

IMPACT OF CORPORATE INCOME TAX AND NON-TAX VARIABLES ON FOREIGN DIRECT INVESTMENT

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ABSTRACT

The effects of corporate income tax and non-tax variables on foreign direct investment (FDI) in Albania for the period from 1992 to 2020 are addressed in this study. For the aim of this study, non-tax variables are inflation rate and Foreign trade. Secondary data were sourced from the Albanian Ministry of Finance and Economy, a database of Albanian Bank and World Bank Development indicators. As was expected between corporate income tax and foreign direct investment, based on the results of the ARDL model exists a significant and negative relationship in long term. Moreover, the relationship between Inflation, trade, and FDI as independent variables results to be positive and insignificant in long term, not like was expected. F-statistic (12.298) value, greater than upper bound critical values of $I(0)$ and $I(1)$ confirm the presence of cointegration and allows in this way (ECM) model for analyzing data. The effect of the dependent variables of this study explains 96.62 percent of the changes in FDI, this refers to the coefficient of determination (R^2). Every year, 238% of short-term changes in FDI are corrected referred to as adjustment speed. A long-term stable relationship can be achieved based on the error correction term (ECM) which is significant at 1% and negative. Like on long run results based Error Correction Model, there is a negative and significant long-run relationship between corporate income tax and foreign direct investment was expected. On the other hand, the long-run relationship between Inflation, trade, and FDI as independent variables results be positive and insignificant, not like was expected. Diagnostic tests have proved that the model does not suffer from autocorrelation or heteroskedasticity and is well-specified.

KEYWORDS:

CORPORATE INCOME TAXES, FOREIGN DIRECT INVESTMENTS, INFLATION RATE, FOREIGN TRADE

JEL CLASSIFICATION CODES:

E22, F21, H20

1. INTRODUCTION

Investments made in foreign countries are called foreign direct investments. They can be carried out by corporations or even individuals. These investments open new opportunities for employment in the countries where they are carried out, they also transfer their new technologies as well as more suitable management methods. FDI is defined as a special shape of a cross-border financial flow (Devereux and Griffith, 2002). All countries without exception are interested in the promotion of foreign direct investments, therefore they intend to design special strategies to achieve their goal. Maximizing profits after tax is the objective of both local and foreign investors. As a result, investors transfer their investments to the countries which offer more advantages to investors (Sanjo, 2012). Reduction of the corporate tax rate is one strategy for attracting FDI inflows. In this study, not only the tax variables are included in the analysis, but also the non-tax variables, thus giving a valuable contribution. For the first time in this study for Albania in the period from 1992 to 2020, the combined effect of tax and non-tax variables on foreign

direct investments was addressed. Albanian is determined because this country experienced changes in tax rates between 1992 and 2020. In this paper is argued that the decreasing of tax rates in Albania should result in an increasing level of FDI inflows.

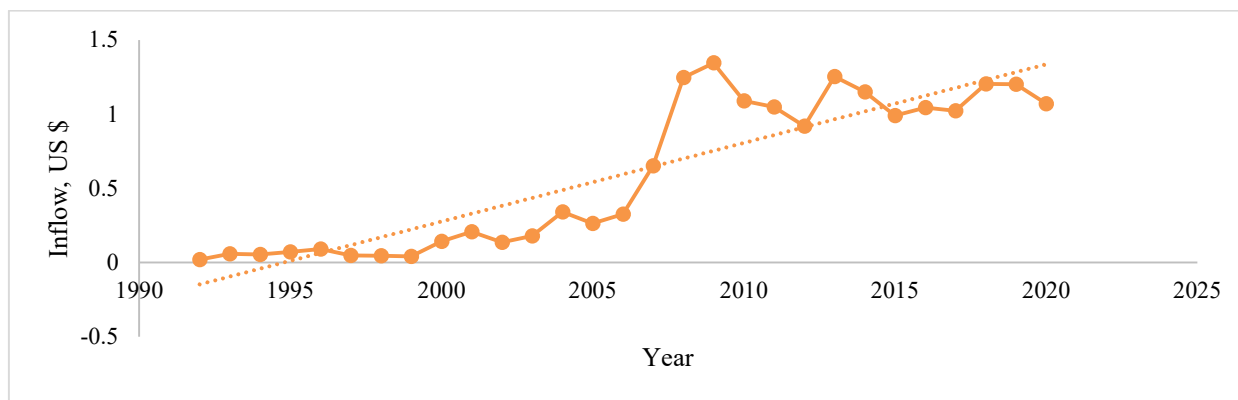
Finally, the organization of the paper is: the second and third parts are treated respectively overview and review of the literature, the methodology is in the fourth part while in the fifth part are presented empirical findings. The conclusion is expressed in the final section of the paper.

2. OVERVIEW OF VARIABLES IN ALBANIA

Foreign direct investment has classified as an investment made by a foreign individual or company in the reporting economy with the main condition that investors should have ownership of 10% of ordinary shares referred to as voting stocks.

In Albania from 2016 to 2017, foreign direct investments suffered a decline of 2.07 %, from 2017 (1.02 billion dollars) to 2018 (1.07 billion dollars) foreign direct investments increased by 17.76 %. They declined from 2018 to 2020 (1.20 billion dollars).

Figure 1. Albania Foreign Direct Investment 1992-2020



Source: World Bank Indicators

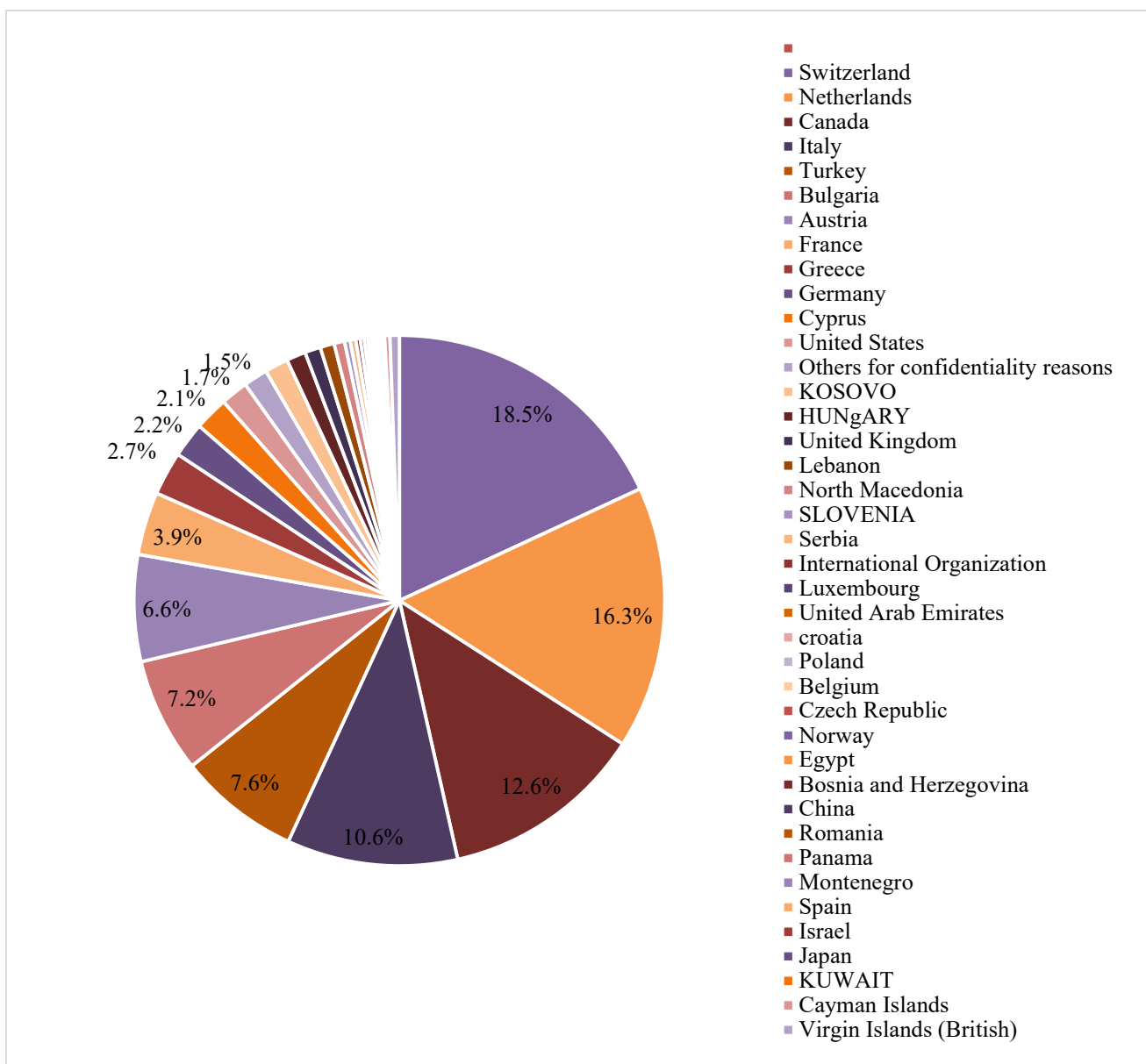
The Hydropower plant of Devoll and the TAP gas pipeline were investments that brought many benefits to the Albanian economy. Some benefits of these investments refer to the increase in employment and improvement in technology and infrastructure. The pandemic decreased foreign direct investment in 2020 but in 2021 the situation changed. Shortly, several serious investments are planned in Albania, such as the Airport of Vlora, a big Port in Durres, and the Hydropower Plant of Skavica. These investments are expected to improve significantly infrastructure, employment, and GDP and bring an optimistic spirit to local businesses.

Based on the original (Figure 2) the Netherlands is the second country with the highest stock of FDI in 2021, followed by Canada and Italy, these countries have a stock worth over 1 billion euros. The stock of FDI from countries neighboring Albania in 2021 is 257 million euros from Greece, 139 million euros from Kosovo, 62 million euros from North Macedonia, and 2.7 million euros from Montenegro. If we look at the countries with more pronounced changes in value or percentage, it turns out that countries like Greece, Panama, and Kuwait have attracted investments in the country. Eastern countries such as the USA, Hungary, Bulgaria, Germany, the Czech Republic, Kosovo, etc. have shown interest in increasing investments in 2021. The fact of increasing the value of investments can be case by case not only the real increase of assets of an origin in the country.

In 2021, the country began to implement legislation on the declaration of the final beneficiary (owner), and this obligation has also brought more complete disclosure of the origin of the owner. Business companies registered in countries with a shell or shell business register, for which the Identity and Origin of the Final Owner were not known, are already obliged according to the Albanian Legislation to declare the complete Share Control Package. This has made this year many Foreign Investments registered with their full origin fully disclose the origin of all direct and indirect shareholders. As a result, some countries have more assets, not because the value of the investments has really increased, but because the investment has now been given a real classification of the owner.

In Albania, corporate income tax is flat at 15%. This tax does not differentiate between local or foreign companies and is applied to every legal entity defined by the legislation in force. The taxable profit is calculated after the non-deductible expenses have been added to the gross profit, referring to the accounting standards and the instructions issued by the relevant institutions.

Figure 2. Foreign Direct Investment stock in Albania based on origine in 2021 in % in million euro



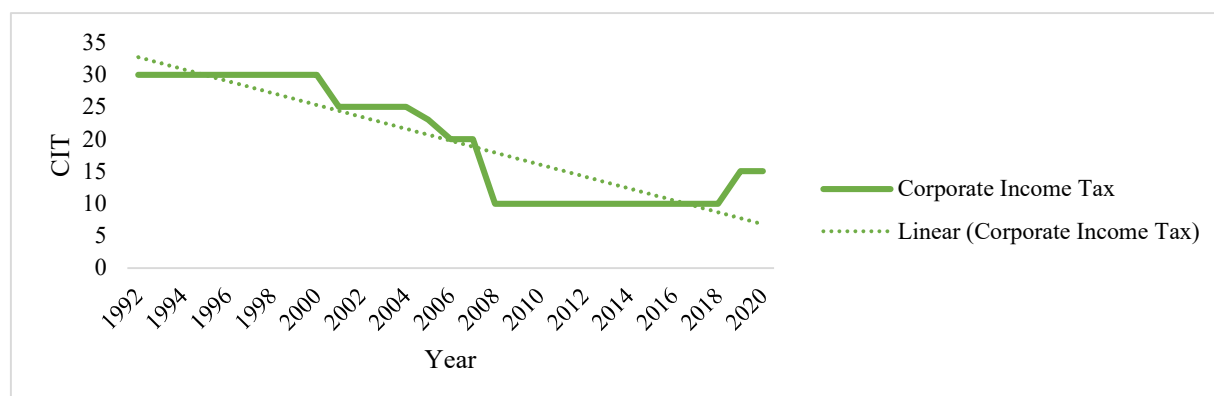
Source: Albanian Ministry of Finance, Instant. Graph- Author.

During the last few years, Albania has approved many changes in tax legislation. In 2021, in the published draft, it is proposed to establish a reduced rate of VAT for certain categories of business, the changes have also affected excise duty as well as national taxes. This new fiscal package has brought important changes to personal income and employment.

Corporate income tax will be at a rate of 0% for all taxpayer which for 2021 have incomes less than 14 mln Albanian leks. Before these draft taxpayers with income of 2 mln Albanian leks had a corporate tax at a rate of 0%

and for those from 2 mln to 8 mln this rate was 5%.

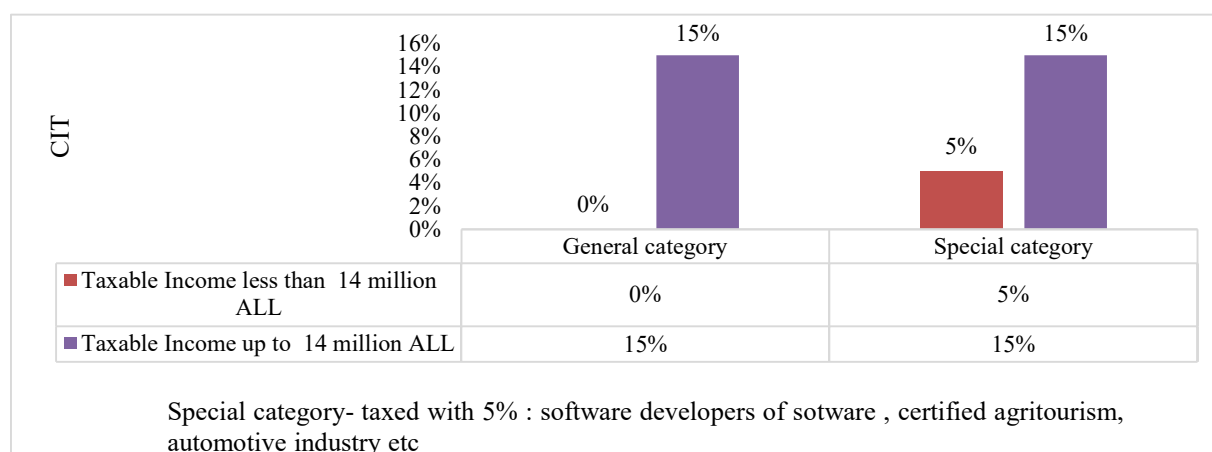
Figure 3. Corporate Income Tax from 1992 to 2020



Source: Ministry of Finance and Economy, Albania. Graph- Author

The rate of 15% has remained unchanged for all businesses whose annual income exceeds 14 million leks. Also unaffected by this draft are special categories such as software developers, certified agritourism, and the automotive industry, which continue to be taxed at the 5% rate, the same as before the approval of the 2021 fiscal packages.

Figure 4. Corporate Income Tax, Albania 2021

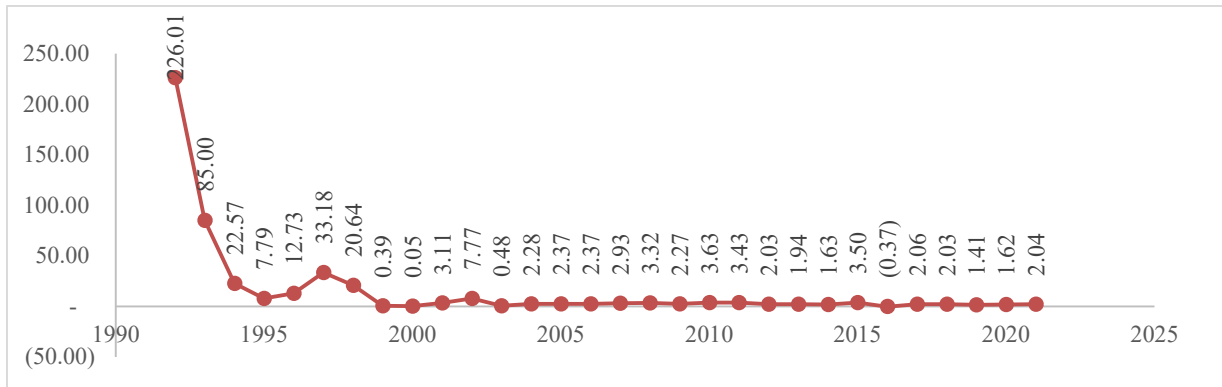


Source: Ministry of Finance and Economy, Albania

During the exercise period, tax on profit is prepaid with a fixed value called installment. The profit tax installment is calculated concerning the profit tax resulting from the financial statements of the previous two years. The installment is paid no later than the 15th of each month. In March of the following year, it is determined based on the profit that results in the balance whether the profit tax has been overpaid or the difference must be paid. If there is an overpayment, then it is carried over to the installments of the coherent year.

The inflation rate represents the increase in the general level of the prices within an economy. According to the Bank of Albania, inflation officially started to be measured in July 1992, so we have presented how the inflation rate has changed in the country ever since.

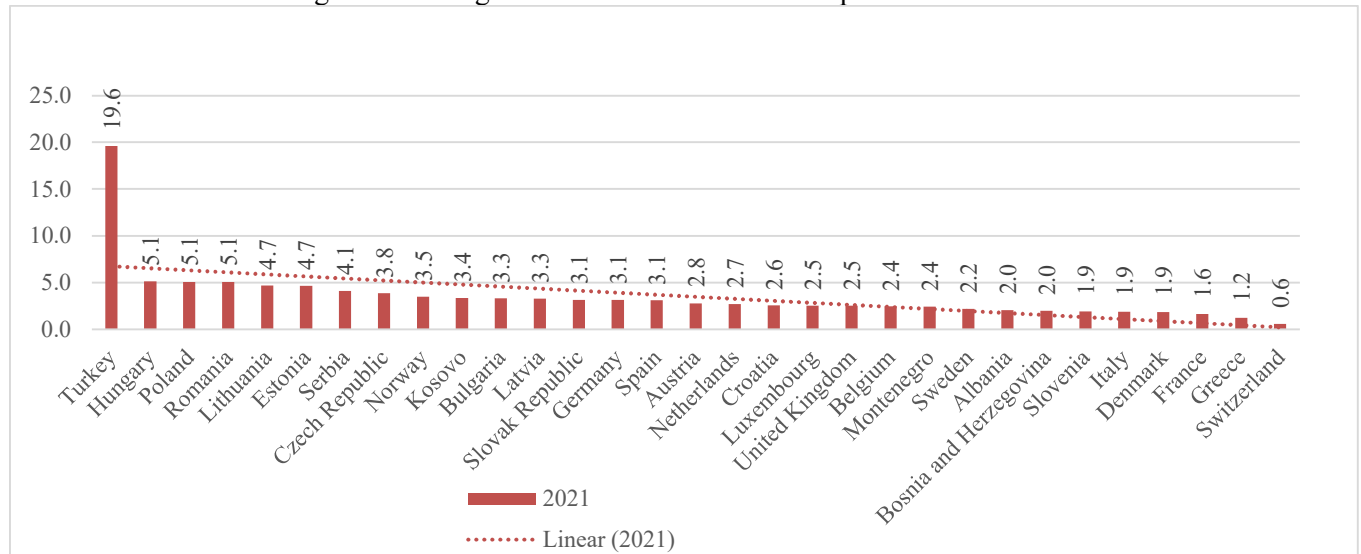
Figure 5. Average annual inflation rate in Albania 1992-2021



Source: Bank of Albania

Inflation is called galloping when prices rise by two or three digits on an annual basis. Such was the situation in Albania with an inflation rate of 226% in 1992, but the same fate befell most of the transition countries in the early 1990s, after the collapse of the communist systems associated with the Eastern bloc in Europe.

Figure 6. Average annual inflation rate in European countries 2021



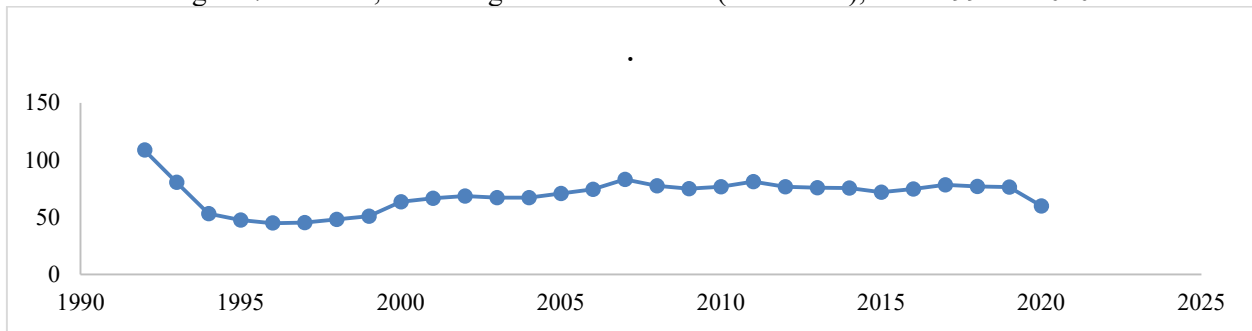
Source: World Bank.

The galloping inflation during 1990-1992 began to decline, year after year, reaching single-digit levels at the end of 1995, respectively 7.8%. The following two-year period coincides with the rise and fall of pyramid schemes, causing the inflation rate to rise to 33.18% in 1997. The consequences of the bankruptcy of rentier firms were all-encompassing and, consequently, inflation couldn't be disaffected falling sharply to 0.39% in 1999. The 1999 – 2000 period, recorded unusual inflation rates for an economy like Albania. The last month of 2000 seemed to give the first signal for the end of the deflationary era. The timespan up to the present day has been characterized by a positive rate, but within the range limit, marking 2.04% in 2021. Below we present the values of the inflation rate in Albania and other European countries for 2021:

Foreign Trade: During 2021 Shiperia has exported mainly to Italy, Serbia, Germany, Spain, and Greece respectively \$1.11 billion, \$236 million, \$165 million, \$152 million, and \$141 million. The main exported goods are leather shoes, crude oil, and non-woven men's suits. The main countries from which Albania imports are Italy, China,

Greece, Turkey, and Germany, respectively \$1.42 billion, \$588 million, \$541 million, \$439 million, and \$358 million. Imports consist of refined oil, packaged medicines, etc.

Figure 7. Albania, Trade of goods and services (% of GDP), from 1992 to 2020

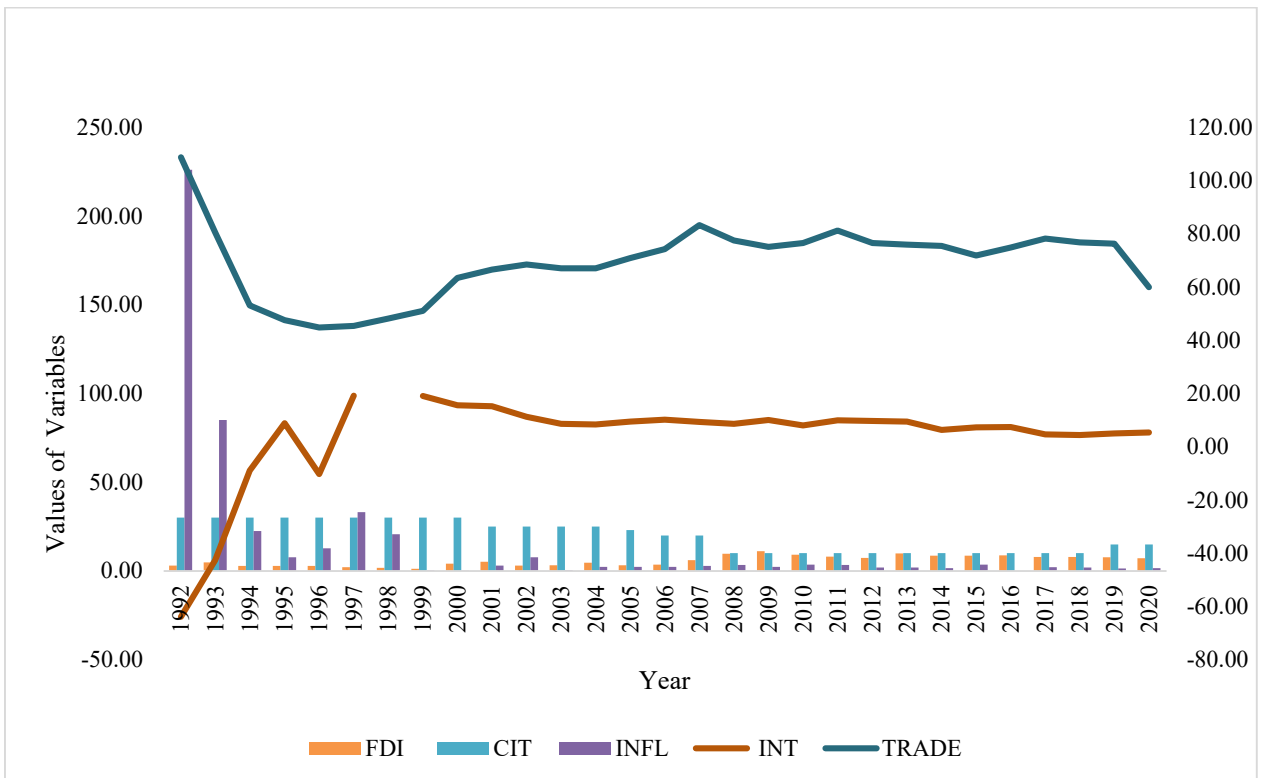


Source: Author calculation based on World Bank Indicators. Graph- Author.

In the main year, 2022 the value of Albania's exports was 39 billion Leke and import was 82 billion Leke. These values compared with the values of the previous month had respectively experienced a decrease of 14.3% in exports and an increase of 0.6%. Referring to the figures for the previous year exports increased by 23% and imports by 14.1%.

Figure 8 shows the trend of all variables included in the model in Albania for the period 1992 to 2020.

Figure 8. Albania, Trend of Foreign Direct Investment, Corporate Income Tax, Inflation, Interest and Trade, from 1992 to 2020



Source: Author

3. LITERATURE REVIEW

Foreign direct investments represent investments made by non-residents, whether individuals or foreign companies. Developed and developing countries, including Albania, are drawing up more and more policies in the framework of the absorption of foreign direct investments. Referring to the steps taken by Albania, foreign investments have been increasing every year. The increase in FDI significantly improves the infrastructure, foreign companies bring with their technological innovation. With the increase of these investments, the demand for employment increases. The positive impact is also seen in the positive spirit of local businesses. Some of the measures to attract FDI refer to improved fiscal packages as well as exemption from customs duties.

The first groups of studies have shown that between CIT and FDI exist and negative, significant relationship. (Appiah-Kubi, 2021) analyses the influence of tax incentives on foreign direct investment in (40) African countries based on data from 2000–2018. Using robust Random Effect results showed that if the corporate income tax rate decreases then FDI increases. In African economies, there is a greater flow of foreign direct investments, this is because long tax breaks are part of the policies of these governments. However, tax concession is insignificant to the inflows of FDIs in Africa. Using the Error Correction Model (ECM)(Okafor, A., 2020) looked over the relationship between corporate income taxes on the flow of foreign direct investments (FDI) in a period from 1983 to 2017 in Nigeria. Econometric output proved the existence of a negative and significant relationship between VAT, Customs Duties, and Corporate income taxes with FDI. On the other hand, the relation of FDI is positive to tertiary education tax. This study is founded on new evidence which shows that a higher tertiary Education tax rate positively influences FDI. Referring to results of static Error Correction Modelling (ECM) (George and Bariyima, 2015) found and negative but significant relationship between FDI and tax incentives. According to the authors, greater attention should be paid to economic and political sustainability and the impact of the effects of continuous tax changes should be reduced. Their result aligns with the findings of (Uwuigbe etc, 2019) who have studied factors that may impact foreign direct investment in Nigeria. Uwuigbe seeks to set up the role of corporate income tax on FDI. For this purpose are used some econometric instruments like Ordinary Least Squares (OLS), the Johansen Co-Integration model, and Unit Root Test. These instruments give evidence that a negative relationship exists between corporate taxation and FDI. The study noticed the existence of a significant relationship in long term between the two variables. The purpose of the (Shafiq, Hua, Bhatti, and Gillani, 2021) paper is to find the implication of taxation in the decision of FDI inflows in Pakistan. For this study, data for Pakistan were collected for the period from 1985 to 2020. The main variables used are the tax rate and foreign direct investment as dependent variables. Other variables are GDP growth, trade openness, and exchange rate. Econometric analyzes are focused on the ARDL model and Error Correction Model (ECM). This study shows that between tax rate and FDI exists a negative relationship in long run. On the other hand, other variables used in the model positively impact FDI. It is suggested that decision-makers should direct policies to reduce the taxes to welcome FDI in Pakistan. (Amuka and Ezeudeka, 2017) studied the effect of taxes and the flow of FDI to the non-oil sector. After transformation in log-log form, a multiple regression model is used for analyzing the relationship of variables. Results reveal that foreign investments in the non-oil sectors increased when the government introduced new tax incentives. The study used company income tax as the only tax variable and produced similar results to those of (Uwuigbe etc, 2019 and George and Bariyima, 2015). (Andre, 2015) examined the effects of corporate taxes on FDI in Portugal. The study assesses the impact of taxes on FDI in Portugal by analyzing FDI data from 1996 - 2013. Key variables examined in the study include FDI flows as the dependent variable, while corporate tax, exchange rate, corruption index, labor cost, and public investment per GDP were the explanatory variables. Ordinary least squares (OLS) and multiple regressions were the estimation method applied in the study. The result shows that corporate taxes are negatively correlated with FDI while exchange rate and corruption had a negative relationship with FDI flows (Camara, 2014) investigated the effect of corporate tax on foreign investments in Ghana; FDI flow was the dependent variable, while the independent variables were exchange rate variations, company income tax, export, interest rate and life expectancy of human capital. This study used secondary data for the period 1986 to 2012, which was provided by the Investment Promotion Center of Ghana. Statistical data indicate that the increase in income tax will result in a decrease in the flow of FDI.

The second group of studies has shown that between CIT and FDI exists and negative and insignificant relationship. (Kubicova, 2013) examined the role of corporate tax in attracting FDI flows in the European Union using panel data covering the period from 2003 to 2011. The main variables used in this study are foreign direct investment as the dependent variable and effective tax rate on profit as the independent variable. Other explanatory variables are

inflation, infrastructure, the openness of the economy, gross domestic product per capita, and capital assets. The result shows that effective tax rate and statutory company income tax were insignificant and weak, but had a contrary effect on FDI flow to E.U. countries. (Hunady and Orviska, 2014) study negates the results of (Kubicova, 2013). This study is part of the third group in which there is no link between Corporate income tax and Foreign Direct Investment. Determinants of FDI flows into the European Union are investigated by (Hunady and Orviska, 2014). The authors studied the effect of the statutory effective tax rate for the period 2004 to 2011. Using Panel data and regression they found opposite results from previous research concluding that corporate income tax does not affect FDI flows. This result agrees with previous work carried out by (Hansson and Olofsdotter, 2010) where they examined the factors responsible for the differences in tax policies between the old E.U. member countries and the new E.U. member countries. For this study are used panel data for 27 EU countries for the period 1995 to 2006. Results reveal that does not exist any linkage between variables and that tax policies do not affect foreign investors' investments in reporting economy.

4. DATA DESCRIPTION AND METHODOLOGY

The main aim of this paper is to investigate what relationships exist between foreign direct investment and corporate income tax. In the study are included two more explanatory variables such as inflation rate and foreign trade. The time series studied for Albania includes a period from 1992 to 2020. Sources of data are World Development Indicators (WDI), the Bank of Albania, and the Ministry of Finance and Economy, Albania. The reason for selecting the period from 1992 to 2020 was that the country has experienced changes in all variables. The variables used in the model are measured as follows in table 1.

Table 1. List of Variable

Variable	Proxy	Measurement	Source
Foreign Direct Investment (FDI) (dependent Variable)	FDI	FDI flows over the years as a percentage of GDP. Depended on the Variable.	World development indicators of the World Bank
Corporate Income Tax (independent Variable)	CIT	It shows the percentage of Corporate Income tax. A negative impact on FDI is expected	Ministry of Finance and Economy, Albania.
Inflation rate (Independent Variable)	INFL	It shows the growth of the country's macroeconomic risk. A negative impact on FDI is expected	Bank of Albania
Foreign Trade (independent Variable)	TRADE	It shows the market opening to foreign investments. (Exports plus Imports). Positive FDI flow factor.	World development indicators of the World Bank

4.1 ARDL Model

The Autoregressive Distributed Lag (ARDL) model is applied for the examination of the relationship between variables and runs a stationarity test. The ARDL modeling approach was originally introduced by Pesaran and Shin (1999) and further extended by Pesaran, Shin, and Smith (2001). Before conducting ARDL first step is to check the stationarity of all variables. Before estimating the Autoregressive Distributive Lag Model, initially estimated the Unit root test which determines if the series is stationary or not. Augmented Dickey-Fuller is used to determine the order of integration of data series. Through stationarity of variables is overlooked spurious regression equation problem. If a time series is stationary this means that it has constant variance, mean, and covariance, over time. Moreover this result that they can produce reliable analysis and can be used in econometric analysis. The main criteria for using the ARDL model is that after needed tests in the same equation, the variables results are incorporated at I(0) and I(1) and there are no variables I(2). To determine if and long-run relationship exist among the variables carried out Co-integration test or to apply and use the ARDL model well, several steps must be implemented. The first point is to take

into consideration the F-statistic value based on which it is determined if we have cointegration or not. Theoretically, when the F statistic is between the lower and upper limits, the result is inconclusive. On the other hand, when this value exceeds the upper or lower critical threshold, the null hypothesis of the absence of cointegration will be rejected or accepted, respectively. In the first case where H0 is rejected, the existence of co-integration between the variables is identified, and then we can proceed to the second step of ARDL. The second step consists in determining the optimal length of the delay, for which there is no specific theoretical criterion, but there are several criteria such as the Schwartz-Bayesian Criterion (SBC) or the Akaike Information Criterion (AIC). Determining the correct lag length will enable us to identify the true dynamics of the model. Several previous studies and analyses have been conducted through Autoregressive Distributed Lag (ARDL) (Barlas, 2020; Facchini et al., 2018). ARDL model that can be specified as given Eq. (1), Eq. (2), Eq. (3), for long run estimations between the variables:

$$FDI = \beta_{01} + \sum_{i=1}^p k_{11} CIT_{t-i} + \sum_{i=1}^p k_{21} INFL_{t-i} + \sum_{i=1}^p k_{31} INT_{t-i} + \varepsilon_t \quad (1)$$

$$FDI = \beta_{02} + \sum_{i=1}^p k_{12} CIT_{t-i} + \sum_{i=1}^p k_{22} INFL_{t-i} + \sum_{i=1}^p k_{32} INT_{t-i} + \varepsilon_t \quad (2)$$

$$FDI = \beta_{03} + \sum_{i=1}^p k_{13} CIT_{t-i} + \sum_{i=1}^p k_{23} INFL_{t-i} + \sum_{i=1}^p k_{33} INT_{t-i} + \varepsilon_t \quad (3)$$

4.2 Error Correction Model

After confirmation of a long-run relationship existing between foreign direct investments, corporate tax rate, inflation rate, and foreign trade, the ECM approach is founded that even a short-run relationship exists between them. To derive the Short-run dynamic error correction model ARDL model is transformed through a simple linear process. Below Eq. (4,5,6) shows the short-run relationship, ECT_{t-1} is an error correction term that should be negative and statistically significant. λ is the coefficient that shows the speed of adjustment to long-run equilibrium and Δ represents a differenced variable.

$$FDI = \beta_{01} + \sum_{i=1}^p \partial_{11} \Delta CIT_{t-i} + \sum_{i=1}^p \partial_{21} \Delta INFL_{t-i} + \sum_{i=1}^p \partial_{31} \Delta INT_{t-i} + \varphi ECM_{t-i} + \varepsilon_t \quad (4)$$

$$FDI = \beta_{02} + \sum_{i=1}^p \partial_{12} \Delta CIT_{t-i} + \sum_{i=1}^p \partial_{22} \Delta INFL_{t-i} + \sum_{i=1}^p \partial_{32} \Delta INT_{t-i} + \varphi ECM_{t-i} + \varepsilon_t \quad (5)$$

$$FDI = \beta_{03} + \sum_{i=1}^p \partial_{13} \Delta CIT_{t-i} + \sum_{i=1}^p \partial_{23} \Delta INFL_{t-i} + \sum_{i=1}^p \partial_{33} \Delta INT_{t-i} + \varphi ECM_{t-i} + \varepsilon_t \quad (6)$$

4.3 Diagnostics Tests

Breusch-Godfrey- test is conducted to determine the serial correlation in the model. The Breusch-Pagan test is conducted to find out if the condition of Heteroskedacity exists in the model or not. Jarque-Bera test is conducted to find whether the residuals are normally distributed in the model or not. The stability of the parameter is estimated from RAMSEY RESET tests.

Empirical model specification: The adopted model employed in this study was used by can be specified as follows:

$$FDI = \beta_0 + \beta_1 CIT_{t-i} + \beta_2 INFL_{it} + \beta_3 INT_{it} + \varepsilon_t \quad (7)$$

Whereby,

FDI = Foreign Direct Investment (FDI) (dependent Variable)

CIT = Corporate Income Tax (independent Variable)

INFL = Inflation rate (independent Variable)

TRADE = Foreign Trade (independent Variable)

5. EMPIRICAL FINDINGS

To test for the presence of unit roots in these variables, the ADF test is employed for every variable. We could see that the Inflation rate and Trade are stationary at the level with, while variables, Foreign Direct Investment, and Corporate Income tax are stationary at the first difference $I(1)$ and have no trend or intercept. Based on Dicky-Fuller test these variables are either integrated at level or integrated at the first difference, $I(0)$ or $I(1)$. Therefore, the Autoregressive Distributed Lag could be performed. The results show that two of the series were non-stationary (mean, variance, and covariance are not constant over time) in level form (Table 2).

Table 2. Unit root test results/ADF Test

Variable	Statistic	p-value	Integration Level
FDI	-2.994	0.0000	I(1)
CIT	-2.994	0.0000	I(1)
INFL	-2.992	0.0000	I(0)
TRADE	-2.992	0.0151	I(0)

Source: Author's calculation

In the series of INFL, INT and TRADE we can reject the presence of a unit root, because the test statistic is more negative than the critical value, even at a 1% level of significance. FDI and CIT variables become stationary after taking the first difference (see Table 2), and the P-values of the variables become significant ($P < 0.05$), so we reject the null hypothesis. Thus, worth concluding that all variables are stationary, two are integrated of order one $I(0)$ s, and two are integrated of order two $I(1)$. This means we can now be able to employ the ARDL model proposed by Pesaran et al. (2001) since it assumes that the variable should be integrated of $I(0)$ or $I(1)$ or a mixture of $I(0)$ and $I(1)$ but no variable should be integrated of $I(2)$. After taking the results of the Unit root test the other step is to determine the optimal. As shown in Table 3 (Appendix), all criteria except for the Log Likelihood select lags FDI (lag 4), CIT (lag 4), INFL (lag 3), and TRAD (lag 4). Taking into account the optimal lag ARDL bound test is used to determine cointegration.

The results in Table 4 below shows that exist a relationship in long term among the variables in the model since the absolute value of F-statistic (12.298) is greater than) critical values of $I(0)$ and $I(1)$. This result indicates the rejection of the null hypothesis of no long-run relationship.

Table 4: Cointegration Test

Null Hypothesis	No levels relationship	
Optimum Lag		
F-statistic	F = 12.298	
Significance	Lower bound	Upper bound
10%	4.29	5.61
5%	3.69	4.89
2.50%	3.23	4.35
1%	2.72	3.77

Source: Author's calculation

The long-run coefficients θ are reported in the output section LR (table 5- Appendix). These coefficients express the effects of the equilibrium of the independent variables on the dependent variables. They have a negative value in the presence of cointegration. Adjustment coefficient $-\alpha$ measures how quickly react

dependent variables or an equilibrium distortion is corrected. Corporate income tax has a negative sign and is significant at a 0.1% level. A 1% increase in CIT will result in a 39.8 % decrease in Foreign Direct Investments, 1% increase in the Inflation rate results in a 2.94 % increase in FDI but this relationship is insignificant. An increase in Trade rate by 1% will result in a 6.8 % decrease in FDI, however, the coefficient is also not significant. Results suggest that Corporate income tax will conclude in a decrease in Foreign Direct Investments in the long run, while, this is the only significant relationship between dependent and independent variables. (see Table 6)

Table 6. Long Run Coefficient Estimate

Variables (Dependent Variable is FDI)	Coefficient	t-statistic	p-value
Constant	-2.3849	-6.55****	0.001
CIT	-0.398	-16****	0.000
INFL	0.0294	0.46	0.66
TRADE	-0.068	-1.73	0.134
R-squared	0.9863		
F-statistic			

Note that:****, ***, **, *, mean significant at 0.1%, 1%,5% and 10%.

Source: Author calculation

Based on equation (3) ARDL-ECM empirical results are presented (Appendix - Table 7). The results show that the optimal lag length is (4,4,3,4). An imbalance exists in the short run if the ECM is different from zero. In the long term, this equilibrium is established only if this coefficient is less than zero. The results confirm the existence of a long-term relationship thanks to the negative ECM term and statistically significant at 1%. The high value of the adjustment speed reflects a relationship in the long term between the dependent variable and the regressors. Speed of adjustment expresses that about 238% of the short-run dynamics in FDI are corrected every year. The coefficient of CIT is in line with expectations of economic theory, significant at 0.1%.

This result shows that a decrease of 1% in the income tax rate will lead to a decline of 95.12% in FDI. This result shows that the more the income tax increases, the more foreign individual or company investors will lose interest in investing in Albania. This will produce a deterioration level of FDI and therefore the income generated by them. Reduction of FDI is always accompanied by a reduction of employment and an infrastructure not improved.

The results of the model show evidence for a positive but insignificant relationship between the rate of inflation and foreign direct investments, contrary to what was expected. In practice, if the inflation rate increases, the monetary policy is directly accompanied by a reduction in the money supply, which would increase interest rates. High-interest rates reduce the interest of all investors to invest, thus reducing the flow of FDI in the reporting economy. This finding however validates previous findings of (Khamis et al.2015; Ndanu & Kennedy, 2018). This study reveals that 96% of FDI changes are explained by the effect of regressors included in the model and only 4% remains to be explained by external factors. Referred to the t-statistic only CIT is significant and has an important impact on FDI in Albania, while other explanatory variables have an insignificant impact.

Table 8. Short Run Coefficient Estimate

variable	Coefficient	Std.Error	t-statistic	Prob
C	42.3138**	10.578	4	0.007

CIT	-0.9512****	0.1506	-6.31	0.001
INFL	0.0702	0.1498	0.47	0.656
TRADE	-0.1623	0.9924	-1.64	0.153
ECM	-2.3849	0.3638	-6.55	0.001
R-squared	0.9662	Durbin-Watson stat		2.8297
Adjusted R-squared	0.8646	Wald F-statistic		
F-statistic	9.52			
Prob(F-statistic)	0.0052			

Note that:****, ***, **, *, mean significant at 0.1%, 1%,5% and 10%
Source: Author's calculation

From the Error Correction result, the Durbin-Watson Statistic was 2.8297. This indicates that autocorrelation is absent in the estimated ECM model. The Breusch-Godfrey test is used to find whether the error terms are autocorrelated (table 9).

Table 9. Serial correlation test

Breusch Godfrey Serial Correlation	
Null hypothesis	No serial correlation at up to 1 lag
Prob. Chi-square	0.0003

Source: Author's calculation

Referred to the test Breusch- Godfrey result for exploring serial correlation it is shown a probability Chi-Square of 0.0003 which does not allow a null hypothesis rejection up to 1 lag for this model. Meanwhile, the null hypothesis was that in the model there is no autocorrelation, from this test we can conclude that serial correlation is not present in the residuals of the model.

Table 10. Heteroskedasticity Test

Test	Probability	Decision
Breusch-Pagan	0.6471	Fail to Reject
ARCH	0.7730	Fail to Reject

Source: Author's calculation

The results show that the probability for both residual diagnostic tests (Breusch-Pagan and ARCH) is greater than 0.05 or 5% which means that we cannot reject the null hypothesis (Ho) of homoskedasticity. The test of econometric results (Table 11) gives strong evidence that the studied model does not suffer from heteroskedasticity of the residuals classifying the model as a good one. F-statistical probability from Ramsey test of 0.8697 that is above 5% falling in this way to reject the null hypothesis. The results of the Ramsey test conclude that the econometric model is well-specified and can give a detailed analysis of the relationship between variables used in the model. Using a significant p-value of 0.05 the RESET test is not significant, indicating there are no omitted variables in the model.

Table 11. Ramsey Reset Test

Test	Value	Prob
F-statistic	0.23	0.8697

Source: Author's calculation

6. CONCLUSIONS

Referred econometric findings of the model are given evidence thus, the higher the corporate income tax, the more the tendency to invest in the host country will be negatively affected. Figures show that the inflation rate has a positive relationship with FDI while trade is a negative one, distorting the expected flow of FDI.

A politic for reduction of income rate will attract local and foreign investors.

This paper studies the effect of corporate income tax, Inflation rate, and trade on foreign direct investments. Dicky-Fuller test shows that these variables are integrated at levels $I(0)$ or integrated at the first difference $I(1)$, therefore, the Autoregressive Distributed Lag will be the appropriate model to be used. Based on the F-statistic (12.298) from the Cointegration test is given evidence that exists a relationship in the long term among the variables. In the long run relationship of Corporate income tax with FDI is significant at 0.1% level and it has a negative sign, these results are on the same line. (Appiah-Kubi, 2021). A 1% increase in CIT will result in a 39.8 % decrease in Foreign Direct Investments. A 1% increase in the Inflation rate and Trade results in an increase in FDI respectively 2.94 % and 6.8 % but these relationships are insignificant. The error correction term is -2.3849, which indicates the speed of adjustment towards the equilibrium followed by a shock to the system. After confirmation of cointegration, the short-run relationship between variables was examined with the help of the ECM approach. This study reveals that 96% of FDI changes are explained by the effect of regressors included in the model and only 4% remains to be explained by external factors. Referred to the t-statistic only CIT is significant and has an important impact on FDI in Albania, while other explanatory variables have an insignificant impact. This result shows that a decrease of 1% in the income tax rate will lead to a decline of 95.12% in FDI. This relationship is significant at level 0.1%. From the result, inflation rate and trade are statistically insignificant and positively associated with FDI while this relationship was expected to be negative. Results imply that Corporate Income tax will result in a decrease in Foreign Direct Investments in the short and long run, while, this is the only significant relationship between dependent and independent variables. Durbin Watson Statistic (2.8297) and Porb. Chi-square=0.0003 of Breusch Godfrey Serial Correlation implies that there is no serial correlation present in the residual. Greater values (p-values > 0.05) of diagnostic tests (Breusch-Pagan and ARCH) imply non-rejection of the null hypothesis (H_0) of homoskedasticity.

Based on the results of this study on the previous literature the recommendation for policymakers is that a reduction in the corporate income tax rate will attract foreign investors and support even more local ones. This study emphasizes that higher income tax will generate higher revenues in the short run but in long term has the intention to reduce foreign investment in the host economy. A deterioration in the level of FDI in the country is translated into a reduction of employment, in reduction of investment in the infrastructure, lack of innovation in the field of technology.

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APPENDIX

Table 3: Optimal Lags

e(lags) [1,4]				
	FDI	CIT	INFL	TRADE
r1	4	4	3	4

Table 5: Co-Integration Test

ardl FDI CIT INFL TRADE ,lags(4,4,3,4) ec btest

ARDL(4,4,3,4) regression

Sample: 1996 - 2020

Number of obs = 25

R-squared = 0.9662

Adj R-squared = 0.8646

Log likelihood = -2.7573263

Root MSE = 0.5515

	D.FDI	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ADJ							
	FDI						
	L1.	-2.384919	.3638582	-6.55	0.001	-3.275248	-1.49459
LR							
	CIT	-.3988587	.0249228	-16.00	0.000	-.4598425	-.3378748
	INFL	.0294705	.0637116	0.46	0.660	-.1264262	.1853673
	TRADE	-.0680564	.0392722	-1.73	0.134	-.164152	.0280391
SR							
	FDI						
	LD.	1.038169	.2726104	3.81	0.009	.3711151	1.705222
	L2D.	.305838	.2219267	1.38	0.217	-.237197	.8488729
	L3D.	.2532219	.2293659	1.10	0.312	-.3080163	.8144601
	CIT						
	D1.	.5316761	.1713641	3.10	0.021	.1123633	.950989
	LD.	.244964	.1577812	1.55	0.172	-.1411128	.6310408
	L2D.	-.0384198	.1966684	-0.20	0.852	-.5196501	.4428106
	L3D.	-.2088265	.1145629	-1.82	0.118	-.4891518	.0714987
	INFL						
	D1.	.0112071	.0736299	0.15	0.884	-.1689587	.1913729
	LD.	-.0461641	.0714828	-0.65	0.542	-.2210762	.128748
	L2D.	-.0793272	.0207031	-3.83	0.009	-.1299859	-.0286685

TRADE						
D1.	.0867341	.055792	1.55	0.171	-.049784	.2232521
LD.	.0025461	.0675721	0.04	0.971	-.1627968	.1678891
L2D.	.1186682	.0461968	2.57	0.042	.0056287	.2317077
L3D.	.0940362	.0625182	1.50	0.183	-.0589402	.2470126
_cons	42.31382	10.57828	4.00	0.007	16.4297	68.19794

Table 7-ECM

Model ecreg

Source	SS	df	MS	Number of obs	=	25
				F(18, 6)	=	9.52
Model	52.09975	18	2.89443056	Prob > F	=	0.0052
Residual	1.82500889	6	.304168149	R-squared	=	0.9662
				Adj R-squared	=	0.8646
Total	53.9247589	24	2.24686495	Root MSE	=	.55151

D.FDI	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
FDI					
L1.	-2.384919	.3638582	-6.55	0.001	-3.275248 -1.49459
CIT	-.9512456	.1506613	-6.31	0.001	-1.3199 -.5825907
INFL	.0702848	.1498867	0.47	0.656	-.2964748 .4370445
TRADE	-.1623091	.0992444	-1.64	0.153	-.4051513 .0805331
FDI					
LD.	1.038169	.2726104	3.81	0.009	.3711151 1.705222
L2D.	.305838	.2219267	1.38	0.217	-.237197 .8488729
L3D.	.2532219	.2293659	1.10	0.312	-.3080163 .8144601
CIT					
D1.	.5316761	.1713641	3.10	0.021	.1123633 .950989
LD.	.244964	.1577812	1.55	0.172	-.1411128 .6310408
L2D.	-.0384198	.1966684	-0.20	0.852	-.5196501 .4428106
L3D.	-.2088265	.1145629	-1.82	0.118	-.4891518 .0714987
INFL					
D1.	.0112071	.0736299	0.15	0.884	-.1689587 .1913729
LD.	-.0461641	.0714828	-0.65	0.542	-.2210762 .128748
L2D.	-.0793272	.0207031	-3.83	0.009	-.1299859 -.0286685
TRADE					
D1.	.0867341	.055792	1.55	0.171	-.049784 .2232521
LD.	.0025461	.0675721	0.04	0.971	-.1627968 .1678891
L2D.	.1186682	.0461968	2.57	0.042	.0056287 .2317077
L3D.	.0940362	.0625182	1.50	0.183	-.0589402 .2470126
cons	42.31382	10.57828	4.00	0.007	16.4297 68.19794