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Impact of determinants on foreign direct investment in Saudi Arabia: A multiple linear regression analysis

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ABSTRACT

Attracting foreign direct investment (FDI) is crucial globally, especially in developing economies. FDI brings in capital, boosts production, enhances infrastructure, generates employment, and fosters economic growth. This becomes particularly significant for Saudi Arabia in light of its Vision 2030 plan, which aims to elevate FDI to 5.7% of its GDP by 2030 (equivalent to $100 billion annually). This study delves into the primary factors influencing FDI in Saudi Arabia. Analyzing data from 2005 to 2021, we explore the effects of various factors, including market size, economic growth, inflation, income levels, export performance, trade openness, corruption levels, and government spending. Using multiple linear regression (MLR), we analyze these factors' impact on FDI. Our findings reveal four significant determinants. Market size, inflation rate, and trade openness positively influence FDI inflows, while GDP per capita (income) has a negative impact. Other variables studied did not show significant effects. These results can inform policymakers in formulating strategies to attract more foreign investment.

1. Introduction

Uncovering the true determinants of direct foreign investment (FDI) has recently grown in importance worldwide, and particularly in Saudi Arabia (Alharthi et al., 2024). In general, the issue has attracted the interest of policymakers and economists over long periods since it is an essential source of financing. Attracting the flows of foreign direct investment (FDI) is vital to the process of globalization (Aluko et al., 2023). It can increase capital inflow, increase production, improve infrastructure, create jobs, and contribute to higher economic growth. Several studies have revealed a strong association between FDI and economic growth. Vehorn (2011) studied the effect of domestic investment, FDI, fiscal policy, and monetary policy in central Europe using a dynamic growth model. The research paper examines the period from 1992 to 2007 in thirteen Central European countries. Their empirical results reveal that factors such as domestic investment and Foreign Investment significantly and positively impact economic growth.

Other studies have revealed similar results. Borensztein et al. (1998) studied the association between economic growth and direct foreign investment in 69 countries. Their results identify a significantly positive relationship. However, they state that this relationship holds true only if the host country's human capital is sufficiently high. However, Moudatsou (2003) suggested that a high level of human capital is unnecessary. Their results reveal that Direct foreign investments significantly positively impact economic growth in countries in the European Union regardless of the level of human capital.

Usually, governments offer incentives to attract foreign investment, such as reduced tariffs and exemptions from taxes. Economies around the world face the challenge of attracting FDI, and Saudi Arabia is no exception. Saudi Arabia aims to increase FDI to reach 5.7% of gross domestic product (GDP) by 2030. This goal is part of the Vision 2030 development program to create a prosperous economy. Saudi Arabia's plan is to reduce oil dependence and diversify its economy, and attracting FDI inflow is integral to the plan. FDI in Saudi Arabia has an average of USD 3676.55 Million from 2006 to 2023, and it reached its highest in 2021, hitting USD 19.28 billion. A considerable amount of literature focuses on the determinants of

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FDI inflows (Meressa, 2022; Alharthi et al., 2024). However, researchers have no complete consensus over what determines FDI. To our knowledge, relatively little literature has investigated FDI inflows in Saudi Arabia. This study builds on previous research examining FDI determinants and contributes to the literature by studying the determinants of FDI in Saudi Arabia. This study enhances our understanding of the FDI determinants in emerging markets, especially the GCC countries. This research answers whether factors such as market size, growth, and income, among others, are essential to attract the inflows of FDI in Saudi Arabia.

This research paper answers three important questions:

1. What are the major factors influencing Direct Foreign investment inflows in Saudi Arabia?
2. What is the direction of the relationship between the variables under investigation and the Direct Foreign Investment inflows?
3. Does the current investment environment attract FDI in Saudi Arabia?

Following previous literature, we study whether the Market size, Growth, Inflation rate, Income, Exports, Openness, Corruption, and government expenditure affect FDI. This paper aims to test the relationship between a set of explanatory variables and FDI inflows using a multiple linear regression technique. Our analysis covers the period between 2005 and 2021

Examining the FDI determinants will shed light on the factors contributing to a higher level of direct foreign investment in the country. This paper benefits policymakers and regulative authorities in Saudi Arabia and thus can promote direct foreign investment inflow. Policymakers will be able to differentiate between factors that contribute to a higher FDI inflow and, thus, can formulate better policies to attract a higher level of FDI, increase development, and promote economic growth.

Our main finding suggests that "trade openness, market size, and inflation rate" can significantly positively impact FDI inflows in Saudi Arabia. The results show that "GDP per capita" has a statistically significant and negative impact on FDI. The remaining variables are insignificant.

Our research follows this structure: Section 2 reviews and summarizes prior studies on FDI, discussing their outcomes. Section 3 presents our gathered data and outlines the analytical approach employed to differentiate between factors. In Section 3, we present our empirical findings, discuss their implications, and conclude the research in Section 4.

2. Literature review

A considerable amount of literature investigates various factors that influence FDI inflows. Numerous studies have tried to uncover the true determinants of FDI inflows around the world (Lim, 2001; Sajilan et al., 2019; Lindelwa Makoni, 2018; Moosa and Cardak, 2006; Rathnayaka Mudiyanselage et al., 2021; Rathnayake et al., 2023). For example, Lim (2001) suggested potential determinants of FDI, such as market size, economic openness, rate of return, quality of infrastructure, human capital, and political instability. Overall, the literature examines a large number of variables to explain FDI. Some of the variables were included because they only make sense, while others because of established economic theories. In terms of the impact of the examined variables on FDI, the empirical results are diverse; currently, there is no complete consensus among researchers. There has been little agreement on the determinants of FDI and what can influence the inflow into the economies. Table 1 shows several influential determinants that have been hypothesized to impact FDI inflows. Table 1 links a set of variables to the theoretical framework.

Based on prior research, the FDI Determinants can vary between countries. A study was carried out by Jaiblai and Shenai (2019), who investigated the determinants of Direct Foreign Investment (FDI) in ten countries in sub-Sahara over the period 1990 to 2017 using a panel cointegration approach. Their results show that FDI inflows are higher in smaller markets with better infrastructure. They conclude that all economies under investigation must move to higher openness to increase FDI inflows.

Faroh and Shen (2015) considered the association between the inflows of FDI and interest rates in Sierra Leone. They study the impact by running multiple regression time series. Their data covers the period between 1985 to 2012. Their empirical results reveal that only two variables significantly impact the inflows of FDI in Sierra Leone. The study suggests that trade openness and exchange rates positively influence FDI inflows. However, the study reveals that the Inflation rate, gross domestic product, and interest rate are insignificant. Numerous studies investigate similar factors, such as Obiamaka et al. (2011), where they reported an insignificant effect of inflation on the inflow of Direct Foreign Investment. Others, such as Bajo-Rubio and Sosvilla-Rivero (1994) and Yang et al. (2000), reported a negative impact of inflation on FDI.

Rathnayake et al. (2023) investigated several factors and their impact on the inflow of Direct Foreign Investment in 26 African countries, including Algeria, Rwanda, Gambia, Mauritius, and Namibia. In their analysis, they use multiple linear regression models and Panel Regression. Their results show mixed results; however, they conclude that variables such as the Global Competitiveness Index, Logistics Performance Index, and Interest Rates are essential to determine the level of FDI inflow. More development in infrastructure and better management of macroeconomic variables is recommended.

Other studies have considered the linkage between GDP and FDI inflows. Studies such as Chakrabarti (2001) and Ang (2008) investigated the impact of variables such as GDP on FDI. They report

that GDP significantly positively impacts the FDI inflow. Suggesting that markets of a larger size contribute to a higher inflow of FDI. Numerous studies support this view (Cheng and Kwan, 2000; Love and Lage-Hidalgo, 2000).

Table 1: A summary of variables affecting FDI (Lindelwa Makoni, 2018; Moosa and Cardak, 2006; Rathnayaka Mudiyanselage et al., 2021; Boddewyn, 1985; Bénassy-Quéré et al., 2007; Zaman et al., 2018)

Variable	Theory/ hypothesis	Direction of relationship	
Market size	Market size hypothesis	Positive	The market size reflects consumer demand. Larger economies are expected to grow faster; thus, FDI will flow in countries with larger market size
Income level	Market size hypothesis	Positive	It appears that countries must reach a higher level of education before capturing the interest of foreign investors. The income level indicates whether citizens of a particular country is better or worse off. A population with a higher income level means better prospects. This is important to foreign investors and can influence their decision whether to invest or not
Growth rate	Differential rates of return, diversification, internal financing	Positive	A fast-growing market reflects profit maximization; thus, a higher growth rate indicates an increase in FDI inflow
Inflation	Other	Negative	Inflation is expected to have a negative relationship with FDI. Rising inflation refers to an increase in the general price level or a loss in purchasing power. Higher inflation will lead to an increased risk and a decrease in the value of assets
Openness	Other	Positive	Countries try to attract foreign investors by making their economies more open. A higher degree of openness causes a higher inflow of foreign capital. In theory, a country with fewer policies and fewer restrictions on imports and exports has a higher chance of attracting FDI inflows (Lindelwa Makoni, 2018; Donghui et al., 2018)
Exports	Other	Positive	A higher degree of international exposure causes a higher inflow of foreign capital.
corruption	Other	Negative	Foreign investors avoid investing in countries with high levels of corruption because it can create operational inefficiencies
Expenditure	Other	Positive/ negative	In theory, higher government expenditures contribute to better infrastructure and promote a better business environment. In turn, governments can absorb more FDI. This view supports the idea that countries must reach a certain level of development before attracting FDI inflows On the other hand, other researchers have considered a negative impact. Researchers argue that an increase in government expenditure is expected to reduce FDI in the economy. They argue that higher expenditures can lead to bureaucracy, mismanagement, and corruption (Bénassy-Quéré et al., 2007)

Sajilan et al. (2019) investigated the Determinants of FDI in 42 OIC Countries using panel fixed effects and random effects estimators. Their findings suggest that the size of the economy, infrastructure, and trade openness are positively and significantly related to FDI, while inflation shows mixed results. Ahmad and Ahmed (2014) argued that foreign investors are more inclined to invest in countries with better infrastructure and favorable policies. Other studies support this view (Tayebiniya and Khorasgani, 2018; Azam and Lukman, 2010). Aljbory (2016) pointed out that factors such as GDP growth and inflation are vital in increasing foreign investment. The research paper investigates whether FDI inflow in Iraq is affected by the investment environment. The study analyzed factors such as GDP growth, balance of payments, exchange rate, and inflation. The view is supported by Billington (1999), who analyzed determinants of FDI in 11 regions in the United Kingdom using a multicountry model and multiregion model. The study reports a significant impact of factors such as GDP growth and GDP per capita.

Demirhan and Masca (2008) investigated a data sample that covers 38 countries using a cross-sectional econometric model. The study investigates several variables, namely inflation, GDP per capita, risk, labor cost, telephone lines per 1,000 people, openness, and corporate tax. Their results show a significant and positive impact of GDP per capita, telephone lines, and trade openness on FDI. In contrast, variables such as the tax and Inflation rates have a significantly negative impact on FDI. The remaining variables are insignificant.

Several studies have revealed similar results. Asiedu (2002) and Azam and Lukman (2010) argued that a positive linkage exists between the inflows of FDI and GDP per capita. They suggest that larger markets with greater income levels provide higher returns on investments, which could attract FDI. However, other studies disagree with their findings, such as those of Jaspersen et al. (2000), who argued that GDP per capita is inversely related to FDI inflow. The study investigates the impact of GDP per capita and reports an inverse relationship.

Moosa and Cardak (2006) distinguished between robust and fragile variables of FDI. In their analysis, they use Extreme Bounds Analysis (EBA). The study is based on data covering 140 countries. Their empirical results reveal two robust determinants of FDI, namely exports and telephone lines per 1000. Other studies, such as Wei (2000), included corruption in their analysis, and they reported a negative impact. The literature suggests that higher corruption levels discourage FDI inflows.

3. Data and research methodology

The analysis in this study is based on information collected from UNCTAD, The World Bank database, and the Saudi Central Bank (SAMA) statistical report. The sample incorporates information on Saudi

Arabia over the period 2005-2021. Studies investigating the determinants of Direct Foreign investment, such as Demirhan and Masca (2008) and Rathnayake et al. (2023), used cross-sectional regression, and the equation takes the following form:

$$Y_i = \alpha + \sum_{i=1}^{n} \beta_i X_i + \varepsilon_i , \quad (1)$$

where, Y_i refer to FDI, X_i represent the list of explanatory variables, β_i denotes the coefficients on the explanatory variables, i denoted countries, α is a constant and ε is the error term.

In this research paper, we use equation 1 to explain FDI inflows. In our analysis, we follow Demirhan and Masca (2008), Rathnayake et al. (2023), and Asiedu (2006). The selection of variables and the study period were dictated by data availability. Apart from availability, we rely on variables identified in previous research. We analyze the effect of only eight explanatory variables on the inflows of direct foreign investment. In connection with the definitions and the previous discussion, the following variables are included in the multiple regression model:

$$Y_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \beta_6 X_{i6} + \beta_7 X_{i7} + \beta_8 X_{i8} + \varepsilon_i \quad (2)$$

where,
$\boldsymbol{Y_i}$: FDI flows during the study period
$\boldsymbol{X_{i1}}$: the Market Size (GDP)
$\boldsymbol{X_{i2}}$: Growth (GDP growth rate)
$\boldsymbol{X_{i3}}$: Income (GDP per capita)
$\boldsymbol{X_{i4}}$: Inflation (annual %)
$\boldsymbol{X_{i5}}$: Exports as a percentage of GDP
$\boldsymbol{X_{i6}}$: Trade Openness
$\boldsymbol{X_{i7}}$: Corruption estimates of a country
$\boldsymbol{X_{i8}}$: Government expenditure during the study period.

In the multiple regression model variable, FDI is the dependent variable, while the remaining variables are explanatory variables. The variables under examination are Market size, Growth, Income, Inflation rate, Exports, Openness, Corruption, and government expenditure. Following Moosa and Cardak (2006), the dependent variable (FDI) is calculated as the percentage of FDI divided by the percentage contribution of Saudi Arabia to the World GDP. Whereas Table 2 presents the set of explanatory variables under examination.

Table 2: List of explanatory variables and reason for inclusion

Variable	Definition and reason for inclusion
Market size	GDP represents all market value in a country and the size of an economy and can capture the size and the development of the economy
Income level	GDP per capita refers to the income level or the money earned by an individual in a country and refers to the purchasing power of citizens
Growth rate	GDP growth is an indicator of the future size, profitability, and productivity of a country
Inflation	Inflation rate and an indicator of costs of running a business
Openness	Trade openness is an indicator of the openness of the economy
Exports	Exports as a percentage of GDP and it measures FDI-exports relationship and international exposer
Corruption	Corruption estimates of a country
Expenditure	Refer to expenditures that are used to manage utilities. E.g., infrastructure. The variable expenditure measures the government's or public Expenditure

4. Empirical results and discussion

The empirical results are acceptable based on R-squared and Adjusted R-squared values. Meanwhile, the Durbin-Watson Statistics has a value of 1.987, almost equal to 2, indicating no autocorrelation. DW statistic values within the range of 1.5 to 2.5 are normal. Table 3 shows the descriptive statistics for the variables under study. Table 4 summarizes our results, showing the coefficients, t stat, and P value. As for the variable market size, the results indicate a significant and positive relationship. It is evident that the inflows of FDI increase with an increase in the market size. Our results coincide with numerous empirical studies (Love and Lage-Hidalgo, 2000; Cheng and Kwan, 2000; Chakrabarti, 2001; Ang, 2008). Usually, larger markets are associated with higher inflows of direct foreign investment. Saudi Arabia is not the only country with the largest economy in the Middle East. Saudi Arabia has one of the largest economies in the world (a member of the G20).

As for the variable growth, our results report a positive link between GDP growth and FDI inflows; however, the coefficients are insignificant. GDP growth will enhance economic development. The positive correlation is consistent with previous studies and corresponds with Vision 2030 initiatives. According to Mamingi and Martin (2018), FDI contributes to higher economic growth when host country conditions are adequate.

Our results indicate that FDI decreases when GDP per capita (Income) increases, indicating a negative and significant relationship with FDI in the Saudi context. Contrary to expectations, this research did not find a significant positive relationship between GDP per capita (income) and FDI. However, our finding corresponds with Jaspersen et al. (2000), who suggested that countries with a low level of GDP per capita offer better opportunities for foreign investors, thus increasing FDI inflow. A major incentive for foreign investors to decide where to invest is whether a particular country has a well-educated workforce with lower wages. According to the World Bank, Saudi Arabia has a low GDP per capita (income level) compared to the GCC countries due to factors such as population size and dependence on foreign labor. Saudi Arabia's population and GDP increased dramatically during the study period (2005-2021). According to the

Saudi General Authority for Statistics, the population size climbed to 35,950,396 million in 2021 compared to 24,397,644 in 2005. Moreover, the Kingdom's 2030 vision was announced in 2016. During this time, the Kingdom has made significant efforts to promote and diversify its economy (Vision 2030 plan). According to Kearney's FDI index, Saudi Arabia is ranked 6th among emerging economies and third in the Middle East in 2023, which means that during the study period, Saudi Arabia enjoyed a high level of FDI inflow, indicating a high level of investor confidence.

As seen in Table 4, the results indicate a statistically significant and positive association between inflation and FDI. This indicates that investors are attracted to investing in the Kingdom despite the higher level of inflation. The positive coefficient points out the inflationary conditions in the market. One can say that a temporary rise in inflation will not affect FDI significantly. However, an important point is that the period when Saudi Arabia initiated economic reforms and changed policies to attract FDI coincides with a global increase in inflation. Saudi Arabia began a series of economic reforms, such as allowing foreign investors to trade in the Kingdom. This initiative is part of Vision 2030. FDI in Saudi Arabia has an average of USD reached its highest in 2021, during which the inflation was high. Global inflation surged following the COVID-19 pandemic, and Saudi Arabia was no exception.

The effects of inflation are somewhat mixed, and numerous studies report a negative impact of inflation on FDI inflows. Researchers argue that a low level of inflation can be a sign of economic stability and thus would increase FDI inflow (Bajo-Rubio and Sosvilla-Rivero, 1994; Yang et al., 2000; Andinuur, 2013; Asiedu, 2002). Other studies, such as Obiamaka et al. (2011), reported an insignificant effect of inflation on the inflow of FDI. They argue that inflation could have a positive impact as long as the inflation rate is not extremely high and remains stable. Alshamsi et al. (2015) reported a positive impact of inflation. Others, such as Sajilan et al. (2019), reported a positive and significant impact of inflation in FDI inflows, arguing that inflation enhances the rate of return.

In terms of corruption, the variable is considered vital to FDI inflows in a country (Wei, 2000; Gossel, 2018). It is apparent from Table 4 that a positive but insignificant association exists. Some researchers support the view that corruption is beneficial, especially when the legal framework in a country is weak. One can suggest that international investors see this as an opportunity to avoid excessive rules and regulations. Bribe is a typical example of avoiding delays (Krifa-Schneider et al., 2022). However, in theory, corruption can create operational inefficiencies and mismanagement, thus decreasing FDI inflows.

As for Government expenditure, the results indicate an insignificant positive impact on FDI. Studies such as He and Sun (2014) and Panigrahi and Panda (2012) suggested that higher government expenditures contribute to better infrastructure and promote a better business environment, which could attract more FDI. Saudi Arabia has a robust infrastructure, a strong industrial base, a well-educated labor force, and a competitive environment to attract foreign investments.

Finally, the results show a positive and significant association between trade openness and FDI. It is evident that openness positively impacts FDI inflow. Our results coincide with Lindelwa Makoni (2018) and Zaman et al. (2018). In theory, a higher degree of openness causes a higher inflow of foreign capital. According to Jordaan (2004) and Kosekahyaoglu (2006), resources with lower costs and countries that enjoy higher openness attract FDI inflows.

Table 3: Descriptive statistics

	Mean	Standard deviation	Kurtosis	Skewness	Minimum	Maximum
FDI INDEX	1.336958	1.1852	1.4835832	1.35326	0.1019780	4.398392
Market size - GDP	2.4E+12	6.49E+11	-1.0355243	-0.51174	1.23077E+12	3.26E+12
Growth Rate -GDP growth (annual %)	3.111584	3.456523	1.4317808	-0.06596	-4.3413876	10.99376
Income -GDP per capita	75824.48	13812.43	-1.0445905	-0.54292	50446.319	90658.44
Inflation (annual %)	2.993797	2.73148	1.7217400	0.55625	-2.0933333	9.870248
Exports (% of GDP)	45.18622	12.17837	-1.5049962	-0.15801	24.901969	62.11151
TRADE OPPEN	262824.8	72395.92	-1.1258486	0.48442	173864	388369.6
Control of Corruption	0.062339	0.204152	-0.9782939	-0.01795	-0.3125280	0.359227
Government expenditure	22.81841	3.038321	0.1756941	0.52802	17.70425	29.32164

Table 4: Summary of results

Variable	Coefficients	t stat	P-value
Intercept	20.7021	2.8570	0.0212
The market size (GDP)	7.55753	1.8761*	0.0975
Growth (GDP growth)	0.06707	0.8382	0.4262
Income (GDP per capita)	-0.00065	-2.5794**	0.0326
Inflation	0.20298	2.8416***	0.0218
Exports	-0.12117	-1.4593	0.1826
Trade openness	5.67422	2.4660**	0.0390
Corruption	2.00028	1.0441	0.3269
General government expenditure	0.07702	0.6142	0.5561

*: denotes that coefficients are significant at the 10% level; **: denotes that coefficients are significant at the 5% level; ***: denotes that coefficients are significant at the 1% level

Over the last decade, Saudi Arabia has done well in attracting FDI. Saudi Arabia succeeded in Attracting FDI even during periods of political instability. Buigut and Kapar (2020), who investigated the most recent 2017 GCC crisis (Qatar blockade) and its impact on the stock market return, argue that the Saudi stock market responded to the crises in a positive way. During the blockade, the political instability influenced foreign investors' decisions. The Kingdom's dominant, fast-growing, and more stable economy attracted investment fleeing Qatar. FDI inflows had gradually increased due to diversification, new projects, and policy interventions. Factors such as controlled inflation, trade openness, a well-educated workforce, and privatization boosted FDI inflows. The Vision 2030 well-implemented plan achieved this positive momentum. According to UNCTAD's World Investment Report 2022, FDI inflows in Saudi Arabia reached a record high in 2021 of 19.28 USD Billion, climbing from 5,39 Billion in 2020. Saudi Arabia has seen a slowdown in FDI inflow in 2019 due to the COVID-19 pandemic; however, the economy showed resilience by increasing its FDI inflow by 20% in 2020. The analysis shows that in Saudi Arabia, FDI inflows increase with an increase in the market size, inflation, and trade openness. These factors contribute positively to FDI, and this could help policymakers differentiate between factors that contribute to a higher FDI inflow and, thus, take steps to formulate better policies. Vision 2030 aims to create a prosperous economy, attract more FDI, increase GDP, increase non-oil exports, and increase growth and diversification. Saudi Arabia must move to an even higher trade openness, imposing fewer restrictions on foreign investment, and work toward increasing and diversifying GDP to increase FDI inflows.

5. Conclusion

Attracting FDI is vital to globalization. It can increase capital inflow, increase production, improve infrastructure, create jobs, and contribute to higher economic growth. To our knowledge, the literature investigating FDI in Saudi Arabia is scarce. This research paper explores the true determinants that affect the FDI inflows in Saudi Arabia. In the study, we evaluate the variables using a multiple linear regression model. Following previous literature, we study the impact of "Market size, GDP growth, GDP per capita, Inflation rate, Openness, Exports, Corruption, and government expenditure" between 2005 and 2021. This paper aims to test the relationship between a set of explanatory variables and FDI inflows. Our main finding suggests that "trade openness, market size, and inflation rate" significantly and positively impact FDI inflows in Saudi Arabia. The results show that "GDP per capita" has a statistically significant and negative impact on FDI. The remaining variables are insignificant. This paper is beneficial to the legislative authorities in Saudi Arabia in promoting FDI. Policymakers will be able to differentiate between factors that contribute to a higher FDI inflow and, thus, can formulate better policies to attract a higher level of FDI, increase development, promote economic growth, and achieve Vision 2030. Policymakers must take steps to formulate policies that can attract more FDI. Saudi Arabia must move to higher openness and work toward increasing and diversifying GDP to increase FDI inflows and thus ensure higher economic growth.

For future research, we suggest examining the long-term impact of interest rates on FDI inflows in Saudi Arabia and extending our research to include the GCC member countries. This will help policymakers form better policies to attract FDI inflows in the region.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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