



DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN THE ARAB COUNTRIES (CASE STUDY OF AN AGRICULTURAL COUNTRY, AN OIL COUNTRY AND AN AGRICULTURAL OIL COUNTRY)

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Abstract

Foreign direct investment (FDI) is one of the main factors affecting the development plans in all countries. The Arab countries need more FDI to stimulate economic growth, create more jobs and reduce poverty. This research aims to specify the determinants of FDI in Arab Countries; represented by Saudi Arabia (KSA), Egypt and Sudan; during the period 1998-2018, using panel regression model. The study showed an increasing growth rate of FDI in KSA (22.1%), Egypt (12.4%) and Sudan (6.5%) during the study period. The gross capital formation, inflation, openness and the population growth rate had a strong positive impact on attracting FDI, while there was a negative relationship between the exchange rate and FDI.

Key words: Foreign direct investment; Panel Data; Gross Domestic Product; Inflation; The openness

Introduction

Foreign direct investment (FDI) is one of the main factors affecting the development plans in all countries. Developing countries are particularly keen to attract foreign direct investment. Shbana (1994) argued that, foreign direct investment is the movement of foreign capital to invest abroad directly to work in the form of industrial, financing, construction, agricultural or service units. The main engine of this foreign direct investment is the profit.

UNCTAD (1999) defines foreign direct investment as the investment that leads to a long-term relationship that reflects the permanent benefit and control of the foreign investor or the main company that located as foreign branch in a host country other than his nationality. In 2008 Demirhan and Masca, pointed that, there are three types of FDI based on the motive of investment. The first type is FDI market-seeking or horizontal FDI. The second type of FDI is resource seeking such as natural resources and raw materials in order to encourage exports. The third type of FDI, called efficiency seeking

as it depends on seeking the factors benefits that enable to compete in international markets. According to the statistics of the Arab Investment and Export Credit Guarantee Corporation, the percent of foreign direct investment in Arab countries was about 3% of the world foreign direct investment in 2018. This reflected the needs for greater openness of FDI flows in some Arab markets.

Anyanwu (2011) explained that the country location attract foreign direct investment as it provides the local market to the receiving country. The Arab world includes 22 countries, which vary in geographical characteristics, climate, economic and social situation. The agricultural sector is an important sector; as it contributes significantly in the national income of most of these countries. For example, it contributes by 3.2% of the Saudi national income while in Egypt it contributes by 13.4% of the national income and by 33.4% in Sudan in 2018. The Arab Gulf states and Libya are considering the least Arab countries depending on agricultural sector. In Saudi Arabia, the Oil sector is the main source of their national income (Mesakar, 1992). Thus, the Arab countries could be divided into three groups the first is oil countries, the

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second is non-oil countries, which relying on agriculture and the public services sectors, and the third one is oil and agricultural countries (Haidar, 1990).

According to the Arab Investment and Export Credit Guarantee Corporation 2018 report, FDI inflow declined in 2017 compared to 2016 from about \$ 32.4 billion in 2016 to about \$ 28.7 billion in 2017 by 11.5%. On the other hand, the Arab countries incoming investments were about 2% of the world in-flowing investment, which was about 1430 billion dollars in 2017 (The Arab Investment and Export Credit Guarantee Corporation, 2018).

Saudi Arabia is the largest Arab oil country with a daily production of about 10.25 million barrels per day in 2017. The percentage of foreign direct investments was about 30.7% of the national income in 2017. Egypt as a model of oil and agriculture country, ranks ninth among the Arab countries of oil production and 28th in the world with about 0.68 million barrels of oil per day in 2017. On the other hand, the percentage of foreign direct investments was about 16.08% in 2017 from the national income in 2017. Sudan as a model of an agricultural country, the percentage of foreign direct investments constituted about 16.20% of national income in 2017 (Organization the petroleum exporting countries, 2018).

Several applied studies have measured the relationship between FDI flows and economic, social and demographic variables. Igbal (2019) applied panel data regression technique to examine the determinants of China's outward foreign direct investment in Asia. The results revealed that inflation rate, import, export, corruption, infrastructure and geographic distance are the significant determinants of China's investment in Asia.

Fotini, E. (2019) examined the impact FDI determinants alongside the impact of economic freedom on FDI inflows in four South European economies (Greece; Italy; Portugal; Spain) during the period 1996-2017 period. Results indicated a positive impact of market size and gross capital formation, as well as a negative impact of unit labor costs on FDI inflows. Economic freedom is found to bear a consistently positive impact on FDI inflows. Khachoo1, A. (2012) estimated the factors determining FDI inflows to developing countries using a panel econometric model. The results suggest that the market size, total reserves, infrastructure and labor costs are the main determinants of FDI inflows to developing countries.

Durairaj and Nirmala (2012) analysed the impact of the level and volatility of exchange rate on FDI inflows to India during the period 1996Q2 to 2010Q1. In addition the study includes other variables such as market size,

inflation rate, trade openness, agglomeration effect, wealth effect and lending interest rate, to identify factors affecting foreign FDI in India. The study found the existence of a negative but insignificant relationship between exchange rate levels and FDI. Meanwhile, large market size and agglomeration effect are likely to attract FDI inflows.

In 2017, Ismail and Hassan explained that the most important positive determinants of FDI in Arab countries were the level of economic growth, Credit circulation, trade liberalization, agreements and the tax facilities to improve and raise the level efficiency of institutions and companies, while inflation and balance of payments deficit have an adverse effect on FDI flows.

In 2016, Al-Sa'iri and Bker explained that there is a positive relationship between FDI and natural resources, trade openness, economic growth, and quality of systems. Tintin (2013) investigated the determinants of FDI inflows in six Central and Eastern European countries (CEEC) over the 1996–2009 period. The study results revealed the positive and economically significant role of GDP size, trade openness, EU membership on FDI inflows.

Asiedu (2002) explored whether factors that affect FDI in developing countries affect countries in sub-Saharan Africa (SSA) differently. The results indicate that: a higher return to investment and better infrastructure have a positive impact on FDI to non-SSA countries, but have no significant impact on FDI to SSA. The study also found that the marginal benefit from increased openness is less for SSA. The result concluded that policies that have been successful in other regions may not be equally successful in Africa.

In 2005, Al-Oqaidi pointed out the importance of balance between the objectives of the host country and the project profitability, this required legislation to protect the host country for investment. He also confirmed the importance of matching the quality of the investment with the development programs of the host country.

According to the Arab Investment and Export Credit Guarantee corporation report, The Arab gravity FDI gap was about 30.59%, which is lower than the percent in 2017. The report showed that the majority of the Arab countries suffer from weak points such as technological progress, high inflation, challenges to the institutional environment, business performance, market closures, human capital level and logistics performance (The Arab Investment and Export Credit Guarantee Corporation, 2018).

The report of the Arab Investment and Export Credit Guarantee Corporation explained that FDI attractiveness determinations consists of 3 main factors with 11 sub-

indices, which divided to 57 internal and external variables, While According to the previous studies Fig. 1 revealed that FDI determinations consists of two main factors that internal and external factors. The internal factors are consist of sub-indicators, some of them contribute in attracting FDI, while some are considered obstacles of FDI flows .The internal factors are Market Size, Economic stability, costs, and economic freedom while the external factors are trade openness and foreign trade. This study aims to specify the determinants of FDI in Arab Countries; represented by Saudi Arabia (KSA), Egypt and Sudan; during the period 1998-2018.

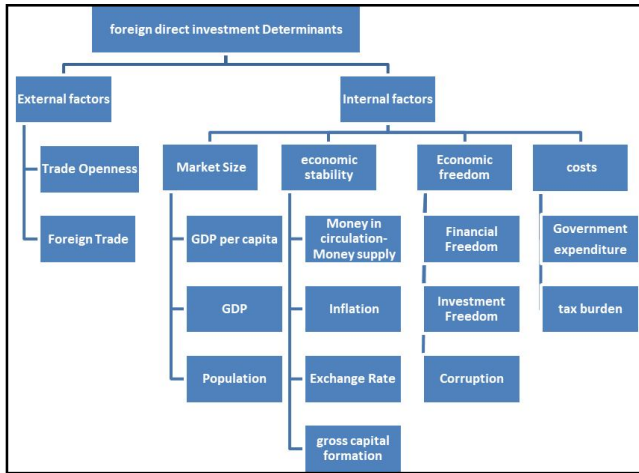


Fig. 1: FDI determinations.

Source: Authors' presentation based on data from (Ismaeil, 2017).

Materials and Methods

This study used panel regression model to achieve its objectives, as it takes into account heterogeneity by allowing individual-specific variables and provides less collinearity among variables. Estimation of the panel data depends on the assumptions about the intercept, the slope coefficients, and the error term (u_{it}). Gujarati (2004) stated that, the most used techniques of panel data estimation are:

A. Fixed Effects Model (FEM) or Least Squares Dummy variable (LSDV) Regression Model.

It assumes that the slope coefficients are constant but the intercept varies over individuals, as follows:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it}$$

Where Y_{it} : stands for dependent variable for individuals over time

X_{it} : stands for independent variables

(i) : Stands for individuals ($i = 1, 2, 3, \dots, n$)

t : for time

B. Random Effects Model (REM) or Error

Components Model (ECM):

It assumes that the individuals have a common mean value for the intercept (β_1) and the individual differences in the intercept reflected in the error term (ϵ_i). (Gujarati, 2004.

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \epsilon_i + u_{it}$$

$$= \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + w_{it}$$

Where

$$w_{it} = \epsilon_i + u_{it}$$

Hausman test was used to select the proper model as follows:

H_0 = Random model is appropriate

H_1 : Fixed model is appropriate

There are many factors affecting foreign direct investment based on economic theories. They are differing from country to other depending on the country economic structure. Ismaeil and Hassan (2017) stated some of these factors as follows:

- Market size of the host country
- Macroeconomics indicators
- External indicators
- Other indicators, such as growth capital formation

In this study, the population annual growth rate of the host country was used as a proxy for market size and it supposed to have positive sign with the FDI inflows. Inflation rate was used as an indicator of macroeconomic instability and is expected to have negative relationship with FDI inflows. In addition, money circulation, tax burden and exchange rate were used as macroeconomic indicators and they expected to have positive sign for the first one and negative relationship to the other two with FDI.

Moreover, openness reflects external factors affecting FDI and it supposed to have positive relation with FDI. Furthermore gross capital formation reflecting the government consumption on assets and infrastructure was included.

All the variables were expressed in natural logarithm to take care of heterogeneity. Six scenarios were performed to estimate the factors explaining the determinants of FDI, including different variables combination.

Results and Discussion

Fig. 2 depicts that in 2018, the agricultural sector is an important sector; as it contributes significantly in GDP in Sudan, Egypt, Morocco and Algeria as Value added in

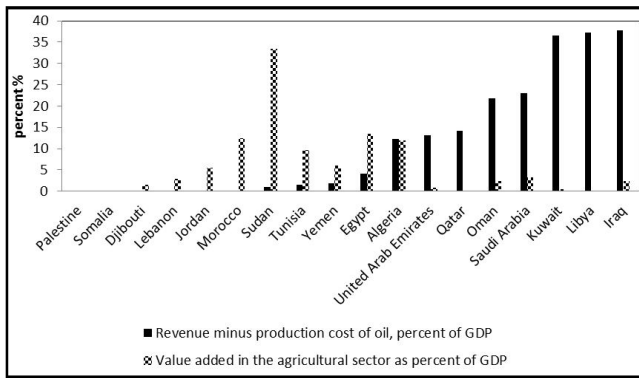


Fig. 2: Distribution of Revenue minus production cost of oil, percent of GDP and Value added in the agricultural sector as percent of GDP in Arab world in 2018.

Source: Authors’ calculation based on data The Global Economy.com serves researchers, business people, academics, and investors who need reliable economic data on foreign countries, Retrieval date 12-7-2020, <https://www.theglobaleconomy.com/>

the agricultural sector as percent of GDP was 33.45%, 13.45% 12.36%, and 11.49% in 2018 respectively. On Other hand, the Oil sector is the main source as it contributes significantly in GDP in Iraq, Libya, Saudi Arabia, Oman as the revenue minus production cost of oil, percent of GDP was 37.98%, 37.29%, 36.61%, 23.10% and 21.8% in 2018 respectively.

Fig. 3 depicts that in 2018, 54% of FDI to Arab world (amounted to 471.8 billion dollars) was concentrated in Saudi Arabia UAE and Egypt. Saudi Arabia ranked the first country among the Arab world receiving the FDI in 2018, with a share of 26.65%; Egypt ranked the third with a share of 12.6% and Sudan ranked the eleventh with a share of 3.05%.

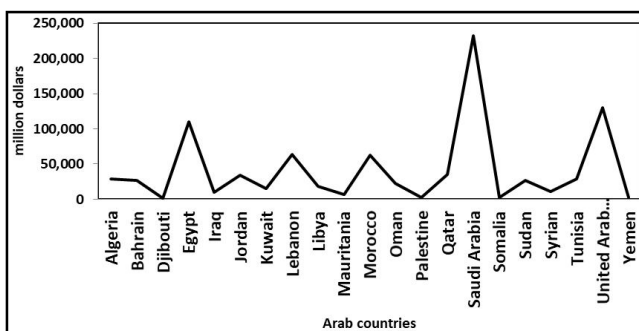


Fig. 3: Distribution of FDI in Arab world in 2018. Source: Authors’ calculation based on data from Arab Investment and Export Credit Guarantee Corporation, 2018.

Fig. 4 shows that there was an increasing growth rate of FDI in KSA, Egypt and Sudan during the period (1998-2018), accounted to 22.1%, 12.4% and 6.5% respectively. The maximum value of foreign direct investment (39.46 billion dollars) was achieved in KSA in 2008, while in Egypt, it is amounted to 11.58 billion

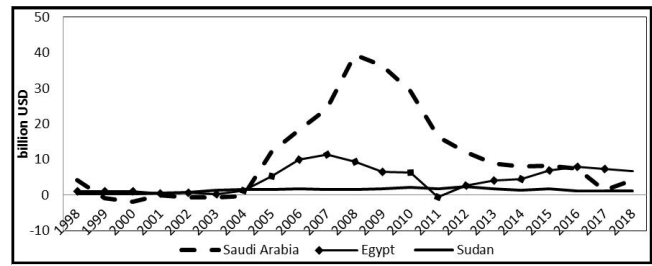


Fig. 4: FDI in KSA, Egypt and Sudan during the period (1998-2018).

Source: Authors’ calculation based on data from the Arab Investment and Export Credit Guarantee Corporation (Various Issues).

dollars in 2007 and it is equal to 2.31 billion dollars in Sudan in 2012.

The contribution of FDI to GDP during the period 1998-2018 showed an increasing rate (12.3%) in KSA, decreasing rate (6.3%) in Sudan and it was unsteady in Egypt. It is noticed that, the highest contribution of FDI to GDP in KSA (9.5%) was achieved in 2008; with 10.75% in Egypt in 2007; and of 7.4% in 2006 in Sudan Fig. 5.

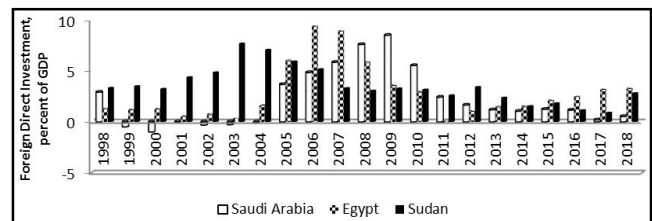


Fig. 5: The percentage of FDI to GDP in KSA, Egypt and Sudan during (1998-2018).

Source: Authors’ calculation based on data from Arab Investment and Export Credit Guarantee Corporation (Various Issues).

Table 1 shows the six scenarios estimating the determinations of FDI in Arab countries. The results indicated that, model (5) was the best model explaining the relationship between FDI and its determinants, depending on R² and F value.

Hausman test, with Prob>chi2 = 0.0093, revealed that fixed effect model (FEM) is appropriate rather than the random effect model (REM). This result is in line with Gujarati (2004), as he stated that there is small difference between the values of the model estimated with fixed or random ones, if the number of time series data is large than the number of cross-sectional units. On this score, FEM may be preferable.

The level of variation was high because of the difference between the economic size, FDI, GDP and gross capital formation of the three countries.

The study results revealed that the gross capital

Table 1: Scenarios of Estimating FDI determinants in Arab World.

Variables	Model 6		Model 5		Model 4		Model 3		Model 2		Model 1	
	Variable coefficient	p-value	Variable coefficient	p-value	Variable coefficient	p-value	Variable coefficient	p-value	Variable coefficient	p-value	Variable coefficient	p-value
Investment Freedom	-0.51	0.44					0.09	0.02				
Inflation	0.54	0.008	0.59	0.002	0.6	0.002	0.46	0.006	0.46	0.005	0.44	0.01
Gross capital formation	1.2	0.000	1.1	0.000	1.1	0.000	1.13	0.000	1.1	0.000	1.2	0.000
openness	1.4	0.004	1.4	0.003	1.5	0.001	1.7	0	1.8	0	1.8	0
Population growth rate	3.9	0.003	3.7	0.004	4.3	0	3.4	0.005	3.6	0.001	3.6	0.001
Tax burden	0.04	0.9	0.05	0.86	0.06	0.85					-0.17	0.513
Exchange rate	-0.7	0.15	-0.88	0.007	-0.82	0.09						
Money in circulation- Money supply	0.19	0.34	0.213	0.27								
constant term	-2.3	0.05	-2.8	0.011			-2.9	0.02	-2.4	0.002	-2	0.05
coefficient of determination R ²	0.51		0.56		0.52		0.52		0.52		0.51	
(Statistical confidence level) F-value	22.2		25.4		29.3		32.9		41.8		33.1	
Views (n)	57		57		57		57		57		57	

$\log FDI_{it} = -2.8 + 0.59 \log \text{inf} + 1.1 \log \text{GCF} + 1.4 \log \text{open} + 3.7 \log \text{pop} - 0.05 \log \text{tax} - 0.88 \text{Exch} + 0.21 \text{M2}$

Where:

FDI: Foreign direct investment to host country, Inf.: Inflation rate of the host country, Open: Openness to host country, GCF: gross capital formation of the host country, Pop: Annual Population growth rate of the host country, Tax: Tax burden, Exch.: Exchange rate, M2: Money in circulation

formation has a strong positive impact on attracting FDI and the variable is statistically significant, if gross capital formation increased by 1% FDI will increase by 1.1%.

The study indicates that inflation has a positive impact on attracting FDI and it is statistically significant, if inflation increases by 1% FDI will increase by 0.59%. An increase in prices is a catalyst for the economy and investment. It also revealed that foreign investment is attracted to countries after the devaluation or the expectation of inflation in order to increase profits when selling goods and services produced in these host countries of foreign investment at high prices or expected to continue to rise in prices.

The openness has a strong direct influence to attract more FDI, and the variable is statistically significant. In addition, if openness increases by 1% FDI will increase by 1.4%. This is mainly attributed to the role of openness in technology transfer and expertise which will contribute positively in attracting FDI.

The population growth rate reflects the size of the domestic market is an attractive factor for FDI, the variable is statistically significant and if it increases by 1% FDI will increase by 3.7%. Moreover the result shows that the exchange rate has an inverse relationship with FDI. If the exchange rate increases by 1% FDI will decrease by 0.88% and the results are statistically significant.

Exchange rate fluctuations lead to rapid changes in profitability of investment returns in host countries. Latief and Lefen (2018) stated that the literature about the relationship between exchange rate volatility and FDI is insufficient and relatively inconclusive. In general, the literature highlights that investment has a negative relationship with exchange rate volatility and with the appreciation of the domestic currency. The inverse relationship between exchange rate and FDI may be explained by the increase in the demand of foreign investment enterprises for foreign currency for several reasons, including: a. transfer most FDI profits abroad. b. importing investment requirements from abroad, c. dependence on the foreign work element and payment of wages in foreign currency due to lack of skill and experience of the local work element. Thus the rise in the exchange rate with the increase in demand for foreign currency by foreign investment facilities leads to a reduction in profitability of investment returns, which leads to escape and cut off FDI.

It is worth mentioning that monetary policy in the Kingdom of Saudi Arabia is working to stabilize the exchange rate and stability, unlike the situation in Egypt and Sudan, where Egypt has suffered since the 2011 revolution of political fluctuations and economic consequences and high exchange rate, especially after floating in 2016. In Sudan, it suffered from the deterioration of the exchange rate after the secession of the South with its oil resources, which was the first source of foreign currency.

As for the money in circulation and tax burden, they were statistically insignificant, although the money in circulation variable sign was in the right direction but the variable tax burden sign wasn't in the right direction. This direct (non-statistically significant) relationship may be due to tax exemptions offered by the host countries to attract foreign investment. Therefore, foreign investment companies do not show any importance to taxes. Sometimes they even circumvent tax evasion in more than one way, for example, some companies resort to changing their business or trade name after the end of the tax exemption granted to them.

Recommendations

a. To further expand the policy of economic openness with countries to benefit from the transfer of technology and expertise, this enhances the attraction of FDI.

b. Pay more attention to exchange rate policies and make it a tool to attract FDI.

c. Conduct further studies on the renewal and study of economic factors affecting the exchange rate in order to achieve better levels of exchange rate stability.

Achieve more democracy and political stability as it has a direct impact on stability and attracting FDI.

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