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An empirical investigation on the public-private sector wage gap in Albania

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Abstract. This study aims to empirically investigate the public-private wage differentials in Albania. The public/private pay differential in these countries is certainly an interesting issue to study given that the country has undergone in-depth restructuring of the economy, which requires understanding in particular the role of the public and private sector. To the best of our knowledge, this is the first attempt in empirically investigating the factors determining the public-private wage gap in the country. Using nationally representative data from the Albanian Living Standard Measurement Survey 2012, the double selection methodology in Heitmueller (2006) is employed in order to model the conditional mean wage regressions with sample selection corrections, as well as the quantile regressions approach following Chernozhukov et al (2013), in order to complement the findings along the entire distribution of wages. Following these, we employ the Oaxaca Blinder Decomposition technique to determine whether the wage gap is attributable to the differences in the individual’s characteristics or to the differences in the remuneration endowments or wage discrimination.

Keywords: wage gap, double selection, quantile regressions, Oaxaca-Blinder decomposition method

1. Introduction

The public sector wage setting can have an important effect on labour market efficiency and macroeconomic outcomes (Depalo et al, 2013). If the government offers higher remuneration to its employees compared to the private sector, it may absorb the highly skilled workers (Hyder and Reilly, 2005). Thus, the private sector employment would be crowded out unless wages increase. There is a positive pay gap in favor of the public sector in Albania (INSTAT, 2015). An unjustified-by-productivity gap might be conducive to a dramatic misallocation of resources. It could also influence the wage setting and other employment practices.

This study will contribute to the existing research in the field and to the policy making process by providing accurate and up to date estimations of the public-private sector wage gap in Albania. It will adopt the more advanced methodological approaches that address the double sample selection problem. To this end, nationally representative data from the Albanian Living Standard Measurement Survey of 2012 will be used.

This paper is organized as follows. Section 2 presents a short literature review. The data and the methodological approach are discussed in section 3. Section 4 presents the empirical results and Section 6 concludes.

2. Theoretical and empirical review

Public sector pay is of great relevance and importance for both policy makers and economists. The public sector wage setting policy instruments could have considerable implications on both public and private earnings inequality and wage gaps between sectors, public finances, the quality and efficiency of the public sector and possibly of the whole economy. A common difference between the public and private sector wage settings is that the determination of wages in the public sector depends on the political constraint whereas that in the private sector on the profit constraint (Bender, 1998).

The public sector may have higher incentives to overpay the workers as it could be used as a means to acquire their political support and cooperation and because it can pass the cost to people via higher taxes. However, wages may be higher in private sector due to compensation for lack of several non-income benefits (Heitmueller, 2006).

The findings of some studies suggest that there is a significant pay differential between private and public sector, but not all these studies have accounted for selectivity bias in their empirical analysis. According to Van der Gaag and Vijverberg (1988), it is important to control for selection bias as it reduces the premium in the public sector. The findings of other studies in the field are inconclusive. Papapetrou (2006), Mizala et al (2009), and Aminu (2011) find a wage differential in favour of the public sector. Giordano et al. (2011) found a conditional pay gap in favour of the public sector in ten euro-area countries. Results also suggest that this wage differential is due to public employees being more educated and more experienced in Ireland (Boyle et al. 2004); due to higher education levels in Pakistan (Hyder and Reilly, 2005) whereas due to experience, education and occupation in Croatia (Rubil 2013). Van der Gaag et al. (1989) and Lindauer and Sabot (1983) find mixed results with regards to the size and direction of the pay gap whereas Depalo et al (2014) find that the overall pay gap between public and private sector displays a non trivial cross-country heterogeneity. The inconclusiveness of the findings may be attributed to the context and institutional settings and labour market policies of the countries under investigation, but also to use of different empirical techniques.

3. The Data and the Methodology

The data from the Albanian LSMS 2012 conducted by the Albanian Institute of Statistics are used in the estimations. The survey contains different modules and detailed information enabling the extraction of a number of variables³. The procedure involves OLS regressions of separate sectoral (public and private) wage equations according to the Mincer earnings function, in which individuals' (logged) earnings depend on educational attainment, work experience and characteristics such as region, industry, occupation, gender and so on. Consequently, the overall average differential in earnings between the private and public sector is decomposed into the explained (attributable to the differences in characteristics) and unexplained part (attributable to the differences in the remuneration endowments or wage discrimination) by using the Oaxaca-Blinder technique.

Selectivity bias due to the non-random selection of the sample of the employees and the assignment to public or private employment are two issues of concern in the empirical estimation (Maddala 1983, Heitmueller 2006). In order to test, and potentially account for, both types of selection, a double sample selection model will be adopted following Heitmueller (2006). This model estimates an equation of selection into employment in the first step, and selection into sector of employment in the second. The two selection processes may be independent, in which case the selection and outcome equations should be separately estimated. Using the appropriate results, sample selection correction terms are constructed. Wage equations for public and private sector are then separately estimated via OLS including the correction terms as additional regressors.

The econometric model requires a solution to the identification problem: each of selection equations must have at least one independent variable that does not belong in the outcome equation, i.e. a variable that affects selection, but not the outcome (wages). In the participation equation, it may be argued that the number of children may be a significant determinant of participation in the labour force, but not of the sector choice, nor wage. We have included the number of children split into age groups of 0-5 and 6-14 years and the dependency ratio⁴, as it is expected to affect participation, but not to be related to sector choice, or to wages. The identification of the sector choice equation was achieved through the inclusion of a variable indicating the presence of any other member of the household employed in the public sector arguing that they may provide valuable information on employment opportunities in this sector.

³ The descriptive statistics for the dependent and independent variables that were included in the empirical model may become available upon request.

⁴ comprising information of all children, adults and other members of the household that do not have any income.

4. Estimation results

Besides the identification variables, the participation equation includes dummies for age groups 21-30 and 31-50 years, marriage status, education dummies for secondary and tertiary education, tenure and squared tenure, occupation dummies in accordance with the ISCO08 classification (the elementary occupations are the reference category). Locational variables include the urban/rural and the strata dummies (Tirana is the reference category). In addition to these variables and the respective identification variables, the sector choice equation includes a variable on the knowledge about English language. Table 1 presents the results of the biprobit model, based on which the participation and sector choice inverse mills ratios were constructed. The results indicate that both stages of the model are identified and the coefficients have the expected signs. The Wald test indicates that there is no sufficient evidence to reject the null at the 5 percent level, but it can be rejected at 10 percent. The final decision was to consider the 10 percent level of significance, and the four selection terms were calculated as in Heitmueller (2006).

Table 1. Results of the biprobit model

	public				participation			
	Coef.	Std. Err.	z	P>z	Coef.	Std. Err.	z	P>z
age16_20	-0.773	0.287	-2.700	0.007	-0.634	0.116	-5.460	0.000
age21_30	-0.150	0.141	-1.060	0.289	0.061	0.087	0.690	0.487
age31_50	0.163	0.087	1.870	0.061	0.231	0.054	4.300	0.000
married	0.009	0.064	0.150	0.884	0.114	0.040	2.830	0.005
educ02	0.627	0.072	8.640	0.000	0.577	0.049	11.840	0.000
educ03	1.547	0.069	22.360	0.000	1.001	0.031	32.010	0.000
exper	0.062	0.016	3.870	0.000	0.051	0.008	6.020	0.000
expersq	-0.001	0.000	-2.530	0.011	-0.001	0.000	-5.310	0.000
urban	0.222	0.055	4.070	0.000	0.390	0.027	14.370	0.000
coastal	0.110	0.070	1.570	0.116	-0.162	0.043	-3.790	0.000
central	0.147	0.076	1.930	0.053	-0.291	0.042	-6.980	0.000
mountains	0.293	0.123	2.370	0.018	-0.477	0.049	-9.730	0.000
english	-0.072	0.057	-1.270	0.205				
othmemberpublic	1.260	0.214	5.890	0.000				
dep_ratio					0.359	0.067	5.350	0.000
child05					-0.011	0.023	-0.480	0.630
child614					-0.006	0.017	-0.330	0.739
cons	-3.466	0.276	-12.550	0.000	-2.347	0.162	-14.480	0.000
athrho					1.261	0.342	3.690	0.000
rho					0.851	0.094		
LR test of indep. eqns. (rho = 0): chi2(1) = 2.96				Prob > chi2 = 0.0854	Log likelihood = -8037.595			
Number of obs = 16861				Censored obs = 13710	Uncensored obs = 3151			

Table 2 presents the results of the OLS estimations with and without correction terms for the public and private sectors. Standard errors for the models are based on a simple re-sampling bootstrap method with 1000 replications. The results of the Oaxaca decomposition (Table 3) indicate that there is a log differential in wages of about 0.18 between the public and the private sector. The decomposition of this difference into the endowment, coefficients and the interaction between the two, indicates that most of the difference is due to the characteristics of the employees included in the regression. If the employees of the public sector would have the characteristics of their counterparts working in the private sector their wages would have been lower. The contribution of the differences in return is almost zero in the sample and not significant for the population. The difference in endowments is the only significant term.

Table 2. Estimates of the OLS regressions for the public and private sector⁵

Variable	OLS Public		OLS Private	
	Not corrected	Corrected	Not corrected	Corrected
age	0.0499	0.0662**	0.0734***	0.0691***
age2	-0.0007**	-0.0008**	-0.0009***	-0.0008***
married	0.0209	-0.026	-0.0158	-0.025
educ02	0.0008	-0.0563	-0.0785**	-0.1073**
educ03	0.2369***	0.0589	0.2385***	0.2024***
educ03 central	-0.0732	-0.0588	-0.2218***	-0.2231***
educ03 coastal	-0.1048*	-0.094	-0.1899***	-0.1927***
educ03 mountains	-0.2024***	-0.1863***	-0.3226***	-0.3310***
exper	-0.0234	-0.0457*	-0.0331***	-0.0335***
expersq	0.0006	0.0008**	0.0005**	0.0005**
managers	0.5273***	0.4862***	0.3752***	0.3785***
professionals	0.3571***	0.3590***	0.4348***	0.4348***
technicians	0.3133***	0.2752***	0.2779***	0.2790***
clerical	0.1405***	0.1399**	0.1744***	0.1761***
service	0.2312***	0.1799***	-0.0901***	-0.0880**
skilled agri	-0.1027	0.0401	-0.1433**	-0.1434**
craft	0.2151***	0.1398**	0.0835***	0.0846***
operators	0.4151***	0.3346***	0.1507***	0.1516***
armedforces	0.3663***	0.3055***	0.0699**	0.0621*
urban01	0.022	-0.0168	-0.0745***	-0.0980***
coastal	0.0146	0.023	-0.0428	-0.0251
central	-0.0453	-0.0187	-0.0607*	-0.0315
mountains	0.0299	0.0823	0.0537	0.1054
english01	0.1467***	0.1281***	0.1015***	0.1011***
exper male		0.0039***	0.0099***	0.0099***
λp		-0.8967*		-0.1809
λs		-0.6834**		-0.0765
cons	8.1677***	8.8356***	7.9700***	8.2594***
N	1319	1319	1816	1816
r2	0.3522	0.3841	0.2692	0.2695

Table 3. Decomposition of the wage differential

ldailywage	Coeff.	Bootstrap Std. Err.	z	P>z
Private sector	9.141	0.011	818.19	0.000
Public sector	9.322	0.009	986.70	0.000
Difference	-0.180	0.015	-12.39	0.000
Decomposition				
Endowments	-0.181	0.019	-9.55	0.000
Coefficients	-0.019	0.020	-0.97	0.333
Interaction	0.020	0.025	0.81	0.419

Conclusions

This study contributes to the existing research in the field and to the policy making process by providing accurate and up to date estimations of the public-private sector wage gap in Albania, adopting an advanced methodological approach. Our findings indicate that the government does offer higher remuneration to its employees compared to the private sector, but the difference is attributed to the differences in the characteristics of the employees rather than to the returns on these characteristics. The return to these is equal between sectors. However, the results suggest that the public sectors employees have better characteristics, which may lead to a lower productivity of the private sector. This research assumes the same remuneration for equal productivity related characteristics between genders. Its testing may be at the focus of future investigations.

⁵ Statistical inference based on bootstrap standard errors. Legend: * p<.1; ** p<.05; *** p<.01

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