak correlation between gender segregation and the gender wage gap in FYR Macedonia.

3. A framework to decompose the gender wage gap.

This section presents a new – albeit simple – framework that decomposes the wage gap into three factors: (i) a wage factor, that measures the extent to which the gender gap exists because wages among low-skilled women are below those of low-skilled men; (ii) a segmentation factor, that quantifies the extent to which the wage gap exists because the share of high-skilled workers differ by gender; and (iii) a returns to education factor, that measures the extent to which the gender gap exists due to differences by gender in returns to education.

The workforce is made up low-skilled (*L*) and high-skilled (*H*) workers that can be male (M) or female (F). Let $i = \{H,L\}$ and $j=(M,F)$. Let S_i denote the share of workers by gender where $\sum_j S_j = 1$ and let S^i denotes the share of workers by skill level where $\sum_i S^i = 1$. The share of workers according to their gender and skill level is denoted by s_j^i, with $\sum_i \sum_j s_j^i = 1$, $\sum_i s_i^j = S_j$, and $\sum_j s_i^j = S^i$.

Let w_j^i denote the average wage rate for individuals with skills *i* and gender *j*; where $w_j^H \geq w_j^L$. Returns to high-skilled workers by gender – a proxi for returns to education –, denoted by r_j, is defined as:

$$r_j = \frac{w_j^H - w_j^L}{w_j^L} \tag{1}$$

Let's denote the average wage in the labor market as:

$$\overline{W} = \sum_j S_j \overline{w}_j \,, \tag{2}$$

where

$$\overline{w}_j = w_j^H \left(\frac{s_j^H}{S_j} \right) + w_j^L \left(\frac{s_j^L}{S_j} \right). \tag{3}$$

[3] The index is a measure from 0 to 1, where the higher the number, the more segregated the two groups are. The formula for computing the Index of Dissimilarity by industry is $D = 0.5 \times \left| (M_i / M) - (F_i / F) \right|$ where M (F) is the male (female) population of employees and M_i (F_i) is the male (female) population of employees in industry *i*.

By adding and subtracting the term $w_j^L\left(\frac{s_j^H}{S_j}\right)$ and by multiplying and dividing by w_j^L both terms in the right side of (3) and simplifying, we can obtain a formula to calculate the average wage rate by gender $\overline{w}_j$ as follows:

$$\overline{w}_j = w_j^L\left(\frac{s_j^H}{S_j}\right)\left(\frac{w_j^H - w_j^L}{w_j^L}\right) + w_j^L\left(\frac{s_j^L}{S_j} + \frac{s_j^H}{S_j}\right) = w_j^L\left(1 + \frac{s_j^H}{S_j} r_j\right) \qquad (4)$$

Equation (4) indicates that the average wage by gender is equal to the average wage of their low-skilled workers times a "high-skills premium factor" (normally greater than one) that depends on the returns to high skill labor, r_j, and on the share of high-skilled workers in the labor market, denoted by s_j^H / S_j. The share of high-skilled workers is our proxi for labor market segmentation according to the worker's skills level.

Let's also define the gender wage gap as:

$$GAP = \left(\frac{\overline{w}_M - \overline{w}_f}{\overline{W}}\right) \qquad (5)$$

Replacing (4) into (5), we get a simple decomposition of the gender wage GAP:

$$GAP = \frac{w_M^L}{\overline{W}}\left(1 + \frac{s_M^H}{S_M} r_M\right) - \frac{w_F^L}{\overline{W}}\left(1 + \frac{s_F^H}{S_F} r_F\right) \qquad (6)$$

Equation (6) decomposes the gender wage gap into three main factors:

1. Wage level of low-skilled workers: proxied by $w_j^L / \overline{W}$
2. Segmentation: share of high-skilled workers by gender, proxied by s_j^H / S_j
3. Returns to education: proxied by r_j:

The decomposition presented by equation (6) is useful to simulate changes in the wage gap due to policies that affect the wage level of low-skilled workers relative to the population and labor market segmentation (through investments on education, for instance). Within the proposed framework, returns to education by gender as given by the labor market.

Note that equation (6) could have been written using the wages of high-skilled workers as basis for the analysis. The choice of writing equation (6) in terms of the wages of low-skilled workers is rather opportunistic as it provides an advantage for analyzing changes in the wage level the low-skilled workers after the introduction of a minimum wage.

To simulate the effect of the introduction of the minimum wage, we assume full compliance so that all workers earning below or at the minimum wage would earn at the minimum wage after its introduction, so that:

$$w_{ij}^{c} = MW \quad \text{if } w_{ij} \leq MW \,, \tag{7}$$

where c denotes the counterfactual wage of worker of level of skills *i* and gender *j* after the introduction of a minimum wage. Simulations re-calculate the "counterfactual" wage gap using the new level of individual wages as specified by equation (7). While full compliance is a rather hard assumption, in practice is rarely achieved. As a consequence, the results of the simulations presented here are likely to overestimate the impact of minimum wages on the wage gap.

4. Results

This section analyses the gender wage gap in FYR Macedonia based on the framework presented in section 3 and then simulates the effect of introduction of a minimum wage in the gender wage gap. Table 4 provides the results of the decomposition. The first row in Table 4 presents the average wage for low-skilled employees (by gender) as a proportion of the average wage. A value 1.03 for low-skilled males indicates that this group earns wage rates that are 3% above average. The same value is at 0.71 for females, suggesting that this group earns 20% lower wage rates than average. Columns 2 and 3 in Table 4 indicate that this same feature occurs among employees in the private and non-private sectors. [4]

The second row in Table 4 presents the share of high-skilled workers by gender. As expected, the share of high-skill workers in the non-private sector is larger than in the private sector (this is probably driven by the fact that workers in the public sector tend to be more educated). Interestingly, the share of high-skilled employees is higher among women (19% among women vs. 28% among men), especially in the non-private sector (28% among women vs. 44% among men).

The third row in Table 4 quantifies the returns to education of high vs. low-skilled workers by gender. Results indicate that female employees display higher returns to education than male employees, especially in the non-private sector: wages of high-skilled males (females) are 38% (71%) higher than those of low-skilled males (females). The fourth row in Table 4 display a "high-skills premium factor", based on both education endowments and returns. Results indicate that this factor is generally higher for women (1.20 vs. 1.07 for men), mainly in the non-private sector (1.26 vs. 1.14 for men).[5]

By multiplying the values in column (1) times the values in column (4) we get a number – call it a gender factor. The gender wage gap can be calculated as the male factor minus the female factor. For male employees, the factor equals 1.10 (the higher the number the better). The factor for women equals 0.85. The value of the factor for men (1.10) minus the value of the factor for women (0.85) equals to the wage gap (0.25 or 25%). Results of the decomposition indicate important differences between private and non-private employees. In particular, among private employees the advantages in wage levels enjoyed by low-skilled men over low-skilled women are offset by advantages

[4] The choice of doing independent analysis for the private vs. non-private sector is not innocuous. Angel-Urdinola and Macias (2008) find important differences in earning by gender and in returns to education in the private vs. non-public sectors.

[5] Women in Macedonia with higher levels of education are more likely to participate in the labor market (Angel-Urdinola and Macias, 2008).

enjoyed by women, who in turn display higher returns to education and a higher endowment of high-skilled workers. As a result, the wage gap in the non-private sector is only at 6.3%

The nice feature of the decomposition is that it helps provide some further insight as of what are the main drivers of the wage gap. In this case, most of the gender wage gap is explained by large disadvantages in wage levels for low-skilled working women. Nevertheless, the decomposition is silent about the reason of such differences. As such, it should be used only as a descriptive tool.

To recapitulate, results in Table 4 indicate that the gender wage gap (at 25%) is mainly explained by very low wage rates among low-skilled women as compared to the average wage rates – a disadvantage that is not evident among low-skilled men –. This phenomenon dominates other advantages displayed by female employees, such as higher returns to education and a larger endowment of high-skilled labor. Results are mainly driven by what occurs in the private sector. In the non-private sector, the gender wage gap is low (at 6.3%) despite the fact that low-skilled men still earn higher wages than low-skilled women. This occurs because men's advantages are offset because women's higher returns to education and endowments of high-skilled labor.

Finally, Table 5 presents a series of simulations of how the gender wage gap would changes with the introduction of a minimum wage. For simulations, a level of the minimum wage between 0.6 and 1 median wage (this is, between 30 and 50 Dinars per hour) is used. This is a range of the minimum wage level that is common in developing economies (Maloney and Nuñez, 2006).

As illustrated in Table 5, a low level of a minimum wage (equivalent to 30 Dinars per hour) would not have much of an effect in the gender wage gap. However, results indicate that the introduction of a minimum wage between 40 and 50 Dinars per hour could contribute to a decrease in the gender wage gap of 15 to 23%. The intuition of this result is very simple: as discussed before, low-skilled women earn much less than low-skilled men, despite women displaying higher human capital endowments and returns to education. As such, a minimum wage is likely to become more binding for low-skilled women than for low-skilled men and thereby likely to improve the wage level of low-skilled women much more than it would for low-skilled men. However, in order to get a significant improvement in the wage level of low-skilled women, a rather high level of a minimum wage (close to the median wage) is needed.

5. Conclusion

Minimum wage policy poses a traditional trade-off. Raising the minimum wage allows for the possibility of increasing the earnings of workers at the lower tail of the wage distribution by more than average and thus promoting positive effects in labor supply, especially among low-skilled workers. However, a minimum wage set above the market-clearing price of labor will lead employers to move back along their demand curves, causing a reduction in employment. Evidence of imperfect competition in FYR Macedonia (due to high levels of discrimination and low mobility) leads to the hypothesis that firms may be paying workers, and especially low-skilled women, below their marginal product of labor, which causes their supply of labor to be below that in a competitive setting. If so, the introduction of a minimum wage at or below the

competitive market wage would likely increase the overall level of employment. Results in this paper indicate that a large wage gap between male and female employees exists, mainly in the private sector, due to the fact that low-skilled males earn wages that are higher that those of low-skilled women; despite little labor occupational segregation and despite the fact that women display higher human capital indicators. The introduction of a minimum wage between 40 and 50 Denars per hour would contribute to a decrease in the gender wage gap of between 15 and 23%. This occurs because introducing a minimum wage is likely to be more binding for low-skilled women than for low-skilled men and thereby likely to improve the wage level of low-skilled women by more than it would among low-skilled men. However, in order to get a significant improvement in the wage level of low-skilled women, a rather high minimum wage (close to the median wage) would need to be introduced. As such, while the introduction of a minimum wage may likely contribute to increase the wages of low-educated women and their levels of participation in the labor market; it may also contribute adversely to employment. The employment effects of minimum wage policy should be treated and assessed with particular care in FYR Macedonia given its very low employment – and high unemployment – rates.

Besides minimum wage policy, other policies aimed at strengthen market competition and at improving women's job conditions and wages should be explored. Promoting higher wages for low-skilled is likely to boost their participation, reduce the gender wage gap, and eventually contribute to poverty reduction (Angel-Urdinola and Wodon, 2006). Finally, the question of whether or not FYR Macedonia has regional markets with monopsony power needs further testing, and more research aimed to understand the demand-side of the labor market in the country should be conducted.

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Table 1: Descriptive statistics on the sample [employed working age population]

	Male	*Female*	*All*
Employment Rates	48.30	30.80	39.60
		Employed Individuals	
Sample size	6,536	4,445	10,981
Weighted sample	240,956	162,608	403,564
Age Group			
% 15-24	7.00	6.55	6.73
% 25-34	25.09	25.41	25.28
% 35-54	60.26	57.43	58.57
% 55-64	7.65	10.61	9.41
Education			
% Low Skill	80.43	71.27	76.74
% High Skill*	19.57	28.73	23.26
Region			
% Skopje	27.28	32.26	29.29
% Bitola	11.59	12.54	11.97
% Veles	8.16	7.89	8.05
% Kumanovo	6.60	5.49	6.15
% Ohrid	11.08	7.48	9.63
% Strumika	9.23	11.63	10.19
% Tetovo	15.15	7.30	11.98
% Shtip	10.91	15.42	12.73
Industry			
% Agriculture/mining/fishing	5.38	1.97	4.00
% Manufacturing	24.04	34.61	28.30
% Elec/Gas/Water	5.69	1.39	3.95
% Construction	12.73	1.81	8.33
% Wholesale/retail	11.11	12.60	11.71
% Hotels/Restaurants	3.92	3.15	3.61
% Transport/communication	7.92	2.58	5.77
% Fin & Real State Svs.	3.63	6.05	4.60
% Public Admin.	11.46	7.21	9.75
% Education/health/Social Work	9.47	25.15	15.79
% Other services	4.66	3.48	4.19
Ownership			
% Private	50.6	54.2	52.1
% Non private**	49.4	45.8	47.9
Total	100.0	100.0	100.0

Source: Author's estimates using 2006 Macedonia LFS data. * High-skill workers are defined as those with at least complete higher education (university and above). ** Includes public and semi-private companies such as utilities (gas, water, and electricity).

Table 2: Average wage rates (in Dinars per hour) and population shares by gender and level of education.

	All Employees		*Private, Non agriculture*		*Non-private*	
	Population shares	Average Wages Rate	Population shares	Average Wages Rate	Population shares	Average Wages Rate
Gender						
Male	59%	72.2	55%	73.9	61%	70.5
Females	41%	56.0	45%	47.5	39%	66.2
Education						
High-skilled	23%	86.4	12%	81.8	34%	88.1
Low-skilled	77%	59.3	88%	59.4	66%	58.9
Gender and Education						
Low-skilled females	30%	46.8	39%	43.8	22%	52.5
Low-skilled males	47%	67.3	49%	71.5	44%	62.0
High-skilled females	11%	80.1	6%	70.2	17%	83.7
High-skilled males	11%	92.6	6%	93.6	17%	92.5
Total	100%	65.5	100%	62.1	100%	68.9

Source: Author's estimates using 2006 Macedonia LFS data. * High-skill workers are defined as those with at least complete higher education (university and above).

Table 3: Unconditional gender wage gap and occupational segregation [low-skilled workers only]

	Share of employment		*Average wage rate*			
	Male	Female	Male	Female	| Mi/M – Fi/F |	**Gender Gap**
	(1)	(2)	(3)	(4)	(5)	(3) / (4)
Agriculture/mining/fishing	6.01	2.33	65.3	40.5	0.04	41.2%
Manufacturing	26.66	44.41	55.5	40.2	0.18	32.0%
Elec/Gas/Water	5.71	1.55	78.2	72.3	0.04	7.6%
Construction	14.87	1.76	101.3	44.6	0.13	58.5%
Wholesale/retail	12.24	14.57	55.9	48.0	0.02	15.2%
Hotels/Restaurants	4.61	4.25	95.8	51.5	0.00	55.7%
Transport/communication	8.78	2.32	62.6	67.1	0.06	-7.1%
Fin & Real State Svs.	2.48	4.22	65.8	71.2	0.02	-7.9%
Public Admin.	9.65	5.16	68.0	55.9	0.04	18.7%
Educ./health/Social Work	4.64	16.13	52.9	50.3	0.11	5.0%
Other services	4.35	3.31	60.9	59.2	0.01	2.9%
Index of segregation					**0.33**	

Source: Author's estimates using 2006 Macedonia LFS data. The formula for computing the Index of Dissimilarity by industry is: $D = 0.5 \times \left| (M_i / M) - (F_i / F) \right|$ where M (F) is the male (female) population of employees and M_i (F_i) is the male (female) population employed in industry *i*.

Table 4: Results of the decomposition of the Gender Wage Gap

	All Employees (1)		***Private, Non agriculture*** (2)		***Non-Private**** (3)	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**
(1) $w_j^L / \overline{W}$	1.03	0.71	1.15	0.71	0.90	0.76
(2) s_j^H / S_j	0.19	0.28	0.11	0.14	0.28	0.44
(3) r_j	0.38	0.71	0.31	0.60	0.49	0.59
(4) $\left(1+\frac{s_j^H}{S_j} r_j\right)$	1.07	1.20	1.03	1.08	1.14	1.26
(1) x (4)	1.10	0.85	1.19	0.76	1.02	0.96
Wage Gap	**24.8%**		**42.5%**		**6.3%**	
Sample Size N	6,536	4,445	3,086	2,348	3,264	2,037
Weighted N	240,956	162,608	115,770	86,168	119,027	74,406

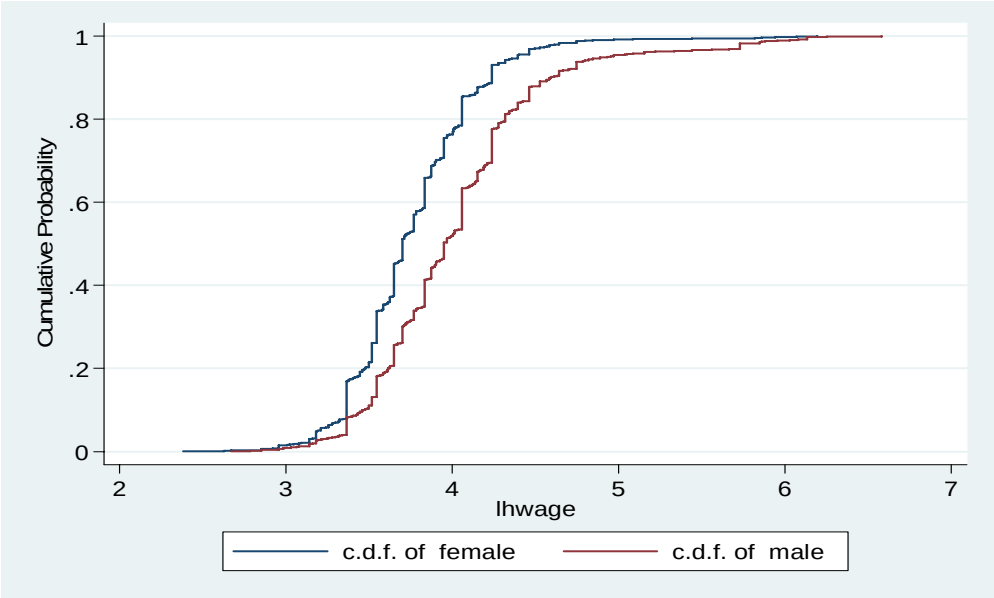
Source: Author's estimates using 2006 Macedonia LFS data**. ***Includes public and semi-private companies such as utilities (gas, water, and electricity).

Table 5: Simulations of changes in the Gender Wage Gap after the introduction of a minimum wage [all employees]

	MW=30 Dinars/hours *(0.6 the median wage)*		***MW=40 Dinars/hours*** *(0.8 the median wage)*		***MW=50 Dinars/hours*** *(median wage)*	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**
(1) $w_j^L / \overline{W}$	1.03	0.72	1.03	0.76	1.02	0.79
(2) s_j^H / S_j	1.07	1.19	1.06	1.15	1.05	1.12
(3) r_j	0.19	0.28	0.19	0.28	0.19	0.28
(4) $\left(1+\frac{s_j^H}{S_j} r_j\right)$	0.37	0.69	0.31	0.53	0.28	0.44
(1) x (4)	1.10	0.86	1.09	0.88	1.08	0.89
Wage Gap	24.3		21.1%		19.0%	
% reduction in the Wage Gap	**2%**		**15%**		**23%**	

Source: Author's estimates using 2006 Macedonia LFS data**. ***Includes public and semi-private companies such as utilities (gas, water, and electricity).

Figure 1: Oaxaca Decomposition [Low-skilled Employees only]



Source: World Author's estimates using 2006 Macedonia LFS data.

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Summary Findings

This paper relies on simple framework to understand the gender wage gap in FYR Macedonia and then simulates how the gender wage gap would behave after the introduction of a minimum wage. First, it presents a new – albeit simple – decomposition of the wage gap into three factors: (i) a wage level factor, that measures the extent to which the gender gap is driven by differences in wage levels among low-skilled workers of opposite sex; (ii) an skills endowment factor, that quantifies the extent to which the gender wage gap is driven because the share of high-skilled workers differs by gender; and a (iii) returns to education factor, that measures the extent to which the gender gap exists is driven by differences by gender in returns to education. Second, the paper presents simple set of simulations that indicate that the introduction of a minimum wage in FYR Macedonia could contribute to decrease the gender wage gap by up to 23%. Nevertheless, in order to get a significant improvement in the wage gap a rather high minimum wage may required, which may contribute to reductions in employment.

HUMAN DEVELOPMENT NETWORK