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## **FACTORS OF FOREIGN DIRECT INVESTMENT INWARDS: THE CASE OF SAUDI ARABIA**

### **Abstract:**

According to the gross domestic production, the Saudi Arabia's economy is listed in one of the top twenty economies in the world and Saudi Arabia is a member of G20 group. Using panel data from 1990 to 2020, this study tries to identify the key factors of foreign direct investment (FDI) inwards in Saudi Arabia. Saudi Arabia is facing many economic challenges which would affect the whole world as Saudi Arabia is consider being one of the leaders in the oil sector. The economy of Saudi Arabia depended extensively on oil exporting for a long period. In 2015, the oil prices dropped sharply which force the Saudi government to find some policies to diversify Saudi economy. The Saudi Vision 2030 is one of the most important strategies to enhance the economy through a bundle of programs and economic reforms. The Saudi vision is based on three main pillars as: 1) A Vibrant Society, 2) A Thriving Economy, 3) An Ambitious Nation. In this study, the focus is on the second pillar A Thriving Economy. However, FDI is one of the most important markers of an economy's efficiency. As a result, this research identifies the positive and negative elements that have a substantial impact on FDI in Saudi Arabia. The data of this study was collected from the database of the World Bank. The ordinary least squares statistical model was utilized in this investigation (OLS). The main findings proposed that GDP has affected the economic growth positively while, unemployment impacted the economy of Saudi Arabia negatively. These results of this study help policymakers to focus on the positive drivers of Saudi economic growth and avoiding negative factors. In addition, foreign investors who would like to invest in Saudi Arabia can explore the determinants of FDI in Saudi. Finally, academics in the field of economics can benefit from this study.

### **Keywords:**

Foreign direct investment, Saudi Arabia; Economic growth, Saudi Vision 2030

## 1. Introduction

The economy of Saudi Arabia is heavily reliant on the oil sector. Due to a surplus of supply over demand, oil prices have recently plummeted. As a result, the Saudi economy has had a difficult time to grow its economy. Policymakers of the Saudi Arabia focused on diversifying its economy in 2016 through Saudi Vision Strategy that called KSA Vision 2030. On April 26, 2016, Saudi Arabia's Crown Prince, Mohammed bin Salman, released KSA Vision 2030, with the goal of diversifying the economy. Attracting foreign direct investment (FDI) is one of the primary initiatives to diversify the Saudi economy (KSA Vision 2030, 2018). By concentrating on the factors that influence FDI, policymakers will be able to identify the most important positive and negative signs. Positive indications aid FDI expansion, and negative ones advise policymakers against dealing with negative signs. Saudi Arabia has a lot of potential in the area, such as luring international corporations to help boost their industries. In contrast, the Saudi Arabia may encounter several problems, including political unrest in the Middle East. To enhance economy, it is very important to identify the drivers of FDI and in the literature review, there are many studies focused on finding the determinants of FDI (e.g., Azam & Haseeb, 2021; Elheddad et al., 2020; Izadi et al., 2020). However, this study makes significant additions to the area, including (1) the fact that few studies have focused on Saudi Arabia. (2) The data spans the years 1990-2020, making it both comprehensive and current. (3) This research helps to the understanding of the impact of the Arab Spring (Arab uprisings) on FDI. (4) The most important contribution is that this study examines the effects of COVID- 19 pandemic on the FDI in Saudi Arabia. This research looks for important positive and negative variables of FDI in the GCC area from 1990-2020. The goal of this research is to find the following:

1. The important positive factors of FDI inwards in Saudi Arabia?
2. The important negative factors of FDI inwards in Saudi Arabia?

In this study, ordinary least square (OLS) is utilized to analyze the data to find the determinants of FDI inwards in Saudi Arabia. The following division describes the literature review. Then, the data description and statistical technique are presented in

Part 3 (methodology). The empirical findings are discussed in Part 4. Finally, Part 5 concludes the research.

## **2. Literature review and formulation of hypotheses**

### **2.1. Literature review**

There many studies in the literature tested the factors of FDI inwards (e.g., Azam and Haseeb, 2021; Elheddad et al., 2020; Izadi et al., 2020) but lack of studies focused on Saudi Arabia, therefore, this study finds the factors of FDI in Saudi Arabia.

FDI inwards indicators were examined by Izadi et al. (2020) for 33 developed and developing countries over the period 2001-2017. Statistically, ordinary least square (OLS), fixed-effects model (FEM), and generalized method of moments (GMM) regression have been used in this study. The major findings revealed that the economic growth was critical in decreasing FDI inwards. As a result, increased output would discourage additional investment in this study. Moreover, Inflation had a major and negative impact on FDI inwards. In this situation, inflation deters corporations and nations from investing in the sample of the study.

Elheddad (2018) examined FDI inwards indicators for the Gulf Cooperation Council (GCC) countries from 1980-2013. The key findings revealed that the gross domestic product (GDP) per capita was critical for increasing FDI inwards. By the contrary, the association between inflation and FDI inwards is significant and negative.

Using the MENA region as a case study, Salem and Baum (2016) looked at the factors that influenced FDI inwards for eight nations in the region of MENA from 2003 to 2009. To determine the relationships between FDI inwards and the independent variables, Salem and Baum (2016) employed the Tobit model. According to the data, a greater unemployment rate leads to more FDI inwards. This suggested a substantial and negative relationship between unemployment and FDI inwards. Regulatory quality has a considerable and beneficial influence on FDI inwards, according to country governance metrics. Control of corruption, voice and accountability, political stability, government performance, and rule of law were all determined to be unimportant when it came to FDI inwards.

Azam and Haseeb (2021) tested the indicators of FDI inwards for BRICS countries during the period 1990-2018. In this study, fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS) regressions have been used to analyze the data to find FDI determinants. The results show that trade openness and economic development are playing a positive role to attract more FDI in BRICS countries. By the contrary, higher inflation rates decrease the FDI intensity significantly.

Focusing on Sub-Saharan countries, Jaiblai and Shenai (2019) used autoregressive distributed lag (ARDL) cointegration technique to find the determinants of FDI inwards for the period 1990-2017. This study concludes that GDP and inflation support FDI inwards positively and significantly.

To summarize the previous studies above, the economic growth and inflation are very important factors to determine FDI inwards. Thus, in this study, the correlation between FDI inwards and both GDP growth and inflations are examined for Saudi Arabia.

## **2.2. Formulation of hypotheses**

### **2.2.1 FDI inwards and GDP growth**

A comprehensive number of previous research has found that higher GDP levels attract greater foreign direct investment (Azam & Haseeb, 2021; Gao et al., 2020). This indicates that economic growth encourages businesses to invest internationally. few numbers of studies confirmed a negative relationship between FDI inwards and economic growth (Izadi et al., 2020). As a result, the first proposed hypothesis is:

*H1: GDP growth impacts FDI inwards in Saudi Arabia significantly*

### **2.2.2. FDI inwards and inflation**

Many studies approved that higher inflation rates leads to support FDI inwards (Nayyar et al., 2021; Gao, 2020) and extensive studies also found the association between FDI inwards, and inflation is significant and negative (Azam & Haseeb, 2021; Izadi et al., 2020). The second hypothesis can be formulated as:

*H2: Inflation impacts FDI inwards in Saudi Arabia significantly*

2.2.3. FDI inwards and unemployment

Because individuals' purchasing power is reduced as a result of rising unemployment, investors are discouraged from expanding their enterprises, resulting in decreased profits. According to Özkan-Günay's (2011) findings, higher jobless rates reduced FDI considerably. This contradicts the findings of Salem and Baum (2016) found a strong and positive correlation between employment and FDI inwards. As a result, the third hypothesis is as follows:

*H3: Unemployment rates significantly impact FDI inwards in Saudi Arabia*

2.2.4. FDI inwards and trade

Trade is one of the most important indicators to attract foreign to invest in any country, therefore, in this study, the correlation between FDI inwards in Saudi and trade is examined. In fact, the results of Canh et al. (2020) conclude that higher percentage of trade support attracting more foreign investments for 21 countries for the period 2003-2013. The fourth hypothesis is:

*H4: Trade impacts FDI inwards in Saudi Arabia significantly*

2.2.5. FDI inwards and COVID- 19 pandemic

Doytch et al. (2021) found that FDI inwards has been affected negatively by the COVID- 19 pandemic in five countries (United States, United Kingdom, India, China, Australia). In this study, there is an examination to see the impact of COVID- 19 pandemic on FDI inwards in Saudi using the following hypothesis:

*H5: COVID- 19 pandemic impacts FDI inwards in Saudi Arabia significantly*

2.2.6. FDI inwards and global financial crisis (GFC)

Most studies confirmed that FDI inwards was declining during the GFC period (Saini & Singhania, 2018; Avioutskaa & Tensaout, 2016). In contrast, few studies have

shown that FDI inwards was significantly and positively impacted during the GFC (Adhikary, 2017). The hypothesis for GFC is:

*H6: GFC impacts FDI inwards in Saudi Arabia significantly*

#### 2.2.7. FDI inwards and Arab Spring

In 2011, the political instability in the Middle East and North Africa (MENA) region was expanded and this political instability called Arab Spring (Arab political revelations). Alharthi (2018) found that Arab Spring has affected FDI inwards for GCC countries. The seventh hypothesis is:

*H7: Arab Spring impacts FDI inwards in Saudi Arabia significantly*

### **3. Methodology**

#### **3.1. Data description**

In this study, the data was gathered from the database of the World Bank. The coverage of the data is from 1990 to 2020 for Saudi Arabia. The dependent factor in this study is the FDI inwards in Saudi Arabia while, the independent variables are GDP growth, inflation rates, unemployment rates, trade intensity, COVID- 19 pandemic, global financial crisis and Arab Spring (Arab political revolutions. See in Table 1 the descriptive statistics data for the whole variables of this study over the period 1990-2020.

#### **3.2. Statistical model of FDI inwards**

This study estimates the determinants of FDI inwards in Saudi Arabia during the period 1990-2020 by using ordinary least square (OLS) through STATA 17 software. The FDI determinants have been found in the literature by many studies such as the studies of Elheddad et al. (2020) for GCC countries, Vadlamannati et al. (2018) for 165 countries, and Aziz and Mishra (2016) for 16 Arab. The statistical model of FDI inwards can be constructed as:

$$FDI_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 INFLATION_{it} + \beta_3 UNEMPLOYMENT_{it} + \beta_4 TRADE_{it} + \beta_5 COVID19_t + \beta_6 GFC_t + \beta_7 ASPRING_t + \varepsilon \dots \dots \dots (1)$$

$$i = 1 \dots n; t = 1 \dots n$$

**Table 1.** Descriptions of the Factors of FDI inwards in Saudi Arabia for the period 1990-2020

| Factors                 | Description   | Statistics |        |        |        |        | Expected Sign |
|-------------------------|---|------------|--------|--------|--------|--------|---------------|
|                         |   | Obs        | Mean   | S.D.   | Min    | Max    |               |
| Dependent variable      |   |            |        |        |        |        |               |
| FDI                     | Foreign direct investment, net inflows (% of GDP)                 | 31         | 1.611  | 2.485  | -1.307 | 8.496  | ---           |
| Independent variables   |   |            |        |        |        |        |               |
| GDP growth              | GDP growth (annual %)   | 31         | 3.295  | 4.840  | -4.106 | 15.193 | +             |
| Inflation rates         | Inflation, consumer prices (annual %)                             | 31         | 1.931  | 2.622  | -2.093 | 9.870  | -             |
| Unemployment rates      | Unemployment, total (% of total labor force)                      | 31         | 5.878  | 0.883  | 4.350  | 8.220  | -             |
| Trade intensity         | Trade (% of GDP)  | 31         | 72.329 | 11.448 | 50.602 | 96.102 | +             |
| COVID- 19 pandemic      | Dummy variable equals 1 for the period 2019-2020 and 0, otherwise | 31         | 0.064  | 0.249  | 0      | 1      | -             |
| Global financial crisis | Dummy variable equals 1 for the period 2007-2009 and 0, otherwise | 31         | 0.096  | 0.300  | 0      | 1      | -             |
| Arab Spring             | Dummy variable equals 1 for the period 2011-2013 and 0, otherwise | 31         | 0.096  | 0.300  | 0      | 1      | -             |

Sources: World Bank database

Where,  $FDI_{it}$  is the foreign direct investment inflows in Saudi Arabia,  $i$  is the country that Saudi Arabia in this case,  $t$  is the time (period);  $\alpha$  is the constant;  $\beta$  is the coefficient;  $GDP_{it}$  represents the gross domestic product growth;  $INFLATION_{it}$  indicate the inflation rate;  $UNEMPLOYMENT_{it}$  explains the unemployment rates;  $TRADE_{it}$  describe the trade intensity;  $COVID19_t$  is the dummy variable of COVID- 19 pandemic: 1 for the period 2019-2020 and 0, otherwise;  $GFC_t$  is the dummy variable of the global financial crisis: 1 for the period 2007-2009 and 0, otherwise;  $ASPRING_t$  is the dummy variable of the Arab Spring: 1 for the period 2011-2013 and 0, otherwise;  $\varepsilon$  is the error term.

The correlation matrix must be checked before the data can be analyzed to ensure that there is no multicollinearity. Table 2 below shows that all correlation coefficients are less than 70%, which means that the multicollinearity is no existed.

#### **4. Findings of the study and discussion**

The data was analyzed in this study using the regression of the OLS as in Table 3. The results of OLS indicate the GDP growth and trade impact the FDI inwards in Saudi Arabia significantly and positively. On the other side, inflation, unemployment, COVID- 19 pandemic, GFC and Arab Spring affect the FDI inwards significantly and inversely.

*H1*: GDP growth: the correlation between economic growth and FDI inwards in Saudi Arabia is significant and positive. The reason behind this finding because investors prefer to invest in larger markets which have more profitability and lower risks. This finding is consistent with many studies like Azam and Haseeb (2021), Nayyar et al. (2021), and Gao et al. (2020). On the other side, some studies approved a significant and negative association between economic growth and FDI e.g., Izadi et al. (2020).

*H2*: Inflation: the coefficient of inflation illustrates that higher rates of inflation discourage the foreign investors to invest in Saudi Arabia. In this case, the policymakers in Saudi Arabia e.g., Saudi Central Bank can control the inflation to attract more FDI inflows to Saudi Arabia. In the literature, Azam and Haseeb (2021) and Izadi et al. (2020) proved the same outcome. By the contrary, Nayyar et al. (2021) and Gao et al. (2020) argued that higher inflation levels attract more foreign investments. Kumari and Sharma (2017) pointed that the correlation between inflation and FDI is insignificant in 20 Asian countries over the period 1990-2012.



**Table 2.** Correlation matrix for the factors of FDI inwards

| Factors         | FDI inwards | GDP growth | Inflation rates | Unemployment | Trade intensity | COVID-19 | GFC     | Arab Spring |
|-----------------|-------------|------------|-----------------|--------------|-----------------|----------|---------|-------------|
| FDI inwards     | 1           |            |                 |              |                 |          |         |             |
| GDP growth      | 0.0299      | 1          |                 |              |                 |          |         |             |
| Inflation rates | 0.5977      | 0.2774     | 1               |              |                 |          |         |             |
| Unemployment    | -0.1589     | 0.1706     | 0.1669          | 1            |                 |          |         |             |
| Trade intensity | 0.6955      | 0.3899     | 0.6224          | -0.1070      | 1               |          |         |             |
| COVID-19        | -0.1196     | -0.2858    | -0.1278         | 0.3610       | -0.3544         | 1        |         |             |
| GFC             | 0.6631      | -0.0882    | 0.5624          | -0.1816      | 0.5700          | -0.0860  | 1       |             |
| Arab Spring     | 0.0195      | 0.1884     | 0.2719          | -0.0975      | 0.3369          | -0.0860  | -0.1071 | 1           |

**Table 3.** The results of OLS for the factors of FDI inwards in Saudi Arabia

| Regression            | OLS                  |
|-----------------------|----------------------|
| Dependent Variable    | FDI Inwards          |
| (H1) GDP growth       | 0.061***<br>(0.86)   |
| (H2) Inflation        | -0.202***<br>(-1.23) |
| (H3) Unemployment     | -0.330***<br>(-0.85) |
| (H4) Trade            | 0.110***<br>(2.67)   |
| (H5) COVID- 19        | -1.095**<br>(-0.82)  |
| (H6) GFC              | -2.592*<br>(-1.65)   |
| (H7) Arab Spring      | -1.290*<br>(-1.12)   |
| Constant              | -4.828**<br>(-1.38)  |
| <i>N</i>              | 31                   |
| <i>R</i> <sup>2</sup> | 0.7201               |

Notes: *t* statistics in parentheses, \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

*H3: Unemployment:* from the results of OLS model, the foreign investors desire to invest in Saudi Arabia when the unemployment rates are lower. This finding is in line with the outcome of Özkan-Günay (2011). But contradicts with the studies of Salem and Baum (2016) who reported that higher levels of unemployment encourage foreign investors to operate more businesses.

*H4: Trade:* as expected, the higher trade intensity increases the FDI inwards significantly and positively in Saudi Arabia over the period of the study. The study of Canh et al. (2020) gave the same finding. This means that Saudi government can draw more policies and regulations to enhance the trade in Saudi Arabia which results having more FDI inwards.

*H5: COVID- 19:* as anticipated, during the period of COVID- 19 outbreak, the FDI inwards decreased significantly in Saudi Arabia. This finding occurred due to the spread of uncertainty over the period of COVID- 19 pandemic.

*H6: GFC:* According to the results of the OLS, over the period of the global financial crisis the FDI inwards declined significantly. Many studies approved the same conclusion of this result like Avioutskaa and Tensaout (2016) and Saini and Singhanian (2018). However, Vadlamannati et al. (2018) and Aziz and Mishra (2016) pointed an insignificant correlation between FDI and GFC.

*H7: Arab Spring:* as expected, over the period of the Arab Spring (2011-2013), the FDI inwards in Saudi Arabia decreased significantly. This result is in line with the finding of Alharthi (2018) who confirmed that in the Arab Spring period, the FDI inwards decline significantly in the GCC countries.

## **5. Conclusion**

The goal of this study was to find the main factors of FDI inwards for Saudi Arabia over the period 1990-2020. The data was gathered from the database of the World Bank and statistically the data was analyzed through the OLS regression that employed by STATA 17. The findings of this study report that foreign direct investment can be supported by the economic growth of Saudi Arabia and the trade intensity. By the contrary, the higher inflation and unemployment levels discourage the foreign investors to invest in Saudi Arabia during the period of the study. Moreover, over the periods of

COVID- 19 spread, global financial crisis and Arab Spring, the FDI inwards decreased significantly. For the implication of this study, it helps the policymakers to draw regulations to attract more foreign investments through finding the positive factors of FDI and by avoiding the negative factors of FDI. For further research, more variables can be examined such as the effects of Carbon Dioxide (CO<sub>2</sub>) on FDI inwards. In addition, a group of countries can be tested such as MENA and GCC regions.

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