Journal of Kyzylorda Scholarly Review

P-ISSN:3006-0265 | E-ISSN:3007-4681. Published by the Open University of Kyzylorda
Copyright © Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC-BY).
https://bulletin.ouk.kz/index.php/bulletin/index



THE IMPACT OF OIL REVENUES ON GOVERNMENT SPENDING AND ECONOMIC GROWTH IN IRAQ, 2000–2024

Bilal Abdulhaq Abdulkareem
Tikrit University, College of Administration and Economics
*Correspondance: bilal53@tu.edu.iq

Article History:
Received: 30th Sept 2026; Revised: 20th Oct 2026; Accepted: 10th Nov 2026; Published: 22th Nov 2026

Abstract: This study aims to analyze the impact of oil revenues on government spending and economic growth in Iraq during the period 2000–2024, given that the Iraqi economy relies heavily on oil revenues to finance the national budget. The study seeks to clarify the nature of the relationship between these variables, determine the extent to which changes in oil revenues affect government spending and economic activity, and distinguish between short-term and long-term effects. To achieve the research objectives, a descriptive and analytical approach was adopted, along with the Autoregressive Distributed Lag (ARDL) methodology to estimate the standard relationships between the variables. The results indicate the existence of varying relationships among the variables studied; according to the findings presented, oil revenues did not have a statistically significant effect in the long run, whereas some other economic and financial variables were found to have a statistically significant impact on economic growth.The results of the error correction model also showed the existence of a mechanism for correcting short-term imbalances and returning to long-term equilibrium. These results underscore the importance of diversifying sources of public revenue, improving the efficiency of government spending, and directing resources toward productive sectors in a way that enhances the sustainability of economic growth and limits the Iraqi economy's vulnerability to fluctuations in global oil prices.

Keywords: oil revenues, government spending, economic growth, the Iraqi economy, ARDL model

Introduction

One of Iraq's main sources of public revenue is oil and oil export revenues make up a significant portion of the government's budget. As a result, oil price volatility has a negative impact on government spending and economic activity. This linkage is significant as it is essential to ensure that the oil sector is being used efficiently, which includes financing public sector expenditure, providing a boost to economic growth and promoting financial stability.

To this end, this study aims to analyse the effect of oil revenues on government expenditure and economic development in Iraq from 2000 to 2024 through the study of the evolution of

the variables and measuring the short and long relationships between the variables using the Auto-regressive Distributed Lag (ARDL) methodology. The primary objective of the study is to present the quantitative results that enlighten the character of the interdependency between oil revenues, government spending and economic growth, which can be helpful for preparing more efficient and sustainable fiscal policies for the Iraqi economy..

Research Problem

Oil is the primary source of government revenue in Iraq; consequently, the national budget and economic activity are vulnerable to fluctuations in oil revenue resulting from changes in oil prices, production, and exports. Changes in oil revenues can affect the government's ability to finance its expenditures either directly or indirectly; they can also affect economic activity and economic growth. Although oil revenues are important for financing Iraq's general budget, the nature of the relationship between oil revenues and government expenditures, as well as the extent to which these revenues and government expenditures affect economic growth, requires statistical testing to determine the relationship between these variables in the short and long term.

Consequently, the research problem is to analyze and measure the effects of oil revenues on government spending and economic growth in Iraq during the period 2000–2024 by constructing statistical time-series models and testing for the existence of long-run equilibrium relationships among the research variables. From this research problem arise the following questions:

1. Do oil revenues affect government spending in Iraq?
2. Is there a long-run relationship between oil revenues and government spending?
3. Do oil revenues affect economic growth in Iraq?
4. What is the effect of government spending on economic growth?
5. Is there a long-run equilibrium relationship among oil revenues, government spending, and economic growth?
6. How quickly do the variables adjust to their long-run equilibrium path following short-run disturbances?

Second: Significance of the Study

The significance of this study is based on the critical position occupied by the oil industry in the economy of Iraq and the use of oil proceeds for financing the budget expenditures. The significance of this study can be seen from the following points:

1. Economic significance: To determine the extent to which government expenditures depend on revenue generated by the oil sector.
2. Statistical Significance: To estimate the short- and long-term relationships between the research variables using the ARDL approach.
3. Fiscal Policy Significance: To provide quantitative information that helps explain the impact of changes in oil revenue on government spending.
4. Economic Growth Significance: To demonstrate the interdependence between oil revenues, government spending, and economic activities in Iraq.
5. Practical Significance: To use the results for the purpose of developing economic and fiscal policies regarding the management of oil resources and public spending.

The objective of the research presented here is to determine the impact of oil revenues on government spending and economic growth in Iraq for the period from 2000 to 2024.

Third: Research Objectives

This objective will be pursued through the following tasks:

1. To examine the evolution of oil revenues in Iraq during the specified period.
2. To trace the evolution of government spending and economic growth during the specified period.
3. To determine the impact of oil revenues on government spending.
4. To determine the impact of oil revenues on economic growth.
5. Determine the impact of government spending on economic growth.
6. Verify the existence of a long-run equilibrium among the variables.
7. Determine the short-run dynamics and the rate at which imbalances are corrected toward long-run equilibrium.
8. Validate the parametric models

Fourth. Research Hypotheses

The null hypotheses were developed based on the research objectives as follows:

Hypothesis 1: There is no statistically significant effect of oil revenues on government spending in Iraq during the period 2000–2024.

Hypothesis 2: There is no statistically significant effect of oil revenues on economic growth in Iraq during the period 2000–2024.

Hypothesis 3: There is no statistically significant effect of government spending on economic growth in Iraq during the period 2000–2024.

Hypothesis 4: There is no long-run equilibrium among the variables in each of the study's models.

Fifth. Scope of the Study

1. Geographic Scope: The geographic scope is limited to the Republic of Iraq.
2. Temporal Scope: The study covers the period 2000–2024, using annual data.
3. Thematic Scope: The study is limited to analyzing the relationship between:

oil revenues → government spending → economic growth

using a number of controlling economic variables supported by the empirical component of the study.

Materials and Method

This study employs descriptive, analytical, and econometric approaches. The descriptive approach was used to examine the evolution of the variables under study over the selected time period, while the econometric approach was applied to identify the economic relationships among the variables using annual time-series data. The primary econometric approach is the Autoregressive Distributed Lag (ARDL) model, which estimates short- and long-run relationships and cointegration among the variables.

The Theoretical Framework for Oil Revenues, Government Spending, and Economic Growth

Oil Revenues

The Concept of Oil Revenues

Oil revenues are defined as the financial proceeds that the state receives from the exploitation, production, and export of crude oil and its derivatives; they primarily include revenues from oil sales, fees, and proceeds related to oil activities. These revenues represent a major source of funding for the general budget in oil-producing countries and influence the government's ability to finance public spending and achieve economic growth and development goals. The importance of oil revenues increases in economies that are highly dependent on oil exports,

as fluctuations in oil prices and production volumes have a clear impact on public revenues and economic activity [1, p. 65].

Sources and Components of Oil Revenues

Oil revenues can be defined as financial flows generated through the exploitation and marketing of oil resources; they vary depending on the financial and legal systems of each country. In general, the main sources of oil revenues consist of revenues from oil exports, revenues from the sale of petroleum products, revenues and fees from oil-related activities, taxes, salaries, and the state's share of oil production or production-sharing contracts. Oil export revenues are the main component in countries where oil is a primary source of foreign exchange and government revenue; they are influenced by oil prices on international markets and the quantity/volume of oil exported [2]. The main components of oil revenues can be presented as follows: [3, p. 52]

Crude oil export revenues: These are revenues generated from the sale of crude oil in domestic or international markets and constitute the main portion of oil revenues in oil-exporting countries.

Revenues from petroleum products: These are revenues generated from the sale of various petroleum products such as gasoline, diesel, fuel oil, and others.

Oil-related salaries and taxes: These are sums of money collected from companies engaged in oil extraction and exploitation in accordance with the law and contracts.

The government's share of oil contracts: These are revenues received by the government in the form of its share of production or the profits generated from the exploitation of oil fields, depending on the type of contract.

Revenues and fees related to oil activities: Certain fees, charges, licenses, and services related to oil exploration, production, transportation, and marketing.

The Importance of Oil Revenues in the Iraqi Economy

Oil revenues are among the main sources of financing in the Iraqi economy, given the government's reliance on revenues from crude oil exports. Revenues from oil sales help allocate the financial resources needed to fund government spending, pay salaries and pensions, and provide public services and projects. Oil revenues also contribute to the generation of foreign currency and imports financing. In its 2024 consultation, the IMF projected oil revenue at 36.7% of GDP and total central government revenue and grants at 40.1% of GDP for 2024 [2]. The significance of oil revenues is also demonstrated by the direct effect it has on the level of government spending and economic activity: if there is an increase in oil prices or the amount of oil exported, the government is able to spend more, and, if oil prices decline, or the quantity of oil exported, then the government's money supply and spending is reduced. The IMF identified exposure to oil price fluctuations as a key fiscal risk [2]. Oil revenues are therefore important because of the following: [4, p. 74]

The financing of the government budget and the basic financing of the government revenue.

Funding of the current and capital expenditure of the Government.

Government spending and investment to support economic growth.

Giving foreign currency to pay for imports.

Spending on public services like education, health and infrastructure.

Promoting financial stability due to the relationship between revenues and oil price fluctuations.

Serving as a primary source of government revenue given the low level of non-oil revenues.

The Relationship Between Oil Revenues and Government Spending in Theory

There is a direct relationship between oil revenues and government spending in the Iraqi economy due to the country's reliance on oil as the government's primary source of income. If oil revenues rise as a result of higher oil prices or an increase in oil production and exports, the government will be able to easily finance its expenditures and investments, thereby increasing its spending. On the other hand, if oil revenues decline, a budget shortfall may occur, which could force the government to cut its spending. The International Monetary Fund has noted that government spending in Iraq follows the pattern of oil prices, and spending pressures typically increase as oil prices rise [2].

This relationship is theoretically justified by government budget constraints, as oil revenues are among the most important sources of government spending. As for the Iraqi economy, the relationship between oil revenues and government spending is even more significant given its rentier nature and the large share of oil revenues in the country's general budget. According to data from the International Monetary Fund, oil revenue represented approximately 91% of central government revenue and grants in 2023 [2].

Government Expenditures

The Concept of Government Expenditures

Government spending consists of all costs incurred in performing the government's economic, social, and administrative functions; providing public goods and services; and implementing activities and projects that contribute to the country's economic and social development. This includes current spending—which encompasses salaries, wages, operating costs, and investment costs for infrastructure projects. An important part of fiscal policy involves the amount of spending that the government conducts, and how that relates to aggregate demand and economic growth. The question of government spending assumes special significance in the Iraqi economy, because a significant part of the revenues from the budget comes from revenues generated by oil sales, and government spending is dependent on the oil price [5, p. 53].

Students will analyze the purposes of government expenditure and the economic roles it plays. Public spending is one of the important components of fiscal policy, apart from funding the government operations and provision of public services, it also impacts on the economic activity and economic and social system stability. Abdul-Aali and Aziz [6, p. 295] summarize the most important economic functions of public spending as follows:

1. Resource Allocation: Public spending increases the allocation of resources to areas of public benefit, such as education, health care, infrastructure and basic services.
2. Economic stability: Government uses aggregate demand through its spending and fights economic instability; aggregate demand can be stimulated during the economic recession and can be slowed down during periods of inflation.
3. Economic Growth: Infrastructure investment and human capital investment increase the economic potential and promote economic growth.
4. Income Redistribution: Public expenditure via social protection policies, incentives and public services contributes to better income distribution and to the reduction of some types of income inequality.
5. Public Goods and Services: The government provides funds for goods and services that it is not possible to provide through markets, such as defense, security, judiciary and some health and educational services.
6. Job creation – public spending may create jobs (directly by creating public sector jobs or indirectly through public projects).



How Government Spending Affects Economic Activity

Government spending is also a part of the economy, having direct and indirect effects on overall demand, production, jobs created, investment, and economic growth. The government uses its money to provide public services, projects and infrastructure, which also increases the demand for goods and services, boosts production and increases the economy. Moreover, government expenditure on investment increases the productive capacity of the economy by increasing capital formation and infrastructure. The role of government spending is also linked to achieving economic stability; this type of spending can be used to combat recessions and downturns in economic activity by increasing spending and stimulating demand. However, growth in government spending is limited in periods of high inflation. Government spending affects the labor market both directly, through public-sector employment, and indirectly, through government projects and spending on production inputs [7, p. 170]. In the case of the Iraqi economy, the role of government spending is even more pronounced, as the government's economic and financial activities rely heavily on the oil sector. An increase in oil revenues enables the government to spend larger amounts of money, while a decline in revenues puts pressure on government spending and public investment—and, consequently, on economic activity. Consequently, changes in government spending in Iraq are strongly linked to changes in oil revenues and oil prices on global markets [2]. The extent of this impact depends on the structure of government spending; thus, productive investments may be more effective than current spending, which supports only consumption and spending on services.

Results and Discussion

Economic Growth

The Concept of Economic Growth

Economic growth occurs when an economy has an increasing ability to produce goods and services over time. It can be measured in terms of the growth rate of the real gross domestic product (GDP). Economic Growth: It is the expansion of productive activities and the rise of productive capacity of the economy due to the efficient use of resources, capital and technology and the improvement in productive capacity through increase in productivity. Economic growth is not simply a situation of output growth; it can be measured as an increase in output and this is what is called real economic growth. Capital growth, human capital growth, technological growth, efficiency and good use of resources are some of the most important factors for sustained growth over time. In the context of Iraq and its economy, the growth rate is one of the most important indicators in evaluating the development of economic activity, given the significance of the oil industry and oil revenues in the Iraqi economy. Hence, knowing how oil revenues, government expenditures and economic growth are related will help us understand the degree to which oil revenues and government expenditures will influence the development of gross domestic product [8, p. 59]. Ajmi et al. give a broader account of economic development and its theoretical foundations [9].

Nature of the relationship between oil revenues and government expenditures and economic growth in the Iraq economy

The connection between oil, oil revenues, government spending and growth in Iraq is very close, as the oil industry has an important role as a source of government revenue and its use for financing government activities. The revenues from oil exports are one of the main sources of funding into the general budget; therefore, any changes in oil prices, production and exports alter the amount of funds available to the government to meet its spending demands. The IMF

estimated Iraq's 2023 oil revenue at 38.8% of GDP and central government expenditure and net lending at 43.9% of GDP [2]. The effect of oil on the real economy is mediated by government spending: higher oil revenues lead to higher government spending, which leads to more investment and spending, which then boosts aggregate demand and activity in other sectors of the economy. The International Monetary Fund (IMF) has pointed out that fiscal expansion in 2023 contributed to strengthening non-oil GDP growth by 6 percent, which was supported by fiscal expansion and growth in agriculture, construction and manufacturing [2]. An oil price decline or one that slows down oil production and/or exports, however, will cut into government oil revenues, which in turn will limit the government's ability to fund its spending requirements and could impact government investments and economic activities. Finally, the oil-GDP relationship is not as stable as in other countries; in Iraq, the drop in oil production led to a decrease in real GDP by 2.2% in 2023, even though the non-oil economy grew at a rapid pace [2]. Some recent research shows that the nature of this relationship in Iraq is greatly affected by fiscal policy. The IMF reports that Iraq's fiscal policy follows the oil price cycle and that a high dependence on oil puts the economy and public finances at risk from the volatility of oil prices [2]. Oil revenues can be a direct influence on economic growth via the oil industry itself as well as indirect via government spending. This mutual dependency is adequate to the theoretical level to study the effects of oil revenues on government spending and economic growth in Iraq during the period 2000-2024 by the use of suitable statistical tools Previous studies of Iraq have examined the relationship between government spending . and GDP over 2004–2022 [10]. Earlier work traced the development of government spending

Description of the Research Variables

Table 1. Description of the Research Variables

Description and Measurement Method	Symbol	Variable
Total amount of government expenditure in Iraq, which is indicated through the total amount of government expenditure that occurred within the course of this research	GE	Government Spending
Amount of revenue received from the oil industry, which is indicated through the annual amount of oil revenue, and acts as the primary source of funding for the general budget in Iraq.	OR	Oil revenues
Average oil price around the world, indicated using dollars per barrel. Used to measure the effects of oil prices around the world on government revenue and expenditure.	OP	Oil price
Denotes the percentage change in the overall price level each year using the rate of annual inflation, which can be used to assess the effect of price changes on government expenditure and the economy.	INF	Inflation rate
Denotes net foreign direct investments made to Iraq each year using the annual flow of investments, which can be	FDI	Foreign Direct Investment

Description and Measurement Method	Symbol	Variable
used to assess the effect of foreign investments on the economy.		
Denotes the economic activity in Iraq each year through the real gross domestic product (GDP) or at constant prices, which can be used to assess economic growth.	GDP	Gross Domestic Product (GDP)

Source: Prepared by the researcher

Description of the Empirical Model Used in the Study

ARDL model was used in the research to determine the relationship between oil revenues and economic variables in Iraq, based on its ability to use small sample sizes and since it does not require all variables to be integrated at the same level [12].

The model estimation takes two steps:

First Model: The Effect of Oil Revenues on Government Spending

$$GE_t = \beta_0 + \beta_1 OR_t + \beta_2 OP_t + \beta_3 INF_t + \beta_4 FDI_t \varepsilon_t$$

Where:

GE: Government Expenditures.

OR: Oil Revenues.

OP: Oil price.

INF: Inflation rate.

β_0: Constant term.

β_1, β_2, β_3, β_4: Model coefficients.

ε: Random error term.

t: Time period.

Model 2: The Impact of Oil Revenues on Economic Growth

$$GDP_t = \beta_0 + \beta_1 OR_t + \beta_2 GE_t + \beta_3 OP_t + \beta_4 INF_t + \varepsilon_t$$

Where:

GDP: Economic growth

EG: Economic growth.

OR: Oil revenues.

GE: Government spending.

INF: Inflation rate.

β_0: Constant term.

β_1, β_2, β_3, β_4: Model coefficients.

ε: Random error term.

t: Time period.

The model seeks to quantify the effect of oil revenues, which is one of the independent variables, on government spending and the economic growth in Iraq, while controlling for some variables that may affect the relationship between the variables.

Thirdly, Descriptive Analysis of the Study Variables

Descriptive statistics of the study variables are shown in Table (2) and consist of government expenditure (GE), oil revenue (OR), oil price (OP), inflation rate (INF), foreign direct investment (FDI) and gross domestic product (GDP). These statistics describe the distribution characteristics, measure of central tendency and the level of dispersion of the variables throughout the study period. The results of the arithmetic means show that the oil sector plays an important role in the Iraqi economy, and the average government expenditure (GE) was

(18.0084), the average oil revenue (OR) was about (47.22426), and the average oil price (OP) was (61.33735). The average inflation rate (INF) was about 8.456946, the average foreign direct investment (FDI) averaged -0.36968, and the average gross domestic product (GDP) averaged 136.409. The standard deviation values show the differences in the amount of variability of the variables studied, where GDP and the oil price showed the largest differences in variability compared to the other variables, given their sensitivity to the fluctuations in the economy in the study period. Moreover, the values of skewness and kurtosis showed that the distribution characteristics for most of the variables was appropriate and they were not far from normal distribution. Moreover, the Jarque-Bera test results showed that the p-values of all the variables in the research model were greater than 5%, suggesting that the assumption of normal distribution for the variables in the research model cannot be rejected.

Table 2. Descriptive Statistics for the Study Variables

Variable	GE	OR	OP	INF	FDI	GDP
Mean	18.0084	47.22426	61.33735	8.456946	-0.36968	136.409
Median	18.19593	46.63792	60.54333	14.14758	-0.00053	152.6301
Maximum Value	25.56374	65.1576	98.69417	38.89983	4.561717	234.6377
Minimum Value	11.83871	27.035	25.24917	-28.7601	-4.54159	21.92157
Standard Deviation (Std. Dev.)	3.023598	9.723403	24.37824	18.69392	2.214808	76.75316
Skewness	0.177281	0.142504	0.135405	-0.30301	-0.21563	-0.18214
Kurtosis	3.825491	2.808265	1.826735	2.170807	2.903844	1.505617
Jarque-Bera	0.739887	0.108159	1.329064	0.96691	0.178957	2.168723
Prob. Jarque-Bera	0.690773	0.947357	0.514514	0.616649	0.914408	0.338118

Source: Prepared by the researcher based on the results of the analysis in EViews 12

Fourth: Stationarity Test of the Variables (ADF Test)

The stationarity of the study variables will be tested using EViews 12 by applying the Augmented Dickey-Fuller Test (ADF) [13] to verify the degree of integration of the time series and determine whether the variables are stationary at level or after taking first differences. This step is necessary prior to applying the ARDL model, as the model requires that the variables be a combination of variables that are stationary at level I(0) or at first differences I(1), with no variables stationary at second differences I.(2)

After conducting the stationarity test for the variables, the results will be presented in Table . (3)

Table 3. Extended Dickey-Fuller unit root test for the study variables

Variable	Level			First Team		
	A	B	Non	A	B	Non
Government Expenditure (GE)	-5.213*	-3.641*	0.209	-	-	-

Variable	Level			First Team		
	A	B	Non	A	B	Non
Oil Revenues (OR)	-1.912	-4.427*	-0.515	-	-	-
Oil Price (OP)	-2.135	-2.072	-0.201	-4.783*	-4.747*	-4.818*
Inflation Rate (INF)	-4.376*	-4.323*	-3.964*	-	-	-
Foreign Direct Investment (FDI)	-1.511	-2.532	-1.413	-3.419*	-3.352	-3.479*
Gross Domestic Product (GDP)	-0.688	-2.427	0.989	-4.601*	-4.467*	-4.009*

a means the regression contains only an intercept
b means the regression contains an intercept and a general trend
non means the regression contains neither an intercept nor a general trend
*means statistically significant at the 5% significance level

Source: Prepared by the researcher based on the results of the analysis in the (EViews12)

We observe from Table (3) that the time series for government spending, oil revenues, and the inflation rate were stationary at the level, whether with a intercept or with both an intercept and a trend—that is, they do not contain a unit root at the 5% significance level, whereas the time series for oil prices, foreign direct investment, and gross domestic product were stable after taking the first differences of the original series and were found to be stable at the 5% significance level, whether with a cut-off or with a cut-off and a general trend.

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
https://bulletin.ouk.kz/index.php/bulletin/index

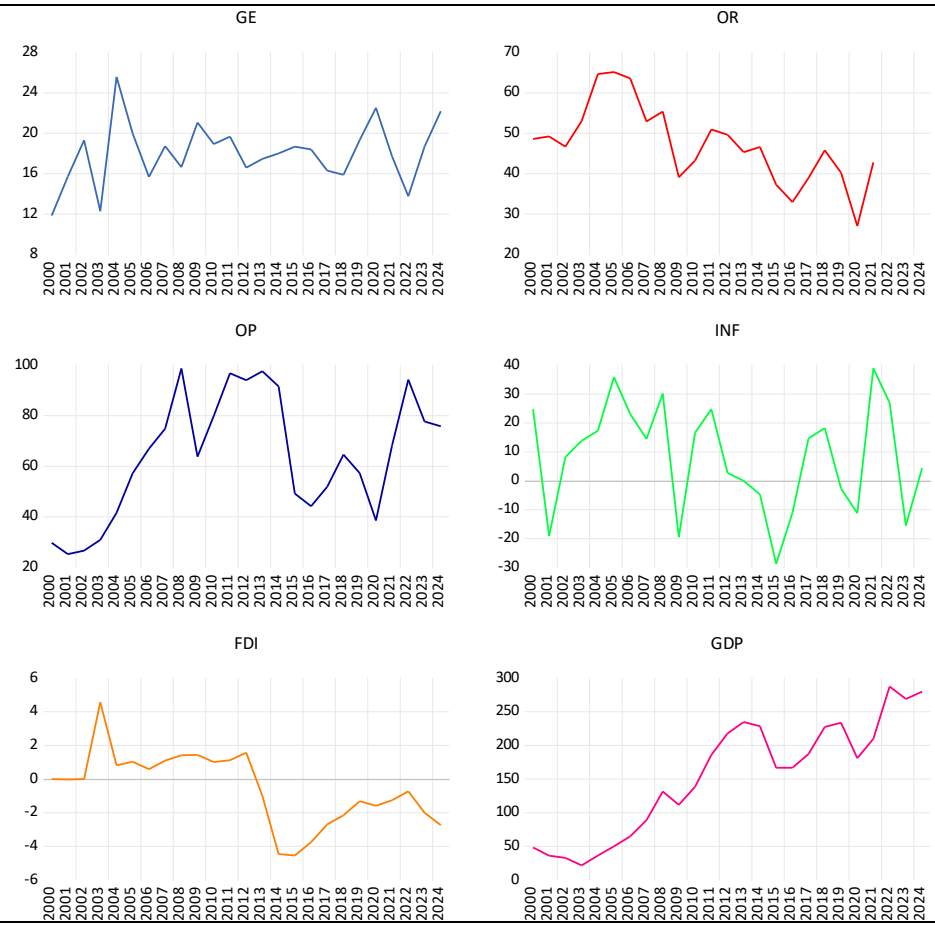


Figure 1. Time series for the period 2004–2024
Source: Prepared by the researcher based on data from the World Bank (World Development Indicators, WDI) [14]. Governance data are from the Worldwide Governance Indicators (WGI) [15].
Source: Prepared by the researcher based on the results of the analysis conducted in EViews 12

Figure (1) below illustrates the trends in the study variables over the period (2000–2024), namely: government investment (GE), oil revenues (OR), oil prices (OP), the inflation index (INF), foreign direct investment (FDI), and gross domestic product (GDP). (GDP). The available data revealed trends in fiscal and investment management that clearly demonstrated the impact of global oil prices on oil revenues and government spending, in addition to identifying specific trends related to foreign direct investment. In contrast, GDP showed varying trends, as the economy experienced periods of recession; this is one of the reasons why the Autoregressive Distributed Lag (ARDL) model is appropriate for these variables.

Fifth. Determining the Optimal Lags for Two ARDL Models

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
https://bulletin.ouk.kz/index.php/bulletin/index

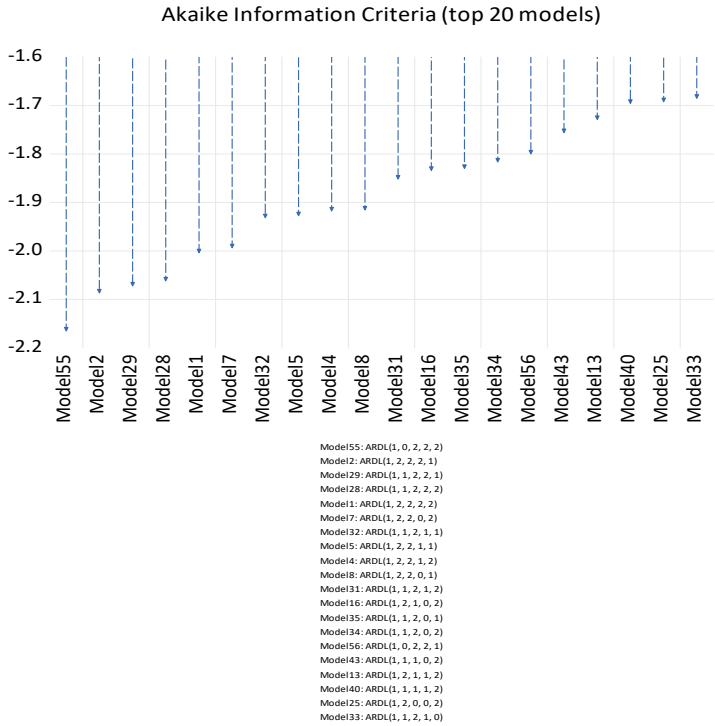


Figure 2. Criteria for Selecting the Order of the First Model V. Determining the O
Source: Prepared by the researcher based on the results of the analysis in EViews 12

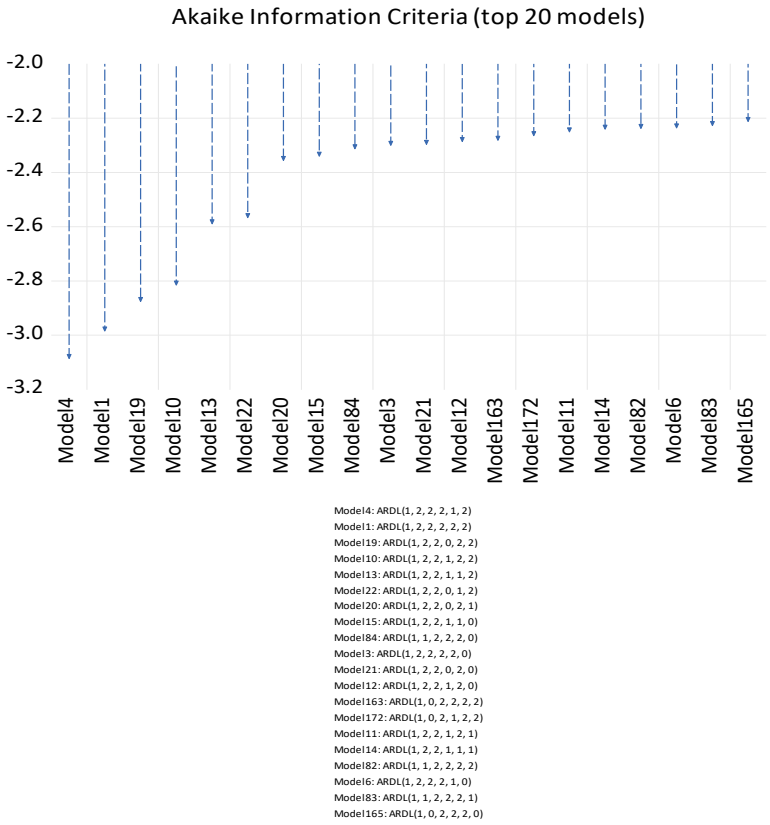


Figure 3. Selection Criteria for the Order of the Second Model
Source: Prepared by the researcher based on the results of the analysis in the (EViews12)

The optimal order for the two ARDL models was determined based on model selection criteria, specifically the Akaike Information Criterion (AIC), which is used to compare alternative models and select the one that yields the lowest value for the criterion [16]. The estimation results showed that the optimal order for the first model, which includes government spending, is ARDL (1,0,2,2,2), while the ARDL model (1,2,2,2,1,2) was selected for the second model, which addresses economic growth. The selection of these orders indicates that the model takes into account the lagged effects of the variables, allowing for an analysis of the dynamic relationship between the variables in both the short and long runs, while avoiding the problem of overspecification resulting from the addition of unnecessary lags.

Sixth: Bounds Test to Detect the Long-Run Relationship in the Two Models

Table (4) below shows the outcomes of the F-Bounds Test, which is applied to determine whether there is a long run association among the variables under the ARDL model. The test is carried out by matching the value of the "F" statistic with the critical value of the bounds for I(0) and I(1). In the first model (on government spending), we find that the calculated value of the "F" statistic (7.733771) exceeds the upper bound I(1) of (4.37) at the 1% significance level, indicating the presence of a long-run relationship. Similarly, in the second model (on economic growth), we find that the calculated value of the "F" statistic (9.220783) exceeds the upper bound I(1) of (4.15) at the 1% significance level.

Table 4. Results of the F-Bounds Test for Cointegration for the Two Models Under Study

النموذج	Test Statistic	Value	Significant Level	I(0)	I(1)
The first model: (GE)	F-statistic	7.733771	10%	2.2	3.09
	K	4	5%	2.56	3.49
			2.50%	2.88	3.87
			1%	3.29	4.37
The second model: (GDP)	F-statistic	9.220783	10%	2.08	3
	K	5	5.00%	2.39	3.38
			3%	2.7	3.73
			1%	3.06	4.15

Source: Prepared by the researcher based on the results of the analysis in EViews 12

Seventh. Estimation of the Long-Run Relationship for Two Models

The nature of the long-run relationship between the variables in the Autoregressive Distributed Lag (ARDL) model is determined by evaluating the long-run parameters presented in Tables (5) and (6), along with the Error Correction Mechanism (ECM) coefficient, which confirms the existence of an equilibrium relationship between the variables. A long-run relationship between the variables was found in both models, based on the coefficients of the independent variables, which indicate their impact on the dependent variable.

Table 5. Long-Run Relationship—Model 1: ARDL (1, 0, 2, 2, 2)

Variable	Long-Run Coefficient	Std. Error	t-Statistic	Prob.
OR	0.014813	0.020056	0.738596	0.4842
OP	-0.045509	0.733692	-0.062027	0.9523
INF	-0.013418	0.004974	-2.697396	0.0308**
FDI	0.081300	0.037604	2.162005	0.0674*
C	2.905590	0.026645	109.0502	0.0000***

Variable	Long-Run Coefficient	Std. Error	t-Statistic	Prob.
$LGE = 2.905590 + 0.014813OR01 - 0.045509OP - 0.013418INF + 0.081300FDI$				

***Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.
Source: Prepared by the researcher based on the results of the analysis in EViews 12

For the first model, which analyzes the effect of oil revenues on government spending, the results in Table (5) show that the oil revenue coefficient (OR) was (0.014813); however, this coefficient was not statistically significant, with a p-value of (0.4842). The same applies to the oil price (OP), whose coefficient was (0.045509–) and was not statistically significant (with a p-value of 0.9523). In contrast, inflation (INF) had a statistically significant negative effect on government spending, with a coefficient of (0.013418-) and a p-value of (0.0308); this indicates that as the inflation rate rises, government spending decreases in the long run. Furthermore, foreign direct investment (FDI) had a statistically significant positive effect at the 10% level, with a coefficient of (0.081300) and a p-value of (0.0674) **.**

Table 6. Long-Run Relationship—Model 1: ARDL (1, 2, 2, 2, 1, 2)

Variable	Long-Run Coefficient	Std. Error	t-Statistic	Prob.
EG	0.011194	0.005464	2.048646	0.1329
OR	-0.061675	0.003675	-16.78335	0.0005***
OP	0.019615	0.001693	11.58719	0.0014***
FDI	-0.139240	0.013988	-9.954376	0.0022***
INF	0.010424	0.006837	1.524553	0.2248
C	6.335700	0.223117	28.39635	0.0001***
$\mathrm{LGDP} = 6.335700 + 0.011194\mathrm{EG} - 0.061675\mathrm{OR} + 0.019615\mathrm{OP} - 0.139240\mathrm{FDI} + 0.010424\mathrm{INF} + \epsilon +$				

***Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.
Source: Prepared by the researcher based on the results of the analysis in EViews 12.

With regard to the second model, which examines the impact of oil revenues on economic growth, the results presented in Table (6) show the existence of long-term relationships between the explanatory variables and gross domestic product (GDP). (GDP). It was found that oil revenues (OR) have a statistically significant negative effect on economic growth, with a coefficient of (0.061675-) and a p-value of (0.0005), indicating that increasing dependence on oil revenues may lead to a slowdown in economic growth in the long run. Furthermore, the oil price variable (OP) has a positive and statistically significant effect on economic growth, with a coefficient of (0.019615) and a p-value of (0.0014), confirming the importance of improved oil prices for economic development. The same applies to foreign direct investment (FDI), which has a negative and statistically significant effect on economic growth, with a coefficient of (0.139240-) and a p-value of (0.0022). In contrast, it was found that neither government spending (EG) nor the inflation rate (INF) exerts any statistically significant effect on long-term economic growth.

Eighth: Estimation of the Error Correction Model for Two Models

The results in Table (7) for the first model, which examines the effect of oil revenues on government spending, indicate that the error correction coefficient CointEq(-1) is (-0.938171) which is negative and statistically significant at the 1% level, confirming the existence of a long-run equilibrium relationship between the model's variables. This coefficient indicates that approximately (93.8%) of short-run imbalances are corrected within one time period to return to the long-run equilibrium path. The results also showed that the lagged change in oil prices, D(OP(-1)), has a negative and statistically significant effect, with a coefficient of (-0.870906), while the short-run effect of inflation was statistically significant through second differences,

showing a negative effect for the current period and a positive effect for the previous period. Foreign direct investment also showed a negative and significant effect during the first slowdown period. Model quality indicators point to high explanatory power, with a coefficient of determination R^2 = 0.968343 and a Durban-Watson statistic of 1.910129, reflecting the model's statistical fit.

Table 7. Specification of the Aggregate Error Correction Model for the First Government Expenditure Model (ECM) (ARDL)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OP)	0.078341	0.157785	0.496507	0.6347
D(OP(-1))	-0.870906	0.133058	-6.545311	0.0003***
D(INF,2)	-0.004077	0.000465	-8.766534	0.0001***
D(INF(-1),2)	0.003907	0.000783	4.989987	0.0016***
D(FDI,2)	0.018535	0.010616	1.745976	0.1243
D(FDI(-1),2)	-0.029203	0.006733	-4.336982	0.0034***
CointEq(-1)	-0.938171	0.105189	-8.918933	0.0000***

Model Diagnostic Statistics	Value
R-squared	0.968343
Adjusted R-squared	0.952515
S.E. of Regression	0.054959
Sum Squared Resid	0.036246
Log Likelihood	32.52785
Akaike Information Criterion (AIC)	-2.687142
Schwarz Criterion (SC)	-2.339191
Hannan-Quinn Criterion (HQ)	-2.628255
Durbin-Watson Statistic	1.910129

ECM: GE

$$(DLOG(GE) = -0.938171 * [LOG(GE(-1)) - (0.014813OR01(-1) - 0.045509OP(-1) - 0.013418INF(-1) + 0.081300FDI(-1) + 2.905590)]$$

Source: Prepared by the researcher based on the results of the analysis in EViews 12

.

As for the results in Table (8) for the second model, which examines the impact of oil revenues on economic growth, they show that the error correction coefficient CointEq(-1) was (-0.950374) which is negative and statistically significant at the 1% level, confirming the existence of a correction mechanism toward long-run equilibrium, whereby approximately (95%) of short-run imbalances are corrected within a single period. The results also showed significant short-term effects for several variables; the effect of changes in government spending (D(EG,2)) was positive and significant, while the effect of oil revenues (D(OR)) was negative and significant, and the oil price (D(OP)) had a positive and significant effect on economic growth. Foreign direct investment also recorded a negative and significant effect, while inflation showed mixed effects between the current and lagged periods. Model quality indicators point to high explanatory power, with a coefficient of determination R^2 = 0.991319 and a Dorben-Watson statistic of 2.118289.

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
https://bulletin.ouk.kz/index.php/bulletin/index

Table 8. Specification of the Autoregressive Integrated Error Correction (ARDL) Model for the Second Economic Growth Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EG,2)	0.005163	0.000370	13.94891	0.0008***
D(EG(-1),2)	-0.003852	0.000453	-8.507915	0.0034***
D(OR)	-0.050295	0.003287	-15.30056	0.0006***
D(OR(-1))	0.031323	0.002610	12.00129	0.0012***
D(OP)	0.022311	0.001577	14.14400	0.0008***
D(OP(-1))	0.009169	0.001646	5.570266	0.0114**
D(FDI)	-0.047813	0.006448	-7.415183	0.0051***
D(INF)	0.008425	0.002008	4.195091	0.0247**
D(INF(-1))	-0.009397	0.001256	-7.482295	0.0049***
CointEq(-1)	-0.950374	0.068297	-13.91533	0.0008***
Diagnostic Statistic			**Value**	
R-squared			0.991319	
Adjusted R-squared			0.982638	
S.E. of Regression			0.032513	
Sum Squared Resid			0.009514	
Log Likelihood			45.23517	
Akaike Information Criterion (AIC)			-3.708965	
Schwarz Criterion (SC)			-3.211892	
Hannan-Quinn Criterion (HQ)			-3.624840	
Durbin-Watson Statistic			3.118289	

ECM:GDP

$$DLOG(GDP) = -0.950374 * [LOG(GDP(-1)) - (-0.061675OR01 + 0.019615OP - 0.139240FDI + 0.010424INF + 0.011194EG + 6.335700)]$$

Source: Prepared by the researcher based on the results of the analysis in EViews 12

Ninth. Model Diagnostic Tests

Various diagnostic tests were conducted to ascertain the validity of the estimated ARDL models, and at the same time, whether or not they have any problems that could be affecting their accuracy of estimation. These tests consist of residual autocorrelation test, heteroscedasticity test, normality of residuals test, Ramsey RESET test for model fitness and coefficient stability tests through CUSUM. From the results shown in Table (7), it is evident that both the models passed most of the diagnostic tests. The results of the Serial Correlation LM Test showed that the p-value for Model 1 was 0.937 and for Model 2 was 0.0812, both of which are above the 5% significance level, indicating that there is no autocorrelation problem in the residuals of either model. Similarly, the results of the Breusch-Pagan-Godfrey test for heteroscedasticity showed that the p-values were 0.765 for the first model and 0.586 for the second model, confirming the stability of the error variances and the absence of a heteroscedasticity problem. As for the Jarque-Bera test for the normality of the residuals, the p-values were 0.158 and 0.976 for the first and second models, respectively, indicating that the residuals follow a normal distribution. Similarly, the results of the Ramsey RESET test showed no issues with model specification, with p-values of (0.984) for the first model and (0.102) for the second model.

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
https://bulletin.ouk.kz/index.php/bulletin/index

Table 7. Results of diagnostic tests for the two ARDL models

Test	Model (1): Government Expenditure Model		Model (2): Economic Growth Model	
	Test Statistic	P.value	Test Statistic	P.value
Serial Correlation LM Test	0.0658	0.937	10.832	0.0812
Heteroskedasticity Test (Breusch-Pagan-Godfrey)	0.0926	0.765	0.309	0.586
Normality Test (Jarque-Bera)	3.688	0.158	0.0488	0.976
Ramsey RESET Test	0.0216	0.984	47.159	0.102

Source: Prepared by the researcher based on the results of the analysis conducted in EViews 12

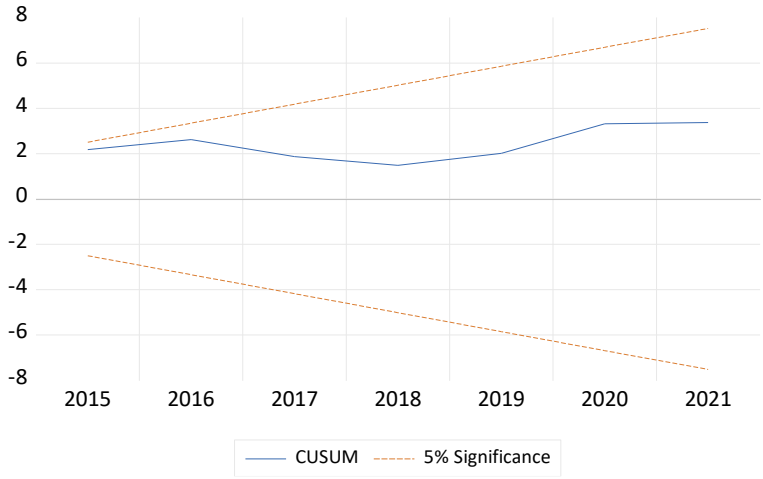


Figure 4. Results of the CUMSUM test for Model 1 (government spending)

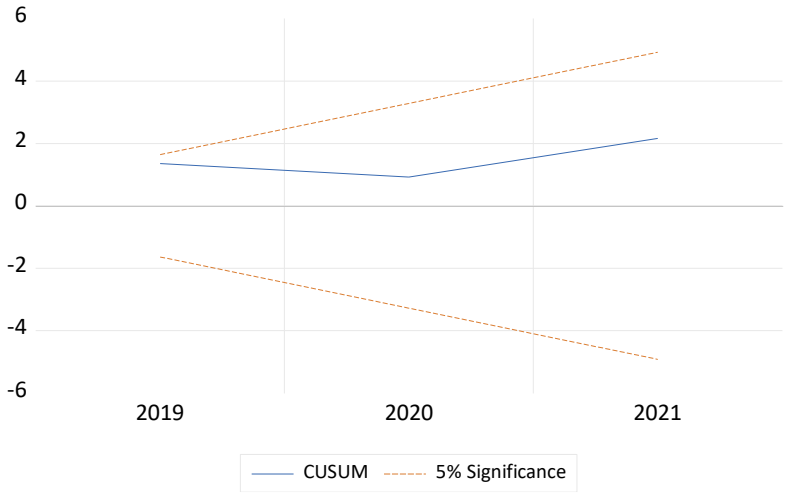


Figure 5. CUMSUM test results for the second model (economic growth)

Figures (4) and (5) show the results of the CUSUM stability test [17], which suggest that the line is within the 5% confidence limits and that there are no structural changes affecting the results of estimation during the study period, model parameters remain stable during the study period.

Conclusion

1. The findings revealed that the oil revenues have no significant impact on the government spending on the long run, however, it has a negative and significant impact on economic growth in the long run at 1 percent significance level which implies that increasing dependence on oil revenues does not necessarily imply sustainable economic growth.
2. In conclusion, the results revealed that the oil prices are important as a supporting commodities for economic growth through oil revenue having significant positive effect on economic growth in the long run while there is negative but non-significant effect on government spending in the long run.
3. The study revealed that the inflation rate exerted a negative and significant impact on Government spending at 5% level of significance as opposed to economic growth, which indicated that the role of the inflation rate vary with the type of the dependent variable in the model.
4. The results indicated that foreign direct investment is positive and significant at 10% level of significance on government expenditure in long run and negative and significant at 1% level of significance on economic growth in long run.
5. The result of the error correction model also suggested that the coefficient of correction was negative and significant for both models; hence, there was a long-run relationship between the variables as the correction of imbalances in the government spending model was around 93.8% for each period and that of the economic growth model was about 95% for each period.
6. The results of the diagnostic tests showed that the ARDL models were stable and valid, with no serious statistical problems that could not be ignored in the process of estimating the ARDL models, including no autocorrelation problem, heteroskedasticity, and non-normality of the residuals, which indicated that the estimation results of the ARDL models were reliable in explaining the economic relationship between the variables.

Recommendations

1. Based on the findings from the current study, a list of suggestions can be suggested, such as:
2. To gradually decrease oil revenue dependence by diversifying sources of government revenue and building up non-oil economic sectors for sustainability of public finances.
3. Unexcessed oil revenues should be directed towards productive investment and long term development projects and so contribute to making oil revenues a tool for economic growth, not a quick source of finance.
4. The need to formulate economic policies for dealing with oil price volatility through more flexible fiscal frameworks to respond to falling oil prices and lessen the effects of price falls on the economy.
5. The investment climate should be improved and the efficiency of FDI strengthened; bringing investments to more productive sectors that can boost the rate of economic growth and enhance domestic value added.

6. Effective fiscal and monetary policies are needed to achieve macro-economic stability in order to reduce the impact of inflation and enhance the effectiveness of the use of government resources to attain economic development objectives.
7. Improve the efficiency of government expenditure management and allocate it to productive sectors and infrastructure and correct any economic imbalances in time to ensure a long-term balance between the variables analyzed.

References

[1] S. Z. Al-Saadi, The Economic Experience in Modern Iraq, 1st ed. Baghdad, Iraq: Dar Al-Mada for Culture and Publishing, 2009.
[2] International Monetary Fund, "IMF Executive Board concludes 2024 Article IV consultation with Iraq," Press Release No. 24/165, May 15, 2024. [Online]. Available: https://www.imf.org/en/news/articles/2024/05/15/pr24165-imf-concludes-2024-article-iv-consultation-with-iraq
[3] J. K. T. Al-Azirjawi, "Analysis of the relationship between the Dutch disease and resource waste in the Iraqi economy for the period 1990–2016," unpublished master's thesis, College of Management and Economics, University of Baghdad, Baghdad, Iraq, 2019.
[4] M. S. Al-Shimari, "Diagnosing the Dutch disease and the foundations for reforming the quasi-market economy in Iraq," Al-Ghari J. Econ. Admin. Sci., vol. 3, no. 12, 2010.
[5] J. A. A. Al-Husseini, "Analysis of the impact of public spending on gross domestic product: A case study of Iraq for the period 1980–2021," Iraqi J. Econ. Sci., vol. 22, no. 80, 2024, doi: 10.31272/ijes.v22i80.104.
[6] M. H. Abdul-Aali and H. K. Aziz, "Analysis of the role of government spending on economic growth in the Iraqi economy for the period 2004–2022," Al-Kut Univ. J., 2024. [Online]. Available: https://js.uokut.edu.iq/index.php/js/article/view/221
[7] M. R. S. Masrif, O. T. Yassin, and M. T. Hathal, "Measuring and analyzing the role of investment spending in economic growth and its impact on achieving social justice in Iraq for the period 2004–2022," Iraqi J. Econ. Sci., vol. 23, no. 85S1, p. 154, 2025, doi: 10.31272/ijes.v23i85.1274.
[8] A. H. A. F. Al-Humaidi, "Measuring and analyzing the impact of general government spending on economic growth in Iraq for the period 2004–2022," Gulf Economist J., 2024. [Online]. Available: https://iasj.rdd.edu.iq/journals/uploads/2024/12/06/e87cefca0ad6b9f2f0a5e0c51d2cb980.pdf
[9] M. A. Ajmi et al., Economic Development: Theory and Practice, 2nd ed. Egypt: Al-Dar Al-Jami'iyya, 2007.
[10] U. A. F. Mankhi and A. A. Salman, "Analysis of the relationship between government spending and gross domestic product in the Iraqi economy for the period 2004–2022," Al-Kut J. Econ. Admin. Sci. [Online]. Available: https://kjeas.uowasit.edu.iq/index.php/kjeas/ar/article/view/851
[11] A. N. Awda and I. A. Farhan, "Analysis of government spending in Iraq for the period 2004–2020," Al-Kut Univ. J., vol. 9, no. 1, 2024. [Online]. Available: https://js.uokut.edu.iq/index.php/js/article/view/335
[12] M. H. Pesaran, Y. Shin, and R. J. Smith, "Bounds testing approaches to the analysis of level relationships," J. Appl. Econometrics, vol. 16, no. 3, pp. 289–326, 2001, doi: 10.1002/jae.616.



[13] D. A. Dickey and W. A. Fuller, "Likelihood ratio statistics for autoregressive time series with a unit root," Econometrica, vol. 49, no. 4, pp. 1057–1072, 1981, doi: 10.2307/1912517.
[14] World Bank, "World Development Indicators." [Online]. Available: https://databank.worldbank.org/source/world-development-indicators
[15] World Bank, "Worldwide Governance Indicators." [Online]. Available: https://www.worldbank.org/en/publication/worldwide-governance-indicators
[16] H. Akaike, "A new look at the statistical model identification," IEEE Trans. Autom. Control, vol. 19, no. 6, pp. 716–723, 1974, doi: 10.1109/TAC.1974.1100705.
[17] R. L. Brown, J. Durbin, and J. M. Evans, "Techniques for testing the constancy of regression relationships over time," J. Roy. Stat. Soc. B, vol. 37, no. 2, pp. 149–163, 1975, doi: 10.1111/j.2517-6161.1975.tb01532.x.