

## RESEARCH ARTICLE

# Investigating the Relationship and Direction of Causality Between FDI and Economic Growth: Evidence From Saudi Arabia, 1985-2012

Hussain M. Al Obaid\*

*Department of Business Administration, King Khalid University, Abha, Saudi Arabia.*

\*Corresponding Author: Email: [halobaid@kku.edu.au](mailto:halobaid@kku.edu.au), [hussainalobaid@yahoo.com](mailto:hussainalobaid@yahoo.com)

## Abstract

This study empirically investigates the relationship and direction of causality between foreign direct investment (FDI) and economic growth using time-series data from Saudi Arabia over the period 1985-2012. Based on previous studies, we treat economic growth and FDI as endogenous variables. In the aggregate level, we find that FDI and economic growth are significant causes of each other. These findings lead us to conclude that FDI growth and economic growth have an endogenous relationship. Nevertheless, the study confirms that FDI promotes economic growth and further provides an estimate that one SAR of FDI adds about 15.58 SAR to the GDP.

JEL Codes: F21, F22, F23, F33, O16 and O33

## Introduction

Saudi Arabia ranked first among Arab countries as the largest host country for FDI inflows, with \$16.4 billion and a 38.2 percent share of the total Arab FDI inflows for the year 2011 [1]. The sources of the largest FDI inflows into the Kingdom in 2009 were the US with \$5.8 billion, Kuwait with \$4.3 billion, the UAE with \$3.8 billion, France with \$2.6 billion and Japan with \$2 billion. Moreover, Saudi Arabia was the big regional winner in 2011 with 161 investments worth \$ 14.7 billion. Regionally, Saudi Arabia topped the list of host countries for inter-Arab FDI over the past 17 years, with an accumulated total value of \$47.8 billion and a 27 percent share of the total. In addition, Saudi Arabia's ability to attract growing quantities of foreign direct investment (FDI) has over the past decades emerged as one of the most impressive success cases of the Gulf region. However, Saudi Arabian General Investment Authority (SAGIA) established in April 2000, to provide information and assistance to foreign investors and to foster investment opportunities in energy, transportation, and knowledge-based industries. SAGIA has to play a vital role as international investors take into consideration the great potential of the Saudi economy, the largest in the Middle East and among the top 20 in the world. SAGIA's duties include formulating government policies regarding investment activities, proposing

plans and regulations to enhance the investment climate in the country, and evaluating and licensing investment proposals. After joined WTO, Saudi Arabia has opened additional service markets to foreign investment, including financial and banking services, maintenance and repair of aircraft and computer reservation systems, wholesale, retail, and franchise distribution services, both basic and value-added telecom services, and investment in the computer and related services sectors. Almost 90 percent of FDI inflows to the Kingdom were green field investments which confirms the direction toward long-term investment. The improvement of investment climate resulted in boosting the average size of foreign investment from \$25 billion annually between 2005 and 2010 to \$ 475 million between 1994-2004 annually. In short, It is worth mentioning that reports from United Nations Conference for Trade and Development (UNCTAD) have shown that the Kingdom of Saudi Arabia has the potential to attract more FDI.

Saudi government has improved its regulatory framework for FDI such as passing a new Investment Law and establishing the associated investment authority (SAGIA) to facilitate foreign direct investment processing, including the establishment of a one-stop shop. It permitted for

100 percent foreign ownership of business in most sectors, including gas, petrochemicals, power generation and water desalination. In order to remove restrictions on repatriation of profits, Saudi government cut the highest corporate income tax on foreign investment from 45 percent to 30 percent. It also, permitted non-Saudis to own real estate for their business or residence, except in the two holy cities. It is widely believed that the policy frame work for FDI adopted by Saudi government has become very similar to that of most of other developing countries [2]. FDI to GDP ratio increased from less than (1/3) percent in the 1985 to over (1/7.5) percent in 2012 [3] although it has been on a downward trend in recent years as FDI inflows stagnated. These positive developments are expected to attract more FDI into the kingdom and enhance economic growth. In general, the kingdom has performed well in attracting FDI inflows in last decades. This paper investigates the relationship between FDI and economic growth in Saudi Arabia. In fact, the role of FDI in promoting economic growth has been viewed differently under different economic growth theories. FDI role has been largely recognized as a growth-enhancing factor in the developing countries [4]. However, in open economy investment is financed both through domestic savings and foreign capital flows, including FDI. The investments in form of FDI enable investment-receiving (host) countries to achieve investment levels beyond their capacity to save. Nevertheless, FDI provides much needed resources to host countries such as capital, technology, managerial skills, entrepreneurial ability, brands, and access to markets. Thus, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy. Caves [5] observes that the rationale for increased efforts to attract more FDI flows from the belief that FDI has several positive effects. This paper tries to analyze and empirically estimate the effect of FDI on economic growth in Saudi Arabia, using the traditional neo-classical production function where FDI is considered to be an additional input. Theoretically, the relationship between FDI and economic growth is analyzed by using the production function based on the endogenous growth theory and the neoclassical growth theories whereas other variables that affect economic growth such as trade, domestic capital and, labor are also used. These theories support strongly the role of FDI in promoting economic growth in host countries. Based on these theories, FDI is considered as a

way to transfer knowledge, promote learning by doing, bring in technology spillovers, and discuss human capital augmentation. According to such theories, few empirical studies have found two-way relationships between FDI and economic growth in both developed and developing countries. However, very little empirical analysis of the issue has been carried out for Saudi Arabia compared to other developing countries. Nevertheless, a large number of studies don't pay any consideration to the possibility of a bi-directional link between FDI and economic growth. We first interact FDI individually with different growth determinants and we find that the contribution of FDI to economic growth is positive and significant depending on the level of human capital and the development of financial markets. The results indicate that foreign direct investment has marginally significant positive effect on economic growth. Granger causality test was applied in order to determine the presence of the relationship between two variables and its direction in Saudi Arabia economy between 1985 and 2012. The organization of paper is as follow; Section 1 is an introduction, Section 2 illustrates the review of the relevant literature, Section 3 describes the research methodology and model, section 4 discusses the findings of the study and Finally, section 5 presents conclusions and recommendations.

## Literature Review

The enormous literature on foreign direct investment and multinational corporations has been debated in many researches. In fact, the role of FDI has been viewed differently under different economic growth theories. Originally, positive effects of FDI spillovers were illustrated as part of Caves' [6] original work in Australia. Also, Hymer [7] suggested that the technological transfer benefits included, among other things. However, it was endogenous growth theory as presented in Romer [8,9] and Lucas [10] that addressed the relationship between technology and growth in detail. Economic models of this theory have been applied to observe the effect of FDI on economic growth through the diffusion of technology [11, 12]. Correspondingly, Helpman [13] suggests that endogenous growth theory emphasized two critical channels for investment to affect economic growth: Firstly, through the impact on the range of available products, and secondly, through the impact on the stock of knowledge accessible for R&D. Also, Romer [9] argues that FDI accelerates economic growth

through strengthening human capital, the most important factor in R&D effort; whereas Grossman and Helpman [14] highlighted that an increase in competition and innovation will lead to technological progress and increase productivity and, therefore, promote economic growth in the end. Markussen and Vernables [15] stated that FDI is considered to have direct impact on trade through which the growth process is assured. Also, According to Balusubramayam et al [16] argument, trade openness is another component of a country's absorptive capability that increases the contribution of FDI to economic growth. In his study of Chinese phenomena, Dees [17] suggests that FDI has been important in explaining China's economic growth. Findlay [18] stated that FDI increases technical progress in the host country by means of a contagion effect. He suggested that FDI increases the rate of technical progress in the host country through a contagion effect from the more advanced technology, management practices, etc., used by foreign firms. In another work, Romer [19] for instance, highlighted FDI's role in diffusing technology and its relationship to economic growth. He stated that for the poorest developing nations, multinational firms will profit from the international transmission of ideas which is the quickest and the most reliable way to reduce the idea gaps that keep them poor. Along with their discussion, Moore [20] and Lucas [21] argued that as economic growth rises, FDI inflows into host countries have a tendency to be encouraged. In another study, Blomström et.al, [22] stated that FDI inflows had a significant positive effect on the average growth rate of per capita income for a sample of 78 developing and 23 developed countries. They indicated that FDI has a significant impact on growth and positive spillovers from FDI depend on the income level of the host economy, but not on education. Moreover, Balasubramanyam et al., [23] and Borensztein et al., [24] illustrated that FDI can also promote economic growth through creation of dynamic comparative advantages that leads to technological progress. By using data from 69 developing countries, Borensztein et al., [24] found that the effect of FDI on host country growth is dependent only on stock of human capital. In another study, Balasubramanyam et al [23] suggest that the positive effects of FDI depend on openness to trade. Bengoa and Sanchez-Robles [25] argues that to benefit from long-term capital flows, the host country need to obtain four factors: a sufficient human capital, adequate infrastructure, economic stability and

liberalized markets. Also, Wang and Wong [26] by using a sample of 84 countries indicated that FDI promotes economic growth only when host countries have an sufficient level of human capital. Furthermore, De Gregorio [27] in his analysis of panel of 12 Latin American countries suggested that a positive and significant impact of FDI on economic growth. His result shows that the productivity of FDI is higher than the productivity of domestic investment. He Also notes that while contributing to the debate on the importance of FDI, it may allow a country to bring in technologies and knowledge that are not readily available to domestic investors, and in this way increases productivity growth throughout the economy De Gregorio [28] In their empirical work, De Mello [29] and Borensztein et al. [24] stated that when a relationship between FDI and economic growth is established empirically, it tends to be restricted on host country characteristics such as the level of human capital. Nevertheless, the degree to which FDI contributes to growth depends on the economic and the quality of environment of the recipient country Buckley, et al. [30]. Using data from different countries, Bende-Nabende et al. [31] showed that FDI promoted economic growth most effectively through the human capital factor and through learning by doing effects, and in turn economic growth influenced FDI. They found that direct long-term impact of FDI on output is significant and positive for economies that considered to be less advanced such as Philippines and Thailand, but negative in the more economically advanced such as Japan and Taiwan. In their study, Marwah and Tavakoli [32] investigate the effect of FDI on economic growth in Indonesia, Malaysia, Philippines, and Thailand. Using time series annual data over the period 1970-1998, they find that FDI has positive correlation with economic growth for all four countries. Chakrabarti [33] and Asiedu [34] pointed out that higher economic growth results in greater FDI inflows as it is a measure of the attractiveness of the host countries. Bengos and Sanchez-Robles [25] state that even if FDI is positively correlated with economic growth and in order to benefit from long-term capital flows, the host country should have an adequate human capital, sufficient infrastructure, economic stability and liberalized markets. On the other hand, Lipsey [35] reviews the micro literature and argues that there is evidence of positive effects. He bring to a close, though, that there is inconsistent relation between the size of inward FDI stocks or flows relative to GDP and growth. In addition, he

suggests that there is need for more consideration of the different results that promote spillovers. Olofsdotter [36] finds that an increase in the stock of FDI is positively related to growth, and the effect is greater for host countries with a higher level of institutional ability as measured by the degree of property rights protection and technical efficiency in the host country.

Empirically, evidence on a positive relationship between FDI inflows and host country economic growth has been elusive. Vu et al. [37] study sector-specific FDI inflows for both China and Vietnam in two different periods. Using an augmented production function specification and regression methodology, they stated that FDI has positive and direct impact on economic growth as well as an indirect effect through its impact on labor productivity. In another study, Pradhan [38] found a significant positive effect of lagged FDI inflows on growth rates only for Latin American countries. Blomstrom, Lipsey and [22] confirms a positive effect of FDI inflows on economic growth.

In terms of causality direction, This is also supported by different studies such as Chowdhury and Mavrotas [39] and Choe [40], which have shown evidence that there is bi-directional causality between FDI and economic growth. For example, Nair-Reichert and Weinhold [41] using a mixed fixed and random panel data estimation method to allow for cross country heterogeneity in the causal relationship, find some evidence that efficacy of FDI in raising growth rate, although heterogeneous across countries, is higher for more open economies. By using panel data for 23 developing countries for the period 1978-1996, Basu et al. [42] pointed out two-way linkages between GDP and FDI. Also, Tsan [43], found two-way linkages between FDI and economic growth for 62 countries in the period 1975-1978, and for 51 countries in the period 1983-1986. However, Ekanayake et al. [44] estimated (VAR) model and error correction techniques to test for the nature of the causal relationship between output growth, FDI inflows and exports, using cross-sectional data of both developed and developing countries over the period 1960-2001. Their results support bidirectional causality between growth of export and economic growth, but the relationship between FDI and economic growth had mixed results. Ahmed, et.al, [45] investigate the causal relationship between FDI, exports and output by using Granger non-causality procedure over the period 1972 to 2001

in Pakistan. They found significant effect from FDI to domestic output. According to the findings of Choe [40], causality between economic growth and FDI runs in either direction but with a tendency towards growth causing FDI but there is little evidence of FDI causing host country growth. In their argument, Blonigen and Wang [46] suggest that it is inappropriate to pool developing and developed economies when investigating the link between FDI and economic growth. Li and Liu [47] apply both single equation and simultaneous equation system techniques to examine endogenous relationship between FDI and economic growth. They find positive effect of FDI on economic growth through its interaction with human capital in developing countries, but a negative effect of FDI on economic growth through its dealing with the technology gap. Presenting co-integration and Granger causality tests, Zhang [48] finds that in five cases economic growth is enhanced by FDI but host country conditions such as trade regime and macroeconomic stability are significant. In several surveys, Markusen [15], Caves [5], Zhang [48], De Mello [29] provide an empirical evidence on the link between FDI and economic growth with uncertainty. Sadik and Bolbol [49] examine the effect of FDI through technology spillovers on overall total factor productivity in selected six countries. They found that FDI has not had any evident positive overflow on technology and productivity. Carkovic and Levine [50] were unable to confirm a relationship from FDI to economic growth even with performing both OLS and dynamic panel data regressions. However, Fry [51] surveyed the role of FDI in promoting growth by using time series cross section data of 16 developing countries for the period of 1966-1988. He did not find FDI to bring to bear a significantly different effect from domestically financed investment on the rate of economic growth.

In contrast, Few studies such as Saltz [52] find a negative relationship between FDI and economic growth. On the other hand, a study by Kawai [53] on Asian and Latin-American countries indicated that an increase in FDI generally had a negative effect on growth of Indonesia, the Philippines, Peru, Singapore and Taiwan. Aitken and Harrison [54] and Carkovick and Levin [50] illustrate that there is insignificant positive relation between FDI and economic growth. Even when the relation is positive, the effects tend to be inefficient. Rodrick [55] for example argues that much of the correlation between FDI and

economic growth is driven by reverse causation. De Mello [29] only finds insignificant indications of a positive relationship between FDI and economic growth in spite of using both time series and panel data fixed effects estimations for a sample of 32 developed and developing countries. Mencinger [56] suggested that the negative relationship between FDI and growth in transition economies could be explained by the form of FDI, which had been mainly through attainments rather than green field investments. Finally, Gorg and Greenwood [57] conclude that the effects are mostly negative.

### The Methodology and Model

The aim of the study is to estimate empirically the impact and causality direction of FDI on economic growth in Saudi Arabia using the time period of 1985-2012, based on the facts that Saudi Arabia started receiving considerable amount of FDI inflows from the late of 1970s. Secondary data for this study are collected from World Investment Report (WIR) published by the UNCTAD -Version 2013. Models used are regularly presented in terms of a production function that treats FDI (foreign capital) as a factor input. The following regression model is specified to measure the effects of FDI on economic growth.

$$(Y) = \alpha_0 + \alpha_1 (X_1) + \alpha_2 (X_2) + \alpha_3 (X_3) + \alpha_4 (X_4) + \dots + \alpha_n (X_n)$$

Whereas further theoretical and quantitative understandings about the effect of FDI on Saudi Arabia economy would be significant, empirical analyses are required as well for better understanding of the relationship between FDI and Saudi Arabia economic growth. Methodology assumptions based on two grounds:

First, Endogenous Growth Theory, that developed by [23] and [24]. This model is assuming that FDI adds to economic growth through several factors

such as new technologies, human capital, infrastructure, and export.

Second, Granger Causality Test, Positive relationships are expected between the dependent variable and all explanatory variables. To capture these possible sequential causality relationships, the method of Granger-causality are employed. Granger causality is a concept that originated in the area of econometrics, focusing on understanding the relationships between two time series. Granger (1969) defined the causality in terms of predictability, based on the fact that the effect cannot come before the cause. The methodology suggested by Engle and Granger [58] is used based on the following steps: First, testing whether the assumed time series are I (1) which is a necessary condition for the further testing procedure by employing the very standard Augmented Dickey-Fuller test (ADFt). Second, testing for the unit roots in the cases when intercept and trend is present in the regression. Third, estimating the long-run relationships by running regression on the equations. Forth, Testing whether the residuals are stationary by using again the standard ADFt. Finally, checking the acceptance or rejecting of the null hypothesis about the unit root.

In order to test the importance of foreign direct investment for Saudi Arabia economic growth, we specify a version of the familiar model of production function:

$$(Y) = \alpha_0 + \alpha_1 (K) + \alpha_2 (K FDI) + \alpha_3 (L) + \alpha_4 (X)$$

The variables (Y), (K), (KFDI), (L), and (X) are real gross domestic product, the total capital stock minus accumulated FDI, accumulated FDI, the labor force, and exports, respectively. Table 1 is shown the growth of these variables from 1985 to 2012.

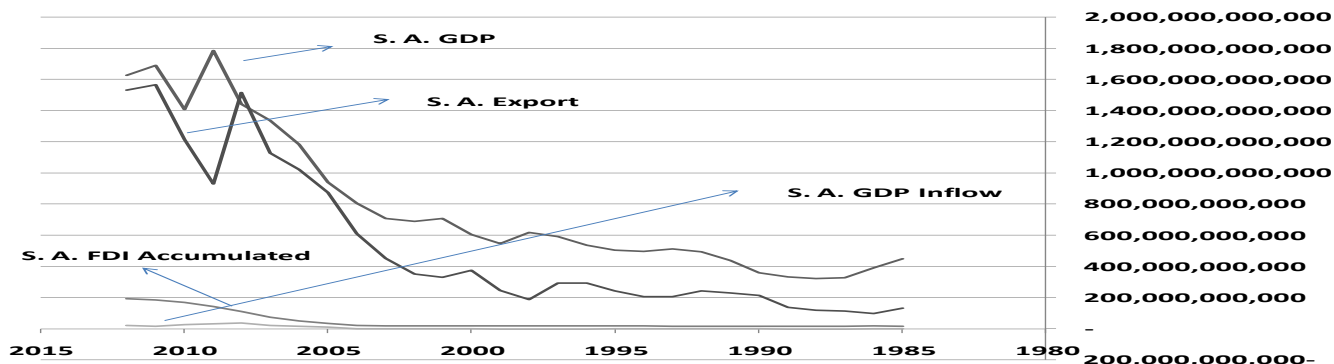
**Table1: Millions in Saudi riyals**

Year	K	KFDI	(Y) GDP	L	X
1985	16,072	491	447,348	4.05	132,980
1990	15,193	312	357,540	5.15	214,990
1995	17,056	578	503,726	6.49	242,180
2000	17,577	183	603,588	7.23	37,500
2005	33,535	1,210	938,771	8.16	873,940
2010	17,045	28,105	1,409,122	9.64	1,215,530
2011	18,685	16,400	1,690,470	9.93	1,566,550
2012	19,385	23,654	1,628,577	10.21	1,531,550



There are different results explained the role of FDI in the long term growth of host countries in the last 60 years. Many contributions have discussed this role earlier such as Lucas [10] Romer [8] and Mankiw [59] revised the

neoclassical growth model, especially the Solow [60] growth model, by including the growth-driving factors of human capital in addition to physical capital to clarify the existence relationship of FDI in developing host countries.



### Findings

The main regression results indicate that FDI has a positive overall effect on economic growth, although the magnitude of this effect depends capital stock minus accumulated FDI, accumulated FDI, the labor force, and exports, respectively. All regressions are based on data for the period 1985-2012 and was estimated using OLS. The results show independent variables had the expected relations with GDP growth and they are statistically significant.

$$GDP = C(1) + C(2) * FDI + \epsilon$$

$$GDP = 5.250 + 15.58 FDI + \epsilon$$

Based on this equation, investing 1 SAR FDI generates 15.58 SAR in GDP. The independent variable FDI explain 82.2% of the variance in GDP, leaving only 17.8% to be explained by the stochastic disturbance term  $\epsilon$  Table 2 reveals all long run determinants of economic growth. Our test results indicate that OLS regressions do produce statistically reliable and significant results.

**Table 2: Long Run determinants of economic growth**

Variable	Coefficient	t-Statistics
Intercept	-1.59E+11	-1.366915
L	102016.9	4.677331
K	2.1641176	3.070714
KFDI	12.53883	3.507314
EX	0.063927	0.484511

Before testing the long run co-integration relation, it is necessary to establish the order of integration presented. To do so, an Augmented

Dickey Fuller (ADF) was carried out on the time series levels and difference forms. The results are given in Table 3.

**Table 3: Result of augmented dickey fuller**

ADF test Statistic	t-Statistic	Probability
	-6.185571	0.00000
Test critical value	1% (-3.7343)	
	5% (-2.9907)	
	10% (-2.6348)	

Based on this result, all the variables have a unit root in their levels and are stationary in their first difference. As a result all five variables (Y, L, K, KFDI and EX) are integrated of order one I (1). However, unit root that has been tested in this study prove that our series are stationary series.

Results in this model indicate that coefficients of the variables show that FDI and economic growth are important determinants of each other. On the other hand, although both FDI and economic growth affect each other in a positive way, the effect of economic growth on FDI is larger than

the effect of FDI on economic growth in Saudi Arabia.

What follows is an attempt to determine the nature of the causality direction between FDI economic growth in Saudi Arabia, based on the analysis of the same macro data during the

interval 1985-2012. Table 4 shows the result of Granger Causality test.

The reported F-Statistics are joint test for joint hypothesis that K does not Granger cause GDP. The probability for accepting the Null-Hypothesis

**Table 4: Granger causality test**

Null Hypothesis	Obs	Statistics Test	Lag 2	Direction
K does not Granger – cause GDP		F- Statistics	16.5039	
		P- Value	0.00005	
GDP does not Granger – cause K		F- Statistics	10.2044	Bidirectional
		P- Value	0.00000	
KFDI does not Granger – cause GDP		F- Statistics	2.89799	
		P- Value	0.07737	
GDP does not Granger – cause KFDI		F- Statistics	6.04660	Bidirectional
	28	P- Value	0.00843	
EX does not Granger – cause GDP		F- Statistics	35.1959	
		P- Value	0.00000	
GDP does not Granger – cause EX		F- Statistics	2.39631	Bidirectional
		P- Value	0.11550	
LF does not Granger – cause GDP		F- Statistics	2.08142	
		P- Value	0.11974	
GDP does not Granger – cause LF		F- Statistics	2.45615	Bidirectional
		P- Value	0.11002	

was only 0.00049% while 99.00051% rejecting this hypothesis which means K causes GDP by around 99.00051 % all the time in the case of Saudi Arabia. However, results presented feedback causality (Bidirectional) from GDP to K where the probability for accepting the Null-Hypothesis was only 0.08% while 99.92% rejecting the hypothesis which means GDP causes K by around 99.92% in all the time for the case of Saudi Arabia.

The reported F-Statistics are joint test for joint hypothesis that KFDI does not Granger cause GDP. The probability for accepting the Null-Hypothesis was only 7.74% while 92.26% rejecting this hypothesis which means KFDI causes GDP by around 92.26 % all the time in the case of Saudi Arabia. However, results presented feedback causality (Bidirectional) from GDP to KFDI where the probability for accepting the Null-Hypothesis was only 0.84% while 99.16% rejecting the hypothesis which means GDP causes KFDI by around 99.16% in all the time for the case of Saudi Arabia.

This findings are consistent with the literature. The result of study indicated that FDI inflows influence economic growth positively is supported by a large number of studies such as Balusubramayam et al [16], Dees [17], Olofsdotter [36] Blomstrom, Lipsey and Zejan [22] Moore [20] and Lucas [21] Blomström et.al, [61] De Mello [29] and Borensztein et al. [24] Bende-Nabende et al. [31] Chakrabarti [33] and Asiedu [34], Lipsey [35] Bengos and Sanchez-Robles [25] Marwah and

Tavakoli [32], Li and Liu [47].

Moreover, our finding about the causality direction between economic growth and FDI inflow, supported by different studies such as Fry [51], Caves [5], Chowdhury Markusen [62] Markusen [62], De Mello [29] and Mavrotas [39] and Choe [40], Nair-Reichert and Weinhold [41] Zhang [48], Sadik and Bolbol [49] Carkovic and

Levine [50] Basu et al. [42] Ekanayake et al. [44] Ahmed, et.al, [45] Choe [40], Blonigen and Wang [46] and Li and Liu [47].

## Summary and Conclusion

The main objective of our study is to analyze the relationship and direction between FDI and economic growth in Saudi Arabia. However, It has been found from the wide literature of economic growth that FDI is a major cause of economic growth. Saudi Arabia attracted massive FDI inflows and enjoyed considerable economic success in the last three decades. In an effort to attract FDI and prompt economic growth, Saudi Arabia have established Saudi Arabian General Investment Authority (SAGIA) and have introduced policies that include fiscal and financial incentives. Based on our analysis of simple regression it is evidence that there is a strong positive link between FDI and growth of GDP in Saudi Arabia. However, there is an endogeneity between FDI and growth in the case

of Saudi Arabia. Our results indicate that the effect of FDI on economic growth is positive and statistically significant. On other world, It is found that, FDI is positively correlated to the economic growth of Saudi Arabia and it has been established as a significant determining factor for the economic growth of Saudi Arabia. Correspondingly, coefficient estimation for FDI is positive and statistically significant. The finding is consistent with the fact that FDI in Saudi Arabia is mainly concentrated on export-oriented oil activities beside the role of skilled workers in attracting FDI inflows into Saudi Arabia. The significant impact of exports on economic growth is positive and statistically significant in our estimations. Our findings are similar to those found in Blomstrom, Lipsey and Zejan [22] Moore [20] and Lucas [21] Blomström et.al,[61],Balusubramayam et al [16] Dees [17], De Mello [29] and Borensztein et al.[24],Pradhan [38], Marwah and Tavakoli [32] who suggested that FDI has been important in explaining in economic growth and argued that as economic growth rises, FDI inflows into host countries have a tendency to be encouraged.

However, In this study, we run Granger-Causality method to test whether there exists bi directional relationship between FDI and

economic growth or not. The results indicate that economic growth stimulates growth of FDI inflows more than that the growth of FDI stimulates economic growth. According to this assumption, it has assumed that the direction of causality goes from inflows of FDI to host country economic growth. Nevertheless, economic growth could itself cause an increase in FDI inflows. Therefore, causality is primarily expected to run in a bidirectional way from FDI inflows to economic growth and from economic growth to FDI inflow for the case of Saudi Arabia economy. The finding is similar to what has been supported by different studies such as Fry [51], Caves [5], Chowdhury Markusen [62] Markusen [62], De Mello [29] and Mavrotas [39] and Choe [40], Nair-Reichert and Weinhold [41] Zhang [48], Sadik and Bolbol [49] Carkovic and Levine [50] Basu et al. [42] Ekanayake et al. [44] Ahmed, et.al, [45] Choe [40], Blonigen and Wang [46] and Li and Liu [47].

Finally, Our empirical results suggest that FDI growth positively affects economic growth and also that economic growth rate positively affects the growth of FDI inflows. More research may suggest that more attention should be paid to formulate policies that will maximize the benefits from FDI inflows through its suitable. [63-67].

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## Appendixes

