

FOREIGN DIRECT INVESTMENT, ECONOMIC GROWTH, AND UNEMPLOYMENT: EVIDENCE FROM DEVELOPING COUNTRIES

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Abstract

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High unemployment is one of the major difficulties confronting most modern countries, putting social, economic, and political strain on policymakers. Foreign direct investment (FDI) is critical to a country's economic development, particularly in transitional economies. FDI is a major source of capital inflows to developing countries. FDI affects the level of employment in the host country, in addition to its many other effects. The research is based on the studies of Johnny, Timipere, and Krokeme (2018) and Zeb, Qiang, and Sharif (2014) that have examined these variables in this paper. This study investigates the relationship between FDI, economic growth, and unemployment to quantify and assess the relationship in selected developing countries or Western Balkans countries according to these variables. Data for the developing countries of Western Balkan were collected in the observed period 2015–2019. Differences between countries were explored in terms of FDI, gross domestic product (GDP), and unemployment using the data produced from the one-way analysis of variance (ANOVA) test. According to regression analysis, FDI and GDP have a considerable impact on country unemployment. The results showed that FDI and GDP have an effect in decrease unemployment in the developing countries examined.

Keywords: Foreign Direct Investment, Gross Domestic Product, Unemployment, Developing Countries

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1. INTRODUCTION

Unemployment is currently one of the most significant difficulties confronting countries around the world at various stages of development in their economic, social, and political systems. The increase in unemployment rates is also considered one of the most essential elements of the global economic crisis, as this problem affects both developed and developing countries, hence jobless rates are found all over the world (Aktar, Demirci, & Öztürk, 2009). In the economic literature on the study of foreign

direct investment and its impact on unemployment, the connection between foreign direct investment and features of the labor market is an important topic. Foreign direct investment (FDI) is a major source of capital for developing countries. FDI has a number of effects, including affecting the level of employment in the host country. In recent years, the governments of developing nations have viewed FDI as one of the best ways to drive their economies' growth.

In these conditions, policymakers, economists, and academics have been increasingly interested in identifying the key qualities of a state that are

relevant to foreign investors as well as studying the impact of foreign direct investments on the characteristics of an economy. FDI can help to solve the unemployment problem in open economies because FDI helps industries develop, and these developing sectors generate additional business spaces through forwarding and backward linkages, FDI creates job opportunities. In fact, FDI has both good and negative direct and indirect effects on employment quantity, quality, and location. Similarly, an economy's ability to attract and maintain FDI has its own set of effects. Various macroeconomic measures, such as the interest rate, gross domestic product (GDP), inflation rate, and exchange rate, are commonly used to assess such potential. According to the literature, these variables have an impact on FDI. Furthermore, authorities in ex-communist nations have viewed FDI as a vital source of managerial skills, new and better-paying jobs, and higher-quality products and services, all of which might boost their economy's internal market as well as export potential. Foreign investments will increase state tax revenues, resulting in increased government spending and local investments, the creation of new job opportunities, the stability of seasonal employment, and the creation of labor-intensive projects characterized by the use of modern technology, all of which will result in the creation and diversification of new job opportunities (Yabuuchi, 1999). Also, according to some hypotheses, FDI plays an important role in reducing unemployment by directly increasing employment opportunities in complementary front and back industries. However, this effect is largely dependent on how investment is established; if it is foundational, it will undoubtedly create new job opportunities (Benmamoun & Lehnert, 2013).

The purpose of this paper is to examine the relationship between FDI, economic growth, and unemployment, to quantify the relationship of developing countries in the Western Balkans according to these variables, to assess the effect of FDI and economic growth on unemployment in the six countries of the Western Balkans, to assess whether there are direct and statistically significant links between these variables with economic impact and as a result derive a regression model explain how FDI and economic growth affect unemployment.

The structure of this paper is as follows. Section 2 reviews the relevant literature of the study. Section 3 analyses the research methodology that has been used to conduct empirical research. Section 4 presents the results of the study, including the analysis of the data and the results obtained from the relevant analyses. Section 5 summarizes the discussions and Section 6 provides conclusions reached based on the findings of the paper.

2. LITERATURE REVIEW

FDI and its effect on the employment rate have been explored by a number of authors in their empirical studies. In theory, they have all agreed that the beneficial employment consequences of FDI in the form of a greenfield project are usually substantially higher. When foreign capital inflows take the form of buyouts of privatized businesses, on the other hand, it can have a small or even negative impact on employment (Hisarcikilar, Gultekin-Karakas, & Asici, 2014).

Stamatiou and Dritsakis (2014) assess the impact of FDI on unemployment and economic growth in Greece using a variety of econometric models. The examination of FDI equation in the short and long run demonstrates that increasing FDI will improve growth and decrease unemployment. From 1980 to 2015, Johnny, Timipere, and Krokeme (2018) investigated the impact of FDI on Nigeria's unemployment rate. According to the findings, there is a negative and substantial association between FDI and unemployment as well as a positive and significant relationship between capital formation and unemployment. According to Balcerzak and Zurek (2011), inflows of FDI have an impact on unemployment in Poland, while the unemployment rate has an impact on the GDP. In the case of developing countries, China showed a positive impact of FDI on employment growth. The Chinese labor market has profited greatly from foreign capital inflows as one of the world's most important receivers of FDI (Karlsson, Lundin, Sjöholm, & He, 2009). Bayar (2014) used a bound testing approach based on autoregressive distributed lag (ARDL) to investigate the link between unemployment, economic growth, export, and FDI inflows in Turkey from 2000:Q1 to 2013:Q3. Unemployment, economic growth, exports, and FDI inflows all have a long-run link, according to the study. Furthermore, empirical studies show that economic development and exports reduce unemployment whereas FDI increases it.

From 1981 to 2009, Mucuk and Demirsel (2013) investigated the association between FDI and unemployment in seven developing countries: Argentina, Chile, Colombia, Philippines, Thailand, Turkey, and Uruguay. All of the above-mentioned countries were subjected to panel unit root, panel co-integration, and panel causality tests. The findings revealed that in the long run FDI and unemployment are linked. In Turkey and Argentina, FDI raises unemployment, but in Thailand, it decreases it. They also indicated that brownfield investments, which consist of acquisitions and mergers, are to blame for the negative effects of FDI on unemployment, and that policymakers should focus on greenfield investments to create more job possibilities. In their study, Zeb, Qiang, and Sharif (2014) have examined the impact of FDI on unemployment in Pakistan as well as other explanatory variables such as corruption, population size, and inflation. From 1995 to 2011, the research was conducted. The effect of selected explanatory variables on unemployment in Pakistan is investigated using multiple regression analysis. FDI plays a vital influence in reducing unemployment in Pakistan, according to the findings. More employment opportunities are available as a result of the inflow of FDI, leading to a reduction in unemployment in the country.

Shaari, Hussain, and Halim (2012) investigated the effects of FDI on Malaysia's unemployment rate and economic growth. The study took place between 1980 and 2010. The data in this study were analyzed using the ordinary least square (OLS) method. They discovered that FDI aids in the reduction of unemployment and the expansion of Malaysia's economy (GDP). Alalawneh and Nessa (2020) in their study investigated the influence of FDI on unemployment in six Middle Eastern and North African countries: Egypt, Jordan, Lebanon, Morocco, Tunisia, and Turkey, because this region has one of

the worst rates of unemployment in the world. The study used panel data from 1990 to 2018 to analyze the influence of FDI on unemployment, male unemployment, and female unemployment. The findings revealed that FDI lowers the long-term jobless rate as well as the male and female unemployment rates. One of the markers of economic connectedness with the rest of the globe is the flow of FDI. The purpose of this research is to assess FDI flows into the Japanese economy as well as unemployment trends. In comparison to other affluent countries throughout the world, Japan has drawn significantly less inward FDI for decades. In addition, Japan's unemployment rate was relatively low, owing to a unique attitude among Japan's working people about employment concerns. In the study of FDI and unemployment, regression and correlation analytic methods (including statistical significance testing) were applied. The relationship between FDI and unemployment has been established (Palát, 2011).

The authors' empirical scientific research and the substantial professional literature dealing with FDI are also reviewed to provide a thorough picture of the problem (Mickiewicz, Radosevic, & Varblane, 2003; Smarzynska Javorick, 2004; Alvaro, Chanda, Kalemli-Ozcan, & Sayek, 2006; Azzimonti & Sarte, 2007; Denisia, 2010; Alfaro & Johnson, 2013; Aveh & Krah, 2013; Lebrand, 2015; Kukaj & Ahmeti, 2016; Ogunjimi & Amune, 2017; Olagbaju & Akinlo, 2018; Oke, Adejayan, Kolapo, & Mokuolu, 2020); and the relationship between these two variables (Sarwar & Mubarik, 2014; Borensztein, De Gregorio, & Lee, 1998; Nunnenkamp & Bremont, 2007; Irpan, Saad, Nor, Noor, & Ibrahim, 2016; Habib & Sarwar, 2013; Pinn et al., 2011; Subramaniam & Baharumshah,

2011; Enu, Havi, & Attah-Obeng, 2013; Ngwakwe, 2017; Çakërri, Muharremi, & Madani, 2021). The findings of several studies evaluated by international scholars have demonstrated that FDI and unemployment are linked. The studies' findings support a considerable long-term direct link between the factors. FDI, according to The World Bank (n.d.), refers to direct investment equity flows in the reporting economy. It is the total of equity capital, earnings reinvestment, and other capital. Direct investment is a type of cross-border investment in which a person from one country has control over or a considerable amount of influence over the management of a company in another country.

Table 1 shows variables of research that include FDI net inflows (*FDI*) in selected developing countries. Serbia ranks foremost, followed by Croatia, while other nations, such as Albania, Montenegro, North Macedonia, and Bosnia and Herzegovina, have substantially lower levels of FDI inflows. All of the countries observed have increased their efforts to create a favorable investment environment, but with little success. Although the Central European Free Trade Agreement (CEFTA) free trade zone was established, among other things, to improve the regional investment environment, the Member States saw themselves as competitors rather than partners in the process of recruiting FDI. In addition, Croatia joined the EU in mid-2013, providing some stability to FDI inflows. Unemployment, according to the International Labour Organization (ILO, 2013), refers to the percentage of the labor force that is unemployed but looking for work. Table 1 depicts the unemployment rate (*Unemp*) in developing countries.

Table 1. FDI (US\$ million), unemployment (%), GDP (US\$ million) variables of developing countries

<i>Countries</i>	<i>Variables</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>
Albania	<i>FDI</i>	989.57	1,044.38	1,022.75	1,204.38	1,201.02
	<i>Unemp</i>	17.19	15.42	13.62	12.30	11.47
	<i>GDP</i>	11,386.84	11,861.20	13,019.69	15,147.02	15,279.18
North Macedonia	<i>FDI</i>	296.60	549.37	380.73	648.73	549.50
	<i>Unemp</i>	26.07	23.72	22.38	20.74	17.26
	<i>GDP</i>	10,064.51	10,672.47	11,307.05	12,683.07	12,547.04
Montenegro	<i>FDI</i>	699.85	226.70	560.66	485.65	462.86
	<i>Unemp</i>	17.54	17.72	16.07	15.17	15.12
	<i>GDP</i>	4,053.09	4,373.95	4,844.60	5,504.25	5,542.57
Serbia	<i>FDI</i>	2,343.13	2,355.21	2,894.61	4,071.89	4,268.70
	<i>Unemp</i>	17.66	15.26	13.48	12.73	10.39
	<i>GDP</i>	39,655.95	40,692.64	44,179.05	50,640.65	51,475.01
Bosnia and Herzegovina	<i>FDI</i>	383.08	313.19	509.42	594.80	390.21
	<i>Unemp</i>	27.69	25.41	20.53	18.40	15.69
	<i>GDP</i>	16,211.541	16,913.330	18,080.118	20,183.510	20,164.193
Croatia	<i>FDI</i>	44.642	429.95	460.16	1,319.39	3,904.10
	<i>Unemp</i>	16.18	13.10	11.21	8.43	6.62
	<i>GDP</i>	49,525.74	51,601.14	55,481.64	61,375.22	60,752.58

Source: Authors' elaboration.

From Table 1, also we can see that the lowest unemployment rate was in Croatia, Albania, and Serbia followed by Montenegro, Bosnia and Herzegovina, and North Macedonia. The countries under consideration, like other transitional countries, have a high unemployment rate. The impact of the global economic crisis aggravates the issue even more. However, if we look at the inter-year trend of FDI net inflow and unemployment, we can see that the Western Balkans developing countries have seen an increase in FDI and at the same time a decrease in the unemployment rate.

From this, we can obtain a basis that is an indication that these two macroeconomic components have a relationship between them for the region as a whole. Regarding gross domestic product (*GDP*), countries mainly converge in terms of economic development, while economic growth ranged from 15 to 30% based on the reviewed years of this macroeconomic indicator.

The following is the causal hypothesis, that is developed from conducting a literature review and will be tested during this research:

H1: There is a significant effect of FDI and GDP on unemployment.

3. RESEARCH METHODOLOGY

Methods that are suitable for conducting the research, following the purpose of the paper, include the one-way analysis of variance (ANOVA) to test the hypothesis (*H1*) and the correlation analysis to measure the relationship between variables. The relationship between the dependent variable and the independent factors was explained using the multiple linear regression analysis.

3.1. Variables and sampling process

The research population is composed of developing countries that include Western Balkan countries. The following countries were selected for the research: Albania, Northern Macedonia, Montenegro, Serbia, Bosnia and Herzegovina and Croatia, as countries with approximately the same economic development. The research consists of these variables: FDI net inflows, unemployment rate, and gross domestic product. Table 2 provides information about the determination of research variables.

Table 2. Definition of the research variables

Variables	Proxy used	Measure	Source
Unemployment rate	<i>Unemp</i>	Log percentage of unemployment	International Labour Organization (ILO)
Foreign direct investment	<i>FDI</i>	Log net inflows of FDI	World Bank (WB)
Gross domestic product	<i>GDP</i>	Log GDP	World Bank (WB)

Source: Authors' elaboration.

3.2. Model specification

The multiple linear regression model is specified to obtain the study variables in the six developing countries. The model estimated in this study is stated as follows:

$$Unemp = \alpha + \beta_1 FDI + \beta_2 GDP + \varepsilon \quad (1)$$

where, *Unemp* is unemployment for the developing countries; α is the constant term; β is the coefficients of the explanatory variables; *FDI* is foreign direct investment net inflows; *GDP* is gross domestic product; ε is the error term.

3.3. Procedures

The collection of necessary data is ensured using secondary data. To meet the purpose of this research, data were collected by the World Bank (WB) and the International Labor Organization (ILO). The present study covers the reference period data

from 2015 to 2019. Based on these data, statistical analyses were performed using SPSS 25 program. FDI, economic growth, and unemployment are all measured using these quantitative measures.

4. RESULTS

The SPSS 25 application was used to analyze the data that were processed. The hypothesis (*H1*) was tested using the one-way ANOVA test. From the data derived for these variables, using the correlation, the one-way ANOVA test, and regression analysis, the impact of FDI and economic growth on unemployment was assessed and predicted.

The descriptive research statistics is summarized in Table 3. The sample consists of six countries and the minimum, maximum, mean, standard deviation, and variance values for both variables used are presented. Due to the large values, the logarithm of the variables is obtained for the research.

Table 3. Descriptive statistics

Variables	N	Min	Max	Mean	Std. Deviation
<i>FDI</i>	30	7.72	9.63	8.8532	0.39804
<i>Unempl</i>	30	0.82	1.44	1.1962	0.14060
<i>GDP</i>	30	9.61	10.79	10.2537	0.37008
Valid N (listwise)	30				

Source: Authors' calculations.

4.1. Matrix of correlations between variables

The findings of the correlation analysis, which was performed to assess and measure the relationship between the variables, are presented in Table 4.

The correlation results revealed a negative association between the two variables: *Unemp* and *FDI* ($r = -0.574$, $p < 0.01$). In the relationship between *GDP* and *Unemp*, the results show a negative correlation ($r = -0.523$, $p < 0.01$).

Table 4. Correlation matrix

		<i>FDI</i>	<i>Unemp</i>	<i>GDP</i>	
Spearman's rho	<i>FDI</i>	Correlation coefficient	1.000		
		Sig. (2-tailed)	0.0		
	<i>Unemp</i>	Correlation coefficient	-0.574**	1.000	
		Sig. (2-tailed)	0.001	0.0	
	<i>GDP</i>	Correlation coefficient	0.359	-0.523**	1.000
		Sig. (2-tailed)	0.051	0.003	0.0

Note: ** at the 0.01 level, the correlation is significant (2-tailed).

Source: Authors' calculations.

Table 5 presents the level of significance, which indicates whether there are differences between the countries. While the value of significance (0.000) is less than 5%, there is a considerable disparity between developing and developed countries,

according to the study according to the *FDI*, *Unemp*, and *GDP*. This level of significance implies that these macroeconomic variables have had an economic impact on the countries under consideration.

Table 5. The one-way ANOVA test results

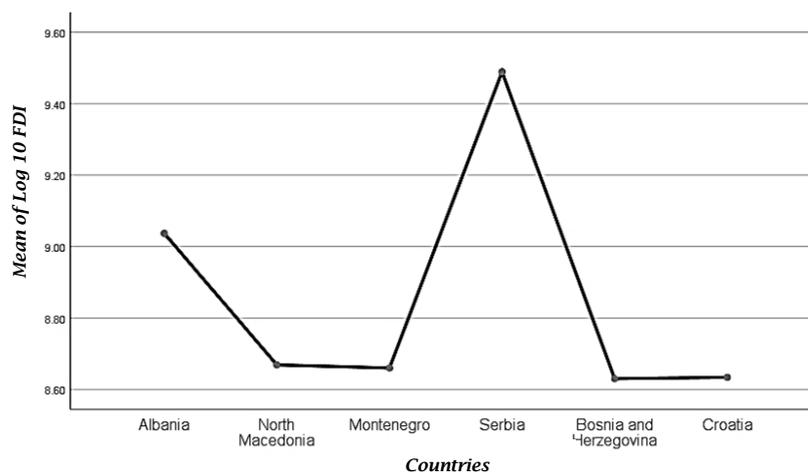
		<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>Sig.</i>
<i>FDI</i>	Between groups	3.032	5	0.606	9.317	0.000
	Within groups	1.562	24	0.065		
	Total	4.595	29			
<i>Unemp</i>	Between groups	0.365	5	0.073	8.425	0.000
	Within groups	0.208	24	0.009		
	Total	0.573	29			
<i>GDP</i>	Between groups	3.910	5	0.782	305.388	0.000
	Within groups	0.061	24	0.003		
	Total	3.972	29			

Source: Authors' calculations.

In comparison to other developing countries, Serbia's FDI increased the most over the time under consideration. This can be seen in Figure 1. Regarding unemployment, Croatia and Serbia have had the lowest unemployment rates compared to other countries (Figure 2). This implies that FDI in these two countries is oriented toward job creation.

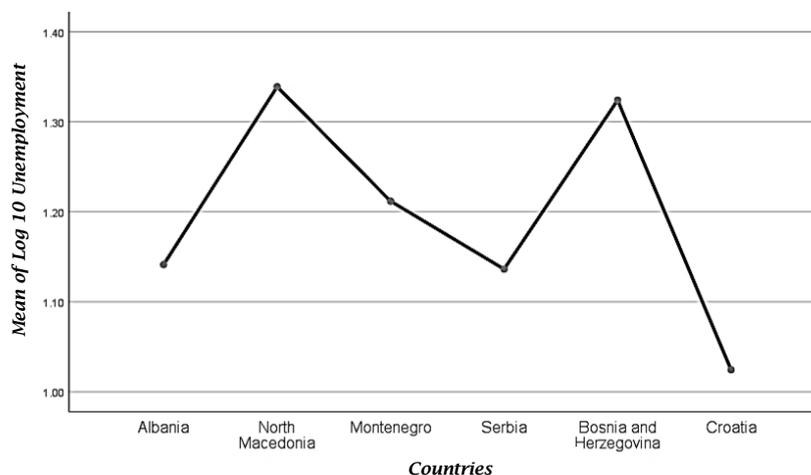
In Figure 3, it can be seen that Croatia and Serbia have had the highest economic growth in comparison to other developing nations. However, it is an indicator of the impact on unemployment in these countries.

Figure 1. Foreign direct investment of countries



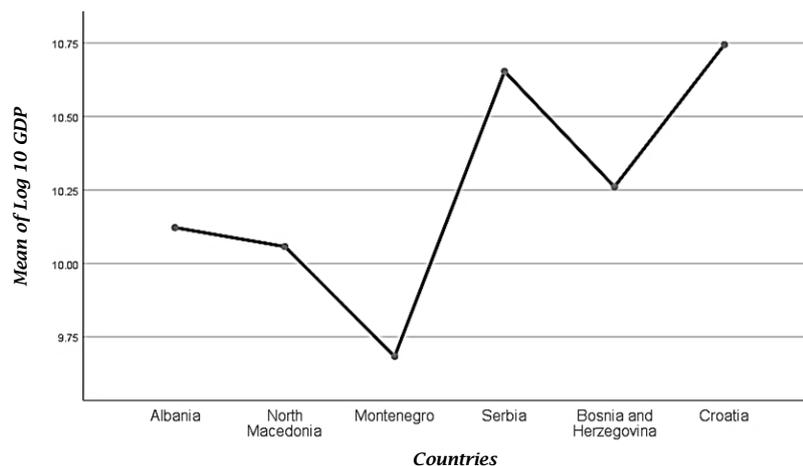
Source: Authors' calculations.

Figure 2. Unemployment of countries



Source: Authors' calculations.

Figure 3. Gross domestic product of countries



Source: Authors' calculations.

4.2. Research findings

The results of the multiple linear regression model are shown in Table 6. The values R and R², which

measure the degree of explanation of the dependent variable by the independent variable, are given in Table 6 using the enter method.

Table 6. Model summary^c

Model	R	R ²	Adj. R ²	Std. Error of the estimate	Change statistics					Durbin-Watson
					R ² change	F change	df1	df2	Sig. F change	
1	0.431 ^a	0.186	0.157	4.66114	0.186	6.391	1	28	0.017	
2	0.607 ^b	0.368	0.322	4.18090	0.183	7.802	1	27	0.009	1.968

Notes: a. Predictors: (Constant), FDI net inflows. b. Predictors: (Constant), FDI net inflows, GDP. c. Dependent variable: unemployment. Source: Authors' calculations.

The R² value is understood to mean that the change in unemployment is 36.8% dependent on the change in the independent variables. As a result, FDI net flows and GDP have a 36.8% impact on unemployment. Table 7 is used to assess if this influence is considerable, as illustrated below.

The level of reliability for the regression model is shown in Table 7. The value of significance in model 2 is 0.002, indicating that the model is significant at its level.

Table 8 below presents the regression coefficients.

Table 7. Assessment on the level of impact (ANOVA^a)

Model	Sum of squares	df	Mean square	F	Sig.	
1	Regression	138.853	1	138.853	6.391	0.017 ^b
	Residual	608.335	28	21.726		
	Total	747.188	29			
2	Regression	275.230	2	137.615	7.873	0.002 ^c
	Residual	471.958	27	17.480		
	Total	747.188	29			

Notes: a. Dependent variable: unemployment. b. Predictors: (Constant), FDI net inflows. c. Predictors: (Constant), FDI net inflows, GDP. Source: Authors' calculations.

Table 8. Coefficients^a

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.646	1.206		15.461	0.000
	FDI	-2.039E-9	0.000	-0.431	-2.528	0.017
2	(Constant)	20.614	1.291		15.969	0.000
	FDI	-8.630E-10	0.000	-0.182	-1.031	0.312
	GDP	-1.294E-10	0.000	-0.494	-2.793	0.009

Note: a. Dependent variable: unemployment.

To summarize, the following is the model prediction result:

$$Unemp = 20.614 - 8.630X_1 - 1.294X_2 \quad (2)$$

The constant value is 20.614, which suggests that unemployment will be 20.614 even if FDI and

GDP are both zero. Unemployment will drop by 8.630 units for every unit of FDI added, and by 1.294 units for every unit of GDP added.

As a result, we conclude that FDI and GDP have a large impact on unemployment, and *H1* is successfully accepted.

This outcome is in line with the theory and assumptions that FDI and GDP work together to generate economic effects and new job possibilities. The findings of this study are consistent with those of many earlier studies, such as those of Johnny et al. (2018), who found that FDI reduces unemployment in Nigeria, and Bayar (2014), who found that FDI reduces unemployment in Turkey.

5. DISCUSSION

This study examined the relationship between FDI, economic growth, and unemployment to quantify the relationship of developing countries of the Western Balkans according to these variables, to assess the effect of FDI and economic growth on unemployment in the six countries of the Western Balkans, to assess whether there are direct and statistically significant links between these variables with economic impact and as a result derive a regression model to demonstrate how FDI and economic growth affect unemployment. Foreign investments, according to the literature assessment, are predicted to have an impact on the host countries' economic growth and development. In general, FDI is projected to boost economic growth in host countries by creating new job opportunities, hence lowering unemployment.

The current study constitutes an addition to the previous literature in this field as developing countries consistently have problems with the macroeconomic variables used in this study. The paper also serves as a basis for future research, taking into account the results found from this study. These findings should be regarded with caution because the relationship may alter if unemployment rises too high, as foreign investors may be hesitant to locate new investments or expand existing ones in a country where there are (significant) symptoms of macroeconomic instability.

6. CONCLUSION

The research results showed that FDI, GDP, and unemployment have had an economic effect on the countries under consideration. It was also found that the FDI and GDP affect unemployment in developing countries. These findings are consistent with earlier research, such as Johnny et al. (2018), who found that FDI lowers unemployment in Nigeria. Irpan et al. (2016) also illustrated that FDI declines the unemployment rate in Malaysia.

The connection between growth and investments is the primary goal of all governments. FDI is one of the most important factors of long-term economic growth. However, there are various components to creating a good economic environment for attracting FDI. Any type of private investment requires a stable economic environment and political stability in the host country. Furthermore, policymakers should pursue policies involving reduced taxes and lower production costs in order to attract FDI. This study also has its limitations. The research is focused on the last five-year period, which makes the forecast only in the short term and not in the long term. In general, institutions in investigated nations, as well as all other relevant actors, should be more active in improving current investor circumstances in order to attract potential foreign investment. The research can be continued for the period 2019 onwards and to analyze the impact of the pandemic in this area, as well and most recently the impact of the electricity crisis as a result of rising prices. Primary data (specialized agencies of the analyzed countries) specified by alternative sources can also be used. This study will be useful to individuals conducting research on this topic in poor countries. Other variables could be included in future studies and research to quantify the influence of FDI and GDP on unemployment. Relationships between them can be researched and shown and comparisons can be made over a longer period of time.

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