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# The Impacts of Domestic and Foreign Direct Investments on Economic Growth: Fresh Evidence from Tunisia

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## **Abstract**

This paper aims to analyze the impact of domestic investment and Foreign Direct Investment on economic growth in Tunisia during the period 1976–2017. This study is based on the Auto-Regressive Distributive Lags (ARDL) approach that is proposed by [Pesaran et al \(2001\)](#). Bound testing approaches to the analysis of level relationships. According to the results of the analysis, domestic investment and foreign direct investment have a negative effect on economic growth in the long run. However, in the short run, only domestic investment causes economic growth. The findings are important for Tunisian economic policy makers to undertake the effective policies that can promote and lead domestic and foreign investments to boost economic growth.

**Keywords:** Domestic Investment; Foreign Direct Investment; Economic Growth; Tunisia; ARDL.

## **1. Introduction**

Over the last decades, foreign capital inflows in the form of Foreign Direct Investment (FDI) have been significantly increased in developing countries. FDI inflows respond to growing investment needs in order to stimulate economic growth at a higher rate and thus contribute to the macroeconomic stability of the economy. Also, FDI is considered as a source of technology transfer, in fact, [Romer \(1993\)](#) showed that multinational firms bring new knowledge and know-how for developing countries; this reduces the technological gap

between developing and developed countries, which can be considered as a powerful growth driver for economic convergence. In addition, the entry of foreign firms can create a competitive environment, forcing local firms to be more efficient and competitive by streamlining their production process and modernizing their technologies.

The literature shows that many theories recognize that the effect of foreign direct investment on domestic investment play an increasingly key role in the development economy, and the two variables can cause each other in an economy. Indeed, the increase in private investment is a sign of a high return on investment in the national economy; however, the increase in public investment reflects the improvement of infrastructure and thus the reduction of the cost of commercial activities {See [Ullah et al \(2014\)](#)}.

The domestic investment encourages foreign investors to reap the benefits of high returns. However, inflows of foreign capital can also be beneficial for investors in the host country. There was a great disagreement between researchers about the question of the effect of FDI on domestic investment; FDI can have a crowding out or crowding in effect on domestic investment {See [Ahmad et al \(2018\)](#)}.

Despite the abundance of previous literature on the link between FDI and domestic investment, the results are in most cases unconvincing and depend on the methodology adopted or the sample used. In other words, the conclusions are ambiguous and mixed. For example, some studies showed that production costs could decrease when a firm combines a national investment with a foreign investment {See [Desi et al \(2005\)](#)}. Thus, FDI stimulates domestic investment. However, [Al-Sadig \(2013\)](#) also showed that the combination of domestic investment and foreign investment for production purposes could have different effects depending on the motivations of foreign investors. [Al-Sadig \(2013\)](#) found inconclusive results regarding the link between FDI and domestic investment, i.e. the effect of FDI on domestic investment could be negative or positive. Indeed, some studies have found that the FDI crowds in the domestic investment {See [Xu and Wang \(2007\)](#), [Lean and Tang \(2011\)](#) and [Mohamed et al \(2013\)](#)}, while other studies showed that the FDI crowds out domestic investment {See [Adams \(2009\)](#), [Pilbeam and Oboleviciute \(2012\)](#)}. Thus, the role of FDI has become controversial in developing countries

Few studies have examined the impact of FDI and domestic investment on economic growth. In addition, [Adams \(2009\)](#) investigated the relationship between domestic investment, foreign investment and economic growth in sub-Saharan Africa by using panel data over the period

1990-2009. He also showed that FDI crowded the national investments. A study was conducted by [Eregha \(2011\)](#) for African countries, reveals that even though FDI inflows in Africa are low, FDI has a positive impact on domestic investment and economic growth. [Omri and Kahouli \(2013\)](#) examine the relationship between foreign direct investment and domestic capital and economic growth in 13 MENA countries. They found that there is bi-directional causal between FDI and economic growth, between domestic investment and economic growth, and there is uni-directional causal from FDI to domestic investment.

In the same context, [Chowdhary and Kushwaha \(2013\)](#) in his study do not find any link between FDI and domestic investment, but there is a two-way causal link between economic growth and domestic investment. Similarly, [Ullah et al \(2014\)](#) examined the interaction between domestic investment, foreign direct investment and economic growth in Pakistan for the period 1976-2010. The empirical results of this study reveal the existence of a long-term relationship between domestic investment, foreign direct investment and economic growth.

[Gungor and Ringim \(2017\)](#) searched for the influence of FDI and domestic investment on economic growth for the case of Nigeria and for the period of 1980 – 2015. They employed Johansen multivariate cointegration test, vector error correction model (VECM) and the Granger Causality Tests as estimation techniques. Empirical analysis of VECM indicated that domestic investment and FDI have a negative effect on economic growth in the long run. However, the results of the Granger Causality tests indicated that only FDI cause economic growth.

[Ahmad et al \(2018\)](#) examined the effect of foreign direct investment on domestic investment and economic growth, and to what extent foreign investment stimulates or crowds out FDI in China. They found positive and significant effects of FDI and domestic investment on economic growth in China using DOLS and FMOLS estimators; however, domestic investment has contributed more to the economic growth and development of the Chinese economy.

[Bakari et al \(2018\)](#) investigated the linkages between domestic investment, FDI and economic growth in Nigeria for the period 1981 – 2015. They applied cointegration analysis and Vector Error Correction Model (VECM). Empirical results indicate that there is no relationship between domestic investment, FDI and economic growth in both the long and short run.

[Belloumi and Alshehry \(2018\)](#) studied the impact of domestic capital investment and FDI on economic in Saudi Arabia over the period 1970 - 2015 by using ARDL Bounds Testing to cointegration approach. They found that domestic investment and FDI have a negative effect on economic growth in the long run. Also, they found that domestic investment and FDI have not any effect on economic growth in the short run.

More recently, [Bakari and Tiba \(2019\)](#) examined the impact of domestic investment and FDI on economic growth for the case of 24 Asian economies over the period 2002 – 2017 by using the fixed and random effects models. Empirical results pointed that domestic investment influence positively on economic growth. However, FDI has a negative effect on economic growth.

Given the disastrous economic situation in which Tunisia is confronted: rising unemployment, poverty, the weight of the external debt and agreements raising the capacity of the country. It is clear to us that domestic investment and foreign direct investment are among the most necessary solutions for advancing the country and reducing most of these disasters.

Therefore, the objective of the present study is to examine the links between the three variables in the case of the Tunisian economy by using a ARDL approach during the period 1990–2016. In other words, ARDL's approach permits to test the relationship between Domestic investment, FDI and economic growth in both the long and short-term.

The paper is organized as follows: The second section describes the used data and the econometric model. Section 3 presents the main results. Section 4 presents the conclusion and the policy implications.

## **2. Data, model specification and methodology**

### **2.1. Data**

The annual data for calculation in this paper are collected from the World Development Indicators released online by the World Bank (2018). The dataset consists of 42 annual observations from the years 1976 to 2017. The brief description of all these variables is reported in Table 1.

**Table 1 - Description of variables**

No	Variables	Description	Source
1	Y	GDP per capita growth (annual %)	World Development Indicators (WDI-2018)
2	DI	Gross fixed capital formation (% of GDP)	World Development Indicators (WDI-2018)
3	FDI	Foreign direct investment, net inflows (% of GDP)	World Development Indicators (WDI-2018)
4	X	Exports of goods and services (% of GDP)	World Development Indicators (WDI-2018)
5	M	Imports of goods and services (% of GDP)	World Development Indicators (WDI-2018)
6	MM	Money supply (% of GDP)	World Development Indicators (WDI-2018)
7	R	Total benefits from natural resources (% of GDP)	World Development Indicators (WDI-2018)

## 2.2. Model Specification and methodology

The basic model employed in this study to inspect the impact of domestic investment and foreign direct investment on economic growth can be expressed as:

$$Y = F [(DI, FDI); X, M, MM, R] \quad (1)$$

We effectuate the ARDL approach of [Pesaran et al \(2002\)](#) because it has several assets. It is more proper for inspecting the existence of relationships in small data in the long-run and in the short-run. Also, the ARDL model allows testing between variables with different integration orders (they should not be integrated of order 2). Our empirical plan would be established first of all on the determination of the stationary of variables using the ADF<sup>1</sup> stationary test and the PP<sup>2</sup> stationary test. All variables must be stationary in I(0) and I(1) to sustain to the next step of applying cointegration analysis.

Augmented Dickey-Fuller (ADF) and Phillipps-Perrons (PP) unit root tests are used to examine the stationary properties for the long-run relationship of time series variables. Augmented Dickey-Fuller (ADF) test is based on the equation given below:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{j=1}^k d_j \Delta Y_{t_j} + \varepsilon_t \quad (2)$$

<sup>1</sup> Augmented Dickey Fuller test, See: [Dickey and Fuller \(1979, 1981\)](#)

<sup>2</sup> Phillipps-Perron test, See: [Phillips and Perron \(1988\)](#)

The general form of PP test is estimated by the following regression

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta Y_{t-1} + \varepsilon_t \quad (3)$$

Where;  $\varepsilon_t$  is pure white noise error term,  $\Delta$  is first difference operator,  $Y_t$  is a time series,  $\alpha_0$  is the constant and  $k$  is the optimum numbers of lags of the dependent variable. The Augmented Dickey-Fuller (ADF) and the Phillipps-Perrons (PP) tests determine whether the estimates of coefficients are equal to zero.

In the second step, we will assess to experiment with the cointegration between the variables of the model by putting into practice the Bounds Test. If the bounds test indicates the existence of a cointegration relationship, the third step would be to estimate the relationship of equilibrium of long term using the ARDL model. The Fourth step consists to determine the relationship in the short run using WALD Test which is included in the ARDL Model.

$$\Delta(Y)_t = \alpha_0 + \sum_{i=1}^m \beta_{1i} \Delta(Y)_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta(DI)_{t-i} + \sum_{i=0}^o \beta_{3i} \Delta(FDI)_{t-i} + \sum_{i=0}^p \beta_{4i} \Delta(X)_{t-i} + \sum_{i=0}^q \beta_{5i} \Delta(M)_{t-i} + \sum_{i=0}^r \beta_{6i} \Delta(MM)_{t-i} + \sum_{i=0}^s \beta_{7i} \Delta(R)_{t-i} + \delta_1 (DI)_{t-1} + \delta_2 (FDI)_{t-1} + \delta_3 (X)_{t-1} + \delta_4 (M)_{t-1} + \delta_5 (MM)_{t-1} + \delta_6 (R)_{t-1} + \varepsilon_t \quad (4)$$

Where Log is the natural logarithm,  $\Delta$  indicates the variable in the first difference,  $\alpha_0$  is an intercept,  $t$  refers to the time period in years from 1976–2017, and  $\varepsilon_t$  is a white-noise error term. Lags (m,n,o,p,q,r,s) are determined using the Akaike information criteria (AIC).

Once Eq. (7) has been estimated, the attendance of a cointegration relationship between the variables has to be elaborate by involving the bounds test. Indeed, the cointegration test is constructed predominately on the Fisher test (F-stat) for the joint significance of the coefficients of the lagged level variables, i.e.,  $H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = 0$ , which indicates no cointegration, against the alternative  $H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq 0$ , which indicates that there is integration. After comparing the F-stat value with asymptotic critical value bounds calculated by [Pesaran et al. \(2001\)](#), the null hypothesis of no cointegration is rejected when the value of the F test protrudes the higher critical bounds value, embroilment that there is a cointegration relationship between the elaborated variables.

The final step is to ensure the goodness of fit. To check the reliability and validity of the estimation of the ARDL model, several diagnostic and stability tests are performed. The diagnostic test examines serial correlation and heteroscedasticity. The structural stability can be examined via the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ)

stability tests. The CUSUM and CUSUMSQ statistics are updated recursively and plotted against the break points. If the plots of the CUSUM and CUSUMSQ statistics remain within the critical bounds at the 5% level of significance, the null hypothesis of all coefficients in the given regression is stable and cannot be rejected.

### **3. Empirical results**

The descriptive statistics of Table 2 shows that Y, DI, FDI, X, M, MM and R exhibit higher significant changes in comparison to the policy series during the period under investigation. This observation is visually evident in the difference between their maximum and minimum values and the leptokurtic distribution over the period of 1976 to 2017.

The correlation between the dependent and independent variables is presented in Table 3. The correlation coefficients suggest that the reported regression models will not be seriously distorted by multicollinearity. This table shows that Y correlates positively with FDI, DI, X and with R. Then, Y correlates negatively with MM and M.



**Table 2 - Descriptive statistics individual sample**

	<b>Y</b>	<b>ID</b>	<b>FDI</b>	<b>X</b>	<b>M</b>	<b>MM</b>	<b>R</b>
<b>Mean</b>	2.292521	25.02087	2.391118	40.93067	46.42856	52.37819	5.517733
<b>Median</b>	2.732287	24.24962	2.098788	40.61496	46.03295	49.53746	4.606190
<b>Maximum</b>	5.653196	34.03130	9.424248	55.65827	58.69656	73.52283	15.19324
<b>Minimum</b>	-3.912600	18.68786	0.600417	29.08432	34.01449	39.95085	1.321046
<b>Std. Dev.</b>	2.484977	3.829835	1.607861	5.921783	6.241239	9.888808	3.501739
<b>Skewness</b>	-0.738002	0.590344	2.171320	-0.080114	0.177305	0.745825	1.252314
<b>Kurtosis</b>	3.029578	2.494734	9.994966	2.978150	2.374125	2.316415	3.867641
<b>Jarque-Bera</b>	3.814058	2.886306	118.6291	0.045763	0.905570	4.711544	12.29543
<b>Probability</b>	0.148521	0.236182	0.000000	0.977378	0.635855	0.094820	0.002138
<b>Sum</b>	96.28589	1050.877	100.4269	1719.088	1949.999	2199.884	231.7448
<b>Sum Sq. Dev.</b>	253.1796	601.3731	105.9939	1437.768	1597.076	4009.330	502.7492
<b>Observations</b>	42	42	42	42	42	42	42

**Table 3 : Test of correlation**

<b>Variables</b>	<b>Y</b>	<b>ID</b>	<b>FDI</b>	<b>X</b>	<b>M</b>	<b>MM</b>	<b>R</b>
<b>Y</b>	1						
<b>ID</b>	0.0614213471342	1					
<b>FDI</b>	0.1630515363994	0.05420604143537	1				
<b>X</b>	0.02170345995889	-0.5367981887052	0.3745764175640	1			
<b>M</b>	-0.1697991042878	-0.4017975884126	0.3173544302784	0.8429530755426	1		
<b>MM</b>	-0.2562908930336	-0.7365282371524	0.1163587803932	0.6325896396651	0.769207174921	1	
<b>R</b>	0.05404552124035	0.5697583371625	0.06015955893920	-0.0496971910509	0.07155899143145	-0.256627376141	1

To apply the ARDL test, the series must be not integrated of order two. The results of ADF and PP unit root tests are shown in Table 4. ADF and PP results indicate that Y and FDI are integrated at the level, and DI, X, M, MM and R are integrated of order one. Also, according to the results of the unit root tests, we can conclude that none of the variables used in the model is integrated in order two. So, we can use the ARDL approach for our empirical estimation.

**Table 4 - Tests for unit root (ADF and PP)**

Variables	ADF Test		PP Test	
	Constant	Linear and Constant	Constant	Linear and Constant
<b>Y</b>	(6.234114)*** [7.297074]***	(6.152758)*** [7.200567]***	(6.241357)*** [36.99159]***	(6.163636)*** [39.74327]***
<b>DI</b>	(1.959479) [4.771720]***	(3.534197)** [4.702376]***	(1.130256) [4.771865]***	(2.320115) [4.702509]***
<b>FDI</b>	(4.368613)*** [10.31328]***	(4.560528)*** [10.18581]***	(4.309671)*** [17.01350]***	(4.635771)*** [17.02537]***
<b>X</b>	(2.509105) [5.610313]***	(2.802248) [5.600772]***	(2.532288) [5.808220]***	(2.941999) [5.835443]***
<b>M</b>	(2.304182) [6.459060]***	(3.075550) [6.346644]***	(2.323510) [7.236470]***	(3.166953) [7.044401]***
<b>MM</b>	(0.016488) [4.188038]***	(1.733657) [4.260888]***	(0.368077) [3.920234]***	(1.422377) [3.923482]**
<b>R</b>	(2.169513) [6.917485]***	(2.601525) [6.837791]***	(2.148742) [7.406595]***	(2.601525) [7.127076]***

\*\*\*,\*\* and \* denote significances at 1% ; 5% and 10% levels respectively

( ) denotes stationarity in level

[ ] denotes stationarity in first difference

Due to we concluded that series are not integrated of order two; we employed the ARDL cointegration test. Based on the ARDL Bound test, we can reject the null hypothesis and conclude that Y, DI, FDI, X, M, MM, and R are moving together in the long-term. The results are reported in Table 5. As seen from the table 5, the results of Bounds Test indicate that F-statistic is higher than the upper critical value. Thus, we reject the null hypothesis ( $H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = 0$ ) in Equation (4). In other words, Table 5 indicates that there is a cointegration nexus among the series in Tunisia.

**Table 5 – Bounds Test**

<b>ARDL Bounds Test</b>		
<b>Test Statistic</b>	<b>Value</b>	<b>K</b>
<b>F-statistic</b>	7.002525	6
<b>Critical Value Bounds</b>		
<b>Significance</b>	<b>I0 Bound</b>	<b>I1 Bound</b>
<b>10%</b>	2.12	3.23
<b>5%</b>	2.45	3.61
<b>2.5%</b>	2.75	3.99
<b>1%</b>	3.15	4.43

Since the validity of a cointegration nexus among Y, DI, FDI, X, M, MM is approved; we examine the long-term and short-term impacts of DI, FDI, X, M, MM on economic growth (Y) in Tunisia.

Table 6 reports the results of the estimation of ARDL model in the long run. According to the results of the estimation, we find that DI has a significant and negative effect on economic growth. Keeping other things constant, a 1% increase in DI is accompanied by a 0.0805% improvement in economic growth. These findings are similar with [Lean and Tan \(2011\)](#); [Bakari \(2017\)](#); [Bakari \(2018\)](#); [Umar-Gingo and Demireli \(2018\)](#) who report that domestic investment is not seen as the source of economic growth.

Also we find that FDI has a significant and negative effect on economic growth. Keeping other things constant, a 1% increase in FDI is accompanied by a 0.2810% improvement in economic growth. This empirical evidence is similar with [Boyd and Smith \(1992\)](#); [Khaliq and Noy \(2007\)](#); [Shaikh \(2010\)](#); [Alege and Ogundipe \(2014\)](#) who report that foreign direct investment does not contribute to economic growth.

For control variables, Table 6 points that M and MM have a negative and significant effect on economic growth. These results mean that respectively, a 1% increase in M is accompanied by a 0.9652% improvement in economic growth and a 1% increase in MM is accompanied by a 0.1466% improvement in economic growth. However, X and R have a significant and positive effect on economic growth. Holding other things constant, a 1% increase in R is accompanied by a 2.2748% increase in Y; and a 1% increase in X is accompanied by a 0.4533% increase in Y

**Table 6 - long-run relationship**

<b>ARDL Cointegrating And Long Run Form</b>				
<b>Dependent Variable: Y</b>				
<b>Selected Model: ARDL(1, 3, 2, 2, 2, 0, 3)</b>				
<b>Cointegrating Form</b>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
D(DI)	0.502356	0.267049	1.881140	0.0762
D(DI(-1))	-0.713845	0.357040	-1.999340	0.0609
D(DI(-2))	0.423212	0.230020	1.839894	0.0823
D(FDI)	-0.103425	0.207057	-0.499499	0.6235
D(FDI(-1))	0.403876	0.257174	1.570436	0.1337
D(X, 2)	0.438596	0.206344	2.125559	0.0476
D(X(-1), 2)	-0.369852	0.204984	-1.804299	0.0879
D(M, 2)	-0.592068	0.173252	-3.417372	0.0031
D(M(-1), 2)	0.312862	0.165018	1.895931	0.0741
D(MM, 2)	-0.166625	0.182764	-0.911695	0.3740
D(R, 2)	1.054198	0.259995	4.054681	0.0007
D(R(-1), 2)	-0.350104	0.208039	-1.682875	0.1097
D(R(-2), 2)	-0.285722	0.150967	-1.892616	0.0746
CointEq <sup>2</sup> (-1)	-1.136231	0.167393	-6.787792	0.0000
<b>CointEq = Y - (-0.0805*DI -0.2810*IDE + 0.4533*D(X) -0.9652*D(M) - 0.1466*D(MM) + 2.2748*D(R) + 5.7873)</b>				

Table 7 reports empirical results of the short run analysis. We find that DI, X and R cause Y. Also, we find that FDI, M and MM are statistically insignificant which mean that they don't have any effect on economic growth.

**Table 7 – Short run / Wald tests**

<b>Variable</b>	<b>Value</b>	<b>df</b>	<b>Probability</b>
<b>DI</b>	8.542112	3	0.0360
<b>FDI</b>	2.720076	2	0.2567
<b>X</b>	8.643328	2	0.0133
<b>M</b>	4.581327	2	0.1012
<b>MM</b>	0.831188	1	0.3619
<b>R</b>	19.35873	3	0.0002
<b>***, ** and * denote significances at 1% ; 5% and 10% levels respectively</b>			

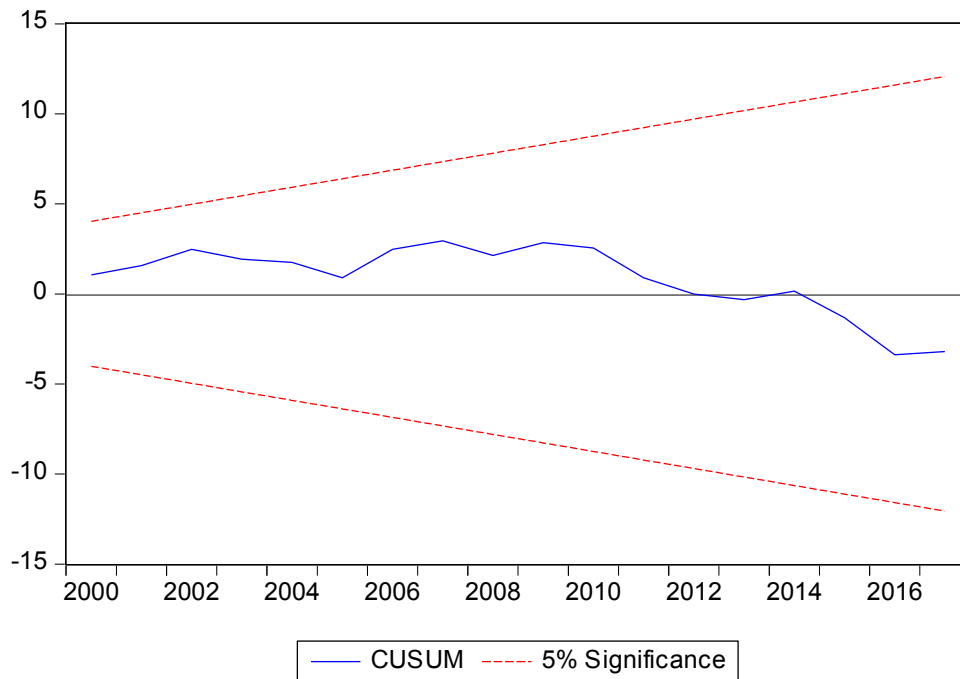
In table 8, diagnostic tests point out that the global indentation adopted is satisfying and reasonable. Tests performed to detect the presence of Breusch-Pagan-Godfrey, Harvey, Glejser, and ARCH in the estimated equation did not reveal any problem of heteroskedasticity at the 5% threshold. The  $R^2$  determination coefficients are close to or greater than 50% and the Jarque–Bera test shows that the residues follow the normality law. Otherwise the probability of Fisher is less than 5%, which indicates that our model is well treated.

**Table 8 - Diagnostics Tests**

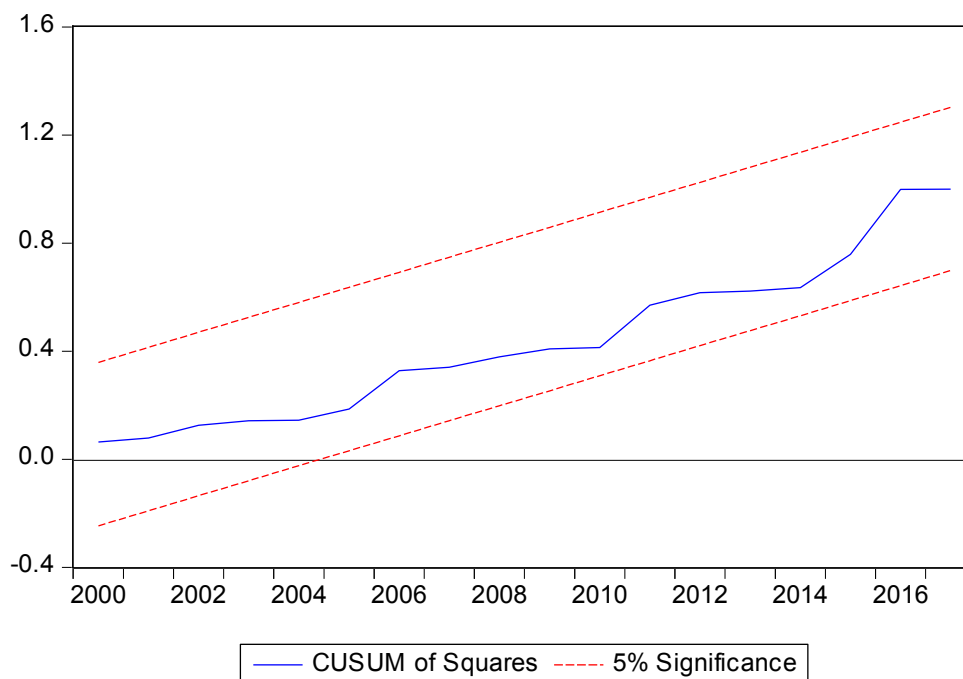
<b>Heteroskedasticity Test: Breusch-Pagan-Godfrey</b>			
F-statistic	0.282238	Prob. F(19,18)	0.9956
Obs*R-squared	8.722348	Prob. Chi-Square(19)	0.9778
Scaled explained SS	1.546533	Prob. Chi-Square(19)	1.0000
<b>Heteroskedasticity Test: Harvey</b>			
F-statistic	0.333990	Prob. F(19,18)	0.9889
Obs*R-squared	9.904809	Prob. Chi-Square(19)	0.9553
Scaled explained SS	7.673741	Prob. Chi-Square(19)	0.9897
<b>Heteroskedasticity Test: Glejser</b>			
F-statistic	0.308335	Prob. F(19,18)	0.9928
Obs*R-squared	9.330821	Prob. Chi-Square(19)	0.9676
Scaled explained SS	3.664893	Prob. Chi-Square(19)	0.9999
<b>Heteroskedasticity Test: ARCH</b>			
F-statistic	0.103296	Prob. F(1,35)	0.7498
Obs*R-squared	0.108878	Prob. Chi-Square(1)	0.7414
<b>Breusch-Godfrey Serial Correlation LM Test:</b>			
F-statistic	0.379384	Prob. F(2,16)	0.6903
Obs*R-squared	1.720482	Prob. Chi-Square(2)	0.4231
<b>Tests of Quality</b>			
R-squared	0.823097	F-statistic	4.407933
Adjusted R-squared	0.636366	Prob(F-statistic)	0.001362
<b>Test of Normality</b>			
Jarque-Bera	0.359624	Probability	0.835427

To inspect the stabilization of the long run of the coefficient of the estimated variables, the CUSUM and CUSUMSQ tests are applied. The two test statistics are incurred within the two bounds of 5% significance level. Figure 1 and figure 2 scheme the results for CUSUM and CUSUMSQ tests, which bid that jointly models are equiponderant and stable.

**Fig1. CUSUM Test**



**Fig2. CUSUM of Squares Test**



#### 4. Conclusion and Policy Implications

The positive effects of domestic investment and foreign direct investment on economic growth are hugely tempted on the theoretical levels as well as on the empirical levels.

However they turn out minus clear when uniqueness is exercised in a case of a developing country that suffers from many problems.

This paper aims to trace the impact of domestic investment and foreign direct investment on economic growth in Tunisia using the ADF unit root test, PP unit root test, Bounds test and ARDL Model for the period 1976 – 2017.

According to the result of the analysis, it was determined that domestic investment and foreign direct investment have a negative effect on economic growth in the long run. These results provide evidence that foreign and domestic investments, thus, are not seen as the fountain of economic growth in Tunisia during this considerable period and pain a lot troubles and inferior economic organization.

Agreement the role acted by domestic investment and foreign direct investment on economic growth has been a gist of disputation over the last decades. The existing empirical investigations provide always conflicting results.

According to [Bakari et al \(2018\)](#) "the majority of foreign investment in Tunisia is aimed at extracting and exploiting its natural resources such as oil, gas, phosphates and iron, as these foreign investments are in fact a long-term ruin for Tunisia. As the contracts passed by foreign companies have several disadvantages, and Tunisia has seen most of them such as pollution of the sea water affecting the marine and tourist products. The air pollution caused by the plants caused a decline in agricultural production, desertification of forests, high mortality and a significant shortage of water stocks. In addition, it is not prudent to exploit and spend the natural resources of the country, especially by foreign companies, but must be saved for the future and to seek other ways to achieve economic growth and sustainable development.", and this is one of the reasons that explain the negative effect of foreign direct investment on Tunisian economic growth. Also, the corruption testified by the Tunisian country commanded to the conclusion of investment contracts with foreign companies at cheap prices and without value to meet their personal ambitions {See [Ben-Taher and Gianluigi \(2009\)](#); [Bredoux and Magnaudeix \(2012\)](#)}<sup>3</sup>.

In the other hand, many reasons can be explain the negative impact of domestic investment on Tunisian economic growth in the long run. First, Tunisia has not yet reached the required level of reforms, which is relatively acceptable for the country's security crisis, drought and

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<sup>3</sup> See : [Bakari et al \(2018\)](#)

natural disasters. Second, the absence of a clear economic policy to encourage investment for this reason investors are not able to know better the economic environment which they lead their projects. Third, the weak entrepreneurial mentality that characterizes the Tunisian investors is simply formulated by the total absence of different types of innovations in their investments leading to the bankruptcy of the different projects. Fourth, the consequences of increases in interest rates and inflation rates in the face of the low profitability of these companies make the payment of debts impossible, which also led to the bankruptcy of the different projects. Finally, the lack of transparency and the presence of practice of corruption are one of the biggest obstacles for the continuity of domestic investment in Tunisia.

In the short run, empirical analyses indicate that foreign direct investments have not any effect on economic growth. However, domestic investments cause economic growth. Economically, this illumines that domestic investments are necessary in Tunisian's economy and are presented as an engine of growth since they cause economic growth in the short term. But they are not carried out with a fair strategy, resulting in the negative effect of domestic investment on economic growth in the long term. Also, we can explain it by a temporary awakening or an honest fear of governments and economic leaders following a popular uprising to improve economic conditions or a false election promise that does not last.

The results obtained lead us to make the following recommendations in order to promote economic growth in Tunisia: First, the economic growth in Tunisia is not mainly linked to domestic capital and foreign direct in long run. Second, the government should pay more attention to the nature of domestic and foreign direct investments. Third, the government should orient the domestic investment and foreign direct investment to more productive projects in order to enhance economic growth. Additionally, it's also important for government to improve good governance policies and the business climate in order to reduce institutional inefficiencies. Fourth, it's more important to reduce the risks and uncertainty associated with capital investment and foreign direct investment. Finally, the efforts should be directed to speed up the administrative procedures to attract more investments.

## **References**

Adams, S. (2009). Foreign direct investment, domestic investment, and economic growth in Sub- Saharan Africa. *Journal of Policy Modeling*, 31, 939–949.



Ahmad, H.M., Ahmed, M.S. and Atiq, Z. (2018). The impact of quality of institutions on sectoral FDI: evidence from Pakistan, *Foreign Trade Review*, Vol. 53 No. 3, pp. 174-188.

Al Sadig, A. (2013). Outward foreign direct investment and domestic investment: The case of developing countries. *IMF Working Paper*, WP/13/52.

Alege, P.O. and Ogundipe, A. A. (2014). Foreign direct investment and economic growth in ECOWAS: A system-GMM approach. *Covenant Journal of Business and Social Sciences (CJBSS)*, 5(1), 1-22.

Bakari, S. (2017). The long run and short run impacts of exports on economic growth: Evidence from Gabon. *The Economic Research Guardian*. 7(1), 40-57.

Bakari, S. (2018). The Impact of Domestic Investment on Economic Growth: New Policy Analysis from Algeria. *Bulletin of Economic Theory and Analysis*, 3(1), 35-51.

Bakari, S., Mabrouki, M., Elmakki, A, (2018). The Impact of Domestic Investment in the Industrial Sector on Economic Growth with Partial Openness: Evidence from Tunisia," *Economics Bulletin* 38(1), 111-128.

Bakari, S., Mabrouki, M and Othmani A (2018). The Six Linkages between Foreign Direct Investment, Domestic Investment, Exports, Imports, Labor Force and Economic Growth: New Empirical and Policy Analysis from Nigeria. *Journal of Smart Economic Growth*, Volume 3, Number 1, Year 2018.

Bakari, S., Tiba, S (2019). The Impact of Trade Openness, Foreign Direct Investment and Domestic Investment on Economic Growth: New Evidence from Asian Developing Countries. *MPRA Paper No. 94453*, University Library of Munich, Germany.

Belloumi, M., Alshehry, A (2018). The Impacts of Domestic and Foreign Direct Investments on Economic Growth in Saudi Arabia. *Economies* 6 (1): 18. <https://doi.org/10.3390/economies6010018>.

Ben-Taher, H and Giorgione, G (2009), *The determinants of FDI, a panel data study on AMU countries*. Liverpool business school, Liverpool John Moore's University.

Boyd, J.H., Smith, B.D. (1992). Intermediation and the equilibrium allocation of investment capital: Implications for economic development. *Journal of Monetary Economics*, 30, 409–432.

Bredoux, L and Magnaudeix, M (2012). *Tunis Connection. Enquête sur les réseaux franco-tunisiens sous Ben Ali*. Paris: éditions du Seuil, 2012.

Chowdhary, R., and Kushwaha, V. (2013). Domestic investment, foreign direct investment and economic growth in India since economic reforms. *Journal of Transformative Entrepreneurship*,1(2), 74–82.

Desai,Mihir,A.,C.Fritz Foley,and James R. Hines(2005). Foreign Direct Investment and the Domestic capital Stock. *American Economic Review*,95(2):33-38.

Eregha, P. B. (2011). The Dynamic Linkages Between Foreign Direct Investment and Domestic Investment in ECOWAS Countries: A Panel Cointegration Analysis. 2011 *Conference of the Centre for the Study of African Economies*, 20-22 March 2011, Oxford University, Oxford, UK.

Gingo, H. U., and Demireli, E. (2018). Analysis of the effect of foreign direct investment on economic growth: The case of Ghana. *International Journal of Contemporary Economics and Administrative Sciences*, 7(34), 119-138.

Gungor, H., Ringim, S.H. (2017), Linkage between foreign direct investment, domestic investment and economic growth: Evidence from Nigeria. *International Journal of Economics and Financial Issues*, 7(3), 97-104.

Im, K.S., Pesaran, M.H. and Shin, Y. (2003), Testing for unit roots in heterogeneous panels, *Journal of Econometrics*, Vol. 115, pp. 53-74.

Khaliq, A., and Noy, I. (2007). Foreign direct investment and economic growth: Empirical evidence from sectoral data in Indonesia. Retrieved from [http://www.economics.hawaii.edu/research/workingpapers/WP\\_07-26.pdf](http://www.economics.hawaii.edu/research/workingpapers/WP_07-26.pdf)

Lean, H. H., and Tan, B. W. (2011). Linkages between foreign direct investment, domestic investment and economic growth in Malaysia. *Journal of Economic Cooperation and Development*, 32(4), 75–96.

Mohamed, M. R., Singh, K. S. J., & Liew, C. Y. (2013). Impact of foreign direct investment and domestic investment on economic growth of Malaysia. *Malaysian Journal of Economic Studies*, 50(1), 21–35.

Omri, A and Kahouli, B.(2014). The nexus among foreign investment, domestic capital and economic growth: empirical evidence from the MENA region, *Research in economics*, Vol.68; Issue 3,pp.257-263.

Pesaran, M. H., Y. Shin, and R. J. Smith. 2001. “Bounds Testing Approaches to the Analysis of Level Relationships.” *Journal of Applied Econometrics* 16 (3): 289–326.

Pilbeam, K and Oboleviciute, N. (2012). Does Foreign Direct Investment Crowd In or Crowd Out Domestic Investment?, Evidence from the European Union, *the journal of economic asymmetries*.

Romer, P. M. (1993). Ideas gaps and object gaps in economic development. *Journal of Monetary Economics*, 32(3), 543–573

Shaikh, F. M. (2010). Causality Relationship Between Foreign Direct Investment, Trade And Economic Growth In Pakistan. *International Business Research* (Vol. 1, pp. 11–18). Harvard Business School.

Ullah,I., Shah,M and Khan,F.(2014) . Domestic Investment, Foreign Direct Investment, and Economic Growth Nexus: A Case of Pakistan, *Economics Research International*, p.5, <http://dx.doi.org/10.1155/2014/592719>

Xu, G., and Wang, R. (2007). The effect of foreign direct investment on domestic capital formation, trade, and economic growth in a transition economy: Evidence from China. *Global Economy Journal*, 7(2), 1–21. <http://dx.doi.org/10.2202/1524-5861.1198>.