Foreign Direct Investment (FDI) or Remittances? Which Contributes the Most to the Albanian Economy?

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Abstract: *Foreign direct investment (FDI) and remittances entering an economy often play a very important role in the development and growth of economies year after year. Especially for economies with similar typologies and characteristics like that of Albania, both of these elements promote economic development and serve as financial incentives. This paper aims to assess the contribution of remittances and foreign direct investment in the Albanian economy in the last three decades, through a multifactorial econometric model. The model uses three endogenous variables, the value of remittances, the value of a foreign direct investment and the value of gross domestic product for the time series 1992 - 2019. As it results from the analysis of the econometric model, both remittances and foreign direct investment payments have a positive impact on economic growth and the value of gross domestic product. It is also evident that remittances are the ones that affect the gross domestic product more compared to foreign direct investment.*

1. INTRODUCTION

In the early 1990s, the change in economic structure occurred as a result of the transformation of Albania's political, economic and social system. Focusing on the free market economy, two of the factors that began to gain increasing importance were remittances and foreign direct investment. The overwhelming wave of emigration of those years began to produce remittances that were brought to the economy of the time. These incomes continued to grow from year to year. At the same time, the opening of the market and the recovery of trade relations with other economies brought about the arrival of foreign investors who mostly profited from the empty space in the markets where investment was needed.

For the effects of economic analysis, it is probably almost impossible to draw an accurate conclusion as to which were the sectors where remittances had their effect. This is for several reasons. Firstly, the lack of an accurate statistical database complicates the analysis. Secondly, remittances have affected almost all sectors of the economy since they began to come as financial flows since the end of 1991. Thirdly, from decade to decade, the orientation and focus of remittances have changed. The first decade of the arrival of remittances met the urgent needs of Albanian households for goods and capital materials that "covered" those needs by remittances. In the second decade remittances contributed mostly to the construction and reconstruction of houses and properties owned by individuals and families. While afterwards, remittances were directed at creating new businesses and supporting existing businesses. In parallel, part of the remittances has been the income base for the education of children, keeping small economies alive, etc.

Even for the assessment of foreign direct investment, there may be some questions about which have been the most important sectors where they have contributed. However, the picture is a little bit clearer given that incoming investments generally coincide with large values that were

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oriented towards large, visible and measurable investments. The paper contains four main parts: the first part presents a literature review that emphasizes the theoretical and empirical framework of previous studies. The second part presents the performance over 27 years of the value of remittances and FDI in relation to gross domestic product, as well as explanations of fluctuations in values. The third part presents the multifactorial econometric model together with the relevant analyzes and interpretations of the model. The last part summarizes the conclusions reached in this paper.

2. LITERATURE REVIEW

There are a lot of authors who have studied the links between remittances, foreign direct investment and gross domestic product. Some studies have seen remittances and foreign direct investment as separate models for their contribution to the economy. Similar studies have been conducted in the countries of Central and Eastern Europe, which for the sake of truth in some cases seem contradictory for different countries. Especially in terms of the correlation between the value of foreign direct investment and gross domestic product, there is much discussion. Some authors acknowledge that there is a positive connection between them. Other authors claim that the ratio between them is inversely proportional, as in some periods FDI has almost no effect on GDP.

Borenzstein and De Gregorio (Borenzstein & Gregorio, 1998) have argued in their study that the level of impact of foreign direct investment on the economy depends substantially on the intellectual level of the workforce. Understandably, the more educated the employees are, the realized investments are "absorbed" faster by individuals and the economy as a whole, having a more visible impact. Not only the workforce but also technology has an important role to play in the impact that FDI has on gross domestic product. "*Technology transfer can be done either through a workforce that was active in foreign companies, or through the introduction of new products in the market of the beneficiary country by making foreign direct investments.*" (Caves, 1996) In many cases, FDI brings new technologies to the place where it is invested. Caves argues that to a considerable extent, the implementation of investments in the field of technology also requires the assistance of foreign employees if domestic employees do not have the necessary specialization.

The impact of FDI on economic growth also depends heavily on the level of intensity of trade relations. Nair - Reichert and Weinhold argue that the more open an economy is [versus other economies], the greater the impact of FDI on the economy. (Nair-Reichert & Weinhold, 2001). Logically, if an economy tends to be open in trade and financial relations with other countries, a higher flow of capital is expected, which directly or indirectly translates into FDI. In contrast, Carkovic believes that the level of economic development of the country is not important to see how much FDI will affect GDP and economic growth. (Carkovic & Levine, 2002). Other authors have found that foreign direct investment has a greater impact on the economy if the country in which it is invested is rich. Being rich and prosperous, these two indicators accelerate the impact of these investments on the economy. (Blomstrom, Lipsey, & Zejan, 1992). In the same line of thought are some other British scholars such as Balasubramanian, Salisu and Stanford, who argue that the greater the economic development, the greater the impact of FDI on the economy (Bramasublamanyan, Salisu, & Sapsford, 1996). To reinforce this conclusion, Alfaro has demonstrated that the impact of FDI is greatest in economies with well-developed financial markets. (Alfaro & Chanda, 2004).

Numerous studies have also been conducted to study the impact of remittances not only on economic growth, but also to explain how the arrival of remittances is related to other macroeconomic factors such as unemployment, labor force, intellectual and human development, etc. Linking to the thirty-year-old Albanian reality and context, Posso and Chami have argued that in countries taken into analysis, the increase in remittances in one country causes a decrease in the active labor force willing to work. (Posso, 2012) (Chami, Fullenkamp, & Jahjah, 2003) This phenomenon has commonly occurred in Albania, as in a very large part of families benefiting from remittances, one or several family members tend not to work, because the provision of income is secure from another source and not from their work. Another study, which for the sake of truth does not coincide with Albania, states that there is no significant link between remittances and the impact it has on economic development. (Barajas, 2009).

Ratha claims in his studies that the growth of remittances has a strong positive impact on the growth and economic development of a country. (Ratha, 2013). The author goes even further, arguing that remittances not only have an impact on economic growth, but also directly affect poverty reduction. Other authors have conducted studies on a broader basis, in longer time series and for developing countries, with typologies somewhat similar to the Albanian economy. The authors Giuliano and Luis-Arranz have studied for about 27 years (1975 - 2002) 100 developing countries and have proven that there is a strong link between remittances and economic growth. The impact was even greater in countries with less developed financial structures and a financial system without much volume. (Giuliano & Ruiz-Arranz, 2009).

Another impact that remittances have is related to the exchange rate and the value of the local currency as a result of the cash flows that enter the country from remittances. Lartey and other coauthors (Lartey & Mendelman, 2012) have shown that a large value of remittances is a factor of direct impact on the exchange rate between the currency in which remittances are sent and the local currency. If this continues regularly, it could also bring about the Dutch disease phenomenon in the domestic economy.

3. PERFORMANCE OF REMITTANCES, FDI AND GDP IN ALBANIA

In the last thirty years, the value of gross domestic product and economic growth expressed in relative terms has often been marked by fluctuations and strong shocks from internal and external factors. In macroeconomic terms, the value of gross domestic product and economic growth is intended to be studied in the case of Albania, being also the focus of fiscal and monetary policies. Only through a quick look at the trend of indicators we can understand the connections between the indicators.

The first five years taken in the study (1992-1997) refer to the growth for the first time of all three indicators, because Albania had just emerged from the system of centralized economy. The first wave of emigration began to give its effects after the first one or two years of emigration. At the same time, the opening up of the economy began to bring in the first foreign direct investment. Following a break in the year 1997, the clearest, most visible and most stable trend of economic growth, remittances and FDI has started. The years 1998 - 2008 coincide with the great momentum of remittances and FDI, which give their impact on the economy. For all three indicators it is clear that they have the same movement cycle.

Meanwhile, from 2009 onwards, GDP has fluctuated with ups and downs reflecting the economic crisis, the change of governments in Albania and other important effects on the economy.

Meanwhile, the value of foreign direct investment and remittances begins to decline creating a steady downward trend. The financial crisis of 2009 is best reflected in remittances, translating into lower remittances. Crises in large international businesses also led to declining FDI in the country. What is worth noting is that the value of remittances in 28 years has always been higher than the value of foreign direct investments.
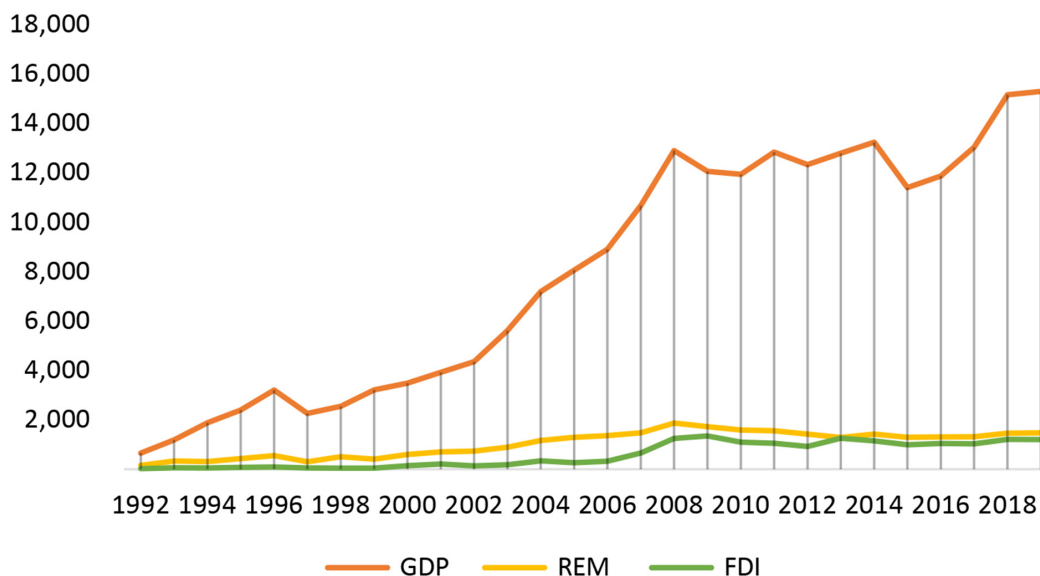

Figure 1. Trend of GDP, Remittances and FDI in Albania
Source: Author's calculations

4. RESEARCH METHODOLOGY

In regressive and autoregressive models that create time series, econometric tests are tests that assess the relationship of variables to each other and correlational relationships. However, even the econometric tests used should be evaluated from the moment of receiving the data, judging their validity and effectiveness of the data in use. The time series stationarity test is the first and most important test in the preparation and validity of the data form. The stationarity of time series is estimated as follows.

Augmented Dickey - Fuller (ADF) is the most common and important test for assessing the stationarity of time series. A variable is non-stationary if it is a function of time. A time series variable is stationary, i.e., stable if its mean and variance are constant over time and the covariance between the two values depends only on the length of the period that separates them and not on the time moments when they occur. The first technical element that needs to be implemented is the conversion of data we receive from time series into stationary data. Once time series data have been converted to stationary data, they can be used in econometric models. It often happens that most of the data for the examined variables are stationary. Even in cases where the data is not stationary, it can be converted to stationary by means of the unit root test.

To explain the relationship that exists between the economic variables of remittance and FDI by gross domestic product value, a simple multifactorial [in our case two-factorial] model of linear regression can be used. Considering the value of GDP as a dependent variable, the equation would be presented as follows:

$$GDP = \alpha + \beta REM_i + \gamma FDI_i + \varepsilon_i \qquad (1)$$

where:
GDP – gross domestic product
REM – remittances
FDI – foreign direct investment

Some authors think that economic phenomena should be explained in logarithmic forms in order to make their interpretation simpler through elasticity. But in cases when we want to express the strength of the connection as well as the importance of the independent variables in relation to the endogenous variable studied, the use of the simple linear form is deemed more appropriate [according to equation (1)]. Based again on the suggestions given by the literature, multifactorial linear regression models should be used to study the relationships. Therefore, even in the case of Albania, for the data of the time series 1992 - 2019, this format of the econometric model will be applied, but after the data have been turned into stationary series.

Table 1. Stationarity of variables

Variable	Level		First difference	
	F stat.	**Probability**	**F stat.**	**Probability**
GDP	-0.5001	0.8765	-4.3783	0.002
REM	-1.5443	0.4969	-5.4462	0.0001
FDI	-0.7684	0.812	-4.1461	0.0036

Source: Author's calculations on EViews 10

The analysis of the data showed that the time series of the three variables are not stationary, but we turned them into stationary series. Specifically, GDP, remittances and FDI are stationary series in the first margin ($p < 0.05$). Now that the series has passed the stationarity test, the data can be used to construct the regression model. Since the data are returned stationary to the first difference, the model regression equation would be given according to the equation:

$$\Delta GDP = \alpha + \beta \Delta REM_i + \gamma \Delta FDI + \Delta \varepsilon_i \qquad (2)$$

The analysis and econometric study of the model present the statistical data as follows:

Table 2. Statistical data of econometric model

Dependent Variable: D(GDP)
Method: Least Squares
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	305.4376	121.7000	2.509758	0.0192
D(REM)	3.207711	0.900387	3.562593	0.0016
D(FDI)	1.813702	0.794512	2.282788	0.0316
R-squared	0.590483	Mean dependent var.		541.7343
Adjusted R-squared	0.556356	S.D. dependent var.		895.8958
S.E. of regression	596.7256	Akaike info criterion		15.72523
Sum squared resid.	8545955.	Schwarz criterion		15.86921
Log likelihood	-209.2906	Hannan-Quinn criter.		15.76804
F-statistic	17.30279	Durbin-Watson stat		1.925987
Prob(F-statistic)	0.000022			

Source: Author's calculations on EViews 10

As it can be seen from the data, we note that the model is statistically significant, referring to the almost zero probability value of the statistic t (Prob <0.05). At the same time, we notice that the corrected coefficient of determinability is over 0.5 (55.6%), thus being a relatively considerable coefficient. We should not worry about its value, as it is enough that the model as a whole is statistically significant. Continuing to interpret the statistical significance of the variables, we assert that both remittances and foreign direct investment are statistically significant, as the probability is again below 0.05 [specifically: prob (rem) = 0.0016 and prob (fdi) = 0.0316].

What is noticeable is that the remittance ratio is almost double the value of the foreign direct investment ratio, which we will argue below. Using this model, the equation is converted to values as in equation (3):

$$\Delta GDP = 305.44 + 3.21\Delta REM_i + 1.81\Delta FDI_i + \Delta \varepsilon_i \tag{3}$$

Realizing the qualitative interpretation of the variables we can say that:
1. If remittances change by $1 million, gross domestic product is expected to change by $3.21 million
2. If foreign direct investment changes by $1 million, gross domestic product is expected to change by $1.81 million.
3. Both variables have a positive correlation with GDP.
4. Remittances affect GDP almost twice as much as FDI.

For the model to be considered for more robust forecasts and analyzes, its parameters must also be tested in terms of multicollinearity between variables, heteroscedasticity, autocorrelation of residues, normal waste distribution, and long-term relevance. These tests are briefly analyzed below.

Table 3. Multicollinearity analysis

Variance Inflation Factors
Sample: 1992 2019
Included observations: 27

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	14810.89	1.123041	NA
D(REM)	0.810696	1.477679	1.330488
D(IHD)	0.631249	1.422065	1.330488

Source: Author's calculations on EViews 10

Analyzing the values of the centered and non-centered factor of variance, we assert that the model does not suffer from multicollinearity, as for all three variables (including the term constant) the value of VIF is less than the value 5.

Table 4. Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.446960	Prob. F(2,22)	0.2568
Obs*R-squared	3.138752	Prob. Chi-Square(2)	0.2082

Source: Author's calculations on EViews 10

It also turns out that our model does not suffer from autocorrelation, being a suitable model to be used in the future. This is confirmed by the probability of the Fischer test which results above 0.05, indicating the lack of autocorrelation in the model. [0.2568> 0.05]

Table 5. Heteroscedasticity

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.504271	Prob. F(2,24)	0.6102
Obs*R-squared	1.088854	Prob. Chi-Square(2)	0.5802
Scaled explained SS	0.847609	Prob. Chi-Square(2)	0.6546

Source: Author's calculations on EViews 10

Also, the constructed model does not suffer from the phenomenon of heteroscedasticity, proving that the model residues have homoscedastic distribution. This is observed by the square Chi distribution probability which results greater than 0.05 [Prob802>0.05]

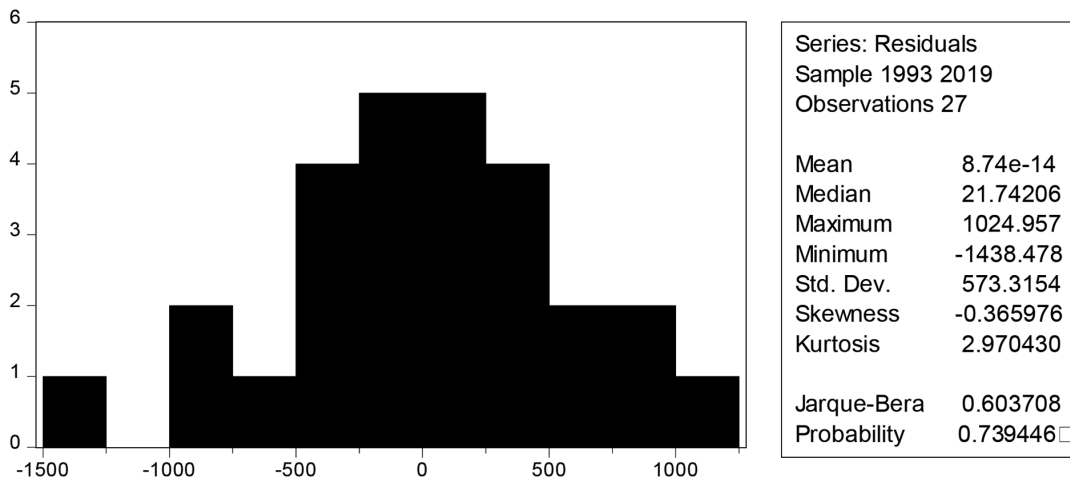| Series: Residuals	
Sample 1993 2019	
Observations 27	
Mean	8.74e-14
Median	21.74206
Maximum	1024.957
Minimum	-1438.478
Std. Dev.	573.3154
Skewness	-0.365976
Kurtosis	2.970430
Jarque-Bera	0.603708
Probability	0.739446

Figure 2. Normal distribution test

Source: Author's calculations on EViews 10

As it can be seen, the waste also has a normal distribution, making the model important and trouble-free to use. Normal waste distribution is a very important test that makes us think that the model can also be used for future predictions. However, to be even more convinced, we also use the CUSUM test.
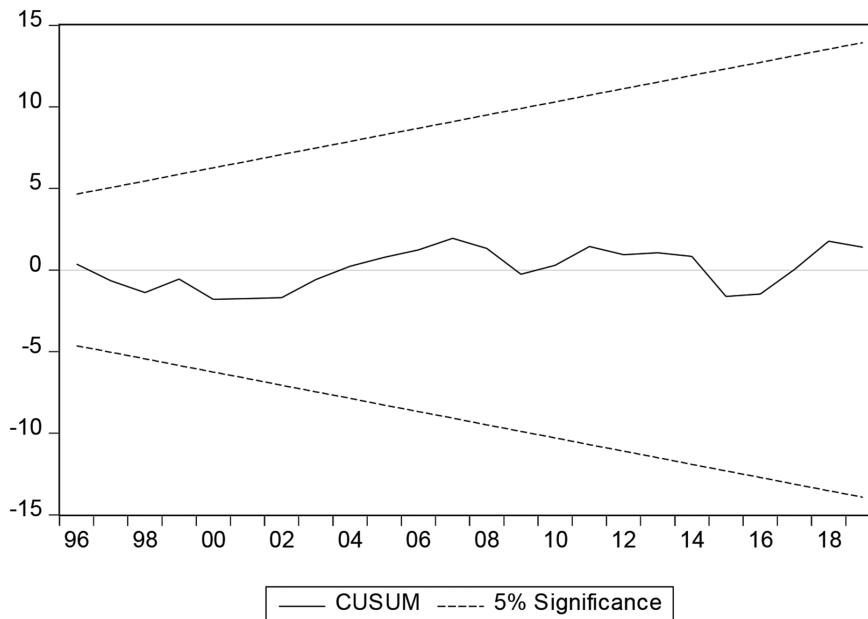

CUSUM ----- 5% Significance

Figure 3. CUSUM Test

Source: Author's calculations on EViews 10

Analyzing the above graph, with a statistical significance level of error of 5%, we can confirm that waste will have the same form of behavior in the long run. This is because the waste does not come out of the red lines with a significance of 5% error. We are now firmly convinced that the model is also important in long-term forecasts.

5.   CONCLUSION

Referring to the numerous studies that have been done in this field, but also the studies cited in the literature review, it was expected that in developing countries (especially for Central and Eastern European countries) both remittances and foreign direct investment had a positive impact on economic growth. Even indirectly, by delving deeper into the fact which of the two indicators had the most impact, it is claimed that remittances are the ones that have the most impact. The same conclusions have resulted for Albania from the study and analysis made during the paper.

If we rely on the result of the study in this paper, it is noticed that both variables, both remittances and foreign direct investment have a positive relationship with the value of gross domestic product. Both remittances and FDI have had a significant impact on the value of GDP and economic growth in Albania over the last three decades. If remittances change by $1 million, gross domestic product is expected to change by $3.21 million. If foreign direct investment changes by $1 million, gross domestic product is expected to change by $1.81 million. Judging also by the coefficients of the model, *we consider that remittances are those that affect almost twice as much as foreign direct investment on the value of gross domestic product.*

It is more than normal that remittances were expected to be the factor that contributed the most to economic growth. This is because for more than 30 years, remittances have strongly and significantly impacted household finances, small business performance and investment concepts within the household. Remittances have been the ones that have dictated the way of doing business, affecting the sectors from agriculture to other service sectors.

In this context, we recommend that:
- Remittances continue to inflow Albania as they serve as an important source of development and economic growth
- Albanian households should start orienting them in a more profitable way towards businesses and profit generation
- Governments can also build programs to encourage investment in remittances in sectors that are considered as priority sectors
- Foreign direct investment, although not as large as remittances, is an important contribution that should continue to contribute to the economy
- Clear programs should be built by the Albanian government to attract as much foreign direct investment as possible in order to provide the most positive long-term effects in the Albanian economy.

This paper aimed to create a simple analysis and quick overview of the economic indicators studied and the relationship that exists between them. Although this study covered the last thirty years (1992 - 2020), it would be preferable for other details to serve as the object of study for the future. Further analysis about calculating the real impact of regular remittances and criminal remittances (immigrant income coming from illegal or underground economies) could

also be studied in other papers. At the same time, future studies can be analyzed the constituent structure of FDI in the Albanian economy and the contribution coming from each of the sectors, etc. These new challenges are also the subject of further studies for the authors themselves. We also invite other researchers, specialists in the field or other experts to contribute to the fullest possible summary of all elements that touch on these issues that are so sensitive and significant for the Albanian economy. Finally, in the future, comparative panels can be built between Albanian data and the countries of the region with similar economic components on the problems of remittances and foreign direct investment.

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