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A Gender Perspective Analysis of the Interaction between Public and Private Sector Employment – A Study of Western Balkan Countries

Bernard Dosti[1]
Donald Vullnetari[2]
University of Tirana, Faculty of Economics, Department of Economics,
Tirana, Albania

A B S T R A C T

This paper examines the connection between expanding public-sector employment and its impact on private-sector job growth. Our focus is on understanding whether public hiring "crowds in" or "crowds out" private jobs, and further, if crowding out occurs, whether it leads to "partial crowding out" (reducing unemployment), "full crowding out" (no change in unemployment), or "more than full crowding out" (increased unemployment). This paper uses data from 2006 to 2022 from five Western Balkan (WB) countries: Albania, Bosnia & Herzegovina (BiH), Montenegro, North Macedonia, and Serbia. The findings show a strong negative link between public and private sector job growth. Similar to the unemployment model, the results suggest "full crowding out," meaning each new job in the public sector leads to roughly one fewer job in the private sector. This implies that adding public jobs does not create new jobs overall, but simply shifts them from one sector to another. Also, traditional gender roles shape labor markets in the WB, leading to lower labor force participation rates for women

[1] Corresponding author, e-mail: bernard.dosti@unitir.edu.al
[2] E-mail: donald.vullnetari@unitir.edu.al

compared to men and influencing the dynamics between public and private employment sectors.

KEYWORDS: *labor markets, public sector employment, private sector employment, gender*

Introduction

The Western Balkans (WB) region has experienced a unique trajectory in its labor market dynamics. Following the dissolution of Yugoslavia in the 1990s and the fall of the communist regime in Albania, these nations underwent significant political and economic transformations, leading to diverse challenges in their labor markets. The transition from centrally planned economies to market-oriented systems marked a pivotal period, with the restructuring process impacting employment patterns and job availability. Shifts in industries, privatization efforts, and the restructuring of state enterprises have contributed to the complexities characterizing the labor markets in the region.

The region is facing a series of internal and external issues, such as significant outward migration fuelled by high unemployment, low wages, and limited opportunities. This "brain drain" underscores persisting socioeconomic hurdles. Notably, public sector employment plays a crucial role, offering stability and benefits to a large segment of the workforce. However, its impact extends beyond job creation, influencing private sector dynamics and overall unemployment rates.

The objective of this paper is to investigate the relationship between growth in public-sector employment and growth in private-sector employment. Specifically, we are investigating whether recruitment in the public sector leads to an increase ("crowding in") or a decrease ("crowding out") in private sector employment. If the results show that there is a crowding out effect, we aim to distinguish if this effect constitutes a "partial crowding out", resulting in a reduction in unemployment; or otherwise "full crowding out", where unemployment remains unchanged; or "more than full crowding out", leading to an increase in unemployment levels.

Based on the context of the WB, particularly in the earlier years of their transition to market-based economies, the public sector was often considered one of the most preferred employers. Public sector jobs were perceived as offering greater job security compared to the private sector

during times of economic uncertainty and transition. Government jobs were seen as more prestigious and respectable, especially in fields like education, healthcare, and civil service, while the lack of development in the private sector influenced skilled individuals to seek public-sector employment.

The transformation of ownership through privatization, the emergence and expansion of small businesses, the inflow of foreign direct investment, the transfer of technology and innovation, shifts in foreign trade patterns, and regional development have all influenced the demand for skills in Western Balkan nations (Barlet, 2007). Kovtun et al. (2014) explain that the ongoing reforms facilitated the growth of the private sector, which ultimately contributed to lowering unemployment rates, while the influx of external capital, particularly through greenfield FDIs, played a crucial role in fostering the emergence of fresh enterprises and even entirely new economic sectors. This influx also offered opportunities for individuals previously laid off from declining industries to reintegrate into the workforce through participation in these new economic endeavors.

Despite the fact that the efficiency of the private sector was increasing in the WB (Reiter et al., 2020), the average wages in the public sector appeared to stay higher than those in the private sector, but also the highly skilled workers were more inclined to work in the public sector and were more frequently employed there (Vladisavljević et al., 2017). With this in mind, the history of private sector development in Eastern European countries shows that with the rise of private sector productivity, the shift of higher wages and high-skilled workers will shift to the private sector, as currently stands in developed countries (Lausev, 2014).

Building on existing research, we aim to explore the potential for public-sector employment to crowd out private-sector jobs. We want to contribute to the broader economic literature on transitioning economies, shedding light on the nuances of labor market shifts during periods of transition (or prolonged transitions). Lastly, we think that understanding whether public-sector expansion positively or negatively affects private-sector employment can guide policies in both private and public-sector development of labor markets.

Despite variations among individual countries, unemployment remains a key concern in the WB, particularly among youth and women. The lack of adequate job opportunities, structural mismatches in skills, and insufficient integration into global value chains have contributed to elevated unemployment levels. In general, during this period, there has been a

notable trend of fluctuation and decline in unemployment rates from the initial years to the most recent period. Most of the countries have experienced a decrease in unemployment rates, indicating improvements in their respective labor markets. Notably, BiH has reduced unemployment from 31.1% in 2006 to 12.7% in 2022 and North Macedonia from 36.4% in 2026 to 14.4% in 2022 (see Annex Figure 1).

There has also been progress in the reduction of the youth unemployment rate (see Annex Figure 2). In BiH, the youth unemployment rate decreased from 62.1% in 2006 to 33.5% in 2022; in North Macedonia, it decreased from 59.6% in 2006 to 34.9% in 2022; in Montenegro, it decreased from 46% in 2006 to 28.3 in 2022; in Serbia decreased from 48% in 2006 to 24.8% in 2022. The youth unemployment rate in Albania peaked in 2015 at 39.9%, while it decreased to 27.8% in 2022. Notwithstanding the progress, the youth unemployment rate remains high.

Limited opportunities within the labor market dissuade numerous young individuals from engaging in workforce participation. Prolonged exposure to such conditions places these young individuals at a heightened risk of enduring prolonged disadvantage within the labor market, a phenomenon known as "labor market scarring", while this effect can precipitate significant and enduring consequences over the long term (Mojsoska-Blazevski et al., 2017).

The WB region experiences significant levels of outward migration, encompassing various forms such as temporary and permanent migration, the emigration of highly skilled individuals, commonly referred to as "brain drain", and transit migration. Despite progress in improving economic and social prospects over the past decade, enduring structural obstacles and socio-economic hardships continue to significantly motivate emigration from Western Balkan economies. These challenges include high levels of unemployment, relatively low wages, poor educational outcomes, inadequate social security, and pervasive corruption, all occurring simultaneously. Established migration networks, sustained labor needs, and migration policy initiatives explicitly designed for WB labor migrants have reduced the obstacles to emigrating to various destination countries (OECD, 2021).

Employment within the public sector has played a substantial role in the labor market of the WB. Government entities, state-owned enterprises, and various public institutions have traditionally been prominent employers, offering job stability and benefits. In 2022, Montenegro had the highest

public employment rate, at 23.7% of the total labor force, followed by BiH with 23.3%, Serbia with 22%, North Macedonia with 18.8% and lastly Albania with 12.6% (see Annex Figure 3). Although there is a slightly decreasing trend for Albania, North Macedonia and Montenegro, the trend is rather steady for BiH and Serbia.

Gender Differences in the Labour Market

Traditional gender roles play a significant role in shaping labor market dynamics in the Western Balkans. These roles are often deeply entrenched in social norms, cultural beliefs, and historical practices, which can have a direct impact on women's participation in the workforce. Looking at the figures (see Annex Table 5), in 2022, the labor participation rate for women is lower in all the WB countries. Particularly, in Albania, the participation rate of women is 52.9% while the participation rate of men is 60.3%; in BiH, the participation rate of women is 40.3% while the participation rate of men is 50.2%; in Montenegro, the participation rate of women is 49.2%, while the participation rate of men is 56.3%; in North Macedonia, the participation rate of women is 42.2%, while the participation rate of men is 53.0%; and in Serbia, the participation rate of women is 51.3%, while the participation rate of men is 59.1%. Considering this, the participation rate of women is, on average, 8.6 percentage points lower in the observed WB countries.

Looking at the historical data (see Annex Table 5), there was a slight improvement since 2006. In 2022, compared to 2006, the labor market participation rate of women in Albania increased by 6.4pp, in BiH by 9.2pp, in Montenegro by 6.8pp, in North Macedonia it increased by 0.5pp and in Serbia by 6.7pp. However, the labor force participation rate for men also increased, sustaining the gender difference, reflecting the ongoing influence of traditional gender roles and the need for continued efforts to promote gender equality in the workforce. Support is required to overcome labor mobility challenges faced by women, including balancing family responsibilities with work commitments and addressing gender stereotypes in occupations (Jevtić et al., 2023). There is also evidence that an increase in digital competencies can lead to increased inclusion of women in the labor market (Lazić et al., 2023).

This difference is, however, less evident when considering the unemployment rate. Although women generally have a higher

unemployment rate than men across all countries and throughout the 2006 – 2022 period (see Annex Table 6), differences are small. Also, for the latest data in 2022, the unemployment rate is lower for women in Albania, Montenegro, and North Macedonia, while in Serbia the women's unemployment rate is 0.5pp higher than men, and in BiH is 4.8pp higher.

Exploring employment in the private sector, gender differences in employment are still highly evident. The employment rate of women is below 50%, and close to 40% in all countries, proving a substantial gap in employment of women in this sector (see Annex Figure 5). More precisely, the percentage of women employed in the private sector in Albania is 43%, in BiH 39%, in Montenegro 41%, in North Macedonia 40% and in Serbia 43%.[3] On the other hand, the public sector is more gender-balanced. The percentage of women employed in the public sector is 50% in Albania, 42% in BiH, 51% in Montenegro, 46% in North Macedonia and 53% in Serbia (see Annex Figure 4).[4] The further development of tourism in the region has shown to be a positive factor in empowering women. Gender inequality within the tourism sector is lower than in other industries, contributing to the inclusion of women in the labor market and increasing entrepreneurship (Pavlović et al., 2022). Although there is some slight progress in the employment of women in both the private and public sectors, it is evident that the public sector has made more progress in ensuring more equitable employment than the private sector.

Literature Review

For a long time, the public sector has played a leading role in employment, not only by being a large employer but also by influencing wages and overall job availability (Marinakis, 1994). Public sector employers, unlike their private sector counterparts who aim to maximize profits, are theorized to make decisions based on two main approaches: achieving optimal social outcomes or pursuing the goals of individual politicians (Forni & Giordano, 2003).

In essence, three key factors influence the impact of public-sector employment on the private sector. Firstly, higher wages in public jobs can

[3] Latest ILOSTAT data available for Albania are in 2019, for Montenegro are in 2020, and for the other countries in 2022.

[4] Latest ILOSTAT data available for Albania are in 2019, for Montenegro are in 2020, and for the other countries in 2022.

attract workers from private businesses, as both sectors compete for the same talent pool. Secondly, the effect of increased public employment on overall jobs depends on how much private and public goods or services complement each other. Finally, the net change in household income due to public job creation, combined with how strongly individual households adjust their spending based on income changes (income effect) and job availability (substitution effect), can lead to uncertain outcomes in terms of overall consumption and its impact on different sectors. (Nalban & Smădu, 2021).

Public-sector employment carries significant and enduring implications for private-sector employment and the overall unemployment rate. More specifically, the public sector becomes a competitor for labor with the private sector, and this competition has the potential to heighten the strains in wage negotiations, leading to an increase in private sector wages, creating a crowding-out phenomenon that draws workers from the private sector into the public sector (Caponi, 2017).

In this context, wages play an important role. According to Afonso and Gomes (2014), public employment and wages impact private employment and wages as they make unemployment less attractive, either by increasing the chances of getting a public-sector job or by making public-sector jobs more attractive while also reducing private-sector employment. This pressure amounts directly to competition between sectors, resulting in the private sector increasing wages.

In one of the early empirical works, Maley and Moutos (1996) assessed the crowding out of private-sector employment by government employment in Sweden during the period from 1964 to 1990. Their findings suggest that the growth in government employment led to a complete crowding-out of private employment in Sweden during this period, suggesting that countries with a substantial public sector workforce would typically experience lower labor force participation rates. However, they indicate caution in their findings, as Sweden`s high participation rate was not due to a labor demand-driven increase in aggregate employment, but rather a labor supply response by households to achieve an "acceptable" level of disposable income. Such conclusions and cautions might be valid for high-income countries, while for developing countries, the situation might be more demand-driven.

In a study by Algan et al. (2002), researchers investigated the relationship between public sector employment and the functioning of labor markets using pooled data from 17 OECD for the period from 1960 to 2000.

Their empirical findings from the employment equation indicated that, on average, public employment has a strong crowding-out effect on private employment, while the impact of public employment heavily depends on the kind of public jobs created, specifically the degree of substitutability with private production and the size of rents in the public sector. Although Boeri et al. (2000) analyzed regulation and labor market performance, they also found evidence of a crowding-out effect of the public sector on the private sector, but at a lower rate than Algan et al. (2002) show. A partial crowding out effect is also shown at a local level by Becker et al. (2021), who suggest that each additional public sector job reduces employment in the industry by around 0.2 jobs while it creates just over one additional job in other parts of the private sector. Their paper used the relocation of the German government from Berlin to Bonn in the wake of the Second World War as a natural experiment to provide evidence for the effects of public employment on private-sector employment.

Nalban and Smădu (2021) quantitatively assess the spillover effects originating from sectoral labor market shocks in an emerging economy (Romania) using a VAR model. They find that increases in public employment crowd out private-sector employment and are contractionary, while increases in public wages lead to muted spillover effects. Conversely, increases in private employment and wages boost public employment and speed up the economy.

Methodology and Data

To investigate the presence of crowding out, we conduct analyses for both the unemployment rate and the rate of private-sector employment. The model is based on the methodological work of Behar and Mok (2019):

$$U_t = \beta Pub_t + \delta X_t + \varepsilon_t$$

$$Prv_t = \beta Pub_t + \delta X_t + \varepsilon_t$$

Where U is the rate of unemployment, Pub is the rate of public employment, Prv is the rate of private employment rate, X is the vector of control variables and ε is the residual term. All rates are shown as percentages of the total workforce. For easiness of interpretation, we will call the first model the Unemployment Model and the second model the

Private Employment Model. The control variables include GDP growth, urbanity, government expenditures, exports and inflation.

For the Unemployment Model, Behar and Mok (2019) explain the estimation results based on the estimating coefficient of the public employment variable. Specifically, if the coefficient β approaches -1, there is no crowding out effect. When β is more negative than -1, there is crowding in. A β value between 0 and -1 suggests a partial crowding out. A β value near 0 suggests complete crowding out.

According to Behar & Mok (2019), in the Private Employment Model, the coefficient β indicates the impact of public employment on private sector jobs. A positive β signifies that public jobs also create employment in the private sector, suggesting a "crowding-in" effect. Conversely, a β close to zero implies no significant impact. Values between -1 and 0 indicate partial crowding out, meaning some private jobs are lost for each public job created. A β of -1 suggests full crowding out, where each public job eliminates one private sector job. Finally, a β lower than -1 implies even greater crowding out, with more than one private sector job lost for each public position created.

The empirical analysis draws upon annual data from 2006 to 2022 for 5 Western Balkans countries, including Albania, Bosnia & Hercegovina, Montenegro, North Macedonia and Serbia. The data for the private employment rate, public employment rate and unemployment rate are collected from ILOSTAT, and the national statistics institutes, namely: Albanian Institute of Statistics (INSTAT); Agency for Statistics of Bosnia and Hercegovina; Statistical Office of Montenegro (MONSTAT); State Statistical Office of the Republic of Macedonia; Statistical Office of the Republic of Serbia. Data for GDP growth, government expenditures, inflation, urbanity and exports are collected from the World Bank's World Development Indicators. A list of variables and their definitions is presented in Table 1, while Table 2 presents a set of summary statistics.

Table 1: Definition of variables

Variable Name	Definition of variables
Private employment rate	Private employment rate as a % of the labor force
Public employment rate	Public employment rate as a % of the labor force
Unemployment rate	Unemployment rate as a % of the labor force
GDP growth	GDP growth (annual percentage)
Government expenditure	General government final consumption expenditure (% of GDP)
Inflation	Inflation, consumer prices (annual percentage)
Urbanity	Urban population (% of total population)
Exports	Exports of goods and services (% of GDP)
Women LFP	Women's labor force participation rate

Source: Author's research

Table 2: Summary statistics

Variable Name	N	Mean	Std. Dev.	Min	Max
Private employment rate	85	60.59	8.26	41.69	76.36
Public employment rate	85	19.85	4.96	11.89	28.90
Unemployment rate	85	19.54	6.67	8.68	36.39
GDP growth	85	2.82	3.75	-15.31	13.04
Government expenditure	85	17.45	3.84	10.18	23.46
Inflation	85	3.25	3.62	-1.58	14.20
Urbanity	85	56.35	6.45	44.28	68.16
Exports	85	39.18	10.74	22.66	74.89
Women LFP	85	43.33	5.26	31.10	52.90

Source: Author's calculations

Results and Discussion

We utilized the Im-Pesaran-Shin panel unit-root test as a preliminary step to assess the stationarity of the variables before proceeding with model estimation. Test results are shown in Annex Table no. 4. Only the public employment rate and the GDP growth are stationary at level, while the other variables are stationary at their difference. To account for non-stationarity, the model was adjusted by including the non-stationary variables in their first difference form. For the purpose of the model, the public employment rate will also be included in the first difference since the interpretation needs both variables to be either level or first difference.

We run the equation for both RE and FE models. An examination of the estimated coefficients revealed discrepancies between the two models. To address this, we employed the Housman specification test (Annex Figure 6) to statistically assess which model is more appropriate for our purposes. As the p-value is higher than 0.05 (chi2 = 6.29, p = 0.1788), we consider the RE model. To assess the presence of autocorrelation in the model's residuals, we conducted the Wooldridge test (details in Annex Figure 7). This test specifically examines first-order autocorrelation, which means errors might be correlated with lagged errors. The test's null hypothesis is that there is no such correlation. Since the p-value (F = 7.738, p = 0.0497) is lower than 0.05, we reject the null hypothesis, indicating the presence of first-order autocorrelation in the model.

We use the Pesaran test (details in Annex Figures 8 and 9) to test for cross-sectional dependence. The results indicate that the null hypothesis is rejected for both RE and Fixed FE regressions: (RE Regression: value = 2.002, p = 0.0452); (FE Regression: value = 1.852, p = 0.0640). To address this issue and obtain reliable coefficient estimates, we employed the Feasible Generalized Least Squares (FGLS) regression model. This model takes into account both autocorrelation and cross-sectional dependence, allowing for a more accurate interpretation of the coefficients obtained from the FGLS regressions.

Table 3 presents the results of the Unemployment Model. As the estimator of public employment shows, the impact of the rate of employment in the public sector on the rate of unemployment is close to zero. *Based on the implications of the model, this suggests a complete crowding out.* However, the estimator is statistically insignificant, so we cannot fully rely on the unemployment model to present a final conclusion.

Table 3: Regression of Unemployment Rate on Public Employment Rate

	RE	FE	FGLS
Δ Public Employment	-0.0059	0.0217	0.0172
	(0.1063)	(0.1059)	(0.0697)
GDP Growth	-0.2812***	-0.2934***	-0.2126***
	(0.0638)	(0.0636)	(0.0429)
Δ Urbanity	1.2937**	-0.4618	0.9589**
	(0.5391)	(2.2444)	(0.4318)
Δ Government Expenditure	0.0990	0.1368	0.1376
	(0.2348)	(0.2326)	(0.1300)
Δ Exports	0.1524**	0.1732***	0.1125***
	(0.0612)	(0.0612)	(0.0387)
Δ Inflation	-0.0728	-0.0690	-0.0469
	(0.0556)	(0.0560)	(0.0382)
Constant	-0.7080**	-0.0125	-0.4982*
	(0.2938)	(0.9173)	(0.2711)
Observations	80	80	80
Number of countries	5	5	5
R Squared	0.2761	0.2837	

Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Source: Author's calculations

Further, we use the Private Sector Model to explore the crowding out effect. In this model, we also include the Women LFP to account for gender differences that exist because of the lower participation of women in the labor market. Running both RE and FE estimators, we noticed some differences between estimates. Given the differences observed in the two models, we applied the Housman specification test again to determine which model yields more reliable results. As the p-value is higher than 0.05 (chi2 = 7.16, p=0.1276), we consider the RE model (see Annex Figure 10). We again employ the Wooldridge test for autocorrelation (see Annex Figure 11). As the p-value is almost 0.05 (F = 6.659, p=0.0613), the test fails to reject the presence of autocorrelation.

Again, we use the Pesaran test to test for cross-sectional dependence. The results reject the null hypothesis of no cross-sectional dependence (RE Regression: value = 4.766, p = 0.0000) (FE Regression: value = 4.7, p = 0.0000), suggesting no presence of cross-sectional independence. Given the diagnostics, even in this case, we run the FGLS regression model.

In alignment with existing literature, the coefficients demonstrate a notably robust negative correlation between the rates of public-sector and private-sector employment. Consistent also with the findings of the unemployment model, the value of β of the Public Employment is -1 and suggests full crowding out. This implies that any increase in public-sector employment is potentially offset by an equivalent decrease in private-sector employment. In essence, the creation of public jobs appears to directly replace or displace jobs in the private sector without leading to a net change in overall employment levels. Besides the other statistically significant factors, results show that the women's labor force participation rate is an important factor in the determination of the crowding-out dynamics. As we previously outlined, the private sector appeared to be more equitable, and this result supports that assertion.

Table 4: Regression of Private Employment Rate on Public Employment Rate

	RE	**FE**	**FGLS**
Δ Public Employment	-1.0179***	-1.0315***	-0.9792***
	(0.1179)	(0.1190)	(0.0607)
GDP Growth	-0.1511	-0.1145	0.2016***
	(0.2470)	(0.2505)	(0.0320)
Δ Urbanity	-0.9547	-0.1862	-0.7986**
	(0.5810)	(2.4977)	(0.3527)
Δ Government Expenditure	-0.3002	-0.3442	-0.0610
	(0.2566)	(0.2572)	(0.1044)
Δ Exports	-0.0730	-0.0917	-0.1434***
	(0.0626)	(0.0635)	(0.0281)
Δ Inflation	0.0905	0.0944	0.0732**
	(0.0626)	(0.0635)	(0.0285)
Δ Women LFP	0.3954*	0.3919*	0.2869***
	(0.2230)	(0.2250)	(0.0547)
Constant	1.0809***	0.7851	0.4035
	(0.3096)	(1.0048)	(0.2526)
Observations	80	80	80
Number of countries	5	5	5
R Squared	0.6047	0.6202	

Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Source: Author's calculations

Conclusions

The Western Balkans' labor market dynamics have evolved uniquely, shaped by historical transitions from centrally planned economies to market-oriented systems. This transformation, marked by political and economic shifts, has led to diverse challenges, including high unemployment, limited opportunities, and significant outward migration. Despite progress in reducing overall unemployment rates and improving youth employment figures, structural obstacles persist, driving ongoing emigration and "brain drain". It is important to notice that still traditional gender roles significantly shape labor market dynamics in the WB, leading to lower labor participation rates for women compared to men. Public sector employment has historically provided stability and benefits, attracted a significant portion of the workforce and recently developed as a more gender-balanced employer. However, this preference has implications for private sector growth and employment dynamics.

During the transition, public sector employment has played a crucial role in providing stability and benefits in the region and is still considered the main employer. The paper seeks to understand whether public-sector employment leads to an increase ("crowding in") or a decrease ("crowding out") in private-sector employment. The results indicate a full crowding-out effect: in our sample of Western Balkans countries, public sector hiring typically doesn't reduce unemployment as it often leads to an equivalent reduction in private sector jobs. The finding is in line with the early literature, in terms of the scale of the crowding out, while also in line with recent literature on the existence of a crowding out effect. This finding suggests a complex interplay between the two sectors, with public employment potentially acting as a substitute for private sector opportunities.

The implications of this crowding-out effect are significant and warrant careful consideration in the formulation of labor market policies. Policymakers must navigate the delicate balance between fostering a stable and robust public sector and ensuring a thriving private sector that contributes to economic growth. The potential substitution effect between public and private employment implies that strategies focusing solely on expanding one sector may inadvertently impact the other. Therefore, a holistic and integrated approach to labor market policies is essential to create an environment where both public and private sectors can grow.

In recent years, there has been a notable upswing in private-sector employment, a trend propelled by the evolving dynamics of outsourcing in the post-pandemic landscape. This transformation has rendered positions in the private sector increasingly lucrative for employees. Conversely, the public sector is grappling with challenges in attracting and retaining highly skilled individuals. Within this context, the government, particularly in Albania, is actively implementing strategies to retain its workforce, primarily through incremental salary increases. Similar initiatives are being devised across the Western Balkan region.

Our findings underscore the necessity of augmenting such salary-centric policies with broader measures that actively bolster private-sector employment. While efforts to enhance public sector competitiveness are crucial, an exclusive focus on this front may inadvertently lead to zero-sum competition for employment opportunities within the country. In essence, the net benefit on overall employment levels for the nation may remain elusive if there isn't a parallel emphasis on supporting and stimulating private sector growth.

References

[1] **Afonso, A., & Gomes, P.** (2014). Interactions between private and public sector wages. *Journal of Macroeconomics*, *39*, 97-112.

[2] **Algan, Y., Cahuc, P., & Zylberberg, A.** (2002). Public employment and labour market performance. *Economic Policy*, *17*(34), 7-66.

[3] **Bartlett, W.** (2007). Economic Restructuring, Job Creation and the Changing Demand for Skills in the Western Balkans.

[4] **Becker, S. O., Heblich, S., & Sturm, D. M.** (2021). The impact of public employment: Evidence from Bonn. *Journal of Urban Economics*, *122*, 103291.

[5] **Behar, A., & Mok, J.** (2019). Does public-sector employment fully crowd out private-sector employment? *Review of Development Economics*, *23*(4), 1891-1925.

[6] **Boeri, T., Nicoletti, G., Scarpetta, S.,** (2000). Regulation and labour market performance, in: Galli, G., Pelkmans, J. (Eds.) Regulatory Reform and Competitiveness in Europe, Edward Elgar Publisher, Cheltenham, UK, 324-380.

[7] **Caponi, V.** (2017). The effects of public sector employment on the economy. IZA World of Labor.

[8] **Engle, R., & Granger, C.** (1987). Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica*, *55*(2).

[9] **Forni, L., & Giordano, R.** (2003). Employment in the Public Sector, *CESifo Working Paper*, No. 1085, Center for Economic Studies and ifo Institute (CESifo), Munich.

[10] **Jevtić, B., Vučeković, M., & Tasić, S.** (2023). The Effects of Digitalization and Skills on Women's Labor Market Inclusion-Serbian Gap Study. *Journal of Women's Entrepreneurship and Education*, 58-75.

[11] **Johansen, S.** (1988). Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamics and Control*, *12*(2-3).

[12] **Johansen, S.** (2009). Cointegration: Overview and development. *Handbook of financial time series*, 671-693.

[13] **Kovtun, D., Cirkel, A. M., Murgasova, M. Z., Smith, M. D., & Tambunlertchai, S.** (2014). *Boosting job growth in the Western Balkans*. International Monetary Fund.

[14] **Lausev, J.** (2014). What has 20 years of public–private pay gap literature told us? Eastern European transitioning vs. developed economies. *Journal of Economic Surveys*, *28*(3), 516-550.

[15] **Lazić, M., Vukmirović, V., Banović, J., Simović, V., & Paunović, M.** (2023). Digital Competences as a Precondition for an Inclusive Digital Economy-Is There a Gender Gap Among Persons with Disabilities in Serbia?. *Journal of Women's Entrepreneurship and Education*, (1-2), 51-71.

[16] **Mojsoska-Blazevski, N., Petreski, M., & Bojadziev, M. I.** (2017). Youth survival in the labour market: employment scarring in three transition economies, *Economic and Labour Relations Review*, *28*(2), 312-331.

[17] **Marinakis, A. E.** (1994). Public Sector Employment in Developing Countries: An Overview of Past and Present Trends. *International Journal of Public Sector Management*, *7*(2), 50-68.

[18] **Malley, J., & Moutos, T.** (1996). Does government employment "crowd-out" private employment? evidence from Sweden. *The Scandinavian Journal of Economics*, 289-302.

[19] **Nalban, V., & Smădu, A.** (2021). The interaction between private sector and public sector labor markets: Evidence from Romania. *Economic Modelling*, *94*, 804-821.

[20] **OECD** (2021) Labour Migration in the Western Balkans: Mapping Patterns, Addressing Challenges and Reaping Benefits.

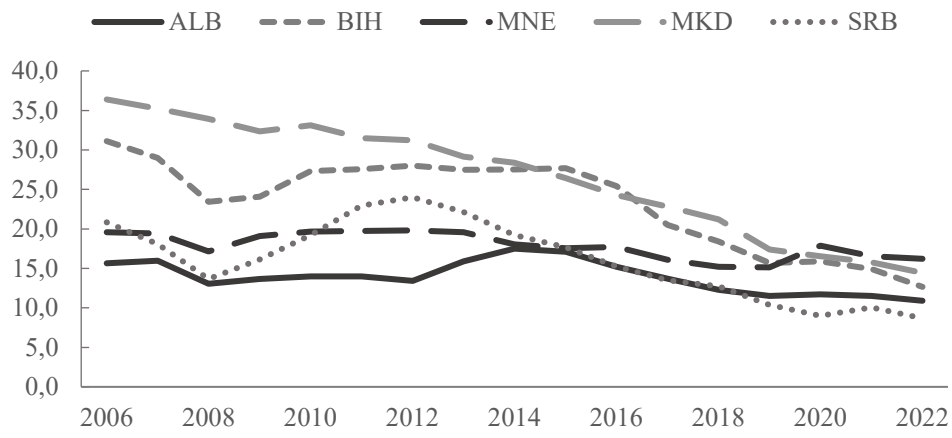
[21] **Pavlović, D., Bjelica, D., Bodroža, D., Jovičić, E., & Pindžo, R.** (2022). Women's economic empowerment through tourism: A case study of selected Western Balkans countries. *Journal of Women's Entrepreneurship and Education*, (3-4), 149-175.

[22] **Reiter, O., Schwarzhappel, M., & Stehrer, R.** (2020). *Productivity and competitiveness of the Western Balkan countries: An analysis based on the Western Balkan Productivity Database* (No. 37). Policy Notes and Reports.

[23] **Vladisavljević, M., Narazani, E., & Golubović, V.** (2017). Public-private wage differences in the Western Balkan countries.

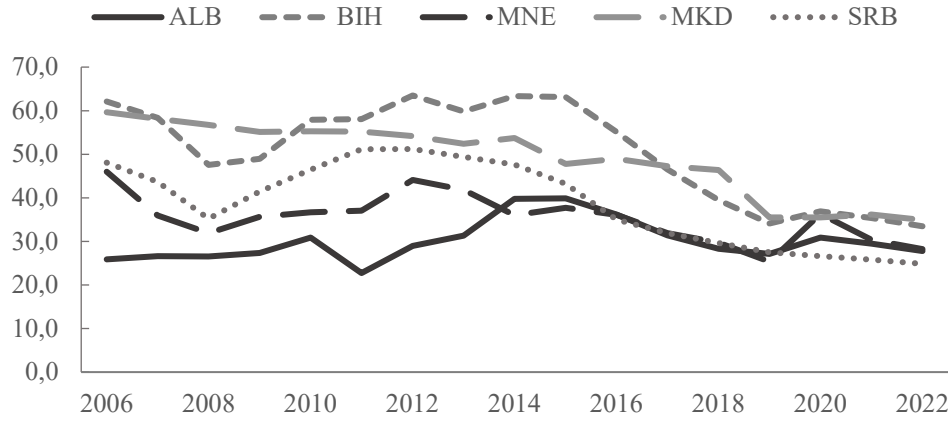
Appendix

Figure 1: Unemployment Rate in the WB Countries (2006 – 2022)



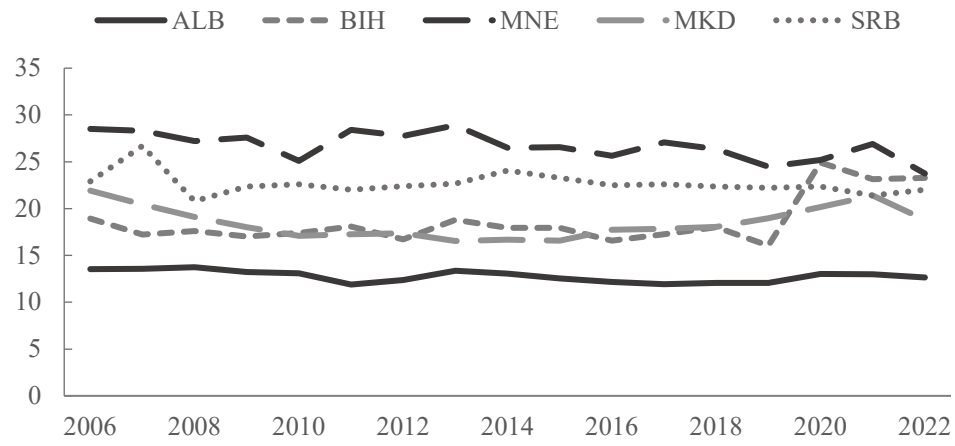
Source: ILOSTAT (2024)

Figure 2: Youth Unemployment Rate in the WB Countries (2006 – 2022)



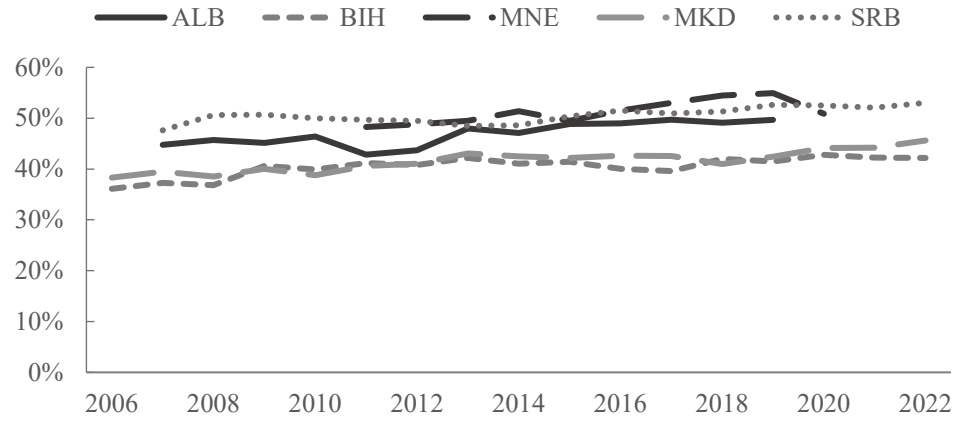
Source: ILOSTAT (2024)

Figure 3: Public Employment Rate as Percentage of Labor Force – WB Countries



Source: ILOSTAT (2024), National Statistics Offices of Albania, Bosnia & Hercegovina, Montenegro, North Macedonia, Serbia

*Figure 4: Percentage of Women Employees in the Public Sector (2006 – 2022)**



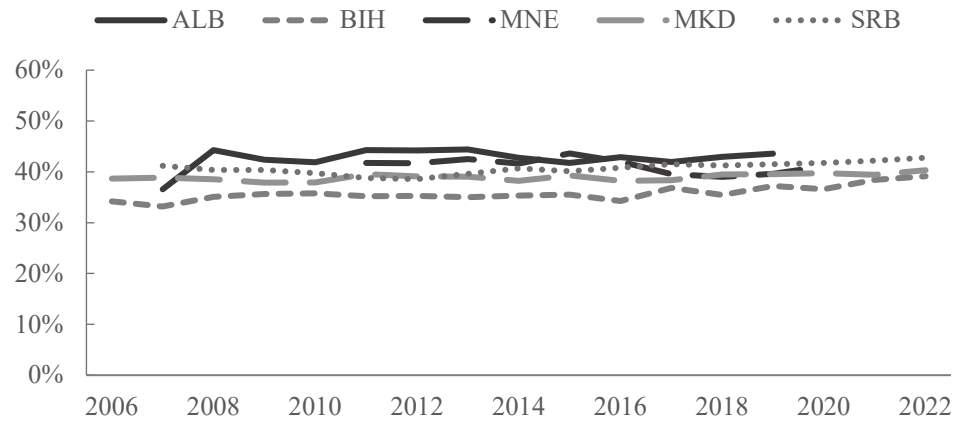
Source: ILOSTAT (2024)

**Data for Albania were not available disaggregated by gender for the year 2006, and years 2020 – 2022.*

**Data for Montenegro were not available disaggregated by gender for years 2006 - 2010, and years 2021 – 2022.*

**Data for Serbia were not available disaggregated by gender for the year 2006*

Figure 5: Percentage of Women Employees in the Private Sector (2006 – 2022)



Source: ILOSTAT (2024)

**Data for Albania were not available disaggregated by gender for the year 2006, and years 2020 – 2022.*

**Data for Montenegro were not available disaggregated by gender for years 2006 - 2010, and years 2021 – 2022.*

**Data for Serbia were not available disaggregated by gender for the year 2006*

Table 5: Labor force participation rate, disaggregated by gender (2006 – 2022)

	ALB		BIH		MNE		MKD		SRB	
	W	**M**	**W**	**M**	**W**	**M**	**W**	**M**	**W**	**M**
2006	46.5	55.4	31.1	43.4	42.3	49.0	41.6	53.4	44.6	53.4
2007	46.0	54.3	31.1	44.0	42.3	48.8	42.9	54.5	45.2	53.5
2008	45.4	53.2	32.4	45.0	42.2	48.7	42.6	55.0	44.7	52.8
2009	45.8	55.0	32.9	44.9	42.2	48.8	42.6	55.2	43.0	51.0
2010	46.7	55.2	34.0	45.7	42.2	48.8	41.2	53.8	41.6	49.7
2011	52.5	59.9	34.0	45.3	42.2	48.7	43.4	55.2	41.5	49.8
2012	48.8	57.0	34.1	45.7	43.6	50.0	42.9	55.0	41.8	50.3
2013	43.7	52.4	34.0	45.3	43.8	50.1	44.2	55.6	42.9	51.3
2014	43.8	53.4	35.5	46.3	46.3	52.7	43.8	55.7	43.6	51.9
2015	47.0	55.5	35.4	46.3	47.7	53.7	43.4	55.4	43.3	51.6
2016	49.8	57.3	34.8	46.2	47.7	54.5	42.5	55.1	45.3	53.4
2017	49.6	58.1	35.4	46.2	47.6	54.7	42.8	55.2	46.2	54.1

	ALB		BIH		MNE		MKD		SRB	
	W	**M**	**W**	**M**	**W**	**M**	**W**	**M**	**W**	**M**
2018	51.3	59.3	34.9	46.0	48.2	56.0	42.4	54.8	46.5	54.6
2019	52.8	60.3	36.9	47.0	50.0	57.4	44.7	55.3	46.9	54.8
2020	50.1	57.4	36.0	46.8	46.5	53.4	43.7	54.5	46.5	54.3
2021	51.8	58.7	39.6	49.9	47.8	54.5	42.9	54.1	49.9	58.0
2022	52.9	60.3	40.3	50.2	49.2	56.3	42.2	53.0	51.3	59.1

Source: ILOSTAT (2024)

Table 6: Unemployment as a percentage of labor force, disaggregated by gender (2006 -2022)

	ALB		BIH		MNE		MKD		SRB	
	W	**M**	**W**	**M**	**W**	**M**	**W**	**M**	**W**	**M**
2006	16.1	15.3	34.8	28.9	28.2	22.1	37.4	35.7	24.7	17.9
2007	16.4	15.6	32.9	26.7	20.9	18.1	36.0	34.7	21.0	15.7
2008	13.7	12.5	26.8	21.4	18.3	16.2	34.4	33.6	15.9	11.9
2009	15.7	12.2	25.6	23.1	20.4	18.0	32.8	32.0	17.8	14.8
2010	15.9	12.8	29.9	25.7	20.7	18.8	33.6	32.9	20.2	18.4
2011	13.7	13.3	29.9	26.1	20.1	19.5	30.9	31.9	23.7	22.4
2012	11.5	14.8	30.6	26.4	20.4	19.3	30.7	31.6	25.0	23.3
2013	13.4	17.7	29.0	26.5	18.9	20.1	29.3	29.1	23.8	20.8
2014	15.5	19.9	31.1	25.2	18.2	17.9	29.1	27.9	20.4	18.3
2015	17.1	17.2	30.7	25.8	17.3	17.8	25.4	27.1	18.7	16.8
2016	14.5	16.1	30.0	22.5	17.1	18.3	23.2	25.0	16.1	14.6
2017	12.5	14.5	23.1	18.9	16.9	15.4	22.4	23.1	14.3	12.8
2018	11.9	12.6	20.3	17.2	15.1	15.2	20.6	21.6	13.7	12.0
2019	11.3	11.6	18.8	13.6	15.7	14.7	18.6	16.6	11.1	9.8
2020	12.5	13.1	18.6	14.1	18.4	17.5	16.2	16.8	9.4	8.7
2021	12.3	12.8	18.1	12.7	15.8	17.1	14.7	16.5	11.0	9.3
2022	11.5	11.8	15.5	10.7	14.7	15.7	12.5	15.7	9.0	8.4

Source: ILOSTAT (2024)

Table 7: Im, Pesaran and Shin Test

	Level	**Difference**
Private employment rate	-0.3173	-4.1779**
Public employment rate	-2.6085*	-4.5526**
Unemployment rate	-2.5376	-3.3074**
GDP growth	-4.2259**	-6.6982**
Government expenditure	-1.5048	-3.5352**
Inflation	-1.7528	-3.2835**
Urbanity	-2.1625	-3.7643**
Exports	-0.9908	-3.6705**
Women LFP	-1.0004	-4.2988**

Source: Author's Calculations

*** p<0.01, * p<0.05*

Figure 6: Housman Specification Test (Regression of Unemployment Rate on Public Employment Rate) – Stata Output

```
                 ---- Coefficients ----
              |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
              |       FE           RE         Difference          S.E.
--------------+----------------------------------------------------------------
        D.pub |    .0216607   -.0058934         .027554        .0176655
       growth |   -.2934393   -.2811908        -.0122485        .0106268
        D.urb |   -.4617883    1.293719        -1.755507        2.217947
        D.gov |     .136792    .0990481         .0377438        .0289731
        D.exp |    .1732428    .1524164         .0208264        .0113398
       D.infl |   -.0689673   -.0727907         .0038235        .0122664
--------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         6.29
                Prob>chi2 =       0.1788
                (V_b-V_B is not positive definite)
```

Source: Author's Calculations

Figure 7: Wooldridge Test for Autocorrelation (Regression of Unemployment Rate on Public Employment Rate) – Stata Output

```
Linear regression                               Number of obs =         75
                                                F(  4,     4) =          .
                                                Prob > F      =          .
                                                R-squared     =     0.3020
                                                Root MSE      =     1.7971

                                  (Std. Err. adjusted for 5 clusters in country)
------------------------------------------------------------------------------
             |               Robust
  D.d_unemp  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       d_pub |
         D1. |   .0682383   .0380014     1.80   0.147    -.0372706    .1737472
             |
      growth |
         D1. |  -.2444868   .0728631    -3.36   0.028    -.4467871   -.0421865
             |
       d_urb |
         D1. |   11.79725   14.93567     0.79   0.474    -29.67082    53.26531
             |
       d_gov |
         D1. |  -.0038123   .1520821    -0.03   0.981    -.4260598    .4184352
             |
       d_exp |
         D1. |   .1318823   .0772616     1.71   0.163    -.0826303    .3463949
             |
      d_infl |
         D1. |  -.0886429   .0462578    -1.92   0.128     -.217075    .0397892
------------------------------------------------------------------------------

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,       4) =      7.738
           Prob > F =      0.0497
```

Source: Author's Calculations

Figure 8: Pesaran's Test of Cross-Sectional Independence (RE Regression of Unemployment Rate on Public Employment Rate) – Stata Output

```
Pesaran's test of cross sectional independence =     2.002, Pr = 0.0452

Average absolute value of the off-diagonal elements =     0.189
```

Source: Author's Calculations

Figure 9: Pesaran's Test of Cross-Sectional Independence (FE Regression of Unemployment Rate on Public Employment Rate) – Stata Output

```
Pesaran's test of cross sectional independence =     1.852, Pr = 0.0640

Average absolute value of the off-diagonal elements =     0.186
```

Source: Author's Calculations

Figure 10: Housman Specification Test (Regression of Private Employment Rate on Public Employment Rate) – Stata Output

	——— Coefficients ———			
	(b) FE_1	(B) RE_1	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
D.pub	-.9823757	-.9590549	-.0233207	.0177605
growth	.2747178	.2629942	.0117236	.0096143
D.urb	.8470333	-1.322849	2.169883	2.195272
D.gov	-.1328501	-.0895434	-.0433067	.0282949
D.exp	-.1918629	-.1662383	-.0256246	.0125032
D.infl	.0793677	.0830482	-.0036805	.0118881
D.wlfp	.2238472	.196994	.0268532	.0216466

```
                b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test:  Ho:  difference in coefficients not systematic

           chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                   =        7.16
         Prob>chi2 =      0.1276
```

Source: Author's Calculations

Figure 11: Wooldridge Test for Autocorrelation (Regression of Private Employment Rate on Public Employment Rate) – Stata Output

```
Linear regression                               Number of obs =         75
                                                F(  4,     4) =          .
                                                Prob > F      =          .
                                                R-squared     =     0.8034
                                                Root MSE      =     1.7739

                                  (Std. Err. adjusted for 5 clusters in country)
------------------------------------------------------------------------------
             |               Robust
    D.d_priv |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       d_pub |
         D1. |  -1.031093   .0624897   -16.50   0.000    -1.204592   -.8575934
             |
      growth |
         D1. |    .227145   .0744205     3.05   0.038     .0205205    .4337695
             |
       d_urb |
         D1. |  -11.15793    15.5721    -0.72   0.513    -54.39301    32.07715
             |
       d_gov |
         D1. |   .0108274   .1438809     0.08   0.944      -.38865    .4103049
             |
       d_exp |
         D1. |  -.1409408   .0800317    -1.76   0.153    -.3631444    .0812629
             |
      d_infl |
         D1. |   .1009685   .0394234     2.56   0.063    -.0084885    .2104255
             |
      d_wlfp |
         D1. |   .1537179   .1515894     1.01   0.368    -.2671616    .5745975
------------------------------------------------------------------------------

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,       4) =      6.659
           Prob > F =      0.0613
```

Source: Author's Calculations

Figure 12: Pesaran's Test of Cross-Sectional Independence (RE Regression of Private Employment Rate on Public Employment Rate) – Stata Output

```
Pesaran's test of cross sectional independence =     4.766, Pr = 0.0000

Average absolute value of the off-diagonal elements =     0.384
```

Source: Author's Calculations

Figure 13: Pesaran's Test of Cross-Sectional Independence (FE Regression of Private Employment Rate on Public Employment Rate) – Stata Output

```
Pesaran's test of cross sectional independence =     4.700, Pr = 0.0000

Average absolute value of the off-diagonal elements =     0.373
```

Source: Author's Calculations

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