

-RESEARCH ARTICLE-

IMPACT OF MANAGERIAL ABILITY ON FOREIGN INVESTMENT AND THE SAUDI ECONOMY: A CASE OF LISTED COMPANIES IN SAUDI STOCK MARKET

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—Abstract—

The present study examines how managerial capability influences foreign investment within firms listed on the Saudi stock exchange, alongside its implications for the national economy. An empirical investigation was undertaken using a sample of 145 listed firms over the period 2009 to 2021, generating a total of 2,039 observations. The analysis evaluates executives' managerial efficiency and assesses its association with foreign investment flows and broader economic outcomes in Saudi Arabia. The findings indicate that the mean level of managerial capability among executives in Saudi firms is broadly comparable to that observed in advanced economies. Empirical results further demonstrate a statistically positive relationship between executives' administrative competence and both foreign investment inflows and economic performance. In this context, the evidence supports the predominance of the "efficient contracting" perspective over alternative views such as rent extraction or benefit maximisation. The results also suggest that executive capability exerts a stronger influence on firm outcomes than inherent organisational characteristics. Moreover, foreign investment decisions appear to be significantly shaped by managerial ability,

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with additional implications observed for the Saudi Islamic economy. This relationship may be attributable to information asymmetry within listed firms in the Saudi stock market. Based on these insights, the study advocates greater emphasis on recruiting and retaining highly capable executives, given their critical role in enhancing foreign investment attraction and supporting economic development, in alignment with Saudi Arabia's Vision 2030 objectives.

Keywords: Managerial Ability, Foreign Investment, Corporate Governance, Saudi Economy.

INTRODUCTION

Firms seek to enhance competitiveness through the effective deployment of their resources, among which human capital represents a critical asset. In this context, managerial quality plays a decisive role in determining organisational success. Managerial ability refers to the set of executive attributes that facilitate the efficient utilisation of available resources and their transformation into revenue-generating outputs, thereby contributing to value creation for the firm (Fernando et al., 2020). In contemporary business environments characterised by rapid internationalisation and diversification, the competence of executives has become a central factor influencing both firm success and the sustainability of performance (Haapanen et al., 2020).

Organisations led by highly capable managers are better positioned to attract external financing and gain access to capital markets, which subsequently shapes their financial decision-making. Accounting literature has extensively addressed the significance of managerial ability from both theoretical and empirical perspectives. From a theoretical standpoint, more competent executives possess superior understanding of their firms' operational dynamics and the surrounding economic conditions (Inam Bhutta et al., 2021). This enhanced understanding enables them to communicate firm value more credibly to external stakeholders, thereby mitigating information asymmetry in capital markets (Park, 2019). From an empirical perspective, the measurement of managerial ability remains an evolving area of research, particularly regarding its influence on various dimensions of firm performance.

Previous studies have employed diverse proxies to capture managerial ability, including media visibility, historical stock returns, executive characteristics, turnover rates, contract duration, and reputation indicators (Demerjian et al., 2012; Gan, 2019). Competent executives are often associated with an enhanced capacity to attract investment into their firms. Investment, in general terms, involves allocating financial resources to economic activities or projects over a specified period with the expectation of generating future returns (Moosa, 2015). It serves as a fundamental driver for the establishment and expansion of firms, which in turn supports broader economic growth.

The significance of investment is reflected in its various forms. Physical investment involves the acquisition of tangible assets with economic value, whereas financial investment pertains to the allocation of funds into instruments such as equities and bonds. Based on geographical scope, investment can be classified into domestic investment, which targets opportunities within the local market, and foreign investment, which entails the transfer of capital from the investor's home country to host economies (Al-Tamimi & Elhaj, 2016). Economic growth in Saudi Arabia is commonly assessed through the expansion of gross domestic product, which serves as a key indicator of overall economic performance. Given the increasing focus on managerial ability and foreign investment, along with their implications for economic development, this study examines the influence of executive capability on foreign investment and its association with the Saudi Islamic economy, utilising the framework proposed by (Demerjian et al., 2012).

Furthermore, in line with the strategic emphasis placed on economic transformation under Saudi Arabia's Vision 2030, it is essential to consider all factors that contribute to achieving targeted developmental outcomes (Allmnakrah & Evers, 2019; Moshashai et al., 2020). Accordingly, the present study investigates the linkage between managerial ability and foreign investment in firms listed on the Saudi stock market, as well as its broader economic implications. The primary objective is to assess the effect of executive administrative capability on foreign investment and the Saudi economy. This research contributes to the existing body of knowledge by examining the interconnected relationships among managerial ability, foreign investment, and economic performance within the Saudi context. To the best of the researcher's knowledge, this represents one of the first empirical attempts in Saudi Arabia to evaluate these relationships comprehensively. While prior studies have explored similar themes in other regions, such as Indonesia, the United States, and Taiwan, limited attention has been given to the Saudi setting. Additionally, the study enriches understanding of foreign investment as a critical component of economic development. Given the relative scarcity of research addressing foreign investment as a source of foreign exchange and its broader economic implications, this study holds particular relevance within both accounting and economic research domains.

LITERATURE REVIEW

The present study is grounded in agency theory (Jensen & Meckling, 1976), which examines the relationship between principals, namely shareholders or owners, and agents, represented by executives, with particular emphasis on potential conflicts of interest. Within this framework, moral hazard arises in investment decisions when executives may misrepresent corporate investment choices, either by rejecting projects that possess positive net present value or by undertaking investments with negative net present value. Additionally, the pursuit of private benefits by executives can lead to more risk-averse behaviour in investment selection, prompting them to avoid high-risk

projects even when such projects could enhance shareholder value. As a result, value-creating opportunities may be disregarded due to executives' preference for lower risk alternatives (Gan et al., 2021).

Adverse selection further complicates investment decisions, as executives typically possess superior information regarding the firm's internal conditions compared to external investors. This informational advantage enables them to strategically determine the timing of asset sales, often opting to sell at elevated prices. When such strategies are successful, the resulting financial surplus can be reinvested to expand the firm's investment activities (Baker et al., 2003). Conversely, when executives prioritise the interests of existing shareholders and the firm's need to finance projects with positive net present value, they may refrain from selling assets at undervalued prices, even if this decision results in the loss of profitable investment opportunities (Khalaf & Hussein, 2024).

The theoretical model also highlights that managerial competence and incentive structures play a critical role in shaping firms' internationalisation strategies and overall performance. High levels of managerial ability contribute to the achievement of organisational objectives, particularly in terms of profitability and investment returns. This, in turn, enhances investor confidence and facilitates access to financial resources, thereby supporting the firm's continuity and growth (Habib & Hasan, 2017). Furthermore, the significance of managerial capability extends across multiple dimensions of firm operations, including providing in-depth knowledge of operational processes and industry-specific dynamics. It influences key decisions related to operations, investment, and financing, while also contributing to improved firm performance and a more transparent information environment.

Foreign Investment

Investment can be conceptualised as a strategic endeavour aimed at enhancing human capital in order to generate future benefits. Within the accounting context, foreign investment refers to the inflow of external capital accompanied by advanced technological, managerial, and administrative expertise, with the objective of fostering economic, social, and administrative progress in the host country, often in collaboration with domestic capital (Al-Ta'ae, 2013). Foreign investment is broadly classified into two principal forms, namely direct and indirect investment. Direct foreign investment constitutes a component of international investment and involves the establishment or acquisition of firms by foreign investors, who retain managerial control either through full ownership or through a sufficiently large equity stake that grants decision-making authority. In this regard, the investor may take the form of an individual, a foreign corporation, or an affiliated branch (Ochilov, 2020).

In contrast, indirect foreign investment relates to the allocation of funds into financial instruments such as shares and bonds issued by firms. Under this arrangement, foreign

investors do not participate in managerial control, and the investment is therefore characterised as financial in nature. This category also encompasses supplier credit arrangements and participation in equity or debt securities without governance rights (Naja & Natsir, 2023). Foreign investment is driven by multiple strategic objectives. Key motivations include securing access to raw materials for industrial use, taking advantage of favourable regulatory frameworks and tax incentives offered by host countries, exploring new markets for goods and services, and disposing of surplus production in external markets to achieve higher returns compared to domestic opportunities. Furthermore, foreign firms often benefit from competitive advantages over local enterprises due to superior product quality, cost efficiency, service diversification, advanced technological capabilities, and substantial capital resources. The potential to diversify operations across different markets also contributes to risk mitigation in host economies (Naja & Natsir, 2023).

From the perspective of host countries, attracting foreign investment is associated with several economic benefits. These include the transfer of advanced technologies, reduction in unemployment levels, expansion of export capacity, improvement in the balance of payments, and decreased reliance on imports through the strengthening of domestic production. Additionally, foreign investment facilitates access to new international markets and enhances trade linkages with global partners (Al-Ta'ae, 2013). The extent of foreign investment within firms is influenced by a range of determinants, among which the role of executives and their managerial capability remains particularly significant.

Attracting Foreign Investment

Indirect foreign investment refers to the allocation of funds towards purchasing equities and debt instruments issued by firms, without granting foreign investors any managerial authority over the enterprise. For this reason, it is commonly classified as indirect financial investment. This form of investment encompasses supplier credit arrangements, as well as participation in the subscription and trading of shares and bonds (Sukharev & Voronchikhina, 2020). A higher level of managerial capability among executives contributes to greater attraction of foreign investment, primarily through the effective utilisation of goodwill and the enhancement of transparency and clarity in financial disclosure (Zhang & Zheng, 2020). Institutional conditions also play a pivotal role in shaping investment inflows. The report of the Organisation for Economic Co-operation and Development (OECD, 2002) highlights that a favourable institutional environment significantly facilitates the attraction of foreign capital. Similarly, the World Bank report (Bank, 2005) emphasises that a supportive economic climate stimulates investment activity by drawing funds into domestic markets, promoting industrial and commercial expansion, and generating employment opportunities.

Foreign investors additionally serve as an external governance mechanism that helps mitigate agency-related issues. Their involvement increases the demand for high-quality information and improved disclosure practices, thereby exerting pressure on executives to enhance transparency. This is particularly important given the informational disadvantages faced by foreign investors compared to their domestic counterparts, who typically have easier access to firm-specific data. Furthermore, foreign investment plays a crucial role in addressing internal financing constraints. In situations where, internal cash flows are insufficient to support investment activities, firms increasingly rely on external funding sources, including foreign capital (Majeed et al., 2021).

In the context of the Saudi stock market, regulatory provisions limit foreign ownership to a maximum of 49 percent of a company's total shares (Authority, 2020). Prior empirical research examining the association between managerial capability and foreign investment, such as the study by (Globerman & Shapiro, 2002), has explored the influence of senior executives' human capital characteristics, including educational attainment at various levels, on foreign investment in developing economies. The findings indicate a positive but statistically insignificant relationship between managerial ability and foreign investment. Based on these theoretical and empirical considerations, the following hypotheses are proposed.

H1: *There is a positive relationship between managerial ability and foreign investment.*

H2: *There is significant impact of managerial ability on Saudi Economy.*

The Relationship between Managerial Ability, Foreign Investment, and the Saudi Economy is shown in Figure 1.

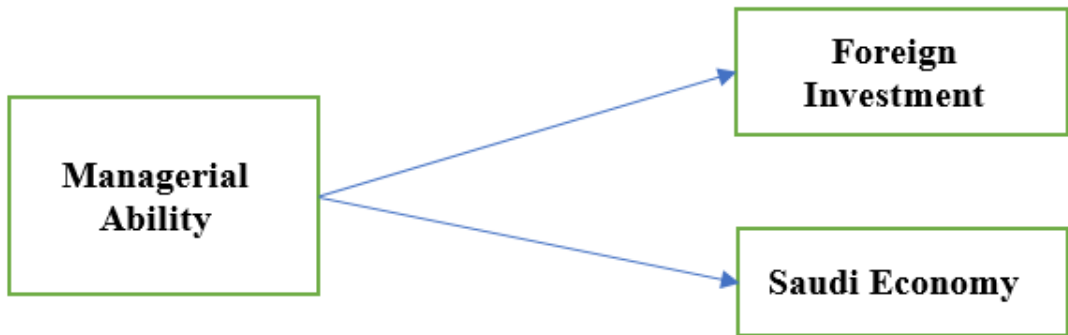


Figure 1: The Relationship between Managerial Ability, Foreign Investment, and the Saudi Economy

METHODOLOGY

The study concentrates on non-financial firms listed on the Saudi stock exchange over an 18-year period spanning 2003 to 2020. The extended timeframe enhances the

robustness and reliability of the empirical findings. Sample selection was guided by two primary criteria, namely the availability of complete financial statements and the presence of accompanying disclosures throughout the study period. Financial institutions, including banks, insurance companies, and real estate funds, were excluded due to their operation under distinct regulatory frameworks. This exclusion approach is consistent with prior research, including Demerjian et al. (2012), Majeed et al. (2021), and Hassan Al-Tamimi et al. (2015). Based on these criteria, a final sample of 145 listed firms was identified. The dataset comprises 2,039 observations, categorised across main sectors and their respective sub-sectors.

Table 1: Study Sample

Main Sector	Sub-Sector		Companies	Percent	Sequence
Energy	Energy	1	5	3.45	10
Basic Materials	Basic Materials	2	42	28.97	1
Industries	Capital Goods	3	12	8.28	2
Industries	Business and Professional Services	4	4	2.76	12
Transport	Transport	5	6	4.14	8
Luxury Consumer Goods	Long Term Commodities	6	6	4.14	8
	Consumer Services	7	10	6.9	5
	Retailing of Luxury Goods	8	8	5.52	6
Basic Consumer Goods	Food Segmentation	9	5	3.45	10
	Food Production	10	12	8.28	2
Telecommunications	Media and Entertainment	11	2	1.37	16
Health	Telecommunications	12	1	0.67	18
	Health Care	13	4	2.76	12
	Pharmaceutical	14	8	5.52	6
Public Utility	Public Utility	15	3	2.07	14
Information Technology	Applications and Technology Services	16	2	1.37	16
Real Estate	Real Estate Management and Development	17	11	7.59	4
Finance	Investment and Financing	18	3	2.07	14
Total			145	100	

Data collection relied on publicly available financial reports issued by the selected firms. These reports were obtained from the official website of the Saudi Stock Exchange (Tadawul), individual company websites, and specialised financial information platforms such as Mubasher and Argaam, which provide comprehensive firm-level data. In addition, formal consent was secured from the respective firms for the utilisation of their data in this research. Table 1 demonstrates that the basic materials sector constitutes the largest proportion of the sample, followed sequentially by the food production sector and the capital goods sector. These are succeeded by the real estate management and development sector, consumer goods retailing, and the

pharmaceuticals sector. Other represented sectors include transportation and durable goods, commercial and professional services, healthcare, public utilities, investment and financing, media and entertainment, applications and technology services, and telecommunications.

The distribution of observations across the study years shows a relatively balanced pattern. However, 2018 accounts for the highest share of observations, whereas 2003 records the lowest proportion. Overall, the number of observations exhibits a gradual upward trend over time. A close clustering is observed between 2003 (2.89%) and 2007 (4.07%), followed by a similar pattern from 2008 (5.15%) to 2011 (5.93%). This trend continues with a moderate increase from 2012 (6.08%) to 2015 (6.67%), and further stabilisation between 2017 (7.11%) and 2020 (7.01%). A slight decline in the proportion of observations is evident in the final two years, 2019 and 2020, where the percentage falls to 7.01%. This reduction can be attributed to delays by certain firms in releasing their financial statements during that period.

VARIABLES MEASURING

The measurement of variables encompasses the assessment of the independent variable, namely managerial ability, alongside the evaluation of dependent variables represented by various dimensions of investment, as well as examining the effect of managerial capability on the Saudi economy. The Managerial Ability Score is determined based on the model proposed by [Demerjian et al. \(2012\)](#), which is implemented through a two-stage procedure.

The First Stage: Measuring Firm Efficiency Score

According to the framework developed by [Demerjian et al. \(2012\)](#), the Data Envelopment Analysis (DEA) technique is employed to assess a firm's efficiency relative to other firms within the same industry. This is achieved by evaluating the relationship between the firm's generated outputs, primarily sales or revenues, and the inputs utilised to produce those outputs. The inputs represent the range of resources deployed by the firm to support revenue generation and operational activities. The model identifies seven key components used in measuring efficiency, comprising three variables derived from the statement of financial position and four variables from the income statement. Based on these elements, the firm's efficiency score is computed by solving a profit maximisation problem within the DEA framework.

$$\max v\theta = \text{Sales} / (v_1\text{CoGS} + v_2\text{SG\&A} + v_3\text{PPE} + v_4\text{OpsLease} + v_5\text{R\&D} + v_6\text{Goodwill} + v_7\text{OtherIntan}) \dots\dots (1)$$

$\max v\theta$: Firm Efficiency Score.

CoGS: Cost of Sold Goods.

SG&A: General and Administrative Expenses.

OpsLease: Operating Lease Expense.

R&D: Research and Development Costs.

PPE: Real Estate, Plant and Equipment (Fixed Assets).

Goodwill, and OtherIntan: Other Intangible Assets.

Upon extracting the required variables from the financial statements of Saudi firms, it was observed that certain firms did not disclose specific components, such as operating lease expenses, research and development expenditures, and goodwill. Due to the absence of these disclosures, these variables were excluded from the analysis. Consequently, the problem is reformulated as a profit maximisation framework, as outlined below:

$$\max v\theta = \text{Sales} / (v_1\text{CoGS} + v_2\text{SG\&A} + v_3\text{PPE} + v_4\text{OtherIntan}) \dots\dots (2)$$

The optimal weights assigned to the various resources are determined by evaluating each firm's resource utilisation relative to other firms operating within the same sector. In instances where a sector contains only a single firm, as in the case of the pharmaceutical sector, it is incorporated into the broader healthcare sector to ensure meaningful comparison. Following this adjustment, the efficiency scores of the seven firms are computed collectively (Demerjian et al., 2012). The efficiency scores generated through the data envelopment analysis range between zero and one, reflecting the constraints embedded within the optimisation model used to solve the profit maximisation problem. Firms that attain a score of one are considered fully efficient and lie on the efficiency frontier, representing optimal performance given the available inputs. In contrast, firms with efficiency scores below one are positioned beneath this frontier. Such firms are deemed inefficient and are required to either reduce operational costs or enhance revenue generation in order to improve their efficiency levels (Demerjian et al., 2012).

The Second Stage: Measuring the Managerial Ability Score

The managerial ability score is determined in accordance with the framework proposed by (Demerjian et al., 2012), whereby a regression analysis is performed using the efficiency score obtained in the first stage as the dependent variable. This is regressed against a set of firm-specific characteristics that are largely independent of executive influence. These determinants are represented by six distinct elements. The regression specification adopted in this study is presented as follows,

$$\text{Firm Efficiency} = \alpha_0 + \alpha_1 \text{Ln}(\text{Total Assets}) + \alpha_2 \text{Market Share} + \alpha_3 \text{Positive Free Cash Flow} + \alpha_4 \text{Ln}(\text{Age}) + \alpha_5 \text{Business Segment Concentration} + \alpha_6 \text{Foreign Currency Indicator} + \text{Year Indicators} + \varepsilon \dots (3)$$

Firm Efficiency: The efficiency score derived from the first stage.

Ln (Total Assets): The natural logarithm of total assets, used as a proxy for firm size.

Market Share: The proportion of the market controlled by the firm.

Positive Free Cash Flow: The natural logarithm of firm age.

Business Segment Concentration: Operating sectors, proxied by the foreign currency index.

Year Indicator: A dummy variable capturing year-specific effects.

$\alpha_0 \dots \alpha_6$: Estimated coefficients of the Tobit regression model.

As a result of the unavailability of data for operating sectors and foreign currency, these variables were excluded from the regression model. Consequently, the model specification was revised as follows:

Firm Efficiency = $\alpha_0 + \alpha_1 \text{Ln}(\text{Total Assets}) + \alpha_2 \text{Market Share} + \alpha_3 \text{Positive Free Cash Flow} + \alpha_4 \text{Ln}(\text{Age}) + \text{Year Indicators} + \varepsilon \dots \dots \dots (4)$

Regression equation No. (4) Was estimated using a Tobit regression model. Given that the dependent variable is constrained within the interval between zero and one, the residuals obtained from this regression capture the variation attributable to the firm's managerial team. These residuals are therefore interpreted as the managerial ability score (MA-Score), which serves as an indicator of executive managerial capability during the study period (Demerjian et al., 2012). This variable is denoted by the symbol "MAbility". Following the computation of the managerial ability measure, the observations were classified into two categories. The first category represents high managerial ability, consisting of cases where the value of the managerial ability variable exceeds zero, and is denoted as MAbilityH. The second category represents low managerial ability, comprising observations where the managerial ability value is less than or equal to zero, and is denoted as MAbilityL.

Measuring Investment (Dependent Variable)

The various dimensions of investment are assessed in line with prior research, including (Gan, 2019; Lee et al., 2018; Peters & Taylor, 2017; Yung & Chen, 2018), as outlined below and shown in Table 2 and Table 3.

Percentage of Foreign Ownership

The proportion of foreign ownership is measured as the ratio of shares held by foreign shareholders to the total number of outstanding shares (Chen et al., 2017). This variable is denoted by the symbol Fowner.

Saudi Economy

The growth of the economy is measured using the annual gross domestic product (GDP) growth rate. This variable is denoted by the symbol GDP.

Table 2: The Data of the Study Variables, Variable Symbols, and Measurement Methods

Variable	Code	Measurement Methods
Independent Variable		
Managerial Ability	MAbility	Expressed as an index of administrative ability (DEA score), it was measured according to the model of Demerjian et al. (2012) .
Dependent Variables		
foreign Investment	Fowner	
Saudi Economy	GDP	It is measured by the ratio of shares owned by shareholders (foreign ownership) to the total number of shares.
Regulatory Variables		It was measured in annual GDP
Company Size	FSize	
Market Value to Book Value of Equity	MTB	Measured by: natural logarithm of total assets at the end of the period under study.
Leverage	LEV	Measured by: the ratio of market value to book equity of the company.
Return on Equity	ROE	Measured by: total long-term debt ÷ total assets at the end of the period under study.
The Growth Rate of the Company's Assets	GRO	Measured by: Net operating income before tax ÷ Equity at the end of the period under study.
Average Returns	RET	The measurement was made by: (Total assets at the end of the period - Total assets at the beginning of the period) ÷ Total assets at the beginning of the period under study.
Cash Flow	CFC	Measured by: Average weekly returns on the company's stock during the year.
Earnings Quality	EQC	The cash flows were measured using the natural logarithm of net operating income + depreciation ÷ equity at the end of the period.
Bankruptcy Prediction Index	ZSC	Earnings quality was measured according to the previously mentioned earnings quality model, and the residual value was multiplied by (-1), so that a high value indicates a high earnings quality.
Company Loss	FLoss	The bankruptcy prediction index was measured according to the Altman (1968) model.
Cash	FCash	
Asset Turnover Rate	ATO	The company's loss was measured in natural logarithm.
The Age of the Company	FAge	Cash ÷ Book value of total assets at the end of the period under study.
	TANG	Sales ÷ Total Assets at the end of the period under study.
Tangible Assets Ratio	FSTD	The natural logarithm of the number of years from the incorporation of the company to the end of the year.

Short Term Debt	FLTD	Measured by: property, plant and equipment (PP&E) ÷ total assets at the end of the period under study.
Long Term Debt	KST	It was measured by: Δ change in current liabilities ÷ total fixed assets at the beginning of the period under study.
Financing Structure	SLACK	Measured by: Δ change in long-term liabilities ÷ total fixed assets at the beginning of the period under study.
The Ratio of Cash to Fixed Assets	OPC	The financing structure was measured by long-term liabilities ÷ (long-term liabilities + equity market value).
	CFOS	The ratio of cash to fixed assets was measured by (cash at the end of the year ÷ property, plant and equipment).
Operating Cycle	DIV	The operating cycle is measured by (inventory holding period + accounts receivable period).

Table 3: The Expected Relationships of Independent Variable and Control Variables with the Dependent Variables

Variable	Code	Expected Relationship with Dependent Variables
Managerial Ability	MAbility	+
Company Cash	FCASH	+
Foreign Investment	Fowner	+/-
Saudi Economy	GDP	+
Company Leverage	LEV	+/-
Return on Equity	ROE	+
The Company's Short-Term Debt	FSTD	+
The Company's Long-Term Debt	FLTD	-
Cash Flow	CFC	+
The Growth Rate of the Company's Assets	GRO	+
Average Returns	RET	+
Cash Dividends	DIV	-
The Rate of Return on Assets	ROE	-
Financing Structure	KST	+/-
Earnings Quality	EQC	+
Bankruptcy Prediction Index	ZSC	-
Company Loss	FLOSS	+/-
The Ratio of Cash to Fixed Assets	SLACK	-
Operating Cycle	OPC	+/-
The Ratio of Cash Flows to Sales	CFOS	-
Asset Turnover Rate	ATO	-
The Age of the Company	FAGE	-
Tangible Assets Ratio	TANG	-
The Rate of Return on Assets	ROE	-
Company Loss	FLoss	+/-
Saudi Economy GDP	CGM	+
Turnover Rate	TANG	+/-
The Rate of Return on Assets	ROE	-
The Growth Rate of the Company's Assets	GRO	+

Data Analysis

This procedure involves analysing an applied sample of firms listed on the Saudi stock market through empirical data examination and hypothesis testing. The statistical analysis was conducted using EViews software (version 12) to achieve the study's objectives, particularly in assessing the impact of managerial ability (MAbility) on direct foreign investment (Fowner). The Saudi economy is represented by the GDP over the study period (2009–2021). Prior to conducting the main analysis, descriptive statistics for the variables are first examined to provide an initial overview of the data. [Table 4](#) reports the descriptive statistics for the variables, allowing identification of both the highest and lowest mean values. The Jarque–Bera normality test indicates that the significance values exceed 0.05 for all variables. Accordingly, it can be inferred that the dataset does not exhibit substantial variation, follows an approximately normal distribution, and does not contain extreme outliers.

Table 4: Descriptive Statistics for the Variables

Variables	Mean	Max.	Min.	Std. Dev.	JB. Test	P-Value
MAbility	-0.2299	0.0807	-0.9891	0.3083	3.0022	0.2229
Fowner	9.1638	17.7600	0.0000	8.8388	2.1504	0.3412
GDP	2461949	2751831	1885745	290590	1.7223	0.4227

Source: Prepared by the researcher based on the 12 Eviews program.

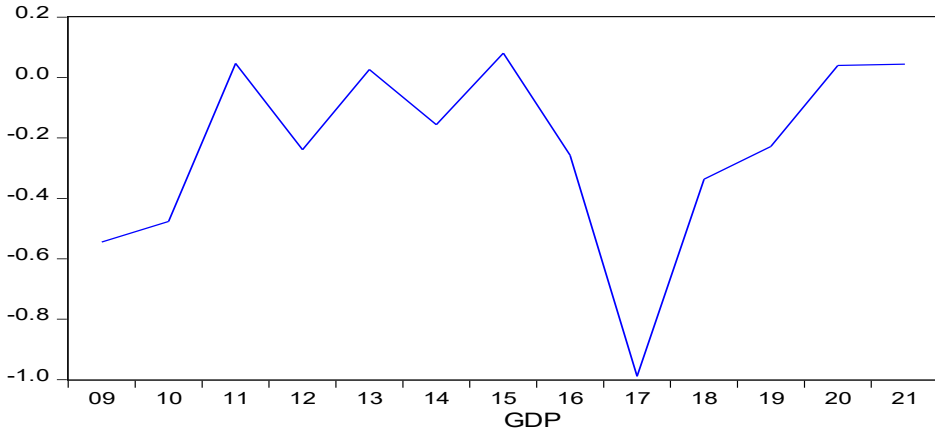
Presentation of Time Series Data

The graphical representation of each time series variable is presented, illustrating the historical progression of the variables over the study period (2009–2021). The trends observed across the variables are reviewed as follows.

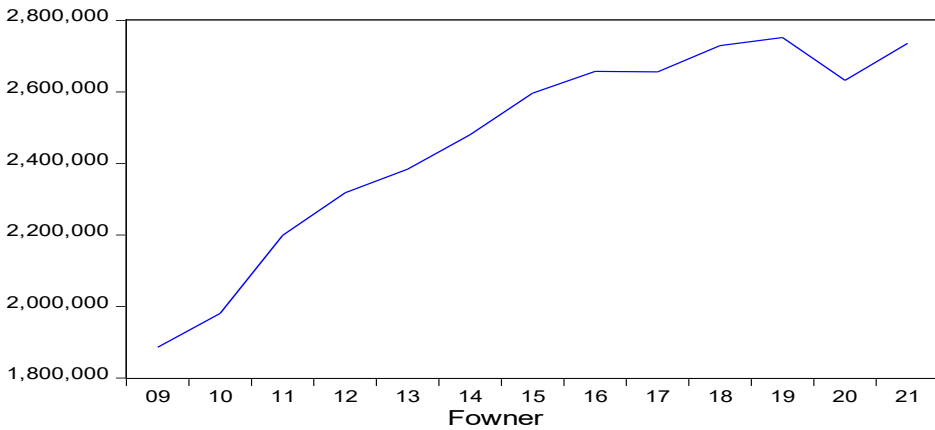
[Figure 2](#) illustrates the historical trajectories of the variables over the study period, showing the evolution of managerial ability (MAbility), direct foreign investment (Fowner), and the Saudi economy as represented by GDP. The [Figure 2](#) indicates noticeable fluctuations in economic growth across the examined period, with observable variations characterised by periods of increase and decline in different years. Time series data is typically associated with non-stationarity, reflected in variations in both the mean and variance over time due to underlying trends and structural changes. To address this issue, stability testing is essential to examine the properties of the time series, confirm their stationarity, and determine their order of integration prior to conducting further statistical analysis. This step is crucial to avoid obtaining biased or misleading results that do not accurately represent the true relationships among variables ([Raghuvanshi et al., 2022](#)). In this study, stationarity is assessed using two-unit root tests, namely the Augmented Dickey-Fuller (ADF) test and the Phillips–Perron test ([Paparoditis & Politis, 2018](#)).

The results presented in [Table 5](#) indicate that the managerial ability of executives (MAbility) and the Saudi economy, represented by GDP, are stationary. This is confirmed by the fact that the absolute values obtained from both the Augmented Dickey-Fuller and Phillips–Perron tests exceed the corresponding critical values at the 5% significance level. Accordingly, these variables are stationary in their level form. In contrast, the Fowner variable is found to contain a unit root, indicating non-stationarity.

MAbility



GDP



Fowner

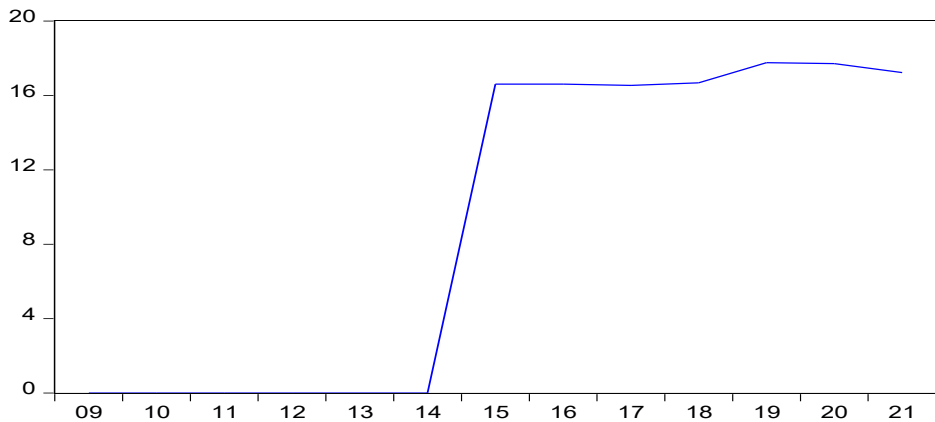


Figure 2: The Evolution of Variables during the Study Period

Source: Prepared by the researcher based on the 12 Eviews program.

Therefore, it is necessary to transform this variable by taking its first difference to achieve stationarity before proceeding with further analysis.

Table 5: The Results of the Unit Root Test for the Variables at the Level

Variable	(ADF) Test			(PP) Test		
	Computed Value	Probability	Decision	Computed Value	Probability	Decision
MAbility	-5.06	0.008	Stable	-2.982	0.043	Stable
Fowner	-3.798	0.969	Unstable	-1.855	0.936	Unstable
GDP	-2.015	0.039	Stable	-3.912	0.013	Stable

Source: Prepared by the researcher based on the 12 Eviews Program

After applying first differences to the previously non-stationary variable, direct foreign investment (Fowner), to eliminate the unit root, the results reported in the [Table 6](#) indicate that the absolute value of the Augmented Dickey-Fuller test exceeds the critical values at the 5% significance level. Similarly, the Phillips–Perron test also yields absolute values greater than the corresponding critical thresholds at the 5% level. This confirms that the variable has achieved stationarity at the first difference. Overall, the unit root test results reveal that most of the time series variables are non-stationary at their levels but become stationary after first differencing. This confirms the appropriateness of employing the Bounds Testing approach alongside the Autoregressive Distributed Lag (ARDL) model to examine long-run relationships among the variables, regardless of whether they are integrated at level I(0) or at first difference I(1).

Table 6: The Result of the Unit Root Test

Variable	(ADF) Test			(PP) Test		
	Computed Value	Probability	Decision	Computed Value	Probability	Decision
Fowner	-5.062	0.006	Stable	-3.501	0.031	Stable

Source: Prepared by the researcher based on the 12 Eviews Program

ARDL Model and Bounds Test

The ARDL model is a time-series econometric approach developed by [Pesaran and Shin \(1995\)](#), designed to examine the existence of long-run relationships among variables through a bounds testing procedure. Within the ARDL framework, the Bounds test can be applied irrespective of whether the underlying variables are stationary at level I(0) or at first difference I(1). This model is particularly useful for identifying both short-run dynamics and long-run equilibrium relationships among the variables ([Greene, 2000](#)).

Accordingly, the study's model specifications are formulated as follows,

$$\text{Fowner}_{it} = \beta_0 + \beta_1 \text{MAbility}_{it} + \varepsilon_{it} \quad (5)$$

$$\text{GDP}_{it} = \beta_0 + \beta_1 \text{MAbility}_{it} + \varepsilon_{it} \quad (6)$$

Thus, Equation No. (5) Specifies the first empirical model, which assesses the effect of managerial ability on indirect foreign investment. Equation No. (6) Presents the second model, which evaluates the impact of managerial ability on the Saudi economy, as represented by gross domestic product.

Fowner denotes foreign investment.

M-ability denotes the managerial ability of executives.

Gross Domestic Product (GDP) represents the Saudi economy.

β_0 represents the constant term of the model.

β_1 represents the coefficient of the independent variable.

ε_{it} represents the random error term of the model.

HYPOTHESES TESTING AND INTERPRETATION OF THE RESULTS

The present study utilises time series data covering the period from 2009 to 2021 to examine the impact of managerial ability (MAbility) on direct foreign investment (Fowner), as well as its relationship with the Saudi economy, represented by GDP. In this context, the ARDL approach is employed to evaluate the study's hypotheses. The first hypothesis posits that managerial ability (MAbility) has a statistically significant positive effect on foreign investment (Fowner). To assess this hypothesis, the ARDL model is applied to estimate the parameters of the first specification, and the corresponding results are presented as follows,

Choosing the Optimal Deceleration Period for First Model Differences

The selection of the optimal lag length in the ARDL model is guided by several key information criteria, with the preferred lag structure being the one that yields the lowest values across these measures (Ghouse, 2018). Table 7 presents the results of determining the optimal lag length for the model specifications.

Table 7: Results of the Criteria for Selecting the Optimal Deceleration Period for the First Model

Model	LogL	AIC	BIC	HQ	Adj. R-sq	Specification
1	-34.4598	6.2433	6.3645	6.1984	0.8790	ARDL (1, 1)
2	-34.4588	6.4098	6.5714	6.3500	0.8439	ARDL (1, 0)

Source: Prepared by the researcher based on the 12 Eviews program.

AIC: Akaike Information Criterion.

BIC: Bayesian Information Criterion.

HQ: Hannan-Quinn Criterion.

Table 7 presents the results of the selection criteria used to determine the optimal lag structure for the model. The preferred lag length is identified as the one that minimises the values of the information criteria, namely the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and the Hannan–Quinn Criterion (HQ), while simultaneously maximising the adjusted coefficient of determination (Adj R-squared). Based on these criteria, the results indicate that the optimal lag specification for the model is ARDL (1,1).

Bounds Test for the First Form

The ARDL framework involves examining the existence of a long-run equilibrium relationship among the model's variables through the application of the Bounds test (Hassan & Mohamed, 2024). This procedure is based on the following hypotheses,

- Null Hypothesis (H-0): There is no bounds among the model variables (there is no long-term equilibrium relationship)
- Alternative Hypothesis (H-1): Existing bounds among the model variables (existing a long-term equilibrium relationship).

When the calculated F-statistic exceeds the upper critical bound, the null hypothesis is rejected in favour of the alternative hypothesis, indicating the existence of a long-run relationship among the variables in the model (Kamel & Abonazel, 2023). Table 8 presents the results of the Bounds test for the first study model specified in Equation No. (5).

The results indicate that the calculated F-statistic value is 5.7943, which exceeds both the lower bound (3.62) and the upper bound (4.16) critical values. This confirms the presence of a long-run relationship among the variables in the model. Accordingly, a long-term equilibrium relationship exists between managerial ability (MAbility) and direct foreign investment (Fowner). Consequently, the null hypothesis, which states that no long-run relationship exists among the variables, is rejected, while the alternative hypothesis, which supports the existence of such a relationship, is accepted.

Table 8: Bounds Test Results

Test Statistic	Value	Significant Level	I (0)	I (1)
F-Statistic	5.7943	5%	3.62	4.16

Source: Prepared by the researcher based on the 12 Eviews program.

ARDL Model Estimation Results for the First Hypothesis

The ARDL model is employed to estimate the parameters of the first specification in order to assess the validity of the first hypothesis. Table 9 presents the results of

estimating the parameters of the first hypothesis model using the ARDL approach. The findings reveal that the model is statistically significant, as the probability value associated with the Fisher F-statistic is below the 5% threshold. This indicates a statistically significant effect of managerial ability (MAbility) on direct foreign investment (Fowner). The Breusch–Pagan–Godfrey test results show no evidence of heteroskedasticity, as the corresponding p-value exceeds 5%, confirming homoscedasticity of the residuals. In addition, the Jarque–Bera normality test indicates that the residuals are normally distributed, with a significance value of 0.3413, which is greater than 5%. This supports the acceptance of the null hypothesis and reflects the reliability of the model.

Table 9: ARDL Model Estimation Results (1,1)

Variable	Coefficient t	Std. Error	T-Statistic	P-Value
FOWNER(-1)	0.8741	0.1737	5.0334	0.0007
MABILITY	0.0129	0.0053	2.4396	0.0102
MABILITY(-1)	0.2677	0.0689	3.8853	0.0014
C	3.2185	2.1132	1.5230	0.1621
Model Efficiency Quality Standards				
R-Squared	0.9009	Adjusted R-Squared	0.8790	
F-Statistic	12.8723	Prob.(F-Statistic)	0.0023	
Breusch-Pagan-Godfrey for Heteroskedasticity	0.0613	P-Value	.09698	
Jarque-Bera Test	2.1496	P-Value	0.3413	
Durbin-Watson D-Statistic	2.0103			

Source: Prepared by the researcher based on the 12 Eviews program.

The Durbin–Watson statistic is close to 2, suggesting the absence of serial correlation among the residuals. Furthermore, the adjusted coefficient of determination (Adj R²) is approximately 88%, indicating that the independent variable explains a substantial proportion of the variation in direct foreign investment, while the remaining variation is attributed to other unexplained factors. To further validate the robustness and stability of the ARDL model, the cumulative sum of recursive residuals (CUSUM) test is employed. This test assesses the stability of the model’s parameters by ensuring that no structural breaks exist in the data. The model is considered stable if the CUSUM plot remains within the 5% critical boundaries, whereas movement outside these bounds indicates parameter instability as shown in [Figure 3 \(Abonazel & Shalaby, 2020\)](#).

The estimated parameters of the ARDL model lie within the critical bounds at the 5% significance level, indicating that the model exhibits stability and consistency across both the short-run and long-run relationships. The analysis conducted to test the first hypothesis confirms the existence of a bounds relationship between the dependent variable (Fowner) and the independent variable (MAbility) in both the short and long run. The statistical significance of managerial ability (MAbility), as reported in [Table](#)

5, provides empirical support for the acceptance of the first hypothesis. This implies that managerial ability exerts a positive influence on foreign investment (Fowner). The estimated regression coefficient is 0.012898 and is statistically significant at a level below 5%, thereby confirming the validity of the first hypothesis.

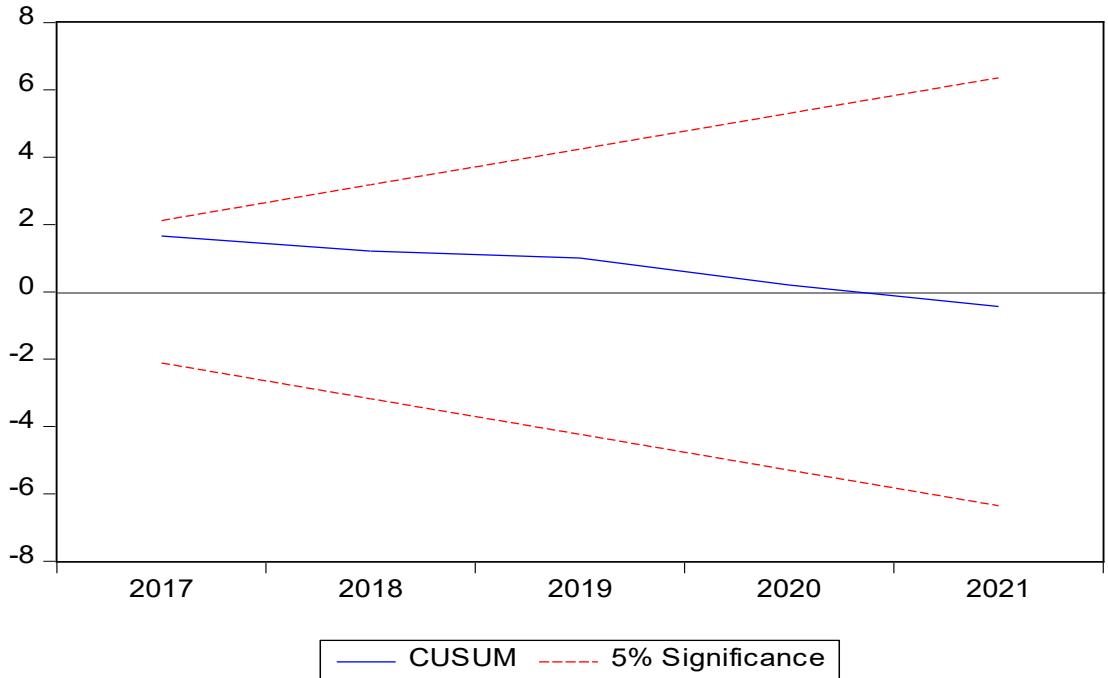


Figure 3: CUSUM Test Results for the First Model

Source: Prepared by the researcher based on the 12 Eviews program.

The Second Hypothesis Test

The second hypothesis posits that managerial ability (MAbility) has a statistically significant positive impact on the Saudi economy, as measured by GDP. To examine this hypothesis, the ARDL model is applied to estimate the parameters of the second specification, and the corresponding results are presented as follows.

Choosing the Optimal Deceleration Period for the Second Model Differences

The selection of the optimal lag length in the ARDL model is guided by several key criteria, with the optimal lag structure being identified as the one that produces the lowest values across these measures. The [Table 10](#) presents the results of determining the optimal lag length for the model specifications. The results presented in [Table 10](#) illustrate the selection of the optimal lag length for the model. The preferred lag structure is identified as the one that minimises the values of the information criteria, namely the AIC, the BIC, and the Hannan–Quinn Criterion (HQ), while simultaneously

maximising the adjusted R-squared (Adj R²). Based on these criteria, the optimal lag specification is determined to be ARDL (1,2).

Table 10: Results of the Criteria for Selecting the Optimal Deceleration Period for the Second Model

Model	LogL	AIC	BIC	HQ	Adj. R-sq	Specification
1	-134.7843	25.0517	25.1602	24.9833	0.8984	ARDL(1, 2)
3	-134.6936	25.3988	25.5797	25.2848	0.8667	ARDL(1, 0)
2	-134.6958	25.2174	25.3621	25.1262	0.8857	ARDL(1, 1)

Source: Prepared by the researcher based on the 12 Eviews program.

Bounds Test for the Second Hypothesis

The ARDL model involves assessing the presence or absence of a long-run equilibrium relationship among the variables through the application of the Bounds test. [Table 11](#) presents the results of the Bounds test for the second model specified in Equation No. (6).

Table 11: Bounds Test Results for the Second Hypothesis

Test Statistic	Value	Significant Level	I(0)	I(1)
F-statistic	7.7745	5%	4.94	5.58

Source: Prepared by the researcher based on the 12 Eviews program.

The results indicate that the calculated F-statistic is 7.7745, which exceeds both the lower bound (4.94) and the upper bound (5.58) critical values. This confirms the presence of cointegration among the variables, implying a long-run equilibrium relationship between managerial ability (MAbility) and the Saudi economy as represented by GDP. Accordingly, the null hypothesis, which states that no long-run relationship exists among the variables, is rejected, while the alternative hypothesis, which supports the existence of such a relationship, is accepted.

Results of Estimating ARDL Model for the Second Hypothesis

The ARDL model was employed to estimate the parameters of the second model in order to test the validity of the second hypothesis. [Table 12](#) presents the results of the model estimation. Moreover, [Table 12](#) presents the estimated results of the second hypothesis model using the ARDL approach. The findings can be summarised as follows:

- The analysis indicates that the model is statistically significant, as the p-value of the Fisher F-statistic is below 5%. This confirms that managerial ability (MAbility) has a statistically significant effect on GDP.

- The Breusch-Pagan-Godfrey test results show no evidence of heteroskedasticity, with a p-value of 0.7222, which exceeds the 5% significance level.
- The Jarque-Bera normality test results suggest that the residuals are normally distributed, as the p-value is 0.1017, which is greater than 5%. This supports the adequacy and reliability of the model.
- The Durbin-Watson statistic indicates the absence of serial correlation, as its value is close to 2.
- The adjusted coefficient of determination (Adj R²) is 93%, indicating that the independent variable explains approximately 93% of the variation in GDP, while the remaining variation is attributable to other factors.

To further confirm the robustness of the ARDL model, the CUSUM test is applied to examine structural stability and ensure consistency of both short-run and long-run parameters.

Table 12: Results of Estimating ARDL Model (1,2) for the Second Hypothesis

Variable	Coefficient	Std. Error	T-Statistic	P-Value
GDP(-1)	0.8152	0.0664	12.2709	0.0000
MABILITY	47790.22	20413.31	2.3411	0.0138
MABILITY(-1)	10146.85	59416.08	0.1708	0.8753
MABILITY(-2)	-31289.38	59577.74	-0.5252	0.6358
C	531209.70	162747.0 0	3.2640	0.0098
Model Efficiency Quality Standards				
R-Squared	0.9436	Adjusted R-Squared	0.9311	
F-Statistic	75.28.96	Prob.(F-Statistic)	0.00002	
Breusch-Pagan-Godfrey for Heteroskedasticity	3.6625	P-Value	0.7222	
Jarque-Bera Test	4.5696	P-Value	0.1017	
Durbin-Watson D-Statistic		1.9582		

Source: Prepared by the researcher based on the 12 Eviews program.

It is evident from the [Figure 4](#) that the estimated parameters of the ARDL model for the second hypothesis remain within the critical bounds at the 5% significance level, indicating stability and consistency of the model in both the short and long run. The results further confirm the existence of a bounds relationship between the dependent variable, GDP, and the independent variable, managerial ability of executives (MAbility), across both time horizons. The statistical significance of MAbility, as reported in [Table 12](#), supports the acceptance of the second hypothesis, demonstrating that managerial ability has a positive effect on GDP. The estimated regression coefficient of 47,790.22, significant at the 5% level, provides additional evidence supporting the validity of the second hypothesis.

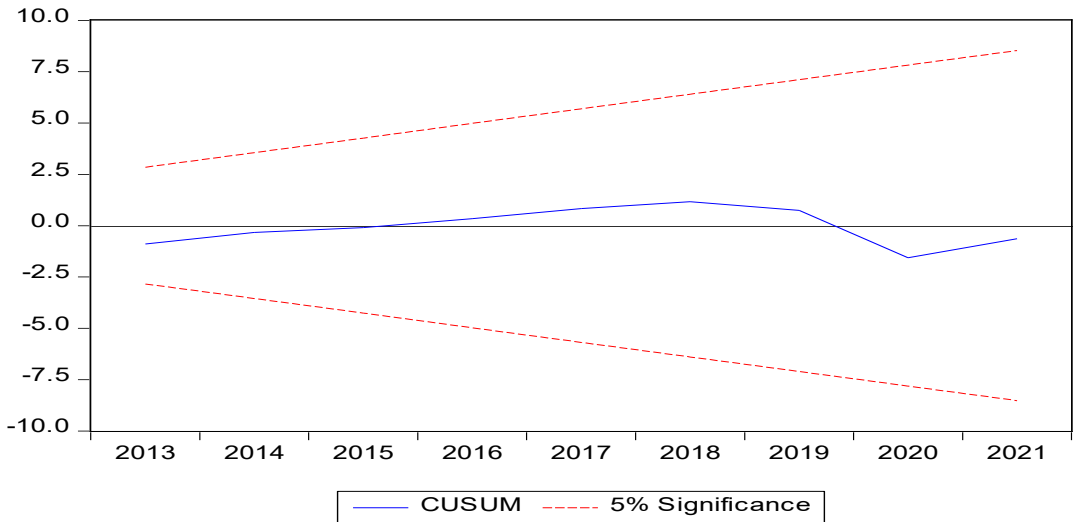


Figure 4: CUSUM Test Results for the Second Model

Source: Prepared by the researcher based on the 12 Eviews program.

RESULTS

These are the results of this research:

- 1- The average managerial ability of executives in Saudi Arabia is comparable to that of executives in economically developed countries according to the model of [Demerjian et al. \(2012\)](#), which has an impact on the domestic product.
- 2- High managerial ability leads to a positive effect on foreign investment.
- 3- The dependent variable, the Saudi economy as represented by the growth of the domestic product, is positively influenced by managerial ability and foreign investment.
- 4- All hypotheses are accepted based on the hypothesis testing results.
- 5- Managerial ability of executives plays a crucial role in attracting foreign investment and enhancing the growth of the country's domestic product.

In summary, the findings indicate that managerial ability has a significant impact on a country's economy. Moreover, these results are consistent with the findings of [Khan et al. \(2022\)](#). The study further shows that managerial ability attracts foreign funding, which aligns with the findings of [Choo et al. \(2021\)](#).

RECOMMENDATIONS

Following are the recommendations based on the results:

- 1- The Board of Directors should focus on improving the processes of selecting, appointing, and incentivising executives in Saudi Arabian firms in order to achieve organisational objectives and protect shareholder rights, thereby contributing to a positive impact on the economy.

- 2- Executives with high managerial ability should prioritise shareholder interests by minimising various forms of risk, which in turn supports positive economic outcomes.
- 3- There is a need to encourage executives of firms listed on the Saudi stock market to adhere to corporate governance principles, particularly ensuring the genuine independence of the Board of Directors rather than a merely formal one.
- 4- Attracting highly capable executives can assist Saudi companies in increasing foreign investment in alignment with Saudi Arabia's Vision 2030, thereby fostering a positive impact on the economy.

RECOMMENDATIONS FOR FUTURE STUDIES

Based on the design of the current study and its results, several avenues for future research can be identified:

- 1- The current study focuses on examining the effect of managerial ability on attracting foreign investment. Future research could extend this by investigating its impact on other firm-level aspects, such as determinants of the Islamic economy, including corporate governance mechanisms, firm value, audit fees, disclosure practices, cost of capital, and the risk of stock price collapse.
- 2- Future studies may explore the impact of managerial ability on the Saudi economy through additional dimensions such as tax avoidance, corporate performance, risk-taking behaviour, credit risk identification, innovation performance, cash holdings, credit ratings, growth opportunities, financial constraints, and dividend distribution policies within the Saudi context.
- 3- The present study is limited to specific measures of investment aspects, each assessed using a particular method. Future research could produce different findings by examining alternative dimensions of investment or by employing different measurement approaches.

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