



The Economic Diversification Strategy and its Impact on Economic Growth in the Kingdom of Saudi Arabia

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Abstract: Energy is considering of modern life, essential for operating all sectors and managing daily affairs. It is a vital resource that nations strive to secure, whether for powering factories, transportation, or other energy-intensive activities that contribute to human production. Energy comes in diverse forms, including oil, coal, gas, and renewable sources such as solar, wind, and hydroelectric power. The research is based on a descriptive analytical methodology that combines a literature review and data analysis using linear regression models and time series analysis, with data processing via Excel, SPSS, and E-Views programs to conduct accurate statistical analyses and test hypotheses at significance levels of 0.01 and 0.05. The study is limited in time to two periods (2000-2008) and (2015-2024) coinciding with influential economic crises, and in terms of location to the Kingdom of Saudi Arabia. Data collection is based on official sources such as the World Bank, the Saudi Ministry of Finance, the General Authority for Statistics, OPEC, and the US Energy Information Administration, in addition to previous studies and relevant references. Two main hypotheses were put forward: that there is no statistically significant relationship between the economic diversification strategy and the gross domestic product, and that there is no statistically significant relationship between the average annual oil price and the GDP growth rate. The research aims to identify the economic diversification strategies followed by the Kingdom and measure their effectiveness in expanding the production base, reducing the impact of oil price fluctuations, and achieving sustainable economic development. It also seeks to analyze the relationship between oil price volatility and economic growth in the Kingdom of Saudi Arabia. The most important findings of the research were: - The results generally show that some sectors contribute to GDP growth, albeit with a relatively small contribution compared to the oil sector, given Saudi Arabia's heavy reliance on it. This demonstrates the dominance of oil sector revenues and profits in driving GDP growth. - The agricultural sector's value added had a very significant positive impact on GDP during the period 2000-2008, and this positive impact is also expected to continue during the period 2015-2024. - The added value of the industrial sector had a significant positive impact on GDP during the period 2000-2008, but no statistically significant impact was observed between 2015 and 2024. - Exports and imports had no statistically significant impact on GDP during the period 2000-2008, and the value added of exports and imports also had no statistically significant impact on GDP during the period 2015-2024. - Thus, the study proved the first hypothesis incorrect, which states that there is no statistically significant relationship between the economic diversification strategy and a set of economic variables (economic growth, production rates, national consumption volume, and national investment volume) in the Kingdom of Saudi Arabia. - No statistically significant impact of oil price, investment rate, and consumption rate on GDP during the period (2000-2008). - A very significant positive impact of oil price on GDP during the period (2015-2024). - A significant positive impact of consumption rate on GDP during the period (2015-2024). - No statistically significant impact of investment rate on GDP during the period (2015-2024). Thus, the study disproved the second hypothesis, which stated that there is no statistically

significant relationship between the average annual price of a barrel of oil and the annual GDP growth rate in the Kingdom of Saudi Arabia.

Keywords: Economic diversification, Strategy Economic growth, Kingdom of Saudi Arabia

INTRODUCTION

Energy is one of the main pillars upon which developed nations rely to operate all their sectors, in addition to its vital importance in managing daily life. It is also one of the most important elements that countries strive to provide for use in operating factories, various means of transportation, and many other applications that require energy and contribute to human material production. Energy comes in various forms, such as oil, coal, gas, and renewable energy sources like solar, wind, and hydroelectric power, among others.

While each of these resources varies in terms of availability and supply, oil is considered the primary source of energy and a key driver of economic growth. In this era, oil is classified as the foremost strategic commodity and a raw material sought after by all nations (Belkacem, 2019). Oil has held a prominent global position since its initial discovery in Pennsylvania, USA, in 1859, becoming the backbone of many countries. Since its discovery, it has been a vital resource upon which industrialized nations have relied to fuel their economic, social, political, and military activities.

With the beginning of the 20th century, the demand for oil increased, and its importance to the world as a whole grew. This prompted some countries to explore for it, and it was discovered in several other regions of the world, including a number of Arab countries. Then, in 1960, OPEC was established, bringing together a group of oil-producing countries from the Middle East and North Africa. Its importance increased further after the October War of 1973 in the Middle East. Oil-consuming countries did not stand idly by but rather tried hard to find solutions that would enable them to obtain it at reasonable prices according to their capabilities and availability. Since then, political conditions, economic growth rates, and international aggregate supply have become among the most important determinants of crude oil prices in global markets. The global oil markets are characterized by instability, as sometimes there is a recovery in demand causing an increase in prices, and at other times there is a contraction in demand, which leads to a decrease in prices, which has made it the most volatile commodity in terms of its prices (Ben Musa, 2021).

Undoubtedly, the oil sector in the Kingdom of Saudi Arabia is the main sector that has controlled the Kingdom's economy since the discovery of oil in the seventies of the last century until the present time, as the oil sector contributes about 61% of the Kingdom's total GDP, which amounted to about 1.8 billion riyals in 2008. This has made the Kingdom's economy very sensitive to the fluctuations of the global market for oil prices, which have fluctuated up and down according to global events, which has cast a shadow on the Kingdom's economy, the latest of which was what the world witnessed in 2020, due to the Coronavirus pandemic and its impact on global energy demand, and the restrictions imposed by governments on travel around the world, the Kingdom of Saudi Arabia faces a clear challenge on three fronts: creating new job opportunities, the depletion of oil resources, and the fluctuations of the local economy. Because the oil sector generates a small number of jobs and is a depletable resource, the Kingdom needs to develop non-oil sectors before its oil reserves run out. This has been one of the strategic goals adopted by the Kingdom's

economic development plans since the beginning of the seventies, up to the present time. These plans aimed to encourage growth in non-oil sectors and increase their contribution to the gross domestic product. Economic diversification means diversifying exports and diversifying production structures to provide alternatives to income instead of relying solely on oil as the main source of national income revenue (Marwa Hassan, 2025).

RESEARCH PROBLEM

Although the Kingdom of Saudi Arabia enjoys a strong economy, this economy has long been heavily dependent on the oil sector as a primary source of national income, making it vulnerable to fluctuations resulting from the volatility of oil prices in global markets, especially in light of economic shocks and global crises, which negatively impacts economic growth rates and GDP.

In this context, Saudi Arabia has adopted a comprehensive strategy in recent years, particularly under its Vision 2030, aimed at diversifying its economic base and reducing dependence on oil by developing non-oil sectors such as industry, agriculture, trade, and services, and by promoting domestic and foreign investment.

Although the Saudi economy has achieved remarkable growth rates in some years, driven by the growth of the non-oil sector and improved global demand, questions remain regarding the effectiveness of economic diversification policies in achieving sustainable economic growth and their ability to mitigate the negative effects of oil price volatility on GDP. Therefore, the research problem is posed as follows:

To what extent has the economic diversification strategy contributed to economic growth in Saudi Arabia, and what impact has oil price volatility had on this growth?

The following questions arise from this issue:

1. What impact has the economic diversification strategy had on Saudi Arabia's GDP?
2. Does the relationship between economic diversification and economic growth differ between the periods 2000-2008 and 2015-2024?
3. What impact has oil price volatility had on Saudi Arabia's economic growth?

RESEARCH OBJECTIVES

The main objective of this study is to identify the economic diversification strategies employed by the Kingdom of Saudi Arabia to achieve maximum economic growth. This objective is achieved through the following sub-objectives:

1. Analyzing the economic diversification strategies in the Kingdom of Saudi Arabia.
2. Measuring the impact of economic diversification on the Gross Domestic Product (GDP).
3. Studying the impact of oil price volatility on economic growth.
4. Comparing the results for the periods (2000-2008) and (2015-2024).

RESEARCH SCOPE

Timeframe

The study's scope is defined by the timeframe for measuring and analyzing the variables under study, which spans two periods: the first period is (2000-2008), and the second period is (2015-2024). These two periods were chosen to represent two distinct economic phases. The first period witnessed the repercussions of the 2008 global financial crisis and the accompanying sharp decline in oil prices, which impacted the economies of countries dependent on crude oil exports, including the Kingdom of Saudi Arabia. The second period represents the economic transformation phase during which the Kingdom of Saudi Arabia adopted new policies and strategies aimed at diversifying its economic base and reducing dependence on the oil sector, within the framework of Vision 2030.

Spatial Framework

The study is limited to the Kingdom of Saudi Arabia, with the aim of analyzing economic diversification strategies and the impact of oil price volatility on economic growth in the Kingdom of Saudi Arabia.

Source of Data

This research relies on secondary data, specifically published financial and economic data issued by several official local and international bodies, most notably the World Bank, the Ministry of Finance in the Kingdom of Saudi Arabia, the Saudi General Authority for Statistics, the Organization of the Petroleum Exporting Countries (OPEC), and the U.S. Energy Information Administration (EIA). The study also utilizes secondary sources such as books and scientific references, academic journals, published research papers, conference papers, and previous studies relevant to the research topic. This is done to develop the theoretical framework of the study and support its applied and analytical aspects.

Study Hypotheses

- First Hypothesis (H_0): There is no statistically significant relationship between the economic diversification strategy, represented by the economic variables (industrial sector, agricultural sector, exports, and imports), and the Gross Domestic Product (GDP) in the Kingdom of Saudi Arabia.
- Second Hypothesis (H_0): There is no statistically significant relationship between the average annual price per barrel of oil and the annual GDP growth rate in the Kingdom of Saudi Arabia.

METHODOLOGY

The study relied on the use of several descriptive and quantitative data analysis tools and methods, using percentages, arithmetic means, and general time trend equations, in addition to using the multiple stepwise regression analysis method to estimate some economic relationships related to the subject of the study, and to identify the most

important factors affecting each case and some economic indicators to analyze and present the most important results.

The study relies on the use of absolute values for economic variables, which include gross domestic product, production of the industrial and agricultural sectors, export and import values, and the average annual price of a barrel of oil, in order to measure the direct impact of these variables on gross domestic product. The natural logarithm (Ln) was used for these variables to reduce variance and achieve time series stability, which facilitates data analysis and improves the accuracy of the results.

RESEARCH RESULTS AND DISCUSSION

First - Measuring and Analyzing the Economic Diversification Strategy and its Impact on Economic Growth in the Kingdom of Saudi Arabia

The economic diversification strategy in the Kingdom of Saudi Arabia aims to reduce dependence on oil as the sole primary source of Saudi GDP, and to develop non-oil sectors such as (tourism, technology, renewable energy, industry, agriculture, entertainment, etc.) to create sustainable economic growth, increase the contribution of the private sector, attract investments, and provide new job opportunities. This will enhance social and economic stability and achieve economic balance in the Kingdom by transforming it into a global economic powerhouse. This section deals with the study and analysis of the economic diversification strategy and its impact on economic growth in the Kingdom of Saudi Arabia.

To understand the study variables, a multiple linear regression model must be formulated and estimated to assess the impact of economic sectors on the Gross Domestic Product (GDP) in billions of dollars in Saudi Arabia during the periods 2000-2008 and 2015-2024. The dependent variable is the agricultural sector, and the following are the independent variables:

AGR: Added value of the agricultural sector (in billions of dollars).

IND: Added value of the industrial sector (in billions of dollars).

IMP: Total imports (in billions of dollars).

EXP: Total exports (in billions of dollars).

Descriptive Analysis of the Study Variables During the Periods (2000-2008) and (2015-2014)

Some descriptive measures were studied to interpret and understand the relationship between the variables under study, namely the arithmetic mean, median, and standard deviation, which are summarized as follows:

1- Descriptive Statistical Measures of the Study Variables During the Period (2000-2008)

Table (1) presents the descriptive statistical measures of the study variables during the study period (2000-2008), represented by the arithmetic mean, median, and standard

deviation, which are considered basic tools for understanding the nature of economic data, measuring its general trend, and the extent of its dispersion and fluctuation over time. These indicators help in forming a preliminary picture of the behavior of the variables before moving on to advanced econometric analysis, where the gross domestic product shows an arithmetic mean of (297.55).

This reflects the general level of economic activity during the study period, while the median reached (258.74), which is less than the arithmetic mean, indicating that the distribution of GDP values tends towards positive skewness, meaning that there were years in which GDP recorded relatively high levels that affected raising the overall average. The standard deviation reached (119.83), which is a relatively high level, indicating the existence of clear fluctuations in GDP during this period. This is attributed to the economy being greatly affected by fluctuations in oil prices and global economic cycles.

The agricultural sector recorded a mean of (10.31) and a median of (10.01), with a very low standard deviation of (0.95). The close convergence between the mean and median indicates that the data for this variable are distributed almost symmetrically, without any significant outliers. The clear decrease in standard deviation reflects a high degree of relative stability in the agricultural sector's contribution to the economy during the period under study. This reflects the limited structural changes in this sector compared to other economic sectors. The mean for the industrial sector was (177.69). While the median was recorded at (146.72), which indicates a significant difference between the values recorded during the study period, the standard deviation reached (88.87), which is a relatively high level, indicating the fluctuation in the contribution of the industrial sector to the gross domestic product. This fluctuation is attributed to the industrial sector's connection to changes in government investments, energy prices, and global demand, in addition to the industrial policies followed during that period. Import data showed an arithmetic mean of (85.24), a median of approximately (62.35), and a standard deviation of (49.01). It is noted that the arithmetic mean is higher than the median, indicating that there were high import values in some years that led to raising the overall average. The average standard deviation also reflects a degree of volatility in imports, which may be a result of changes in domestic demand, income levels, and fluctuations in commodity prices in global markets.

Table (1): Statistical Measures for the Period (2000-2008)

Variable	Arithmetic Mean	Median	Standard Deviation
GDP	297.55	258.74	119.83
Agriculture	10.31	10.01	0.95
Industry	177.69	146.72	88.87
Imports	85.24	62.35	49.01
Exports	160.98	131.92	89.75

Source: SPSS program outputs for data in Table (1) in the appendix.

While exports recorded an arithmetic mean of (160.98), and a median of (131.92), with a relatively high standard deviation of (89.75), these results indicate that exports experienced significant fluctuations during the study period. This mainly indicates that exports depend heavily on oil, and are directly affected by fluctuations in its prices in global

markets. Also, the difference between the arithmetic mean and the median indicates the uneven distribution of exports and the existence of years with high export performance.

In general, the results show that there is a clear disparity in the degree of stability and volatility among the study variables during the period (2000-2008). The agricultural sector was characterized by a high degree of stability, while the gross domestic product, the industrial sector, and exports showed high levels of volatility. These indicators also point to the rentier nature of the economy and its relative dependence on external factors, especially oil prices.

2- Descriptive Statistical Measures of the Study Variables during the Period (2015-2024)

Table (2) illustrates the descriptive statistical measures of the study variables during the period (2015-2024), namely the arithmetic mean, median, and standard deviation. These measures aim to analyze the fundamental characteristics of the economic data, measure its general trend, and assess its dispersion and volatility over time. This period is of particular importance due to the significant structural and economic transformations it witnessed, most notably the fluctuations in oil prices, economic reform programs, and the long-term development vision.

The gross domestic product shows a remarkable increase in the arithmetic mean of approximately (934.52), compared to the previous period, which reflects the significant growth in the size of the economy during this stage. The median reached (887.73), which is relatively close to the arithmetic mean, indicating a more symmetrical distribution of GDP values compared to the period (2000-2008). In contrast, the standard deviation recorded a high value of (224.93), indicating the continued existence of fluctuations in GDP levels. Meanwhile, the arithmetic mean for the agricultural sector reached (23.90), with a median of (22.26), and a standard deviation of (4.27). The arithmetic mean is noted to be higher compared to the previous period, reflecting a relative improvement in the performance of the agricultural sector.

The convergence between the mean and the median also indicates a relative stability in the contribution of the agricultural sector, although the relative increase in the standard deviation compared to the first period indicates a slight increase in the degree of fluctuation, which may be related to the change in agricultural policies. The industrial sector recorded an arithmetic mean of (431.51), and a median of (420.49), with a relatively high standard deviation of (130.15). These values indicate a clear expansion in industrial activity during the period (2015-2024), driven by economic diversification programs and an increase in industrial investments.

The relatively high standard deviation also reflects the continued volatility in the performance of the industrial sector, as a result of its being affected by economic cycles and changes in domestic and global demand. Meanwhile, the arithmetic mean for imports reached (233.79), with a median of (216.25), and a standard deviation of (43.85). These results indicate a significant increase in the volume of imports compared to the previous period, with a relatively lower degree of volatility. This reflects an increase in domestic demand, the expansion of economic activity, and an improvement in foreign trade management. Exports showed an arithmetic mean of (290.42), with a median of (286.18),

and a standard deviation of (83.84). The large convergence between the arithmetic mean and the median is noted, indicating a more stable distribution of export values during this period. The standard deviation also indicates moderate volatility, reflecting the continued vulnerability of exports to external factors, although their stability has improved somewhat due to the diversification of the export base compared to the previous period.

Compared to the period (2000-2008), the results for the period (2015-2024) show a significant increase in the arithmetic means of all variables, reflecting economic growth and the expansion of productive and commercial activities. The results also indicate a relative improvement in the stability of some variables, such as exports and imports, while volatility remains evident in GDP and the industrial sector.

Table (2): Statistical Measures for the Period (2015-2024)

Variable	Arithmetic Mean	Median	Standard Deviation
GDP	934.52	887.73	224.93
Agriculture	23.90	22.26	4.27
Industry	431.51	420.49	130.15
Imports	233.79	216.25	43.85
Exports	290.42	286.18	83.84

Source: SPSS program outputs for data in Table (1) in the appendix.

Second - General Time Trend Equations for the Most Important Factors Affecting the Gross Domestic Product (GDP) of the Kingdom of Saudi Arabia during the Two Study periods (2000-2008) and (2015-2024)

The Period (2000-2008)

- Development of the Value of GDP:

A study of the development of the value of GDP during the period (2000-2008), as shown in Table (1) of the Appendix, that it ranged between a minimum of approximately \$ 184.14 billion in 2001 and a maximum of approximately \$ 519.80 billion in 2008, with an overall average of approximately \$ 297.55 billion during the study period. Estimating the general time trend equation for the value of GDP during that period shows, as shown in Table (1) of the Appendix, that it increased by approximately \$ 41.7 billion. The coefficient of determination (R^2) was approximately 0.91, meaning that time accounts for 91% of the change, while 9% of the changes are due to other factors not included in the estimated model. The model was found to be significant at a level of 0.01.

- The Development of the Added Value of the Agricultural Sector:

By studying the development of the added value of the agricultural sector during the period (2000-2008), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$9.26 billion in 2000, and a maximum of about \$ 11.52 billion in 2008, with an overall average estimated at about \$ 10.34 billion during the study period. By estimating the equation of the general time trend of the added value of the agricultural sector during that period, it became clear from Table No. (3) that it had increased by about \$ 0.34 billion, while the coefficient of determination (r^2) reached about 0.91, meaning that

time affects 90% and that 10% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- *The Development of the Added Value of the Agricultural Sector:*

By studying the development of the added value of the agricultural sector during the period (2000-2008), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$9.26 billion in 2000, and a maximum of about \$ 11.52 billion in 2008, with an overall average estimated at about \$ 10.34 billion during the study period. By estimating the equation of the general time trend of the added value of the agricultural sector during that period, it became clear from Table No. (3) that it had increased by about \$0.34 billion, while the coefficient of determination (r^2) reached about 0.91, meaning that time affects 90% and that 10% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- *Development of the Added Value of the Industrial Sector:*

By studying the development of the added value of the industrial sector during the period (2000-2008), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$ 93.51 billion in 2001, and a maximum of about \$ 345.3 billion in 2008, with an overall average estimated at about \$ 177.69 billion during the study period. By estimating the equation of the general time trend of the added value of the industrial sector during that period, it became clear from Table No. (3) that it had increased by about \$ 30.7 billion, while the coefficient of determination (r^2) reached about 0.89, meaning that time affects 89% and that 11% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- *Development of National Imports:*

By studying the development of national imports during the period (2000-2008), it became clear from Table No. (1) in the appendix that they ranged between a minimum of about \$ 44.06 billion in 2000, and a maximum of about \$ 176.8 billion in 2008, with an overall average of about \$85.24 billion during the study period. By estimating the equation of the general time trend of national imports during that period, it became clear from Table No. (3) that they had increased by about \$ 16.5 billion, while the coefficient of determination (r^2) reached about 0.85, meaning that time affects 85% and that 15% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- *Development of National Exports:*

By studying the development of national exports during the period (2000-2008), Table No. (1) in the appendix showed that they ranged between a minimum of about \$ 75.98 billion in 2001, and a maximum of about \$ 322.82 billion in 2008, with an overall average of about \$160.98 billion during the study period. By estimating the equation of the general time trend of national exports during that period, Table No. (3) showed that they increased by about \$

31.26 billion, while the coefficient of determination (r^2) was about 0.85, meaning that time affects 91% and that 9% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

2- The Period (2015-2024)

- Development of the Value of the Gross Domestic Product:

By studying the development of the value of the gross domestic product during the period (2015-2024), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$ 689.28 billion in 2016, and a maximum of about \$ 1237.53 billion in 2024, with an overall average of about \$ 297.55 billion during the study period. By estimating the equation of the general time trend of the value of the gross domestic product during that period, it became clear from Table No. (3) that it had increased by about \$41.7 billion, while the coefficient of determination (r^2) reached about 0.91, meaning that time affects 91% and that 9% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- The Development of the Added Value of the Agricultural Sector:

By studying the development of the added value of the agricultural sector during the period (2015-2024), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$ 20.11 billion in 2015, and a maximum of about \$ 31.44 billion in 2024, with an overall average estimated at about \$ 23.9 billion during the study period. By estimating the equation of the general time trend of the added value of the agricultural sector during that period, it became clear from Table No. (3) that it had increased by about \$1.34 billion, while the coefficient of determination (r^2) reached about 0.90, meaning that time affects 90% and that 10% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- Development of the Added Value of the Industrial Sector:

By studying the development of the added value of the industrial sector during the period (2015-2024), it became clear from Table No. (1) in the appendix that it ranged between a minimum of about \$ 293.51 billion in 2015, and a maximum of about \$ 658.24 billion in 2022, with an overall average estimated at about \$ 431.25 billion during the study period. By estimating the equation of the general time trend of the added value of the industrial sector during that period, it became clear from Table No. (3) that it had increased by about \$ 35.06 billion, while the coefficient of determination (r^2) reached about 0.67, meaning that time affects 67% and 23% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

- Development of National Imports:

By studying the development of national imports during the period (2015-2024), it became clear from Table No. (1) in the appendix that they ranged between a minimum of about \$

182.18 billion in 2020, and a maximum of about \$ 367.31 billion in 2024, with an overall average of about \$233.89 billion during the study period. By estimating the equation of the general time trend of national imports during that period, it became clear from Table No. (3) that they had increased by about \$ 9.35 billion, while the coefficient of determination (r^2) was about 0.42, meaning that time affects 42% and that 58% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.05.

- Development of National Exports:

By studying the development of national exports during the period (2015-2024), Table No. (1) in the appendix showed that they ranged between a minimum of about \$182.85 billion in 2020, and a maximum of about \$ 445.88 billion in 2022, with an overall average of about \$ 290.42 billion during the study period. By estimating the general time trend equation for national exports during that period, Table No. (3) showed that they increased by about \$ 20.01 billion, while the coefficient of determination (r^2) was about 0.52, meaning that time affects by 0.52%, and that 48% of the changes are due to other factors not included in the estimated model. The significance of the model was shown at a significance level of 0.01.

Table (3): Results of the general time trend analysis of the most important factors affecting the gross domestic product of the Kingdom of Saudi Arabia during the two study periods (2000-2008), (2015-2024)

Year	GDP (billion USD)	Agricultural Added Value (billion USD)	Industrial Added Value (billion USD)	Total Imports (billion USD)	Total Exports (billion USD)
1-The period (2000-2008)					
Average	297.55	10.307	177.69	85.24	160.98
Amount of change	41.7**	0.34**	30.70**	16.50**	31.26**
R ²	0.91	0.94	0.89	0.85	0.91
F	69.11**	105.42**	59.77**	39.67**	70.56**
2-The period (2015-2024)					
Average	934.52	23.90	431.25	233.89	290.42
Amount of change	68.23**	1.34**	35.06**	9.35*	20.01**
R ²	0.84	0.90	0.67	0.42	0.52
F	43.15**	74.48	15.90**	5.72*	8.74**

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (1) in the appendix

Third - Multiple Linear Regression Analysis of the Most Important Factors Affecting the Gross Domestic Product (GDP) of the Kingdom of Saudi Arabia during the Study Periods (2000-2008) and (2015-2024)

The multiple linear regression model is used to analyze the relationship between GDP and various economic variables. It allows for estimating the impact of each independent variable, such as industry, agriculture, exports, and imports, on economic growth while

controlling for the influence of other variables. The model relies on a set of assumptions to ensure the validity of the results and is used to interpret the relationship between variables and predict future changes in GDP.

(1) Multiple Linear Regression Analysis for the Period (2000-2008):

Analysis and interpretation of the multiple linear regression of the relationship between GDP as the dependent variable and the added value of the agricultural sector (X1), the value added of the industrial sector (X2), the value of imports (X3), and the value of exports (X4) as independent variables. The analysis shows that the added value of the agricultural sector is significant at the 0.05 level, and the value added of the industrial sector is significant at the 0.01 level. However, the value of imports and the value of exports are not significant at the familiar significance levels (0.01-0.05). The estimated model in Table (4) indicates a positive effect of the value added of the agricultural and industrial sectors on GDP, and no statistically significant effect of imports and exports on GDP.

Table (4): Results of multiple linear regression analysis during the period (2000 - 2008)

Variable	Coefficient	P-value	Interpretation
Agriculture	*22.437	.032	A positive and significant effect
Industry	**1.050	.005	A positive and significant effect
Imports	.016	.865	A positive and insignificant effect
Exports	.053	.814	A positive and insignificant effect

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (1) in the appendix

The determination coefficient (R^2) was approximately 0.979, meaning that about 98% of the change in GDP is attributable to the independent variables included in the model, while the remaining 2% is due to the factors included in the model. The overall significance of the model was found at the 0.01 level. Therefore, the multiple linear regression equation can be formulated as follows:

$$Y = a + b_1X_1 + b_2X_2 + \dots + e$$

Where:

Y = Dependent variable

a = Constant

b₁ = Regression coefficient y on the first independent variable

b₂ = Regression coefficient y on the second independent variable

X₁ = First independent variable

X₂ = Second independent variable

$$Y = -130.023 + 22.437 X_1 + 105.X_2 + 0.016 X_3 + 0.053X_4$$

$$(0.033)^* (0.005)** (0.865)ns (0.814)ns$$

$$0.979 F = 35.76 = R^2$$

The number between brackets represents the tabulated t-value.

** : Significant at 0.01 * : Significant at 0.05 ns : Not significant

The constant of equation (-130.023) indicates the expected value of GDP when all variables in the model are equal to zero.

(2) Analysis of the Multiple Regression Model for the Period (2015-2024)

By conducting a multiple linear regression analysis of the relationship between GDP as a dependent variable and the value added of the agricultural sector (X1), the value added of the industrial sector (X2), the value of national imports (X3), and national exports (X4) as independent variables, the value added of the agricultural sector was found to be significant at a significance level of (0.01), while the significance of the remaining model variables was not clear at the familiar significance levels (0.01, 0.05). Table (5) of the estimated model indicates a positive effect of the value added of the agricultural sector, and no effect of the value added of the industrial sector and imports.

Table (5): Results of the multiple regression analysis for the period between (2015-2024)

Variable	Coefficient	P-value	Interpretation
Agriculture	*20.509	.017	A positive and significant effect
Industry	1.407	.064	A positive and insignificant effect
Imports	-.042	.894	A negative and insignificant effect
Exports	-.454	.579	A negative and insignificant effect

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (1) in the appendix

Based on the regression model, the multiple linear regression equation can be formulated as follows:

Multiple regression equation for the period (2015 - 2024)

$$Y = -21.096 + 20.509 X_1 + 1.407 X_2 - 0.402 X_3 - 0.454 X_4$$

$$(0.017) ** (0.064) \text{ ns } (0.894) \text{ ns } (0.579) \text{ ns}$$

$$R^2 = 0.998 \quad F = 43.85$$

The determination coefficient (R^2) was approximately 0.998, meaning that 99.8% of the change in GDP is attributable to the variables included in the regression model, and approximately 0.002% is attributable to other factors. This indicates the significant impact of the aforementioned independent variables on GDP. The overall significance of the model is shown at the 0.01 level, and the constant of the equation (-21.096) represents the expected value of GDP when all the estimated variables are equal to zero.

It can be said that the agricultural sector maintained its vital and stable role as a main sector of economic growth in both periods, with a strong and statistically significant positive impact. This reflects the importance of agriculture in the Saudi economy during the two decades. The industrial sector showed a significant positive impact in the first period

(2000-2008), but in the second period (2015-2024), the impact was not significant despite the increase in the coefficient. This may indicate changes in the structure of industry, or the impact of other factors that weakened its economic role in the more recent period. As for the value of imports, it did not have a significant impact on the GDP in either of the two periods, with the trend changing from slightly positive to slightly negative, indicating that imports were not an influential factor in economic growth during the two periods.

Exports also did not show a significant impact in the two periods, and their impact shifted from positive to negative between the two periods, which may reflect external factors, fluctuations in global markets, or different trade policies. Thus, we can say that the agricultural sector remains the main pillar of economic growth across the two periods, and the industrial sector needs further study, especially to understand why the significance of its impact changed. As for foreign trade (imports and exports), it does not directly and clearly affect the GDP during the two periods, which calls for a broader review of the effects of trade on Saudi economic growth.

Fourth - Pearson's Correlation Coefficient between GDP and its Main Influencing Variables:

(1) Pearson's Correlation Coefficient between GDP and the Study Variables for the Period 2000-2008:

Table (6) shows the Pearson's correlation coefficient between GDP and the study variables. The results indicate very strong positive correlations between GDP and agriculture, industry, imports, and exports. The correlation coefficient between GDP and the agricultural sector reached (0.993**), indicating a strong and statistically significant positive relationship. The industrial sector showed the highest degree of correlation with GDP, with a coefficient of (0.999**), reflecting the pivotal role of industry in supporting economic growth.

As for the correlation coefficient with imports (0.986**), it indicates a strong positive correlation, although it is relatively lower compared to the rest of the variables, while exports recorded a very high correlation coefficient of (0.999**), which confirms the great importance of foreign trade in promoting the gross domestic product. In general, these results reflect that all the study variables are strongly positively correlated with the gross domestic product, and all of them are statistically significant at the (1%) level, which indicates the possibility of relying on them.

Table (6): Pearson's correlation coefficient between GDP and study variables (2000-2008)

Variable	Correlation coefficient
Agriculture	**0.993
Industry	**0.999
Imports	**0.986
Exports	**0.999

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (1) in the appendix

(2) Pearson Correlation Coefficient between GDP and Variables for the Period (2015-2024):

Table (7) shows the Pearson correlation coefficient between GDP and the study variables. The results indicate strong, statistically significant positive correlations between GDP and each of the study variables. The correlation coefficient between GDP and the agricultural sector reached (0.944**), reflecting a strong and statistically significant positive relationship. The industrial sector also recorded a high correlation coefficient of (0.972**), which confirms the important role of the industrial sector in supporting GDP. Meanwhile, the correlation coefficient between GDP and imports reached (0.792**), which is a moderate to strong positive correlation compared to the rest of the variables, but it is still statistically significant.

As for exports, they recorded a correlation coefficient of (0.924**), which indicates a strong positive relationship that reflects the importance of exports in promoting economic growth. The results of the table show that all the study variables are positively correlated with the gross domestic product and with statistical significance levels at the level of (1%), with a difference in the strength of the relationship between the variables, where industry came first, followed by agriculture and then exports, while imports were relatively least correlated.

Table (7): Pearson's correlation coefficient between GDP and study variables (2000-2008)

Variable	Correlation Coefficient
Agriculture	0.944**
Industry	0.972**
Imports	0.792**
Exports	0.924**

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (1) in the appendix

Fifth - Predicting the Economic Situation in the Future:

Since the results showed that the two most stable sectors are the industrial and import sectors, it is possible to predict for the next five years during the period (2026-2030) using the (ARIMA) model (Table No. 8), which is a model suitable for relatively short time series to predict the magnitude of the variables to be predicted during specific years. The predictions indicate that the industrial growth rate will rise from 6.99% in 2026 to reach 7.14% during the years 2028-2030, which indicates expectations of sustainable industrial growth with a tendency towards stability in the medium term. As for the import growth rate, it is expected to record 2.61% in 2026, then stabilize at about 2.74% during the period (2027-2030), which reflects positive growth, but less compared to the growth of the industrial sector.

In general, the results of the ARIMA model show a relative stability in the expected growth rates for both industry and imports during the forecast period, with a clear advantage for the growth of the industrial sector, which may contribute to supporting economic growth and reducing the relative dependence on imports in the medium term.

These results can also be used in analyzing future economic policies, especially with regard to promoting local manufacturing and achieving balance in the trade balance.

Table (8): Forecasting industrial growth and imports for the years (2026-2030) using the ARIMA model

Year	forecast for industry growth (%)	Import growth forecast (%)
2026	6.99	2.61
2027	7.09	2.74
2028	7.14	2.74
2029	7.14	2.74
2030	7.14	2.74

Source: Compiled and calculated from data in Table (1) in the appendix

Sixth - Analysis of the Relationship between Oil Price Fluctuations and Economic Growth in the Kingdom of Saudi Arabia

Global oil markets have been affected by several conflicting factors that have impacted global oil demand. Global oil demand increased significantly during the preceding period, driven by increased demand in non-OECD countries. Various global events, such as the 2008 crisis, have impacted the global oil market, with oil prices experiencing record highs followed by a sharp decline due to the global financial crisis.

During the period 2014-2016, prices collapsed as a result of increased global production, especially shale oil, and the 2020 Corona pandemic, which caused an unprecedented decline in global demand, and US oil prices reached negative levels. Also, after 2022, prices rose due to the Russian-Ukrainian war, and other events that caused the collapse of oil prices in the global market and the slowdown in global growth. This part of the study deals with an analysis of the relationship between the fluctuation of oil prices and its impact on economic growth in the Kingdom of Saudi Arabia.

Equations for the General Time Trend of Oil Prices, National Investment Volume, and National Consumption Volume in the Kingdom of Saudi Arabia during the Two Study Periods (2000-2008) and (2015-2024)

(1) The Period (2000-2008)

Development of Oil Prices:

A study of oil price trends during the period (2000-2008) reveals, as shown in Table (2) of the appendix, that prices ranged from a low of approximately \$ 23.06 per barrel in 2000 to a high of approximately \$ 95.16 per barrel in 2008, with an overall average of approximately \$ 45.82 per barrel during the study period.

Estimating the general time trend equation for oil prices during that period, as shown in Table (9), indicates an increase of approximately \$8.39 per barrel. The determination coefficient (R²) was approximately 0.85, meaning that time accounts for 85% of the change, while 15% of the changes are due to other factors not included in the estimated model. The model's significance was found at a level of 0.01.

- Development of National Investment:

A study of the development of national investment during the period (2000-2008) shows, as shown in Table (2) of the appendix, that it ranged from a minimum of approximately \$ 6.94 billion in 2002 to a maximum of approximately \$ 26.99 billion in 2004, with an overall average of approximately \$ 10.34 billion during the study period. Estimating the general time trend equation for national investment during that period, as shown in Table (9), indicates that the model is not significant at the familiar significance levels (0.01, 0.05).

- Development of National Consumption:

A study of the development of national consumption during the period (2000-2008) shows, as shown in Table (2) of the appendix, that it ranged between a minimum of approximately \$ 117.57 billion in 2000 and a maximum of approximately \$ 231.75 billion in 2008, with an overall average of approximately \$ 154.64 billion during the study period. Estimating the general time trend equation for oil prices during that period, as shown in Table (9), indicates an increase of approximately \$14.31 billion. The determination coefficient (R²) was approximately 0.89, meaning that time accounts for 89% of the change, while 11% of the changes are due to other factors not included in the estimated model. The model was found to be significant at a level of 0.01.

(2) The Period (2015-2024):**- Oil Price Developments:**

A study of oil price developments during the period (2015-2024) shows, as shown in Table (2) of the appendix, that prices ranged from a minimum of approximately \$ 40.96 per barrel in 2016 to a maximum of approximately \$ 101.64 per barrel in 2022, with an overall average of approximately \$ 65.51 per barrel during the study period. Estimating the general time trend equation for oil prices during that period, as shown in Table (9), indicates an increase of approximately \$ 4.7 per barrel. The determination coefficient (R²) was approximately 0.53, meaning that time accounts for 53% of the change, while 47% of the changes are due to other factors not included in the estimated model. The model's significance was found at a level of 0.01.

- Development of National Investment Volume:

A study of the development of national investment during the period (2015-2024) shows, as shown in Table (2) of the appendix, that it ranged from a minimum of approximately -\$12.46 billion in 2016 to a maximum of approximately \$ 36.47 billion in 2023, with an overall average of approximately \$ 18.84 billion during the study period. Estimating the general time trend equation for national investment during that period, as shown in Table (9), indicates that it increased by approximately \$ 2.82 billion. The of determination coefficient (R²) was approximately 0.38, meaning that time accounts for 38% of the changes, while 62% of the changes are due to other factors not included in the estimated model. The model was found to be significant at a level of 0.05.

- Development of National Consumption:

A study of the development of national consumption during the period (2015-2024) shows, as shown in Table (2) of the appendix, that it ranged between a minimum of approximately \$ 492.96 billion in 2016 and a maximum of approximately \$ 821.04 billion in 2024, with an overall average of approximately \$ 625.07 billion during the study period. Estimating the general time trend equation for oil prices during that period, as shown in Table (9), indicates an increase of approximately \$ 37.59 billion. The determination coefficient (R²) was approximately 0.94, meaning that time accounts for 89% of the change, while 6% of the changes are due to other factors not included in the estimated model. The model was found to be significant at a level of 0.01.

Table (9): Results of the analysis of the general time trend of oil prices, national investment and the volume of national consumption for the Kingdom of Saudi Arabia during the two study periods (2000-2008), (2015-2024):

Year	GDP (billion dollars)	Oil Prices (dollars per barrel)	National Investment (billion dollars)	National Consumption (billion dollars)
1-The period (2000-2008)				
Average	297.55	45.82	7.36	154.64
Amount of change	41.7**	0.34**	1.01-	**14.31
R ²	0.91	0.85	0.89	0.85
F	69.11**	**8.39	0.60	**55.50
2-The period (2015-2024)				
Average	934.52	85.51	18.84	625.06
Amount of change	68.23**	4.70**	*2.82	**37.59
R ²	0.84	0.53	0.67	0.94
F	43.15**	**8.98	*4.84	**116.8

** significant at the 0.01 level * significant at the 0.05 level

Source: Compiled and calculated from data in Table (2) in the appendix

Seventh - Stability Test (ADF Test):

(1) - Results of the ADF Test for the Period (2000-2008):

Table (10) shows the results of the ADF test for the period (2000-2008). The variables—Gross Domestic Product (GDP), oil prices, and national consumption—are not stable at the level indicated by the p-value, which was higher than the significance level of 0.05. Furthermore, the ADF test statistic was positive or insufficient to exceed the critical value, indicating the presence of unit roots in these time series. This means that these variables exhibit a general trend and change over time, and do not stabilize around a fixed average. This is a natural characteristic of macroeconomic variables, which are affected by economic, financial, and structural cycles. In contrast, the size of national investment appeared as a stable variable at the level, where the p-value was less than 0.05 and the ADF had a sufficiently negative value to exceed the critical value. This indicates that the size of national investment during this period was not heading in a long-term upward or downward direction, but rather was moving around a relatively constant average, reflecting the limited investment expansion during the stage, and its weak contribution to generating sustainable economic growth. That

is, GDP, oil prices and the volume of national consumption are characterized by instability at the level, which indicates the existence of long-term trends and fluctuations related to economic cycles during this stage, while it was shown that the volume of national investment is stable at the level, which reflects the limited investment expansion and the absence of structural transformation in this sector during the period. These results indicate that the economy at that stage was mainly dependent on oil revenues and government spending, while investment or domestic consumption were not major drivers of growth in the short term.

Table (10): Stability test results for the period between (2000-2008)

Variable	ADF Statistic	p-value	Result
GDP	5.179	0.9998	Unstable
Oil prices	4.105	0.9991	Unstable
investment National	-2.348	0.0264	Stable
consumption National	1.535	0.9512	Unstable

Source: E-views program outputs for the data in Table (2) in the appendix

(2)- Results of the ADF Test for the Period (2015-2024):

The results of the ADF test, as shown in Table (21), indicate that all the economic variables studied during the period (2015-2024) are not stationary at the level, as the (p-value) values appeared higher than the statistical significance level (0.05). The ADF test statistical values were also insufficient to exceed the critical value. This means that the gross domestic product, oil prices, the volume of national investment, and the volume of national consumption are characterized by long-term time trends and do not settle around a fixed average. This reflects the economy's exposure to structural changes and changes in economic policies during this period, which necessitates a cointegration test to verify the existence of a long-term relationship between the variables.

Table (11): Stability test results for the period between (2015-2024)

Variable	ADF Statistic	p-value	Result
GDP	1.3021	0.9365	Unstable
Oil prices	0.027	0.06655	Unstable
investment National	-1.138	0.2128	Unstable
Consumption National	3.662	0.9987	Unstable

Source: E-views program outputs for the data in Table (2) in the appendix

Eighth - Multiple Linear Regression Analysis of the Relationship between GDP as a Dependent Variable and Oil Prices, National Investment Volume, and National Consumption Volume as Independent Variables

(1) Multiple Linear Regression Equation for the Period (2000-2008):

By conducting multiple linear regression analysis of the relationship between GDP as a dependent variable (Y) and oil prices (X1), national investment (X2), and national consumption (X3) as independent variables, the estimated model coefficients were found

to be insignificant at the familiar significance levels (0.01, 0.05), while the model as a whole was found to be significant at the 0.01 significance level. Table (12) shows the following:

Table (12): Results of the multiple regression analysis for the period (2000 - 2008)

Variable	Coefficient	P-value	Interpretation
Oil prices	2.633	.126	A positive and insignificant effect
investment National	.242	.566	A positive and insignificant effect
consumption National	1.319	.184	A positive and insignificant effect

Source: E-views program outputs for the data in Table (2) in the appendix

The value of the determination coefficient (R^2) was approximately 0.997, which means that about 99% of the change in GDP is due to the independent variables included in the estimated model, and the remainder is due to other factors not included in the model.

$$Y = -28.472 + 2.633 X_1 + 0.242 X_2 + 1.319 X_3$$

$$(0.126)^{ns} (0.566)^{ns} (0.184)^{ns}$$

$$F = 68.47 \quad R^2 = 0.997$$

The results of the multiple regression analysis indicate that all the studied variables such as oil prices, national investment, and national consumption have a positive (direct) effect on GDP during the period (2000-2008), as the coefficients for all variables were positive. However, the high p-values (over 0.05) for all variables indicate that these effects are not statistically significant during this period. In other words, we cannot confirm that changes in oil prices, investment, or consumption have a real or tangible effect on GDP during these years. This may reflect that other factors not included in the model may have a greater effect on GDP, or that the relationship between these variables and economic output during this period was weak or unstable. These results can be also interpreted as meaning that the economy during this period was not heavily dependent on oil prices or on investment and consumption variables as key drivers of growth, perhaps due to external or internal factors that affected the economy's resilience.

(2) Multiple Regression Equation for the Period (2015-2024)

By performing multiple linear regression analysis of the relationship between GDP as a dependent variable and oil prices (X_1), national investment (X_2), and national consumption (X_3) as independent variables, the coefficients of the estimated model were found to be insignificant at the familiar significance levels (0.01, 0.05), while the model as a whole was found to be significant at the 0.01 significance level. Table (13) shows the following:

Table (13): Results of the multiple regression analysis for the period (2015-2024)

Variable	Coefficient	P-value	Interpretation
Oil prices	**4.883	.000	A positive and significant effect
investment National	-0.653	.164	A positive and insignificant effect
consumption National	**1.258	.000	A positive and significant effect

Source: E-views program outputs for the data in Table (2) in the appendix

Based on the regression model for the period (2015-2024), the multiple linear regression equation can be formulated as follows:

$$Y = - 160.36 + 4.88 X_1 + 0.65 X_2 + 1.26 X_3$$

$$(0.000)** (- 0.653)ns (0.000)**$$

$$F= 65.5 , R^2= 0.90$$

The results of the multiple regression analysis shown in Table (13) for the period (2015-2024) indicate that there are significant and positive effects of both oil prices and the volume of national consumption on the gross domestic product, as the coefficient for oil prices (4.883) shows a high statistical significance (p-value = 0.000), which means that an increase in oil prices is associated with a tangible and strong increase in the gross domestic product, reflecting the importance of oil as a major factor and economic driver in this period.

Similarly, the level of national consumption shows a statistically significant positive impact on GDP, with a coefficient of 1.258 and strong statistical significance (p-value = 0.000), confirming that a high level of national consumption contributes significantly to supporting economic growth.

On the other hand, the level of national investment shows a negative impact on GDP (coefficient -0.653), but this effect is not statistically significant (p-value = 0.164), meaning that a real or significant relationship between the level of investment and GDP during the period cannot be confirmed.

This variation in the impact of variables reflects a change in the dynamics of the national economy, where oil prices and domestic demand (consumption) have become the main drivers of growth, while investment may have a less obvious role or be influenced by other factors such as economic policies or market conditions.

Ninth - Pearson's Correlation Coefficient between GDP and the Study Variables

Table (14) shows the values of Pearson's correlation coefficient for the study variables in the period (2000-2008), which reflect the strength and direction of the relationship between GDP and the study variables. Oil prices show a very strong positive correlation with GDP (0.995**), and this indicates a very strong correlation between the rise in oil prices and the increase in GDP, which reflects the importance of oil as a major factor affecting the performance of the national economy.

As for the size of national investment, it shows an average negative correlation (-0.301) with GDP, indicating that there is an inverse relationship between investment and GDP in the data studied, but it is not strong or statistically significant according to this indicator alone. This may indicate that the investments made may not be directly or effectively correlated with GDP during the period under study.

The national consumption is also strongly positively correlated with GDP (0.995**), highlighting the role of consumption as a major driver of economic growth, as GDP increases with the volume of national consumption. The results of Pearson's correlation coefficient reflect that oil prices and the volume of national consumption are strongly and positively correlated with GDP, confirming their vital role in determining the level of economic

growth. Meanwhile, the volume of national investment shows a weak negative relationship, which may call for a deeper study of the impact of investment on growth in the economy under study.

Table (14): Pearson's correlation coefficient between GDP and study variables for the period (2000-2008)

Variable	Correlation coefficient
Oil prices	0.995**
investment National	-0.301
consumption National	0.995**

Source: E-views program outputs for the data in Table (2) in the appendix

In the period (2015-2024), Pearson's correlation coefficient values between the dependent variable and the independent variables are shown in Table (14). A strong positive correlation exists between oil prices and GDP (0.916, $p < 0.01$), confirming the continued role of oil prices as a primary driver of economic growth during this period.

National investment shows a moderately strong positive correlation (0.595) with GDP, but it is less strong than the correlations with the other variables. This indicates a positive relationship between national investment and growth, but it is not as strong and may be influenced by other factors.

The national consumption shows a strong and statistically significant positive correlation (0.967, $p < 0.01$) with GDP, indicating the importance of consumption in supporting and promoting economic growth during this period.

Overall, a strong and statistically significant positive correlation was found between GDP, oil prices, and the national consumption at a significance level of 0.01, while no statistically significant correlation was found between GDP and the national investment at a significance level of 0.05 during the period (2015-2024).

Table (15): Pearson's correlation coefficient between GDP and study variables for the period (2015-2024)

Variable	Correlation coefficient
Oil prices	0.916**
investment National	0.595
consumption National	0.967**

Source: E-views program outputs for the data in Table (2) in the appendix

Tenth - Forecasting the Growth Rate of Oil Prices and Consumption for the Years (2026-2030)

Since the results showed that the two most stable sectors are the price of oil and the national consumption, it is possible to forecast for the next five years (2026-2030) using the ARIMA model. This model is suitable for relatively short time series data to predict the magnitude of the variables to be forecasted over specific years. Table (16) shows the forecasts for the growth rate of oil prices and the growth rate of national consumption for

the years (2026-2030) using the ARIMA model. The forecast results indicate an upward trend in the growth rate of oil prices during the forecast period, rising from about 5.99% in 2026 to about 7.74% in 2030. This reflects expectations of increased global demand for oil or continued supply-side constraints.

In contrast, the growth rate of national consumption shows a more moderate upward trend, rising from 3.79% to 4.32% during the same period, with growth expected to stabilize at 4.32% in both 2029 and 2030. This reflects a positive but asymmetrical response of consumption to the anticipated rise in oil prices.

These results suggest an indirect relationship, indicating that while higher oil prices may support national income and consumer spending, their impact remains limited compared to the speed at which oil prices rise. This may be related to other factors such as fiscal policies, government subsidies, and the level of economic diversification.

Table (16): Forecasting the growth rate of oil prices and consumption rates for the years (2026-2030) using the ARIMA model

Year	Oil Price (%)	National Consumption Rate (%)
2026	5.99	3.79
2027	6.76	3.91
2028	7.22	4.15
2029	7.49	4.32
2030	7.74	4.32

Source: E-views program outputs for the data in Table (2) in the appendix.

RECOMMENDATIONS

Related to the results obtain in the research. It recommends the following:

1. Re-evaluating industrial policies: The negative relationship between industry and GDP growth necessitates a detailed analysis of industrial practices and policies. Identifying and addressing the underlying problems can help reverse this trend.
2. Investing in the agricultural sector: Given its positive impact on GDP, increased investment in agricultural technology, infrastructure, and training can yield significant economic benefits.
3. Strengthening export strategies: Although there is no strong correlation, a positive export coefficient indicates potential for improvement. Implementing robust export policies and exploring new markets can further stimulate GDP growth. Investment in imports can help implement strategies to reduce import dependency, boost domestic production, and supply raw materials for integration into the local market, thereby increasing GDP growth.
4. The need to capitalize on high oil prices to make changes to the Saudi government's fiscal and monetary policies to make them more effective. This will contribute to achieving genuine economic development for Saudi society and help realize the goals of Saudi economic policy in line with Vision 2030.
5. Increasing government spending on sectors that contribute to rapid economic development while ensuring the sustainability of achieved growth rates.

6. The necessity of diversifying the sources of national income for the Saudi economy to reduce dependence on oil. The dominance of the industrial sector in the GDP indicates a lack of diversification in the contributions of the agricultural sector, imports, and exports. This aligns with the goals of Vision 2030. Given the continued significant impact of oil prices on GDP, it is essential to strengthen efforts to diversify the economy and reduce reliance on oil revenues to mitigate the economic risks resulting from fluctuations in global oil prices.
7. Given the significant and influential role of national consumption in supporting GDP in recent times, it is recommended to implement policies that encourage domestic spending and support citizens' purchasing power, such as consumption support programs and measures to stimulate domestic demand.
8. Conduct more research. More detailed studies to understand the dynamics of each sector and its interactions with GDP will provide deeper insights and more targeted recommendations in the field of strategy development. By focusing on these areas, decision-makers can better harness the potential of different economic sectors to drive growth. Given the structural changes in the relationship between economic variables, it is recommended to conduct periodic studies to update models and analyze the impact of new economic variables to ensure informed and effective decisions are made.

CONCLUSION

Energy is considering of modern life, essential for operating all sectors and managing daily affairs. It is a vital resource that nations strive to secure, whether for powering factories, transportation, or other energy-intensive activities that contribute to human production. Energy comes in diverse forms, including oil, coal, gas, and renewable sources such as solar, wind, and hydroelectric power.

With the beginning of the 20th century, the demand for oil increased, and its importance to the world as a whole grew. This prompted some countries to explore for it, and it was discovered in several other regions of the world, including a number of Arab countries. Then, in 1960, OPEC was established, bringing together a group of oil-producing countries from the Middle East and North Africa. Its importance increased further after the October War of 1973 in the Middle East. Oil-consuming countries did not stand idly by but rather tried hard to find solutions that would enable them to obtain it at reasonable prices according to their capabilities and availability. Since then, political conditions, economic growth rates, and international aggregate supply have become among the most important determinants of crude oil prices in global markets. The global oil markets are characterized by instability, as sometimes there is a recovery in demand causing an increase in prices, and at other times there is a contraction in demand, which leads to a decrease in prices, which has made it the most volatile commodity in terms of its prices.

The research is based on a descriptive analytical methodology that combines a literature review and data analysis using linear regression models and time series analysis, with data processing via Excel, SPSS, and E-Views programs to conduct accurate statistical analyses and test hypotheses at significance levels of 0.01 and 0.05. The study is limited in time to two periods (2000-2008) and (2015-2024) coinciding with influential economic crises,

and in terms of location to the Kingdom of Saudi Arabia. Data collection is based on official sources such as the World Bank, the Saudi Ministry of Finance, the General Authority for Statistics, OPEC, and the US Energy Information Administration, in addition to previous studies and relevant references.

Although the Saudi economy has achieved remarkable growth rates in some years, driven by the growth of the non-oil sector and improved global demand, questions remain regarding the effectiveness of economic diversification policies in achieving sustainable economic growth and their ability to mitigate the negative effects of oil price volatility on GDP. Therefore, the research problem is posed as follows:

To what extent has the economic diversification strategy contributed to economic growth in Saudi Arabia, and what impact has oil price volatility had on this growth?

The following questions arise from this issue:

1. What impact has the economic diversification strategy had on Saudi Arabia's GDP?
2. Does the relationship between economic diversification and economic growth differ between the periods 2000-2008 and 2015-2024?
3. What impact has oil price volatility had on Saudi Arabia's economic growth?

The research aims to identify the economic diversification strategies followed by the Kingdom and measure their effectiveness in expanding the production base, reducing the impact of oil price fluctuations, and achieving sustainable economic development. It also seeks to analyze the relationship between oil price volatility and economic growth in the Kingdom of Saudi Arabia.

The most important findings of the research were:

- The results generally show that some sectors contribute to GDP growth, albeit with a relatively small contribution compared to the oil sector, given Saudi Arabia's heavy reliance on it. This demonstrates the dominance of oil sector revenues and profits in driving GDP growth.
- The agricultural sector's value added had a very significant positive impact on GDP during the period 2000-2008, and this positive impact is also expected to continue during the period 2015-2024.
- The added value of the industrial sector had a significant positive impact on GDP during the period 2000-2008, but no statistically significant impact was observed between 2015 and 2024.
- Exports and imports had no statistically significant impact on GDP during the period 2000-2008, and the value added of exports and imports also had no statistically significant impact on GDP during the period 2015-2024.
- Thus, the study proved the first hypothesis incorrect, which states that there is no statistically significant relationship between the economic diversification strategy and a set of economic variables (economic growth, production rates, national consumption volume, and national investment volume) in the Kingdom of Saudi Arabia.

- No statistically significant impact of oil price, investment rate, and consumption rate on GDP during the period (2000-2008).
- A very significant positive impact of oil price on GDP during the period (2015-2024).
- A significant positive impact of consumption rate on GDP during the period (2015-2024).
- No statistically significant impact of investment rate on GDP during the period (2015-2024).

Based on The Results Reached, The Research Recommends the Following:

1. Re-evaluating industrial policies: The negative relationship between industry and GDP growth necessitates a detailed analysis of industrial practices and policies. Identifying and addressing the underlying problems can help reverse this trend.
2. Investing in the agricultural sector: Given its positive impact on GDP, increased investment in agricultural technology, infrastructure, and training can yield significant economic benefits.
3. Strengthening export strategies: Although there is no strong correlation, a positive export coefficient indicates potential for improvement. Implementing robust export policies and exploring new markets can further stimulate GDP growth. Investment in imports can help implement strategies to reduce import dependency, boost domestic production, and supply raw materials for integration into the local market, thereby increasing GDP growth.
4. The need to capitalize on high oil prices to make changes to the Saudi government's fiscal and monetary policies to make them more effective. This will contribute to achieving genuine economic development for Saudi society and help realize the goals of Saudi economic policy in line with Vision 2030.
5. Increasing government spending on sectors that contribute to rapid economic development while ensuring the sustainability of achieved growth rates.
6. The necessity of diversifying the sources of national income for the Saudi economy to reduce dependence on oil. The dominance of the industrial sector in the GDP indicates a lack of diversification in the contributions of the agricultural sector, imports, and exports. This aligns with the goals of Vision 2030. Given the continued significant impact of oil prices on GDP, it is essential to strengthen efforts to diversify the economy and reduce reliance on oil revenues to mitigate the economic risks resulting from fluctuations in global oil prices.
7. Given the significant and influential role of national consumption in supporting GDP in recent times, it is recommended to implement policies that encourage domestic spending and support citizens' purchasing power, such as consumption support programs and measures to stimulate domestic demand.
8. Conduct more research. More detailed studies to understand the dynamics of each sector and its interactions with GDP will provide deeper insights and more targeted recommendations in the field of strategy development. By focusing on these areas, decision-makers can better harness the potential of different economic sectors to drive growth. Given the structural changes in the relationship between economic

variables, it is recommended to conduct periodic studies to update models and analyze the impact of new economic variables to ensure informed and effective decisions are made.

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APPENDIX

Table (2): Development of study variables during the two periods (2000-2008), (2015-2024)

Year	Gross Domestic Product (GDP) (Billion Dollars)	Agricultural Added Value (Billion Dollars)	Industrial Added Value (Billion Dollars)	Total Imports (Billion Dollars)	Total Exports (Billion Dollars)
2000	189.51	9.29	101.3	46.93	82.26
2001	184.14	9.46	93.51	44.06	72.98
2002	189.61	9.55	96.7	44.83	77.64
2003	215.81	9.65	116.46	51.74	98.96
2004	258.74	10.01	146.72	62.35	131.92
2005	328.21	10.46	202.78	81.8	187.39
2006	376.4	11.01	235.7	113.49	225.51
2007	415.69	11.41	260.78	145.28	249.32
2008	519.8	11.92	345.3	176.68	322.85
Average	297.55	10.307	177.69	85.24	160.98
2015	693.41	19.1	309.27	247.31	218.01
2016	689.28	20.11	293.15	198.36	200.88
2017	741.27	21.02	332.75	201.4	239.89
2018	886.56	21.4	434.55	209.07	314.92
2019	888.89	21.81	406.43	218.97	285.86
2020	767.95	22.7	294.13	182.18	182.85
2021	982.66	24.06	451.6	213.52	286.5
2022	1239.08	27.44	658.24	258.21	445.88
2023	1218.58	29.95	580.11	291.56	368.53
2024	1237.53	31.44	554.85	317.31	360.91
Average	934.52	23.903	431.51	233.79	290.42
General Average	616.035	17.105	304.6	159.515	225.7

Source: Compiled and calculated from economic reports and publications issued by the Saudi Central Bank and the World Bank

Table (2): Development of study variables during the two periods (2000-2008), (2015-2024)

Year	Gross Domestic Product (GDP) (Billion Dollars)	Oil Prices (dollars/barrel)	National Investment (billion dollars)	National Consumption (billion dollars)
2000	189.51	27.6	11.26	117.57
2001	184.14	23.06	2.78	119.08
2002	189.61	24.32	-6.94	119.46
2003	215.81	27.69	19.32	126.53
2004	258.74	34.53	26.99	137.77
2005	328.21	50.21	-5.09	156.6
2006	376.4	61.1	5.92	181.16
2007	415.69	68.75	-0.84	201.81
2008	519.8	95.16	-0.38	231.75
Average	297.55	45.824	5.8911	154.64
2015	693.41	49.85	12.19	497.81
2016	689.28	40.96	-12.46	492.96
2017	741.27	52.59	10.49	513.93
2018	886.56	70.59	19.09	582.37
2019	888.89	64.96	-1.16	594.87
2020	767.95	41.91	27.48	588.23
2021	982.66	70.65	33.45	650.82
2022	1239.08	101.64	35.66	722.85
2023	1218.58	84.94	36.47	785.77
2024	1237.53	77.04	13.61	821.04
Average	934.52	65.513	17.482	625.07
General Average	616.035	55.681	11.686	389.855

Source: Compiled and calculated from economic reports and publications issued by the Saudi Central Bank and the World Bank