Journal Of Maliksussaleh Public Economics, Volume 07 Nomor 01 April 2024
E-ISSN : 2615-126X
URL: http://ojs.unimal.ac.id/index.php/Jompe

CAUSALITY BETWEEN DOMESTIC INVESTMENT AND ECONOMIC GROWTH IN ARAB COUNTRIES

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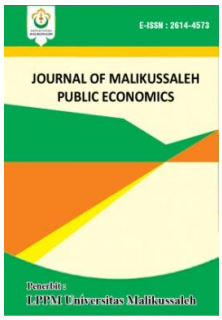

ARTICLEINFORMATION

Keywords:
Domestic Investment, Economic Growth, VECM, Arab Countries

ABSTRACT

The aim of this investigation is to examine the nexus between domestic investment and economic growth in Arab countries. To attempt our goal, we used annual data for the period 1990 – 2020 and Vector Error Correction Model. Empirical analysis indicates that there is no relationship between domestic investment and economic growth in the long run. However, we find a bidirectional causality between domestic investment and economic growth in the short run. These results provide evidence that domestic investment is necessary in Arab countries' economy and is presented as an engine of growth since they cause economic growth in the short term. But they are not carried out and treated with a solid and fair manner, which offer new insights into Arabe countries' investment policy for promoting economic growth.

1. INTRODUCTION

Domestic investment is an important factor and an essential determinant for the development and improvement of economic activity in all countries. In fact, domestic investment can influence in a favorable way on several macroeconomic aggregates such as the reduction of the unemployment rate, the reduction of poverty, the increase in productivity, the increase in the value of exports which results in a refinement of the trade balance, the reduction of the debt burden and the improvement of economic growth.

The prospects for breaking the cycle of poverty and unemployment in the Arab world seem dim in the face of deficit, accumulation of debts, corruption, and nepotism. The validity of this saying does not detract from successes here and there, as all governments have failed to harness the energies of young human resources.

Since 2014, the suffering of the poor and oil-rich Arab countries has worsened, except for the corrupt elites that compose them, with the decline in their resources and the increase in the deficit of their budgets, for reasons of bribery and bribery. decline in oil revenues and foreign trade. This leads him to accumulate debts, installments, and interest. This is not limited to countries that used to borrow from the International Monetary Fund and other creditors for decades, such as Tunisia, Egypt, Lebanon, and Jordan. The deficit and borrowing infection also spread to countries that enjoyed financial surpluses, such as Saudi Arabia. and Algeria.

The accumulation of debt and its burdens are pushing some countries to the brink of bankruptcy, as is the case in Lebanon. If other countries such as Tunisia do not obtain additional loans, the situation quickly evolves towards this edge, with the risk of a further deterioration in the level of infrastructure. Since 2011, the latter has been unable to alleviate the economic and social pressures also resulting from the high youth unemployment rate at over 15% and inflation rates reaching over 6% per year. The situation does not look any better in Jordan, which lives on debts and rescheduling's. In other countries such as Syria, Libya, Iraq and Yemen, the issue is not limited to the deterioration, but also to the destruction of most of the state structures, infrastructure, and social structures in because of wars and terrorism.

Given the disastrous economic situation in which the Arab countries are facing. It is clear to us that domestic investment is one of the most necessary solutions to promote the advancement of the country and to reduce most of these disasters. However, a very few studies have examined jointly the causality links between domestic investment and economic growth in developing countries. Furthermore, such an empirical exercise has never been done in the context of Arab Countries. In this paper, we try to bridge these gaps by investigating the causal links between domestic investment and economic growth. Our methodology relies on VECM models where economic growth and domestic investment are endogenous. The rest of the paper is organized as follows: Section 2 reviews the theoretical and empirical links between economic growth and domestic investment. Section 3 provides a first look at the data and empirical methodology. Sections 4 discuss the causality results. Section 5 concludes the paper with some policy implications.

2. LITERATURE REVIEW

Domestic investment takes a very considerable place in the economies of countries thanks to its impact on several economic variables. In fact, Romer (1986); Lucas (1988), Barro (1991), Bakari and Mabrouki (2017), Bakari and Tiba (2019), Dahmani (2021), Dahmani et al (2021), Dahmani et al (2022) certified the importance of domestic investment in improving economic growth. Javid (2019) tested the impact of domestic investment on economic growth for Pakistan over the period 1972 to 2015. He used Johansen Co-integration Tests and fully modified ordinary least squares (FOLS). Results indicated that public and private investment has positive impacts on economic growth. Shabbir et al (2021) used ARDL Model to detect the nexus between domestic investment and economic growth in Pakistan for the period 1980 – 2017. They confirmed that domestic investment is a source of growth more than foreign direct investment.

For the case of Vietnam, Nguyen and Trinh (2018) examined the impact of domestic investment on economic growth in the short term and in the long run during the period of 1990 - 2016. The findings from this study denoted that domestic investment in Vietnam allotted positively economic growth in the short run and in the long run. Furthermore, Tran and Hoang (2018) tested the influence of domestic investment on economic growth in 47 provinces of Vietnam during the period 2012 to 2015. The empirical results pointed out that domestic investment has a positive incidence on economic growth. Kobilov (2020) found that there is a positive bidirectional relationship between domestic investment and economic growth in the case of Uzbekistan.

In the case of Algeria, Bakari (2018) proved that domestic investment causes economic growth in the long run and in the short run for the period 1969 – 2015. Bakari and Tiba (2019) searched the determinants of economic growth in USA during the period 1970-2016. They found that final consumption expenditure, population, domestic investment, foreign direct investment inflow, and export are the source of economic growth in the long run. Bakari et al (2020a) investigated the relationship among domestic investment, taxation, and economic growth in Germany during the period 1972-2016. They found a positive relationship between the three variables in the long run and in the short run. In the case of G7 countries, Bakari (2021a) searched the impact of internet use, domestic investment, and economic growth. By applying various panel model during the period 1991-2018, he indicated that domestic investment has a positive effect on economic growth. Again, Bakari (2021b) found that domestic investment is one of the factors that influent economic growth in the case of Spain. Mkadmi et al (2021) indicated that the cointegration between domestic investment, tax revenue and economic growth is positive in the case of Tunisia during the period 1995 – 2020. In their study, they confirmed that tax revenue can make domestic investment as stimulator of growth.

Anwar and Elfaki (2021) investigated the relationship between energy consumption, economic growth, environmental degradation, trade openness and domestic investment in Indonesia. To attempt their goal, they applied annual data for the period 1965 - 2018 and ARDL model. Empirical analysis noted that domestic investment has a positive effect on economic growth and negative effect on environmental degradation.

Other studies show that domestic investment does not necessarily have an influence or a favorable effect on economic growth Khan (1996); Devarajan (1996) and Bakari (2017). For example, Bakari (2019) examined empirically the nexus between tax, domestic investment, and economic growth in France during the period 1972-2016. Results suggest that in the long run there is a negative relationship

between tax revenue, domestic investment, and economic growth. He indicated that the strategy tax policy of France is not safe for domestic investment and economic growth. Ewubare and Worlu (2020) searched the impact of domestic investment on economic growth in Nigeria for the period 1990 to 2017, and they found that there is a negative relationship between domestic investment and economic growth in the long run.

For the case of Tunisia, Bakari and Bouchoucha (2021) confirmed that domestic investment and foreign direct investment have a negative impact on economic growth in the long run during the period 1976 – 2017. They explain these results by the lack of transparency and the presence of practice of corruption which present one of the biggest obstacles for the continuity of domestic investment in Tunisia. These results are also confirmed by another study examined by Bakari (2020) in the case of Tunisia. Aslan and Altinoz (2021) examined the nexus between natural resources, gross capital formation, globalization, and economic growth in the developing countries from European, Asian, African, and American continents. They used the panel vector autoregression (PVAR) approach to test this relationship for the period from 1980 to 2018. Results suggest that domestic investment negatively affects growth.

Also, there is other studies that proved that there is no relationship between domestic investment and economic growth. For the case of Peru, Bakari et al (2020b) examined the impact of domestic investment, exports, and economic growth during the period 1970-2017. By using vector error correction model, they indicated that there is no relationship between domestic investment, exports, imports, and economic growth in the long term and in the short run. These are the same results found by Bakari et al (2019) in the case of Urugay for the period 1960-2017. Also, Bakari et al (2021) found that there is no relationship between economic growth, domestic investment, and pollution in the case of Tunisia during the period 1971 – 2015. Ogunjinmi (2022) studied the impact of domestic investment and economic growth in the case of Nigeria. By using ARDL model, he found that there is no relationship between domestic investment and economic growth in the long run during the period 1981-2019. Fakraoui and Bakari (2019) examined the impact of domestic investment and exports on economic growth in India for the period 1960 – 2017. By applying Veco Error Correction Model, they found that there is no relationship between domestic investment, exports, and economic growth in the long run.

3. EMPIRICAL METHODOLOGY

The analysis used in this study cover annual time series of 1990 to 2020 or 31 observations which should be sufficient to capture the nexus between domestic investment and economic growth in Arab countries. The data set consists of observation for GDP (constant US$) as a proxy of economic growth and Gross Fixed Formation Capital (constant US$) as a proxy of domestic investment. All data set are taken from World Development Indicators 2020. We will use the most appropriate method which consists firstly of determining the degree of integration of each variable. If the variables are all integrated in level, we apply an estimate based on a linear regression. On the other hand, if the variables are all integrated into the first difference, our estimates are based on an estimate of the VAR model. When the variables are integrated in the first difference we will examine and determine the cointegration between the variables, if the cointegration test indicates the absence of cointegration relation, we will use the model VAR. If the cointegration test indicates the presence of a cointegration relation between the different variables studied, the model VECM will be used.

In our case, the basic model is written and modeled as follows:

$$\Delta\log(Y)_t = \alpha_1 + \beta_1\Delta\log(DI)_t + \varepsilon_t$$
$$\Delta\log(DI)_t = \alpha_1 + \beta_1\Delta\log(Y)_t + \varepsilon_t$$

Where, ‘Y’ is economic growth, ‘DI’ is domestic investment ‘ε’ is the term error, and ‘t’ is the temporal dimension.

4. EMPIRICAL RESULTS

The first step in our empirical analysis involves examining the evolution of the variables over time to settle the links between them. To complete this phase, certain tests aim to specify the stationarity of the variables. In our case, we will use the most appropriate tests which are the PP test and the ADF test. According to table 1, the results of the two tests (ADF and PP) indicate that all the variables (domestic investment and economic growth) are stationary and above all they are integrated in order 1.

Table 1. Results of Unit root tests

UNIT ROOT TEST TABLE (PP)			
At Level			
		LOG(Y)	LOG(DI)
With Constant	t-Statistic	-1.0554	-1.3654
	Prob.	0.7251	0.5907
With Constant & Trend	t-Statistic	-2.0953	-2.1439
	Prob.	0.5343	0.5081
Without Constant & Trend	t-Statistic	4.5992	2.0807
	Prob.	1.0000	0.9900
At First Difference			
		d(LOG(Y))	d(LOG(DI))
With Constant	t-Statistic	-5.1779	-5.8985
	Prob.	0.0001	0.0000
With Constant & Trend	t-Statistic	-5.1185	-5.8009
	Prob.	0.0007	0.0001
Without Constant & Trend	t-Statistic	-4.0292	-5.6563
	Prob.	0.0002	0.0000
UNIT ROOT TEST TABLE (ADF)			
At Level			
		LOG(Y)	LOG(DI)
With Constant	t-Statistic	-0.3223	-1.3537
	Prob.	0.9130	0.5963
With Constant & Trend	t-Statistic	-2.3742	-1.8776
	Prob.	0.3872	0.6495
Without Constant & Trend	t-Statistic	2.4310	2.2517
	Prob.	0.9957	0.9934
At First Difference			
		d(LOG(Y))	d(LOG(DI))
With Constant	t-Statistic	-3.8739	-5.8891
	Prob.	0.0047	0.0000
With Constant & Trend	t-Statistic	-3.8253	-5.7997
	Prob.	0.0246	0.0001
Without Constant & Trend	t-Statistic	-2.9166	-5.6563
	Prob.	0.0045	0.0000

Source: Authors' calculations using EViews 12 software

The second step in our empirical analysis is to determine the number of optimal lags in our model. Table 2 shows that according to the results of information criteria such as AIC and HQ the number of the optimal delay is equal to 1.

The third step is to verify the cointegration between the variables. For this reason, we will use Johanson's test. Table 3 shows us that there is a cointegration relationship between the variables of our model.

Table 2. VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	124.1418	NA	8.86e-06	-5.958135	-5.874546*	-5.927697
1	130.4346	11.66485*	7.93e-06*	-6.069983*	-5.819216	-5.978667*
2	133.5975	5.554316	8.27e-06	-6.029147	-5.611203	-5.876955
3	137.5853	6.613844	8.31e-06	-6.028550	-5.443428	-5.815481
4	139.2982	2.673875	9.37e-06	-5.916987	-5.164687	-5.643041
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Authors' calculations using EViews 12 software

Table 3. Johansen Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.497742	41.51647	15.49471	0.0000
At most 1 *	0.241838	11.90488	3.841466	0.0006
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.497742	29.61159	14.26460	0.0001
At most 1 *	0.241838	11.90488	3.841466	0.0006
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' calculations using EViews 12 software

In fact, the long-term equilibrium equation is presented as follows:

$$\mathbf{Log}\,(\mathbf{Y}) = \mathbf{0.014186} + \mathbf{0.740035}\,\mathbf{Log}\,(\mathbf{DI})$$

The long-term equilibrium equation shows that the domestic investment coefficient is positive with a value equal to 0.740035. This means that a 1% increase in domestic investment leads to a 0.740035% increase in economic growth.

It can be said that the equilibrium cointegrating equation is significant and there is a long-term relationship between the variables when the error correction term has a negative coefficient and a negative probability. Table 4 shows that the error correction coefficient has a probability greater than 5%. This means that the equilibrium cointegration equation is not significant and therefore the absence of a causal relationship between domestic investments and long-term economic growth.

Table 4. The Significance Of The Long-Term Equilibrium Cointegration Equation

Dependent Variable : D(DLOG(Y))				
Method : Least Squares (Gauss-Newton / Marquardt steps)				
	Coefficient	Std. Error	t-Statistic	Prob.
ECT	-0.154553	0.154601	-0.999687	0.3236
C(2)	-0.277080	0.195937	-1.414123	0.1653
C(3)	-0.151799	0.075284	-2.016364	0.0507
C(4)	-0.004693	0.006764	-0.693838	0.4919

Source: Authors' calculations using EViews 12 software

As soon as the relationship between the long-term variables is determined, we move on to the next step, which consists of examining the relationship between domestic investment and economic growth in the short run. To determine short-term causal relationships, we use Granger Causality tests (WALD test), and we retain a probability of error of less than 5%.

The results in Table 5 indicate that there is a bidirectional causality relationship between economic growth and domestic investment in the short term. The last step of our empirical analysis is to verify the robustness and credibility of our found results. To achieve this goal, we will use a set of tests called diagnostic tests.

Table 5. VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(DLOG(Y))			
Excluded	Chi-sq	df	Prob.
D(DLOG(DI))	4.065725	1	0.0438
All	4.065725	1	0.0438
Dependent variable: D(DLOG(DI))			
Excluded	Chi-sq	df	Prob.
D(DLOG(Y))	3.953750	1	0.0468
All	3.953750	1	0.0468

Table 6. Diagnostics Tests

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.881301	Prob. F(6,36)	0.1110
Obs*R-squared	10.26429	Prob. Chi-Square(6)	0.1140
Scaled explained SS	14.51485	Prob. Chi-Square(6)	0.0244
Heteroskedasticity Test: Harvey			
F-statistic	1.258878	Prob. F(6,36)	0.3005
Obs*R-squared	7.457315	Prob. Chi-Square(6)	0.2806
Scaled explained SS	8.430659	Prob. Chi-Square(6)	0.2082
Heteroskedasticity Test: Glejser			
F-statistic	1.748466	Prob. F(6,36)	0.1380
Obs*R-squared	9.703087	Prob. Chi-Square(6)	0.1377
Scaled explained SS	12.28836	Prob. Chi-Square(6)	0.0558
Heteroskedasticity Test: ARCH			
F-statistic	0.993564	Prob. F(1,40)	0.3249
Obs*R-squared	1.017958	Prob. Chi-Square(1)	0.3130

Source: Authors' calculations using EViews 12 software

The diagnostic tests show that the estimation results are acceptable and that the model meets the application conditions of the OLS. Indeed, the probabilities of the heterodasticity tests are greater than 5%, which confirms the robustness of our empirical results and that our model is well processed (see Table 6).

5. CONCLUSION AND POLICY IMPLICATIONS

This study investigates the causality between domestic investment and economic growth in the Arab Countries over the period 1990 – 2020. To do this, we applied cointegration analysis, VECM Model and the Granger Causality Tests. Our main question was, how does domestic investment affect he growth of an economy?

The empirical results indicate that there is no relationship between domestic investment and economic growth in the long run. These results are explained that Arab countries have not yet reached the required level of reforms, which is relatively acceptable for the country's security crisis, drought, and natural disasters [See: Al-Madhari and Elberier (1996); Medany (2008); Tolba and Saab (2009); Wodon et al (2014); Ghomian and Yousefian (2017)]. Also, this is explained by the absence of transparency and the presence of corrupt practices [See Othmani et al (2015a); -Hashem (2014); Tuati (2014); Ahmed et al (2020); Bakari and Benzid (2021)].In addition, the absence of a pure and perfect competitive market in Arab countries can decrease the efficiency of the productivity of domestic investments [See: Stepan and Robertson (2003); Murjan and Ruza (2002); Othmani et al (2015b)].

Equally, Arab countries are characterized by the absence of a clear economic policy to encourage investment for this reason investors are not able to better know the economic environment in which they carry out their projects [See: Rivlin (2001); Nunnenkamp (2004); Atmay (2013)]. Also, the weak entrepreneurial mentality that characterizes the Arab investors simply formulated by the total absence of different types of innovations in their investments leading to the bankruptcy of the different projects. Finally, the consequences of increases in interest rates and inflation rates in the face of the low profitability of these companies, which makes the payment of debts impossible [See Slimani et al (2015a, 2015b)].

On the other hand, the empirical results show that there is a two-way causal relationship between domestic investment and short-term economic growth. In fact, these effective links between domestic investment and economic growth conform to the theoretical rules of economic growth. This is due to a temporary awakening or honest fear of governments and economic leaders following a

popular uprising aimed at improving economic conditions or a false election promise that does not last.

Policy makers should pay attention to the relationship between domestic investment and economic growth. This also highlights the urgent need in formulating policies that enhance domestic investment by creating new strategies to eliminate the risks and uncertainty associated with domestic investments.

The study shows very shocking results that better explain the plight of Arab countries. Broadly speaking, these can be boiled down to several barriers, including business model issues, poor management, lack of research and planning, weak leadership, lack of financial flows, unemployment among young graduates, the poor economic situation, and financial problems.

Concerning the frontiers of this work, we suffered issues linked to the collection of the database. In fact, we need to have a vaster period to test the nexus between domestic investments and economic growth in Arab Countries. Otherwise, and because of the short period of our database, we applied an ad hoc specification which has only two variables by eliminating several control variables whose goal is to have a larger and more dynamic degree of freedom. Another limitation, which we encountered, is that the stationarity of our variable obliges us to stratify an estimate founded on the VECM model. In fact, the framework of the database exhibits us that we cannot utilize other econometric models, and this presents itself as a holdback to checking the robustness of our results by applying another econometric model. Finally, regarding the limits of this study, we encountered obstacles in the literature. Indeed, we have noticed the absence of work that has studied the links between domestic investments and economic growth in Arab Countries, and this asserts in a way the originality of our work. We propose that the direction of research concerning the Arab countries is to examine the determinants of domestic investments and to study the impact of the structure of domestic investments on economic growth to exploit the most effective sector in improving the economic growth.

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