Gender Inequality in the Labor Market in Serbia

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Abstract

This paper presents a broad overview of labor market indicators for men and women in Serbia with a focus on employment patterns, entrepreneurship and career advancement as well as earnings differentials. The analysis relies primarily on the results of the Labor Force Surveys conducted in Serbia in April 2008 and October 2009. The findings show that although the overall labor market situation in Serbia is difficult, women are in a much more disadvantageous position than men. Women are much less likely to be employed, start a business or advance in the political arena. Furthermore, there is a significant wage gap between men and women in a number of sectors and occupational groups with low educated

women being particularly disadvantaged. The results of the Oaxaca-Blinder decomposition demonstrate that the wage gap is indicative of discrimination of women in the labor market as earnings differentials cannot be explained by differences in observed characteristics of male and female employees. Based on the obtained results, the paper outlines four broad areas that require the attention of policy-makers: employment generation; enhancement of education outcomes; improvement of the regulatory environment and support to women's business and political careers; and promotion of transparent performance setting mechanisms.

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GENDER INEQUALITY IN THE LABOR MARKET IN SERBIA

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This paper is part of the larger initiative led by ECSPE that aims to analyze gender differences in the labor markets in the Western Balkans. For other examples of this work, please see Blunch, Niels Hugo and Victor Sulla. 2011. “The Financial crisis, labor market transitions and earnings: A Gendered Panel Data Analysis for Serbia”, Blunch, Niels Hugo “The Gender Earnings Gap Revisited: A Comparative Study for Serbia and Five Countries in Eastern Europe and Central Asia” and Matković, Gordana, Boško Mijatović and Marina Petrović “Impact of the financial crisis on the labor market and living conditions outcomes”.

Table of Contents

INTRODUCTION	1
PART I. EMPLOYMENT CHARACTERISTICS OF MEN AND WOMEN IN SERBIA	1
1.1. Key Labor Market Indicators.....	2
1.2. Employment Patterns of Men and Women	4
PART II. ENTREPRENEURSHIP AND LEADERSHIP AMONG MEN AND WOMEN.....	7
2.1 Entrepreneurship among Men and Women	7
2.2 Career Advancement among Men and Women	8
2.3 Women in Politics	9
PART III. EARNINGS OF MEN AND WOMEN.....	10
3.1 Wage Differentials between Men and Women in Serbia.....	11
3.2 Explaining the Wage Gap.....	13
PART IV. CONCLUDING OBSERVATIONS AND IMPLICATIONS FOR POLICY MAKING.....	17

Annex 1. Definitions of Labor Market Indicators

Annex 2. Percentage Change of Sectoral Employment of Men and Women in Serbia between 2008 and 2009

Annex 3. Structure of Self-employed by Sector of Economic Activity

Annex 4. Detailed threefold Oaxaca-Blinder Decomposition

INTRODUCTION

The socialist regime in the former Yugoslavia was characterized by a de jure gender equality in labor relations, which translated into equal access to education opportunities and high levels of employment among men and women. Transition to a market economy was marked by sectoral restructuring, privatization of state-owned enterprises, price adjustments, growth of the informal sector and a rapid increase in unemployment. Despite stable economic growth for almost a decade (since 2000 and up until the global recession in 2009), the labor market performance in Serbia remained weak in comparison to other transition economies. Only a half of working age adults was employed in 2009 and the activity rate of population is much lower than the regional average.

While labor statistics have been collected by the Statistical Office of Serbia on an annual basis for the past decade, there are few studies on the differences in access to jobs and general employment patterns between men and women in Serbia. This paper aims to fill this gap by providing a gender-disaggregated picture of the labor market. To distinguish the impact of the global economic crisis, selected employment indicators as well as wages of men and women are compared with the data for 2008; however an in-depth examination of the impact of the crisis on the labor market in Serbia is beyond the scope of the paper. The analysis relies primarily on the results of the Labor Force Surveys (LFS) conducted in Serbia in April, 2008 and October, 2009. Whenever possible, labor market characteristics in Serbia are compared with those in the EU countries, where similar labor force surveys have been organized.

The findings of this paper show that although the overall labor market situation in Serbia is difficult, women are in a much more disadvantageous position than men:

- The employment rate of working age women is 26% lower than men's while the inactivity and unemployment rates are significantly higher (See Annex 1 for definitions of labor market indicators).
- Women are markedly underrepresented in the business world and in the political arena. Men comprise 72% of the self-employed, make up 71% of the company owners and hold over 80% of ministerial positions in the government.
- There is a significant wage gap between men and women in a number of sectors and occupational groups with low educated women being particularly disadvantaged.

The reasons that hamper women's employment and career advancement include 1) a disproportionate share of household responsibilities, including child care; 2) lack of flexible work arrangements (e.g. part-time or seasonal jobs) that have helped women in EU countries to combine employment with family responsibilities; 3) stereotypes about traditional roles of men and women; and 4) low market demand for female labor. It is hoped that the gender disparities highlighted in this paper will provoke further and more in depth research of gender inequalities in the Serbian labor market.

The rest of this paper is organized as follows: part I provides a snapshot of men's and women's employment patterns, part II describes gender disparities in entrepreneurship and access to leadership positions, part III focuses on the differences in earnings between men and women and part IV offers concluding observations.

PART I. EMPLOYMENT CHARACTERISTICS OF MEN AND WOMEN IN SERBIA

1.1. Key Labor Market Indicators

Similar to many countries of the region, Serbia has experienced a painful transition from a centrally planned to a market economy. Restructuring of economic activities resulted in massive job losses and the unemployment rate remained high over the past decade. Reform processes in Serbia were delayed by the political turmoil of the 1990s and the country still lags behind other Eastern European economies on key employment outcomes (Table 1). Only half of Serbia's working age population reports being employed, which is much worse than the EU average and far from the European Union Lisbon target of 70% to be achieved by 2010. The unemployment rate in Serbia is almost double the EU-27 average and much higher than in other Eastern European economies.

Table 1. Labor market indicators for working age population (15-64) in Serbia and selected countries of Eastern Europe, 2009

	Activity Rate	Employment Rate	Unemployment Rate
EU 27	71.1	64.6	8.9
Bulgaria	62.5	62.6	6.8
Czech Republic	70.1	65.4	6.7
Hungary	61.6	55.4	10.0
Romania	63.1	58.6	6.9
Croatia	62.4	56.6	9.1
Poland	64.7	59.3	8.2
Serbia	60.5	50.0	17.4

Source: for Serbia, LFS, 2009; for other countries Eurostat LFS Database

http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database

While the overall labor market situation is difficult, women appear to be disproportionately affected (Figure 1). Despite similar education levels, women's employment rates are 26% lower than men's (with no changes between 2008 and 2009). Women also tend to be overrepresented in the category of inactive population and the unemployed¹. Furthermore, a large number of the unemployed women – 12.5% have been looking for a job for over ten years, with negative consequences for their skill levels and welfare.

Figure 1. Labor market indicators for working age men and women in Serbia, 2008 and 2009

Source: Serbia LFS 2008 and 2009

¹ Restricting the analysis of labor market indicators to the 25-64 age group, to account for the relatively large share of population obtaining secondary and university education, improves labor market indicators to some extent. Activity rate in this age category is 67.2%, employment rate – 57.1% and unemployment rate – 15.1%. Yet, gender disparities are similar to those observed in the broader working age group: women's activity rate is 23.9% lower than men's, employment rate is 26.9% lower than men's and unemployment rate is 19.5% higher than men's.

Between 2008 and 2009, activity rates for women increased by 16.9% and for men by 12.3%. The increase in activity rates was due to the job loss associated with the global economic crisis. Worsening economic hardships made women who did not work before the crisis join the labor force to supplement family incomes – a trend observed in some other countries of the region (e.g. Turkey, Lithuania)². As could be seen from Figure 1 above, the global economic crisis has increased unemployment among men more than among women. This is because male-dominated sectors (e.g. construction, mining and quarrying, and manufacturing) have been affected more than female-dominated sectors like health or education (See Annex 2 for more information on the sectoral employment changes of men and women after the crisis).

Women of all age groups have higher inactivity and unemployment rates than men. The highest unemployment rate for both genders – 39.8% for men and 45.9% for women – is observed in the 15-24 age group (Serbia LFS 2009). Scarce job opportunities for young people have high social costs as they prevent new entrants in the labor market from obtaining relevant skills.

Activity and employment rates are much higher among people with upper secondary and university education (Figure 2). For instance, activity rates for women vary from 9.1% for those with no education to 83.8% for those with a master's degree. The respective rates for men are 18.7% and 70.5%. Employment rates follow a similar pattern. Women with low educational attainment are almost twice less likely to be employed than men with similar education levels. However, university-educated women have higher employment rates than men. This difference is most apparent at the master's level where employment rates among women are 21% higher than among men.

Figure 2. Employment Rates and Educational Attainment of Working Age Men and Women in Serbia, 2009

Source: Serbia LFS, 2009

Low activity and employment rates among poorly educated women can be potentially explained by several factors. First, women with low educational attainment may be more likely to follow traditional social roles, where a man is seen as a breadwinner and a woman's role is limited to household's responsibilities. When asked about reasons for not seeking a job, over one-fifth of low educated women versus one-tenth of women with tertiary education name household responsibilities as a reason for inactivity. Second, the salaries of low educated women are much lower than those of low educated men; with women who have completed only primary education (eight years) receiving 24% less than men with

² Koettl, Johannes Isil Oral and Indhira Santos. 2011. "Employment recovery in Europe and Central Asia". ECA Knowledge brief. Special Issue1, World Bank, Washington DC

similar education levels. This may provide disincentives for women to enter the labor force. Another possible explanation for higher employment rates of better educated women could be that employers offering high skilled jobs have a much smaller gender bias.

Regionally, employment rates are highest in the capital city of Belgrade and lowest in Central Serbia. Rural population is more likely to be employed than urban, which is not uncommon in post-conflict countries due to a larger supply of low value-added jobs. Agriculture is a key sector for the rural economy, employing 47.2% of rural citizens (45.3% of men and 50.7% of women) while the job market in urban locations is dominated by services.

Gender disparities in access to job opportunities are much more pronounced in rural areas, where 33% more men than women are employed (Figure 3). Lower employment rates among rural women can potentially be explained by a greater prevalence of traditional lifestyles as well as by lack of child care institutions in rural locations. Another possible reason is that there are simply not enough jobs in rural Serbia offering attractive remuneration rates for women to make it worth for them to join the labor force. Studies from other countries, e.g., the export-oriented flower industry in Ecuador, show that when opportunities for women's gainful employment arise, households reallocate family responsibilities with men spending much more time doing housework allowing women to take advantage of paid employment.³

Figure 3. Employment rate of working age population in rural and urban areas, %

Source: Serbia LFS, 2009

1.2. Employment Patterns of Men and Women

Differences in Employment by Type of Institutional Ownership and Sector of Economic Activity

Market-oriented reforms and privatization have resulted in the shift of a large share of the labor force into the private sector, which now accounts for almost 70% of total employment (Table 2). As in many other countries in the region, women are somewhat more likely to work in the public sector. Jobs in state-owned institutions tend to be relatively secure and rarely require overtime work, allowing women to combine employment with family responsibilities.

**Table 2. Structure of Employment by Type of Ownership, %
(population age 15 and above)**

	Male	Female	Total
Private - registered ownership	58.0	52.2	55.5
Private – with unregistered ownership	14.1	12.9	13.6
State ownership	24.1	31.9	27.4
Social ownership	2.3	1.5	2.0
Other types of ownership	1.6	1.4	1.5
Total	100	100	100

Source: Serbia LFS 2009

³ Newman, Constance. 2001. *Gender, Time Use, and Change: Impacts of Agricultural Export Employment in Ecuador*. Policy Research Report on Gender and Development. Working Paper Series No18, The World Bank

Noticeable differences can be observed in the sectoral employment patterns of men and women (Table 3). In particular, women are overrepresented in health and social work, education as well as financial intermediation. Women make up between 60 to 80 percent of those employed in these sectors. Construction, transport and communications, energy as well as mining are the sectors, which are dominated by men.

Table 3. Structure of Employment by Sector, % (population age 15 and above)

Sector of Economic Activity	Male	Female	Total
Agriculture, hunting forestry and fishing	24.8	22.9	24.0
Mining and quarrying	1.5	0.5	1.1
Manufacturing	19.9	13.2	17.0
Electricity gas and water supply	2.7	0.5	1.8
Construction	8.1	1.4	5.2
Wholesale and retail trade	12.0	16.5	13.9
Hotels and restaurants	2.4	3.7	2.9
Transport, storage and communication	8.2	3.1	6.0
Financial intermediation	1.5	3.0	2.1
Real estate, renting and business activities	3.3	3.6	3.4
Public administration and social security	4.9	5.0	4.9
Education	3.9	8.3	5.8
Health and social work	2.2	12.8	6.8
Other community, social and personal services	4.4	4.8	4.6
Private households with employed persons	0.1	0.5	0.2
Extra-territorial organizations & bodies	0	0.1	0.1
Total	100	100	100

Source: Serbia LFS, 2009

Transition to a market economy was characterized by emergence of the informal sector, which currently employs almost a quarter of Serbian population (26% of men and 24% of women). The definition of the informal sector used in this paper includes all those working in non-registered private companies as well as workers without employment-related pension insurance. There are no significant gender differences in the characteristics of workers employed in the informal sector. Most of the informal sector employees live in rural areas and work in agriculture (70% of men and 76% of women). The overwhelming majority of people engaged in informal activities have extremely low education levels with 55% of men and 67% of women being educated only up to primary school level. The high percentage of people employed in the informal sector may be indicative of the relatively high costs associated with business registration, social security contributions and taxes; the preference for flexible working hours of some population groups; and/or the lack of other employment opportunities for low-skilled workers.

Flexible Forms of Employment and Average Working Hours in Serbia

Flexible forms of employment (e.g. part-time, seasonal and temporary work arrangements), which are quite widespread in the EU countries allowing young people to obtain work experience while receiving their education, helping parents to combine work with childcare responsibilities and enabling older people to stay in the workforce longer, are uncommon in Serbia. The overwhelming majority of Serbian population continues to give preference to permanent full time jobs: 88.6% of the employed have a permanent job and 91.3% work full time.

While Serbian women are more likely to hold part-time jobs than men, the percentage of women engaged in part-time work in Serbia is significantly lower than in OECD and EU-15 countries (Figure 4). Furthermore, both men and women who work part-time in Serbia cite inability to find full-time employment as a major reason for working fewer hours while part-time employment in OECD countries is largely voluntary⁴.

Part-time jobs in Serbia are mostly in the informal sector and the majority of people who work less than full time has low education levels and is engaged in unskilled occupations. Agriculture accounts for 70% of women's and 61% of men's part-time employment, followed by wholesale and retail, which provides part-time employment to 7.5% of men and 7% of women. The unattractiveness of part-time jobs could be explained by the low level of wages in the country. Employees may not be able to afford working part-time as associated costs (transportation, meals, childcare, etc) could be too high relative to earnings. Furthermore, flexible forms of employment were non-existent in Serbia before the transition and full-time work may be a long-entrenched tradition⁵. Similar reasons can explain lack of attractiveness of temporary or seasonal jobs, which are also less common in Serbia than in the EU countries; 88% of Serbian men and 90% of women have a permanent job.

The majority of labor force survey respondents in Serbia reports holding one job with only 6.3% of men and 2.9% of women engaging in additional paid activities outside their main job in 2009. As with part-time jobs, most of the additional work activities are performed in agriculture, which provides an extra-source of income to 64% of men and 39% of women who have more than one job. Manufacturing, construction (for men), wholesale and retail as well as hotels and restaurants are other sectors commonly cited as a source for additional jobs.

Both men and women in Serbia tend to work relatively long hours. The mean number of hours usually worked in a week is 45 for men and 42 for women with 23% of men and 12% of women working over 50 hours a week (Table 4). This suggests that employers in Serbia are filling additional labor demand by requesting employees to work longer hours rather than through new job creation⁶. While women spend somewhat less time at work, they perform most of the domestic responsibilities. It is estimated that in

Figure 4. Share of part-time employment in total employment, % (population age 15 and above)

Source: for Serbia LFS 2009; for EU-15: Eurostat Data in Focus 35/2009

Table 4. Weekly hours usually worked by men and women in Serbia (population age 15 and above)

Weekly hours worked	Percentage		
	Male	Female	Total
10 or less hours	0.66	1.19	0.89
11-19 hours	0.99	1.37	1.16
20-29 hours	2.89	4.83	3.73
30-39 hours	5.93	7.81	6.74
40- 49 hours	66.12	71.91	68.62
50- 59 hours	10.47	7.13	9.03
60 or more	12.93	5.76	9.84
Total	100	100	100

Source: Serbia LFS, 2009

⁴ OECD. 2010. *OECD Employment Outlook 2010: Moving beyond the Job Crisis*, Paris

⁵ World Bank. 2006. *Serbia: Labor Market Assessment*, Washington DC

⁶ World Bank. 2006. *Serbia: Labor Market Assessment*, Washington DC

over 70% of households, cooking, washing, cleaning and taking care of small children is done solely by women⁷.

PART II. ENTREPRENEURSHIP AND LEADERSHIP AMONG MEN AND WOMEN

2.1 Entrepreneurship among Men and Women

Men are almost twice as likely to engage in entrepreneurial activities as women (Figure 5). In fact, men represent 72% of the people who identify themselves as self-employed. Furthermore, self-employed men are significantly more likely to hire workers than self-employed women. Men comprise over two-thirds of entrepreneurs with employees.

Figure 5. Structure of men's and women's employment,%
(population age 15 and above)

Source: Serbia LFS, 2009

Almost 70% of the self-employed live in rural areas and over a half of entrepreneurs of both genders are employed in agriculture. According to the UNDP study “The position of women in the labor market in Serbia”, women’s entrepreneurship in rural areas is constrained by the limited ownership of farm land. When rural women buy or inherit land, tradition obliges them to register it in the name of their husband or other male relative. This situation prevents women living in rural areas from starting/joining agricultural cooperatives⁸. It may also limit their opportunities for engaging in other types of entrepreneurial activities due to lack of collateral and inability to access bank loans.

Noticeable differences can be observed in the concentration of male and female entrepreneurs in non-agricultural activities. Self-employed women significantly outnumber men in trade, real estate and renting as well as in community, social and personal services while the number of men entrepreneurs is almost double that of women in manufacturing, construction and transport and communications (Annex 3).

The analysis of the Business Environment and Enterprise Survey (BEEPS) 2009 provides additional information on the experience of male and female-owned firms in the non-agricultural sector. The survey helps assess the performance and key obstacles to growth of SMEs and large firms in Serbia through interviews with the owners and top management of 388 companies in manufacturing and services sectors.

⁷ Babovic, Marija. 2008. *The position of Women on the Labor Market in Serbia*. UNDP and Gender Equality Council of the Government of Serbia, Belgrade

⁸ Babovic, Marija. 2008. *The position of Women on the Labor Market in Serbia*. UNDP and Gender Equality Council of the Government of Serbia, Belgrade

The results of the survey show that while there are many more men than women among the owners of the companies 71% and 29% respectively, the performance of female-owned firms is only slightly behind that of male-owned firms in terms of exports and research and development and ahead of male-owned firms in innovation. For instance, 45% of female-owned firms vs. 48% of male-owned firms export their products (the figures include both direct exports and domestic sales to third parties that export products); 29% of female-owned firms vs. 31% of male-owned firms invested in research and development; and 68% of female-owned firms vs. 55% of male-owned firms introduced new products or services in the past three years. These figures demonstrate that the characteristics of female-owned firms are similar to male-owned firms, so the low representation of women among company owners may not be indicative of failure or underperformance of women's enterprises. Instead, the limited engagement of women in entrepreneurial activities could be explained by a combination of other factors, like family obligations, traditional values, limited access to credit as well as higher exposure to regulatory requirements and crime.

Female-owned firms report facing greater regulatory hurdles than male-owned firms. For instance, they are more likely to consider certain business regulations as a major or very severe obstacle to current firm operations and to have concerns over crime and safety issues (Figure 6). Furthermore, female-owned businesses are almost twice as likely to report providing additional payments or gifts to get things done when dealing with public officials: 10% of female vs. 6% of male-owned businesses report usually or always making gifts or additional payments to get things done with regard to customs, taxes, licenses, regulations, or other government services.

Figure 6. Percentage of firms that perceives business regulations and crime as a major or very severe obstacle to current operations

Source: BEEPS, 2009

Given that BEEPS interviews commonly involved not only business owners but also senior executives (not necessarily female), it is unlikely that differences in survey responses can be explained by perceptual differences of the business environment between men and women. It is possible that firms owned by women are subject to somewhat greater scrutiny by public officials (potentially because women are perceived as being less assertive in negotiations and considered an easy prey) than those owned by men, which increases business start-up and development costs for women and restricts the growth of women-owned businesses.

2.2 Career Advancement among Men and Women

There are pronounced gender differences in the career advancement of men and women in Serbia, with men having a higher representation in leadership positions and women being over-concentrated in the group of professionals, technicians, clerks, service and sales workers as well as in elementary occupations (Table 5).

Women comprise only 30% of the people in the category of legislators, senior officials and managers in public and private organizations. The data from the BEEPS 2009 survey shows that females constitute just 16% of firms' top managers. Interestingly, female-owned companies are significantly more likely to have women among top managers than male-owned companies: 41% of female-owned firms vs. 6% of

male-owned firms have a woman as a top manager (BEEPS 2009). This fact suggests that women may be facing a less favorable environment for professional growth in male-owned firms (due to lack of support for their career aspirations, pervasiveness of stereotypes, discriminatory practices, etc) or it may be indicative of the importance of role-models from whom other female employees can learn and whose example can provide reassurance that women's career ambitions are achievable, thus pushing more women to break the boundaries.

**Table 5. Structure of employed men and women by occupation, %
(population age 15 and above)**

Occupation	Male	Female	Total
Legislators, senior officials and managers	6.3	4.6	5.6
Professionals	8.8	15.1	11.5
Technicians and associate professionals	10.5	18.9	14.1
Clerks	4.8	7.7	6
Service and sales workers	9.5	17.4	12.9
Skilled agricultural and fishery workers	21.7	19.9	20.9
Craft and related trades workers	19.1	4.5	12.8
Plant and machine operators and assemblers	11.4	1.8	7.3
Elementary occupations	7.4	10.1	8.6
Military officers	0.6		0.3
Total	100	100	100

Source: Serbia LFS 2009

Women are more likely to have supervisory responsibilities in public institutions than in private companies: 51.3% of women employed in state-owned organizations, 46.4% in private institutions and 2.3% in organizations of other types of ownership supervise the work of at least one employee excluding apprentices. There are no differences in the share of men in supervisory positions between public and private organizations (LFS 2009). These figures suggest that stereotypical perceptions about men's and women's roles are more prevalent in the private sector and that the private sector, particularly small domestic companies, may be lacking clear and objective criteria for staff evaluation and promotion.

Focus group discussions conducted by UNDP among women employed in the private and public sectors revealed that women face two major problems in building their careers. First, employees of private enterprises report that there is a social bias towards women in senior positions, so that even if a company's board of directors is ready to promote a woman to a managerial position, such decision is often met by a resistance of male colleagues and in case a woman is granted a management role, she may face lack of collaboration in her daily work from the male employees of the company. Second, increased professional responsibilities are not necessarily followed by a redistribution of household roles and women commonly mention the need to take care of the family as an obstacle to professional growth and career advancement (Babovic, Marija.2008).

2.3 Women in Politics

Political life in Serbia is dominated by men that hold the most influential government positions and outnumber women by almost four to one in parliament (Figures 7 and 8). Over 80% of all ministerial positions are occupied by men, including those of the prime-minister and deputy prime-ministers. This is higher than the average for EU-15 countries, where men represent 71% of political executives⁹. While the

⁹ European Commission. 2010. *More women in senior positions- Key to economic stability and growth*, Luxembourg: Publications Office of the European Union

number of ministerial positions in Serbia has increased from 19 in 2002 to 24 in 2008, the number of women-ministers never exceeded four. An even greater gender disparity is observed in municipal governments as women make up less than 4% of all mayors¹⁰.

The situation in the National Assembly (Parliament) of Serbia is somewhat better: the number of women increased from 12.4% in 2002 to 20.4% in 2008.¹¹ Following the parliamentary elections of 2008, the National Assembly has been presided by a female speaker Slavica Đukić Dejanović, the second woman to assume this position after Nataša Mičić.

Underrepresentation of women in decision making institutions is likely a reflection of historical stereotypes about the division of power in society. While this problem is faced by most states of the world, there are positive examples in many European countries. For instance, women comprise at least 40% in the cabinet in Finland, Spain, Iceland, Denmark, Germany, Sweden, Liechtenstein and Norway and of the parliaments in Sweden, Iceland, Belgium, Netherlands and Finland¹². The measures introduced by these countries may be used to inform public awareness campaigns and legislative reforms in Serbia.

Figure 7. Ministers of the Government of Serbia, structure and number by gender (2002-2008)

Source: Statistical Office of Serbia, 2008

Figure 8. Members of Parliament of Serbia, structure and number by gender (2002-2008)

Source: Statistical Office of Serbia, 2008

PART III. EARNINGS OF MEN AND WOMEN

In 2009, women's monthly wages in Serbia were on average 4.6% lower than men's. This wage gap, difference between average men's and women's net monthly wages as a percentage of men's average net monthly wages was twice higher in 2008, i.e. before the global financial crisis. This is likely because the crisis has affected male-dominated sectors (e.g. construction) more than female-dominated sectors (e.g. health and education). Although the wage gap in both years was lower than the average in the EU countries¹³, it is not indicative of smaller gender disparities in the labor market. The relatively small difference in men's and women's average earnings in Serbia is a reflection of the low female labor force participation and the small share of low-skilled women in the labor force. As mentioned in part one, women with low education levels are almost twice less likely to be employed than men while the employment rates of women with university degrees are higher than for similarly educated men. Overall, 60% of employed women vs. 47% of employed men have upper secondary or tertiary education.

¹⁰ UNIFEM <http://www.unifem.sk/index.cfm?module=project&page=country&CountryISO=RS>, accessed on August 10, 2010

¹¹ Statistical Office of the Republic of Serbia. 2008. *Women and Men in Serbia*, Belgrade

¹² European Commission. 2010. *More women in senior positions - Key to economic stability and growth*, Luxembourg: Publications Office of the European Union

¹³ The wage gap for EU countries, calculated based on hourly wages, is 17.6% as of 2007. (EU Commission.2010. *Report on equality between women and men 2010*, Luxembourg: Publications Office of the European Union)

Figure 9 presents estimates of wage distribution of male and female employees, using non-parametric methods (kernel density estimators). Men have higher mean wages and their earnings have a smaller variance in comparison to female workers.

The rest of this part provides a description of wage differentials between men and women (based on occupation, sector of employment, education, age and location) as well as attempts to explain the wage gap in Serbia using multivariate analysis and Oaxaca-Blinder wage decomposition. The results suggest that the earnings differentials cannot be attributed to differences in observed characteristics of male and female employees and that the wage gap is largely explained by discrimination against women in the labor market.

Figure 9. Kernel density estimates of the wage distribution of male and female employees

Source: Estimates based on LFS, 2009

3.1 Wage Differentials between Men and Women in Serbia

Differences in Earnings based on Occupation and Sector of Employment

The comparison of average earnings within occupational or sectoral categories reveals considerable gender disparities. Women are paid much less than men in all occupation groups and in most sectors. In three out of nine occupational categories, women's wages are lower than men's by at least a quarter with the highest gender-based wage differentials being observed in the category of skilled agricultural and fishery workers and the lowest in secretarial and clerical jobs (Figure 10). Women's work is undervalued even if performed by top level government or corporate executives, with women managers being paid almost 20% less than men.

Figure 10. Wage Gap by Occupation Category (population age 15 and above)

Source: Serbia LFS 2009

The wage gap is significantly higher in the private than in the public sector 10.2% and 2.2% respectively. This can reflect the smaller share of women in supervisory positions in the private sector, mentioned earlier, as well as the fact that decisions on recruitment and career advancement are subject to greater managerial discretion in private companies while wages in the public sector are established/increased based on certain objective criteria, e.g. educational qualifications, years of experience, knowledge of foreign languages, etc.

When the differences in average men's and women's monthly earnings are examined by sector, the highest wage gap is observed in agriculture and mining and the lowest in public administration (Table 6). Women's wages are higher than men's in four sectors: construction, financial intermediation, transport and communications and community and personal services. The wage differentials are highest in construction, where women are paid 42% more than men. The higher earnings of women in construction as well as transport and communications are most likely because women employed in these sectors are primarily office workers while men are mainly engaged in hard manual labor. The sectors where women's remuneration is likely to be higher than men's account for just 12.4% of women's employment while almost three-fourth of women are engaged in economic activities where their salaries are between 13% and 27% lower than men's.

**Table 6: Wage Gap by Sector of Employment
(population age 15 and above)**

Sector of Employment	Wage Gap	Share of women employed in the sector	Share of men employed in the sector
Agriculture, hunting, forestry and fishing	26.5	22.9	24.8
Mining and quarrying	36.4	0.5	1.5
Manufacturing	15.9	13.2	19.9
Electricity, gas and water supply	4.8	0.5	2.4
Construction	-41.7	1.5	8.1
Wholesale and retail trade	15.6	16.5	12.0
Hotels and restaurants	8.8	3.7	2.8
Transport, storage and communication	-2.2	3.0	8.2
Financial intermediation	-15.1	3.0	1.5
Real estate, renting and business activities	2.4	3.6	3.3
Public administration and social security	1.8	5.1	4.9
Education	12.6	8.4	3.9
Health and social work	13.3	12.8	2.2
Community, social and personal services	-3.8	4.9	4.4

Source: Serbia LFS, 2009

* negative sign indicates the percentage by which average salaries of women are above average salaries of men

Differences in Earnings of Men and Women Based on Age, Education and Location

Men's and women's earnings tend to increase with age; yet, women's wages are lower than men's in all age categories except for the pre-retirement/early retirement age group of 55-64 where women earn almost 13% more than men. The employment rate of women in this age category is significantly lower than men's - 25% vs. 46% respectively and their higher wages can potentially be explained by the fact

that women of this age group who do find employment are more likely to possess higher expertise and be employed as professionals or associate professionals.

Women's salaries are lower than men's at all education levels, except for women with PhD degrees (Table 7). The highest wage gap is observed between men and women with primary education where women earn almost a quarter less than men. However, the wage gap decreases progressively with each level of education and female master's degree holders earn only about one percent less than men.

Table 7. Wage gap between men and women by educational level (population age 15 and above)

Education Level	Wage gap
Primary education (eight years)	24.0
Lower secondary education lasting 1-3 years	20.0
Upper secondary education lasting 4-5 years	14.9
High education, faculty, academy or higher school	3.4
Master's degree	0.9
PhD degree	-3.4

Source: Serbia LFS, 2009

The differences in men's and women's average earnings are much higher in rural than in urban locations: women in rural areas are paid 12.9% less than men while women in urban areas are paid 4.5% less than men. This may be indicative of the greater prevalence of stereotypes about men's and women's roles as family income providers in rural areas, so that women are paid less than men for work of equal value.

Furthermore, many rural women are working on a family business or farm without any financial remuneration at all: 18.8% of women vs. 3.9% of men in rural areas are not compensated for their work. The majority of the unpaid workers are employed in agriculture: 82.5% of men and 94.2% of women performing unpaid work. Women who work in agriculture are 4.5 times more likely to work without any financial remuneration than men.

3.2 Explaining the Wage Gap

This section of the paper attempts to explain the wage gap between men and women in Serbia. The conclusions of the analysis below suggest that the relatively small gender wage gap in Serbia (smaller than in Western European economies) can be explained by the fact that female workers in Serbia on average have better characteristics (e.g. education levels) than male workers. If men had the same characteristics as women the wage differentials would have been larger. The wage gap occurs due to different returns to the same worker characteristics (e.g. education, occupation, sector of employment) and could be indicative of discrimination of women in the Serbian labor market.

Methodology

The paper applies the Oaxaca-Blinder methodology to explain the observed wage differentials between men and women in Serbia. The approach is based on the assumption that wages are tied to productivity. In the absence of discrimination, the observed gender wage differentials would result from the differences in productivity between men and women. Gender wage discrimination takes place when equally productive workers are paid different wage rates¹⁴.

To measure wage differentials, separate wage equations are estimated for men and women:

$$\text{Males' wage: } W_{\text{male}} = \beta_{\text{male}}X + \varepsilon_{\text{male}} \quad (1)$$

$$\text{Females' wage: } W_{\text{female}} = \beta_{\text{female}}X + \varepsilon_{\text{female}} \quad (2),$$

¹⁴ Gardeazabal, Javier, Arantza Ugidos. 2005. *Gender wage discrimination at quintiles*. Journal of Population Economics

where W_{male} and W_{female} are the logarithms of monthly wages of the male and female workers respectively, X is a vector of workers' characteristics (education, experience, occupation, etc) that explain the level of wages; β_{male} and β_{female} are the returns to the workers' characteristics; and $\varepsilon_{\text{male}}$ and $\varepsilon_{\text{female}}$ are error terms for both equations. Following the methodology of Oaxaca (1973) and Blinder (1973), the difference in mean wages for men and women, denoted R , can be decomposed into three parts (Jann, 2008):

$$R = \bar{W}_{\text{male}} - \bar{W}_{\text{female}} = (\bar{X}_{\text{male}} - \bar{X}_{\text{female}}) \hat{\beta}_{\text{female}} + \bar{X}_{\text{female}} (\hat{\beta}_{\text{male}} - \hat{\beta}_{\text{female}}) + (\bar{X}_{\text{male}} - \bar{X}_{\text{female}}) (\hat{\beta}_{\text{male}} - \hat{\beta}_{\text{female}})^{15} \quad (3)$$

This is a three-fold decomposition, where the first term represents the Endowments Effect (E) and explains the differences that are due to employee characteristics (such as education, sector of employment, occupation etc):

$$E = (\bar{X}_{\text{male}} - \bar{X}_{\text{female}}) \hat{\beta}_{\text{female}},$$

the second term reflects the Coefficients effect (C), which shows the differences in the estimated returns to men's and women's characteristics:

$$C = \bar{X}_{\text{female}} (\hat{\beta}_{\text{male}} - \hat{\beta}_{\text{female}}),$$

and the third term, Interaction effect (I), allows to account for the fact that differences in endowments and coefficients between men and women exist simultaneously:

$$I = (\bar{X}_{\text{male}} - \bar{X}_{\text{female}}) (\hat{\beta}_{\text{male}} - \hat{\beta}_{\text{female}})$$

If men and women get equal returns for their characteristics, the second and the third part will equal zero and wage differentials between male and female employees will be explained by the difference in endowments alone.

The above decomposition is formulated based on the prevailing wages of women, i.e. the differences in endowments and coefficients between men and women are weighted by the wage coefficients of women. However, this equation could also be presented based on the prevailing wage structure of men.

An alternative approach to wage decomposition, prominent in the literature on wage discrimination, is based on the assumption that wage differentials are explained by a non-discriminatory coefficients vector, denoted β^* , which is estimated in a regression that pools together samples of both men and women. Then, the wage gap can be written as:

$$W_{\text{male}} - W_{\text{female}} = (X_{\text{male}} - X_{\text{female}}) \beta^* + X_{\text{male}} (\beta_{\text{male}} - \beta^*) + X_{\text{female}} (\beta^* - \beta_{\text{female}}) + \varepsilon_{\text{male}} - \varepsilon_{\text{female}} \quad (4)$$

The above equation represents a two-fold decomposition:

$$R = Q + U$$

Where $Q = (\bar{X}_{\text{male}} - \bar{X}_{\text{female}}) \hat{\beta}^*$ is the part of the wage differential that is "explained" by sample differences assessed with common "returns" and the second term $U = \bar{X}_{\text{male}} (\hat{\beta}_{\text{male}} - \hat{\beta}^*) + \bar{X}_{\text{female}} (\hat{\beta}^* - \hat{\beta}_{\text{female}})$ is the "unexplained" part not attributed to observed differences in men's and women's characteristics. The latter

¹⁵ Bars on the top of variables denote mean values; $\hat{\beta}$ shows estimated coefficients value.

part is often treated as discrimination. It is important to note however that “the unexplained part” also captures all potential effects of differences in unobserved variables (Jann, 2008).

Results

Coefficient estimates of the separate wage regressions for men and women are reported in Table 8. The results show that wages of both male and female workers are influenced by personal characteristics such as education, occupation, urban or rural location, full-time or part-time employment as well as marital status. For most variables, the estimated coefficients are statistically significant.

Table 8. Earnings Regression

VARIABLES	2008		2009	
	Female	Male	Female	Male
	Log of Monthly Earnings			
Location : omitted rural				
Urban	0.098 (0.020)	0.049* (0.018)	0.092 (0.02)	0.091 (0.019)
Age	0.015** (0.007)	0.023* (0.007)	0.011** (0.007)	0.003** (0.006)
Age ²	- 0.0002** (0.0001)	-0.0003** (0.0001)	-0.0001** (0.0001)	-0.0001** (0.0001)
Marital status: omitted non-married				
Married	-0.028** (0.023)	0.073* (0.029)	-0.043** (0.026)	0.087* (0.028)
Education: omitted primary and below				
Lower secondary	0.094* (0.036)	0.090* (0.028)	0.071** (0.051)	0.078* (0.033)
Upper secondary	0.180 (0.033)	0.199 (0.031)	0.171 (0.060)	0.206 (0.036)
Tertiary	0.414 (0.042)	0.418 (0.045)	0.463 (0.071)	0.403 (0.046)
Number of years at the job	0.003** (0.002)	0.007** (0.002)	0.004** (0.002)	0.009** (0.002)
Job type: omitted full-time				
Part-time	-0.517** (0.093)	-0.732** (0.093)	-0.479** (0.070)	-0.342** (0.109)
Number of children	-0.012** (0.012)	-0.022** (0.011)	0.009** (0.011)	-0.003** (0.014)
Sector: omitted agriculture				
Mining and quarrying	0.500 (0.128)	0.479 (0.060)	0.396 (0.121)	0.505 (0.070)
Manufacturing	0.191* (0.080)	0.053** (0.045)	0.295 (0.087)	0.046** (0.047)
Electricity, gas and water supply	0.206** (0.105)	0.254 (0.061)	0.496 (0.113)	0.211 (0.071)
Construction	0.259 (0.093)	0.249 (0.050)	0.428 (0.105)	0.158 (0.051)
Wholesale and retail trade	0.200* (0.079)	0.108** (0.050)	0.367 (0.088)	0.072** (0.051)
Hotels and restaurants	0.302 (0.088)	0.050** (0.073)	0.416 (0.102)	0.060** (0.077)
Transport, storage and communication	0.255 (0.085)	0.213 (0.048)	0.433 (0.097)	0.154 (0.052)
Financial intermediation	0.530 (0.087)	0.491 (0.066)	0.638 (0.09)	0.159** (0.103)
Real estate, renting and business activities	0.185** (0.097)	0.213 (0.079)	0.462 (0.147)	0.103** (0.074)
Public administration & social security	0.361 (0.083)	0.24 (0.052)	0.391 (0.093)	0.178 (0.058)
Education	0.170** (0.082)	0.093** (0.060)	0.324 (0.089)	0.085** (0.072)
Health and social work	0.283 (0.079)	0.161* (0.061)	0.409 (0.089)	0.117** (0.065)
Community social and personal services	0.208* (0.092)	0.142* (0.062)	0.367 (0.097)	0.014** (0.060)
Private hhs with employed persons	0.249** (0.379)	0.862 (0.400)	0.809** (0.477)	.
Extra-territorial organizations and bodies	.	1.061 (0.071)	.	.
Ownership: omitted other				
Private	0.093** (0.076)	0.105* (0.048)	0.041** (0.107)	0.085** (0.086)
Public	0.232 (0.077)	0.135* (0.053)	0.121** (0.107)	0.166** (0.086)
Occupation: omitted elementary				
Managers and senior officials	0.011** (0.111)	-0.101** (0.185)	0.465 (0.075)	0.537 (0.065)
Professional occupations	0.352 (0.100)	0.337 (0.062)	0.410 (0.058)	0.447 (0.052)
Associate professionals and technicians	0.338 (0.082)	0.245 (0.052)	0.238 (0.054)	0.216 (0.043)

Clerks	0.140** (0.077)	0.069** (0.034)	0.118* (0.048)	0.106** (0.052)
Service, shop and market sales workers	0.079** (0.079)	-0.088** (0.039)	-0.033** (0.049)	0.044** (0.044)
Skilled agricultural and fishery workers	-0.079** (0.078)	-0.148** (0.033)	0.319* (0.142)	-0.109** (0.129)
Craft and related trades workers	-0.263** (0.159)	0.217* (0.097)	0.016** (0.060)	0.114* (0.035)
Plant and machine operators and assemblers	-0.105** (0.078)	-0.024** (0.026)	0.161 (0.054)	0.143 (0.036)
Military officers	-0.149** (0.079)	-0.177** (0.036)	.	0.394 (0.083)
Constant	8.886 (0.193)	9.091 (0.147)	8.890 (0.191)	9.440 (0.155)
R-squared	0.530	0.362	0.532	0.380
Observations	2,152	2,775	2,026	2,572

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Serbia LFS, 2008 and 2009

The estimates from these regressions are used to calculate a threefold and a twofold Oaxaca-Blinder decomposition (Table 9). The wage differentials between men and women decreased from 9.2% in 2008 to 4.6% in 2009. As mentioned earlier, this is likely because male-dominated sectors have been somewhat more affected by the global economic crisis.

The results of a threefold decomposition (based on equation 3 described above) show that women have higher endowments (e.g. higher education levels) than men; however they receive lower returns for these endowments. In fact, if men on average had the same characteristics as women the wage differentials would have been larger. These conclusions are supported by findings from a twofold decomposition (according to equation 4). Women on average have better employment-related characteristics as reflected by the negative sign in “the explained part”, which has an equalizing effect on the overall wage gap. The “unexplained part” (i.e. the factors that cannot be attributed to differences in observed worker characteristics), accounts for the greatest part of the wage differential between men and women and is indicative of discrimination against women in the Serbian labor market.

To understand which variables have the greatest impact on the endowments and coefficients effects, a detailed Oaxaca-Blinder threefold decomposition was performed and the results are presented in Annex 4. The key finding of this decomposition is that women had higher education levels than men,

Table 9. Oaxaca-Blinder threefold and twofold decomposition of monthly wages of male and female employees

	2008	2009
Natural Log of Monthly Earnings		
Male	10.062*** (0.011)	10.146*** (0.012)
Female	9.970*** (0.012)	10.100*** (0.014)
Wage Differential	0.092*** (0.016)	0.046* (0.018)
Threefold Decomposition		
Endowments (E)	-0.110*** (0.019)	-0.098*** (-0.021)
Coefficients (C)	0.144*** (0.015)	0.106*** (0.017)
Interaction (I)	0.058*** (0.018)	0.038* (0.019)
Twofold Decomposition		
Explained	-0.064*** (0.013)	-0.071*** (0.014)
Unexplained	0.156*** (0.015)	0.117*** (0.016)
Robust standard errors are in parentheses; ***, **, * denote statistical significance at 1%, 5% and 10% respectively		

Source: Estimates are based on Serbia LFS, 2008 and 2009 surveys

**Table 10. Gender Wage Gap at Quartiles, 2009
(Log of Monthly Wages)**

	Q1	Q2	Q3	Q4
Male	9.533*** (0.014)	10.003*** (0.004)	10.327*** (0.004)	10.800*** (0.012)
Female	9.523*** (0.014)	9.989*** (0.005)	10.326*** (0.005)	10.786*** (0.015)
Wage Differential	0.010 (0.020)	0.014** (0.007)	0.001 (0.006)	0.014 (0.019)
Threefold Decomposition				
Endowments	-0.009 (0.026)	-0.002 (0.008)	-0.020 (0.013)	0.023 (0.023)
Coefficients	0.009 (0.024)	0.013 (0.008)	0.016* (0.009)	0.047* (0.023)
Interaction	0.010 (0.03)	0.003 (0.010)	0.005 (0.014)	-0.056* (0.026)
***, **, * denote statistical significance at 1%, 5% and 10% respectively; robust standard errors in parenthesis				

Source: Serbia LFS, 2009

however they received lower returns for education than their male counterparts. Other coefficients are difficult to explain and the results require further research.

Unlike many countries where the gender wage gap is higher among either the high earners or the low earners, there is no such pattern in Serbia where the overall gender wage gap is much higher than earnings differentials within the quartiles with no differences between 2008 and 2009. As could be seen from Table 10, which presents estimates of Oaxaca-Blinder wage decomposition for each of the four quartiles, the wage differentials at different points of earnings distribution are relatively small and with the exception of the second quartile the results are not statistically significant. There are no statistically significant differences in returns to worker characteristics among the low paid employees, however in the upper two quartiles of wage distribution returns to observed characteristics are higher for male employees.

This part of the paper has shown that women's wages are lower than men's in all occupation groups and in most sectors. Although the wage differentials reduced from 2008 to 2009, this is likely a temporary effect as the economic crisis affected male-dominated sectors more than female-dominated sectors. The gender-based pay gap has repercussions for women's lifetime earnings and pensions. Above all, however, systematic undervaluation of women's skills has a highly negative impact on their self-esteem and the position of women in society.

PART IV. CONCLUDING OBSERVATIONS AND IMPLICATIONS FOR POLICY MAKING

The findings of the paper show that women's position on the labor market is much more disadvantageous than that of men. Women have much smaller chances of finding a job, starting a business, receiving a job-related promotion or being remunerated at the same rate as men. Less than half of working age women is employed. Education is a major determinant of employment outcomes. Only 22% of women with primary education vs. 84% of those with a master's degree have a job. The difference in employment rates of low educated men and those with a graduate degree (39% vs. 61%) is also significant although less striking than that for women. Family responsibilities, relatively long average working hours, lack of flexible work arrangements and low market demand for female labor are the factors that contribute to the low activity and employment rates for women.

Women are much less likely to start their own businesses or to advance their careers in established companies. They comprise only 28% of the self-employed and 16% of company top managers. Furthermore, women-owned businesses face a more difficult regulatory environment and are more likely to pay bribes to government officials to get things done. Lastly, women are paid less than men in all occupation groups and in most sectors. Although the wage differentials between men and women have reduced from 9.2% to 4.6% between 2008 and 2009, this decrease is most likely attributable to the effects of the global economic crisis rather than to an improved treatment of women. The regression analysis has demonstrated that the wage gap is indicative of discrimination of women in the labor market as earnings differentials cannot be explained by differences in observed characteristics of male and female employees.

These findings suggest that Serbia has a significant and largely untapped economic potential, represented by those women who either do not enter the labor force or who do not have the opportunities to advance in their business and political careers. Thus, improving employment outcomes for women will help not only to realize their right for work but also increase the economic growth of the country. Two facts make women's greater participation in the labor force attractive for the economy: almost 70% of the population is in the working age group offering a potential for increased economic growth; and more than 60% of GDP comes from services, a sector that needs skilled people to grow. To improve labor market opportunities for men and women, policy makers should pay attention to the following four broad areas:

- 1) ***Employment generation.*** In lieu of the currently low labor force participation rates, it will be essential to create more jobs for both men and women (e.g. through improvement of the regulatory regime, attraction of FDI and improvement of infrastructure). It will be particularly important to develop more off-farm livelihood opportunities in rural areas where the difference in men's and women's employment and remuneration rates is most pronounced. Studies from other countries e.g. Bangladesh garments or Ecuador flower industry show that a greater availability of paid jobs for women helps reduce the impact of stereotypes about gender roles and increase the number of women in the labor force. It is equally important to improve access to affordable childcare, introduce parental leave options for men and develop flexible work arrangements to increase women's activity and employment rates.
- 2) ***Enhancement of education outcomes.*** Given that people with upper secondary and higher education levels have better chances of finding a job, it will be crucial to raise the educational attainment of population and to encourage women to continue their education to higher levels. It will also be important to improve the quality and relevance of education as well as to promote internship opportunities for students. As mentioned earlier, the highest unemployment rate (39.8% for men and 45.9% for women) is observed in the 15-24 age category, so such measures will be vital for helping the youth obtain valuable work experience, smooth the transition from educational institutions to the professional environment and increase the employment rates of young people.
- 3) ***Improvement of the regulatory environment and support to women's business and political careers.*** Improvement of business regulations, reduction of corruption and enhancement of access to credit will improve entrepreneurship among both men and women. It will also be important to increase asset ownership among women by ensuring that land registration and inheritance practices follow legal norms rather than traditional practices. Further research is needed to explain the differences in perception of the regulatory environment between men and women. In the meantime, attracting more female employees into the government regulatory bodies may improve the situation.

Traditional views on the position of men and women in society may restrict women's aspirations for prominent roles in business and politics. Highlighting women's success stories in the media, e.g. through annual Business Women awards can improve the visibility of women's achievements and provide a positive example for other aspiring female entrepreneurs. Similarly, public awareness campaigns and legislative reforms (e.g. introduction of quotas for women in parliament) can enhance women's participation in the decision making processes.

- 4) ***Promotion of transparent performance evaluation and wage setting mechanisms*** can bring more women to leadership positions, reduce the gender-based wage gap and improve the performance of public and private institutions by bringing more deserving people to leadership positions. The public sector can set an example of implementation of merit-based promotion schemes. Likewise, industry associations, chambers of commerce and other private sector associations can be mobilized to spread gender-sensitive corporate practices and promote the equal treatment of men and women at the workplace.

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Definitions of Labor Market Indicators

The Labor Force Survey observes population aged 15 and over, relative to the activity status in the respective week and not according to formal status of the persons interviewed.

The term ***employed*** refers to the persons who did a job for at least one hour in the respective week and were duly remunerated (payments in money or in kind), as well as the persons who were employed and were absent from work in the observed week.

The term ***unemployed*** refers to the persons who, in the respective week did not perform any work for remuneration and who did not have a job they were absent from and which they could carry on after the absence, in case they met the following conditions:

- In the last four weeks these persons undertook active steps to find a job and if a job was offered, they would be able to start working within two weeks time;
- In the last four weeks these persons undertook no active steps to find job, since they had already found a job and were about to start working after the respective week, latest within the following three – month period.

Active population (labor force) includes all employed and unemployed persons aged 15-64.

Inactive population consists of the population aged 15-64 who were not categorized as active population

Activity rate presents the percentage share of active population in total population aged 15-64.

Employment rate presents the percentage share of employed population in total population aged 15-64.

Unemployment rate presents the percentage share of unemployed population in total number of active population.

Inactivity rate presents the percentage share of inactive population in total population aged 15-64

Adopted from: Statistical Office of the Republic of Serbia. 2009. *Labor Force Survey, October 2009. Preliminary results*. Communication # 357.

Note: In this paper activity rate, employment rate and unemployment rate is presented for population age 15-64 to enable comparability with the EU countries. Other data on employment patterns (e.g. "Structure of Employment by Type of Ownership", "Structure of Employment by Sector", etc) is provided for population age 15 and above.

Percentage Change of Sectoral Employment of Men and Women in Serbia between 2008 and 2009

Sector of Economic Activity	Male	Female	Total
Agriculture, hunting forestry & fishing	-4.5%	-12.3%	-7.7%
Mining & quarrying	-24.0%	56.3%	-15.4%
Manufacturing	-9.2%	-19.1%	-12.8%
Electricity gas & water supply	12.0%	-6.2%	10.8%
Construction	-27.5%	-17.9%	-26.1%
Wholesale and retail trade	-15.8%	-9.0%	-14.4%
Hotels and restaurants	-18.9%	-3.6%	-10.7%
Transport, storage & communication	1.1%	7.7%	2.6%
Financial intermediation	-8.7%	-12.1%	-11.9%
Real estate, renting & business activities	-2.9%	2.3%	-1.9%
Public administration & social security	-6.8%	-2.3%	-5.7%
Education	54.7%	17.9%	30.6%
Health & social work	-25.6%	5.3%	-1.9%
Other community, social & personal services	-12.7%	9.8%	-3.5%
Private households with employed persons	-8.7%	17.2%	-7.7%
Total	-8.9%	-5.6%	-7.8%

Serbia LFS, 2008 and 2009

Structure of Self-employed by Sector of Economic Activity

Structure of Self-employed by Sector of Economic Activity			
	Male	Female	Total
Agriculture hunting forestry & fishing	62.2	55.51	60.32
Mining & quarrying	0.09	0	0.06
Manufacturing	6.82	3.3	5.83
Electricity gas & water supply	0.12	0	0.08
Construction	7.44	0.87	5.59
Wholesale and retail trade	10.91	18.35	13
Hotels and restaurants	1.45	2.24	1.67
Transport, storage & communications	4.03	0.9	3.15
Financial intermediation	0.3	0.43	0.34
Real estate, renting & business activities	2.83	5.91	3.7
Education	0.3	0.55	0.37
Health & social work	0.56	1.57	0.84
Community, social & personal services	2.66	8.17	4.21
Private households with employees	0.17	1.99	0.68
Extra-territorial organizations & bodies	0.13	0.2	0.15
Total	100	100	100

Source: Serbia LFS 2009

Oaxaca-Blinder detailed three-fold decomposition of monthly wages of male and female employees, 2008 and 2009		
	2008	2009
	Means	Means
Males wages	10.062*** (0.011)	10.146***(0.012)
Females wages	9.970*** (0.012)	10.100***(0.014)
Wage Differential	0.092*** (0.016)	0.046*(0.018)
Endowments		
Location	-0.011*** (0.003)	-0.009***(0.003)
Age	0.006 (0.006)	0.004 (0.005)
Age ²	-0.009 (0.007)	-0.006 (0.006)
Marital status	0.001 (0.001)	0.0004 (0.001)
Education	-0.044*** (0.007)	-0.048*** (0.008)
Number of years at this job	0.007 (0.004)	0.010* (0.004)
Full/part-time employment	- 0.0002 (0.001)	0.003 (0.003)
Children	- 0.0003 (0.0005)	0.000 (0.0004)
Sector	-0.003 (0.009)	-0.014 (0.010)
Ownership	-0.012*** (0.003)	-0.006 (0.003)
Occupation	-0.043*** (0.016)	-0.032 (0.017)
Total	-0.110*** (0.019)	-0.098***(0.021)
Coefficients		
Location	-0.011* (0.006)	-0.0002 (0.006)
Age	0.344 (0.392)	-0.340 (0.395)
Age ²	-0.300 (0.201)	-0.034 (0.210)
Marital status	0.018*** (0.007)	0.021*** (0.006)
Education	0.122*** (0.028)	0.026 (0.029)
Number of years at this job	0.057 (0.043)	0.069 (0.046)
Full/part-time employment	0.099 (0.063)	-0.067 (0.062)
Children	-0.005 (0.009)	-0.007 (0.011)
Sector	-0.139 (0.035)	-0.008(0.034)
Ownership	-0.008*** (0.027)	0.014(0.043)
Occupation	-0.078*** (0.023)	0.050*(0.025)
_cons	0.045 (0.208)	0.382 (0.197)
Total	0.144*** (0.015)	0.106 (0.017)
Interaction		
Location	0.005* (0.003)	0.0001(0.003)
Age	0.003 (0.005)	-0.003(0.004)
Age ²	-0.010 (0.008)	-0.001(0.006)
Marital status	-0.002 (0.002)	-0.001(0.002)
Education	-0.002 (0.007)	0.005(0.008)
Number of years at this job	0.008 (0.006)	0.010(0.007)
Full/part-time employment	- 0.00009 (0.001)	-0.001(0.001)
Children	- 0.0003 (0.001)	-0.000(0.001)
Sector	0.012 (0.014)	0.024(0.013)
Ownership	0.009** (0.004)	-0.0002(0.003)
Occupation	0.034* (0.018)	0.005(0.018)
Total	0.058*** (0.018)	0.038*(0.019)
Observations	4937	4598
Robust standard errors are in parentheses; ***, **, * denote statistical significance at 1%, 5% and 10% respectively		
Source: Serbia LFS, 2008 and 2009		