

Causative Relationship between Domestic Investment in Jordan and Some Economic Variables during the Period (2000-2016)

Talal Bataineh¹

¹ Faculty of Business, Tafila Technical University, At-Tafila, Jordan

Correspondence: Talal Bataineh, Faculty of Business, Tafila Technical University, P.O. Box 179, Tafila, 66110, Jordan. E-mail: bataineh.talal@yahoo.com

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Abstract

This study aimed at revealing the reciprocal role of the domestic investment in Jordan in affecting and being affected by some economic variables. The researcher used the appropriate statistical analysis by using (ols) way and the (e-views) program. The study concluded a group of results, the most important of which is that the domestic investment affects and is affected by the gross domestic product as being one of its components. The domestic investment also did not have a positive role in the increase of the magnitude of national exports. The study concluded a group of recommendations, the most important of which is the increase of concern about domestic investment and the increase of incentives to productive sector as they are important in reducing the problems of both poverty and unemployment.

Keywords: domestic investment, gross domestic product, inflation rate, exports magnitude, Jordan

1. Introduction

Jordan has a special concern about investment and the improvement of the investment environment as being a basic support for the achievement of development of the citizen's living circumstances and decrease of unemployment rates, beside its role in the improvement of the balance of trade in Jordan through its role in the increase of national exports and decrease of the magnitude of imports.

Jordan has conducted some improvements on the economic and legislative environment for the settlement of domestic investors. The great developments and changes which the world has witnessed recently, have undergone a wave of economic liberalization, free foreign trade and elimination of the obstacles which hinder the movement of capital. These developments have led to the open economies of countries with each other. Several countries have implemented reform programs and economic and legislative restructuring with the aim of achieving economic stability, overcoming fluctuations and freeing commerce and capital movement for the sake of providing the appropriate capital environment.

Jordan has taken important steps and measures concerning the release and blending of economy with international ones through the implementation of economic reform programs and the adaptation of a number of important economic legislations which have had a role in the improvement of the investment climate in general. The Jordanian experience in the economic trade fields during the past few years, has been characterized by qualitative transfer in the contribution of the private sector to the achievement of the required economic growth through the provision of a package of legislations which govern the environment of investment, in addition to the developed infrastructure through the establishment of qualified industrial zones and free areas and the holding of trade deals and Jordanian's starting the program of partnership between public and private sectors in 2008. This program is considered as the main core of the strategy of economic development adopted by the government and which emphasized the necessity for improving and increasing the services offered by the government through the attraction of the investments and experiences of the private sector.

2. Theoretical Frame and Literature Review

Investment is considered as one of the cores on which the national economy is based. Countries seek to maintain the magnitude and development of investment in order to reach development, prosperity and sustainable development. In this study, emphasis will be on domestic investment and its role in economic development and the aims hoped to be achieved at the domestic level on one hand and the impact on some entire economic

variables on the other hand. Investment can be defined as sacrificing the resources used in the present for the sake of obtaining revenues or interests during a period of time in the future, as the return will be bigger than the preliminary expenditures of investment.

2.1 Importance of Domestic Investment

The importance of domestic investments lies in a group of things (Al-Shukeiri, 2012), the important of which are:

- 1) Increase in production and productivity, in a way that leads to the increase in national income, rise in the individual's average share from it and the improvement of the citizen's living standard.
- 2) Providing services for citizens and investors.
- 3) Providing job opportunities and lessening unemployment rates.
- 4) Increasing the rates of capital formation of the government.
- 5) Providing different specializations of technicians, managers and skillful workers.
- 6) Producing accommodates and services which satisfy citizens and exporting the surplus abroad, in a way that provides necessary foreign currencies for buying instruments and machines and increasing the capital formation. For stimulating the domestic investor and settling his investments, a group of factors should be available, the most important of which is the availability of necessary infrastructure of investment and offering it to investors with suitable prices to make it possible for domestic productive investments to produce immediately with suitable costs which are competitive in the market.

2.2 Literature Review

Conducted a study about the obstacles of capital formation in the industrial sector in Toolkarm Government. The study concluded the existence of a group of obstacles which restricted the capital formation in this sector and they differed in importance, namely, industrial establishments did not encounter all the obstacles determined by the study. The study recommended the necessity for the industrial establishment to follow modern managerial methods and check the procedures of specifications and measures in a way that serves the industry, and concern about the law of taxes and its role in the encouragement of domestic investment (Abu Obeidah, 2014).

Conducted a study about the impact of domestic investment in the projects of infrastructure on the economic growth in the Sudan during the period (2000-2012). The study concluded the existence of weak investment in the infrastructure in the Sudan in regard to domestic product and the financing of the infrastructure projects greatly depended on the private sector, and the investment in the infrastructure was concentrated, with a bigger ratio, on the item of capital machines. The study recommended the creation of alternative resources for financing this sector like the use of the system of partnership with the private sector in particular, in the vital domains such as agriculture, industry and mining of metals (Al-Ali, 2016).

Conducted a study about the role of regional groups in supporting the domestic investment. The study concluded several things the most important of which are the participation of regional groups in domestic economic guidance by taking their opinions, the use of modern technological means, providing encouraging initiatives for the participation of civil community and acquainting them with the importance extent of their support of domestic investments and rapid passing of special regulations of investment (Huddud, 2013).

Conducted a study about the impact of economic variables on direct domestic investment in Algiers a measurement study for the period (1989-2009). The study concluded that the size of gross capital formation passed a stage characterized by growth with positive rates, in which the prices of effective interest fluctuated before and after the economic reforms followed in Algiers. Direct investment is affected by the volume of population and is negatively affected by the price of effective interest. The study recommended the emphasis on the rate of economic growth in way that ensures the continuity of the power of effective demand in order to stimulate direct domestic investment (Hussein & Abbadi, 2013) .

Conducted a study about the use of VR models in prediction and the study of causative relationship between domestic product and the entire capital formation in Syria. The study concluded that the gross domestic product is considered as one of the important economic indicators for any country as it reflects the entire activity and its economic performance in a certain year and which, in its turn, is reflected on the general economic situation of the country. In other ways, the gross domestic product is characterized by mutual relationship with the size of capital investments. As these investments increase, their efficiency increases as does the gross domestic product. Domestic product affects the size of investment as it is part of the gross domestic product (Nakkar & A-awwad, 2012).

Conducted a study about the limitations of domestic investment in Turkey- a measurement study for the period (1970-2011). The study concluded a group of results, the most important of which are the existence of a positive relationship between economic growth, domestic savings, public expenditure, rates of stable prices, and direct foreign investment on domestic investment in the long run. And the causative relationship supported this trend. The study recommended the implementation of further incentives to the foreign investor by expanding expenditure and concern about putting a suitable mechanism for the stability of exchange and the necessity for the achievement of high domestic saving rates as being a main resource for financing the escalating rates of domestic investment (Sumadi & Thnoon, 2014).

Conducted a study about investment in the Arab Syrian Republic. The study concluded the advantage of available development economic opportunities. This can happen through the social and service development of all the areas and development of economic activities without concentration on one sector. The study also concluded the concern about human development and furthering the competence of human capital through training, education and health in order to enable the trained workers to deal with the factors of economy with competence and efficiency. It also conclude the necessity for economic reforms in Syria at all levels, especially the legislative and legal ones. The low incomes and low savings in Syria did not contribute to the formation of necessary capital in economic development (Abduljundi & Bawadikgi, 2010).

Conducted a study about the role of the commission of investment motivation in encouraging the domestic and foreign investment in Palestine. The study concluded that most companies owning the investment projects were private contributing ones in regard to their legal formation, and most invested capital was self- capital. Most investments were concentrated on the borders of Gaza and the rest was in north, middle and south the strip. Most of these projects were industrial, tourist, agricultural and services. The study also concluded the need for some improvements relating to the rapid course of investors handlings. It also concluded that the commission did not give feasibility study services of the investment projects, not giving technical advice to investors, not helping, in giving entry and exit permissions not doing activities follow- up for technical things relating to development. It also concluded the need for training employees and opening offices in foreign countries and updating the organizational structure of the commission and issuing a guidebook for investment in Palestine (Muhammad & Migdad, 2008).

3. Method

Jordan is not a big country in the Middle East Region. It has limited resources, but due to the economic policies, Jordan has witnessed development in the field of domestic and foreign investment as a result of supporting laws of investment by eliminating all obstacles which hinder investors. Table (1) shows the development of the magnitude of domestic investments in Jordan.

Table 1. Development of the volume of domestic investments in Jordan in millions during the period (2000-2016)

year	Size of domestic investment (in millions)
2000	1266.6
2001	1235.8
2002	1287.3
2003	1490.8
2004	2005.4
2005	2733.7
2006	2717.1
2007	3334.1
2008	4352.4
2009	4584.4
2010	5113.9
2011	5109.9
2012	4705.9
2013	4739.4
2014	5034.3
2015	5189.1
2016	5270.0

Source: Central Bank of Jordan Statistical Bulletin.

Through Table 1 we notice the big growth in the magnitude domestic investments during the period of the study. They increased from (1266.6) millions in 2000 to reach (5270) in 2016. This increase is due to the attracting climate of investment and the political and economic stability characterizing Jordan.

In this study, the researcher examined the relationship between some of the entire economic variables and domestic investment considering some variables like inflation rate, nominal gross domestic product, unemployment rate and volume exports and domestic investment, taking into account that some studies proved the mutual effect of these variables on each other as the domestic investment is one of the components of domestic product. For achieving the aim of the study, the researcher designed the following statistical model:

$$DI = a_0 + a_1 \ln GDP + a_2 iNF + a_3 EXT$$

Study variables: based on the economic literature, some variables believed by the researcher as being affecting and affected by domestic investment in Jordan during the period of the study were adopted as follows:

- 1) Nominal domestic product.
- 2) Inflation rate.
- 3) Magnitude of exports.

The first design of the study model was as follows:

$$DI = a_0 + a_1 \ln GDP + a_2 iNF + a_3 EXT$$

Where:

DI means domestic investment (dependent variable)

nGDP means nominal gross domestic (independent variable)

iNF means inflation rate (independent variable)

EXT means size of national exports (independent variable)

OLS method was used in the analysis through (e-views) program. The results were as follows:

$$DI = 0.781 \ln GDP - 182.9 iNF + 0.0009 EXT$$

T	1.572	-2.211	5.66
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$R^2 = 0.94$

Adjusted $R^2 = 0.92$

D.W. = 1.78

F stoof = 67.33

The value of stable (a_0) was excluded as being insignificant, and through analysis, it was revealed that there was:

- 1) A positive relationship between the increase of the volume of gross domestic product and the magnitude of domestic investment.
- 2) A negative relationship between the rates of inflation and domestic investment, as when the rates of inflation rise, the volume of domestic investments decreases.
- 3) A positive relationship between the magnitude of national exports and the volume of domestic investment, as when the magnitude export increases, the magnitude of domestic investments increases.

All the variables of the study were significant with a statistical significance. This is notices through the values of (T) and (F) and also through the value of (D.W.).

After that, a second model was built considering the domestic investment as an independent variable as in the following model:

$$NGDP = a_0 + b_1 DI + a_2 iNF + a_3 EXT$$

Where:

nGDP means nominal gross domestic (dependent variable)

DI means domestic investment

iNF means inflation rate

EXT means national exports size

The results were as follows:

$$nGDP = 1.65 DI - 182.9950.6iNF + 0.0056EXT$$

T	2.73	-6.64	33.30
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R² = 0.965

Adjusted R² = 0.960

D.W. = 1.75

Through the analysis, it was revealed that there was a:

- 1) Positive relationship between the volume of domestic investment and the volume of nominal domestic product.
- 2) Negative relationship between the rates of inflation and the volume of gross domestic product.
- 3) Positive relationship between the volume of national exports and the volume of gross domestic product, as the increase in the magnitude exports contributions to the increase in the volume of gross domestic product. All the variables of the study were statistically significant. This can be noticed through the values of (T) and also through the value of (D.W.).

After that, a third model was designed as follows:

$$EXT = a_0 + a_1 nGDP + a_2 DI + a_3 iNF$$

Where:

EXT means national exports size (dependent variable)

nGDP means nominal gross domestic

DI means domestic investment

iNF means inflation rate

After analysis, the results were as follows:

$$EXT = 179.4 nGDP - 182.9950.6315.5 DI + 177.8 iNF$$

T	33.738	-3.01	8.10
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R² = 0.95

Adjusted R² = 0.96052

D.W. = 1.7584

It was revealed that there was a:

- Strong positive relationship between the increase of the volume of domestic product and the magnitude of national exports.
- Negative relationship between domestic investment and the magnitude of national exports that can be attributed to the fact that most domestic investments are directed to the sectors of services, not to the sectors prepared for exportation.
- Positive relationship between inflation rates and the magnitude of national exports, which was in contrast to what was expected. This explains that the inflation rates in Jordan were satisfactory and did not have an effect on the magnitude of national exports. All the study variables were significant with statistical significance. This can be noticed through the values of (T) and (D.W.).

Through what has previously been discussed, we can reach the following results and recommendations

4. Results

4.1 Conclusions

- 1) Domestic investment is affected by and affects the variables of study; it was clearly affected by the nominal gross domestic product and also the nominal gross domestic investment. This conformed with the economic theory which states that domestic investment is part of domestic product.
- 2) Inflation rate is no longer negative on domestic investment, namely, the increase of inflation rates contributes to the fall of domestic investment. This result conforms with the economic literature, as the investor seeks to find a politically and economically stable environment, because the fluctuations of prices have a negative role in the volume of investments.

3) National exports had a positive role in the volume of domestic product, while the effect of domestic investment was negative in the national exports. This can be explained by the fact that most domestic investments are concentrated on the sector of services and the non-exporting sectors. Therefore, their effect was negative.

4.2 Recommendations

- 1) The necessity for the concern about domestic investment as this sector effectively growth in the country, as well as lessening economic problems like poverty and unemployment.
- 2) The necessity for directing domestic investment toward the vital sectors by providing further incentives to these investments to enable them to increase the magnitude of national exports and lessen the volume of imports.
- 3) Simplification of licensing procedures and necessary approvals in order to start domestic projects with the necessity for offering advice to domestic investors and directing them toward the sectors in which there are the best opportunities of investment.
- 4) Conducting further studies about this topic by examining new variables.
- 5) The necessity for the concern about all the aspects which serve the investment process as it is the most fluctuating component of domestic product as it is affected by a lot of factors such as taxes, general level of prices and the economic and political situation of the country..

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Appendix A

Study Variables

year	nGDP	DI	inF	EXT
2000	5998.6	1266.6	0.7	1080.8
2001	6363.8	1235.8	1.8	1352.4
2002	6794.0	1287.3	1.8	1556.7
2003	7228.7	1490.8	2.3	1647.7
2004	8090.7	2005.4	2.6	2306.6
2005	8925.4	2733.7	3.7	2570.2
2006	10675.4	2717.1	6.3	2929.3
2007	1231.4	3334.1	4.7	3183.7
2008	15593.4	4352.4	14.0	4431.1
2009	16912.2	4584.4	-0.7	3579.2
2010	18762.0	5113.9	4.8	4216.9
2011	20476.6	5109.9	4.2	4805.9
2012	21965.5	4705.9	4.5	4749.5
2013	23851.6	4739.4	4.8	4805.2
2014	2543.1	5034.3	2.9	5163.0
2015	26637.4	5189.1	-0.9	4797.6
2016	27444.8	5270.2	-0.8	4396.5

Source: central bank of Jordan –statistical report.

Appendix B

Table B1.

Dependent Variable: DI				
Method: Least Squares				
Date: 03/20/18 Time: 09:26				
Sample (adjusted): 2001 2016				
Included observations: 16 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.1418	1.572661	0.471613	0.741687	D(NGDP)
0.0472	-2.211113	79.38691	-175.5334	INF
0.0001	5.660808	0.000166	0.000937	EXT
0.8304	-0.218917	337.2046	-73.81970	C
3615.856	Mean dependent var		0.943923	R-squared
1568.302	S.D. dependent var		0.929904	Adjusted R-squared
15.10781	Akaike info criterion		415.2192	S.E. of regression
15.30096	Schwarz criterion		2068884.	Sum squared resid
15.11770	Hannan-Quinn criter.		-116.8625	Log likelihood
1.780908	Durbin-Watson stat		67.33037	F-statistic
			0.000000	Prob(F-statistic)
Dependent Variable: DI				
Method: Least Squares				
Date: 03/20/18 Time: 09:31				
Sample (adjusted): 2001 2016				
Included observations: 16 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0842	1.869723	0.418184	0.781887	D(NGDP)
0.0202	-2.646309	69.13124	-182.9426	INF
0.0000	8.498102	0.000107	0.000911	EXT
3615.856	Mean dependent var		0.943699	R-squared
1568.302	S.D. dependent var		0.935037	Adjusted R-squared
14.98679	Akaike info criterion		399.7255	S.E. of regression
15.13165	Schwarz criterion		2077146.	Sum squared resid
14.99421	Hannan-Quinn criter.		-116.8944	Log likelihood
	Durbin-Watson stat		1.816805	Durbin-Watson stat

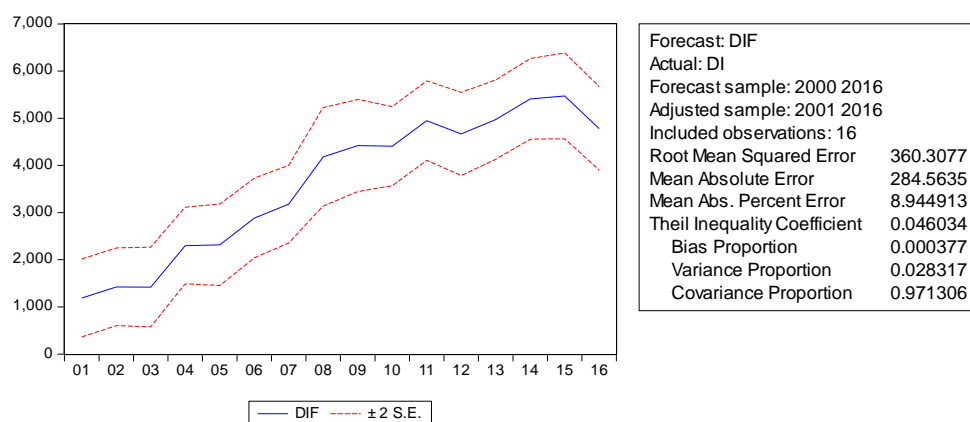


Figure 1.

Table B2.

Dependent Variable: NGDP				
Method: Least Squares				
Date: 03/20/18 Time: 09:37				
Sample (adjusted): 2002 2016				
Included observations: 15 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0400	2.327462	0.626523	1.458209	D(DI,2)
0.0001	-5.948342	150.7779	-896.8783	INF
0.0000	17.98241	0.000323	0.005816	EXT
0.3064	-1.072587	1318.798	-1414.527	C
16728.41	Mean dependent var		0.968965	R-squared
7410.173	S.D. dependent var		0.960500	Adjusted R-squared
17.65081	Akaike info criterion		1472.737	S.E. of regression
17.83962	Schwarz criterion		23858494	Sum squared resid
17.64880	Hannan-Quinn criter.		-128.3811	Log likelihood
1.870582	Durbin-Watson stat		114.4777	F-statistic
			0.000000	Prob(F-statistic)
Dependent Variable: NGDP				
Method: Least Squares				
Date: 03/20/18 Time: 09:38				
Sample (adjusted): 2002 2016				
Included observations: 15 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0181	2.733949	0.603916	1.651074	D(DI,2)
0.0000	-6.644854	143.0726	-950.6966	INF
0.0000	33.80414	0.000163	0.005515	EXT
16728.41	Mean dependent var		0.965719	R-squared
7410.173	S.D. dependent var		0.960005	Adjusted R-squared
17.61695	Akaike info criterion		1481.940	S.E. of regression
17.75856	Schwarz criterion		26353754	Sum squared resid
17.61544	Hannan-Quinn criter.		-129.1271	Log likelihood
	Durbin-Watson stat		1.756778	

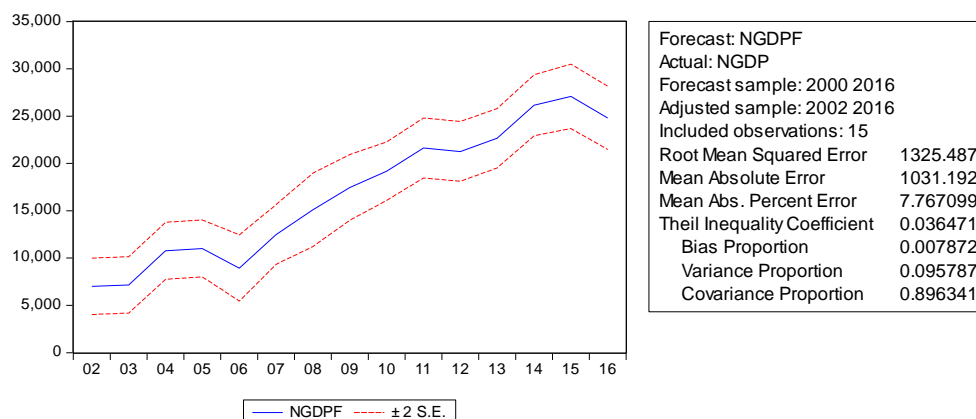


Figure 2.

Table B3.

Dependent Variable: EXT				
Method: Least Squares				
Date: 03/20/18 Time: 09:39				
Sample (adjusted): 2002 2016				
Included observations: 15 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	17.98241	9.247727	166.2964	NGDP
0.0445	-2.266930	106.8548	-242.2322	D(DI,2)
0.0001	5.761473	26120.31	150491.4	INF
0.1211	1.680225	209082.5	351305.7	C
3675957.	Mean dependent var		0.967617	R-squared
1226722.	S.D. dependent var		0.958785	Adjusted R-squared
27.91181	Akaike info criterion		249041.7	S.E. of regression
28.10062	Schwarz criterion		6.82E+11	Sum squared resid
27.90980	Hannan-Quinn criter.		-205.3385	Log likelihood
1.875552	Durbin-Watson stat		109.5617	F-statistic
			0.000000	Prob(F-statistic)
Dependent Variable: EXT				
Method: Least Squares				
Date: 03/20/18 Time: 09:41				
Sample (adjusted): 2002 2016				
Included observations: 15 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	33.80414	5.307818	179.4262	NGDP
0.0107	-3.018759	104.6139	-315.8042	D(DI,2)
0.0000	8.105882	21936.94	177818.3	INF
3675957.	Mean dependent var		0.959306	R-squared
1226722.	S.D. dependent var		0.952524	Adjusted R-squared
28.00692	Akaike info criterion		267291.4	S.E. of regression
28.14853	Schwarz criterion		8.57E+11	Sum squared resid
28.00541	Hannan-Quinn criter.		-207.0519	Log likelihood
	Durbin-Watson stat		1.842921	

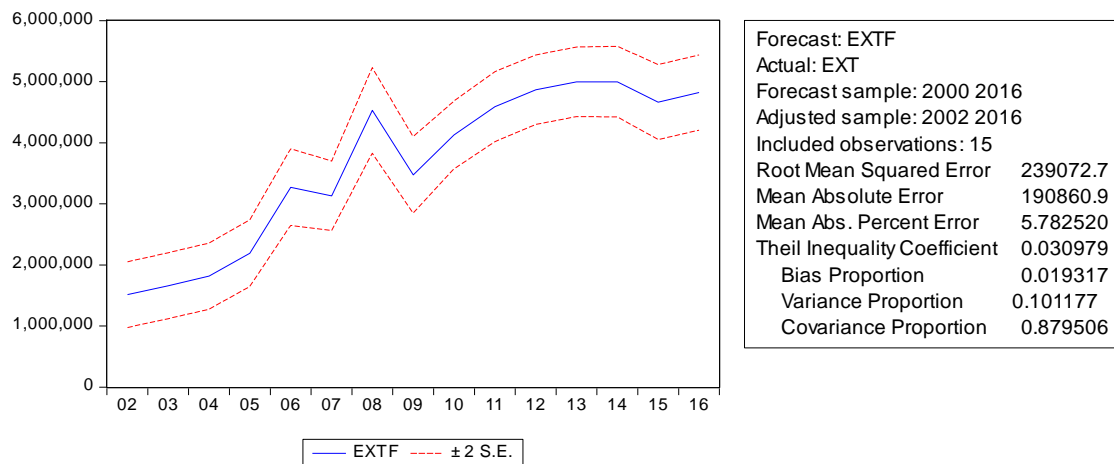


Figure 3.

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