Original Research Article

Measuring and Analyzing the Impact of Economic Growth and Stability on Investment in Iraq after 2004

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Abstract: Investment studies are fundamental to understanding how to improve living standards and achieve economic growth and stability. The Iraqi economy has experienced sharp fluctuations in growth since 2004 as a result of the interaction of economic and political factors. This research aims to measure and analyze the impact of economic growth and stability on investment in Iraq during the study period using a normative analytical approach, specifically the ARDL model. The research concludes that there is a long-term positive impact of GDP on investment in Iraq. This means that a one-unit increase in the GPT index leads to a 0.5-unit increase in total investment (GF), assuming all other factors remain constant. Conversely, a one-unit increase in the IN index leads to a 0.2-unit decrease in total investment (GF), assuming all other factors remain constant, negatively impacting long-term investment in Iraq. The report recommends strengthening economic stability through sound monetary, fiscal, and trade policies, providing a secure environment, and boosting investor confidence to attract both domestic and foreign investment.

Keywords: Investment, Gross Domestic Product, Inflation.

INTRODUCTION

Countries worldwide strive to provide and improve a favorable investment environment to attract investors, given the vital role investment plays in promoting development and the economy. Iraq suffers from a decline in investment due to the political and security problems it has faced since 2004. This leads to hesitation among many local and foreign businesspeople to invest in Iraq. Furthermore, investors face numerous challenges and risks, in addition to Iraq's lack of a developed financial system, which negatively impacts investment and leads to its decline. Despite these risks, the government has given considerable attention to the private sector and its investments by enacting important laws to protect it and make it a fundamental pillar for supporting and enhancing economic growth, both now and in the future.

Research Problem: The research problem can be formulated through the following question:

Did economic growth and stability play an effective role in increasing investments in Iraq after 2004?

Research hypothesis: The research started from the hypothesis that economic growth and stability did not play a positive role in increasing investment in Iraq during the research period.

The objectives of this research are:
1. To study the reality of economic growth, stability, and investment in Iraq.
2. To analyze the impact of economic growth and stability on investment in Iraq after 2004.
3. To measure the relationship between GDP and inflation on investment in Iraq.

The Importance of the Research:
1. The importance of this research lies in understanding the impact of economic growth and stability on investment, particularly in light of the transformations witnessed during that period.
2. This research contributes to understanding the relationship between the variables used and their interactions.
3. Quantitative analysis helps in adopting more sustainable and efficient policies.

Research Scope:
1. Spatial Scope: The Iraqi economy.
2. Temporal Scope: The period is defined as after 2004.

RESEARCH METHODOLOGY

The research adopted the inductive approach in a descriptive style to determine the impact of growth and stability on investment in Iraq by presenting and analyzing the data, results, and effects that we reached through the use of the standard model.

Section one
Theoretical and Conceptual Framework for Economic Growth, Stability, and Investment in Iraq
First: investment
A. The Concept of Investment

Investment involves using other resources and funds in assets such as real estate, bonds, and stocks to generate future profits, with the aim of increasing capital value or creating a continuous income stream over time. Investing is fundamental to personal and business financial planning, as it helps achieve the financial goals of companies and individuals, such as building wealth and generating profits. It also includes asset analysis, risk assessment, and making sound investment decisions based on the investor's objectives and risk tolerance. (Hanaa, 2006: 91) Investment is one of the most important activities undertaken by most countries, institutions, and even individuals. It contributes to capital growth and the expansion of businesses' operations, and it is a key indicator of economic growth in any country. Investment is defined as the flow of new spending on fixed capital goods, such as factories, machinery, and roads, or the addition of inventories, such as raw materials or intermediate goods, over a specific period. It is also defined as the postponement of the use of current assets to generate future profit in the form of income or an increase in capital. Furthermore, it is defined as the productive deployment of capital. In other words, directing capital towards use leads to an increase in capital goods, construction projects, or inventory. (Awni, 2002: 81).

B. Types of Investment
1. Private and Public Investment:

Private investment refers to investments made by the private sector, while public investment refers to investments made by the government. The distinction between them is crucial in macroeconomic theory, as private sector investment is primarily profit-driven, while public sector investment aims to achieve economic and social development goals in line with the state's aspirations. These goals include achieving full employment or stabilizing the general price level. Public investment is also used as a compensatory mechanism to cover any shortfall in private sector investment spending. (Saqr, 1983: 220).

2. Indirect Foreign Investment:

Foreign investment is divided into two types: direct and indirect. Indirect investment, also known as foreign portfolio investment, takes the form of foreign ownership of stocks and bonds in the host country, or government bonds, with the aim of speculation and profiting from price differences and receiving dividends or fixed-interest shares. However, foreigners do not own sufficient shares to grant them the right to manage the project or interfere in the decision-making process. This type of investment is usually undertaken by financial institutions such as banks and investment funds, or institutional investors such as pension funds and insurance companies. The short-term nature of this kind of investment nature, which may not exceed a few weeks or months. Foreign direct investment, however, is a real, long-term investment in productive assets. (Hanaa, 2002: 15).

Factors Determining Investment
1. Expected Return: Investing involves capital risks, so achieving a return that exceeds these risks is essential for profitability. A company's profit margin is a good indicator of the viability of an investment.
2. Business Confidence: Uncertainty about the future can lead to decreased confidence, resulting in changes in companies' trust in investment decisions. Consequently, companies will not invest until confidence is restored.
3. Interest Rates: Higher interest rates increase the opportunity cost of investing, which in turn raises the interest rate on savings accounts or reduces consumer spending, leading to a loss in investment returns. This necessitates that consumers maintain their current spending levels.

Second: Economic Growth

Economic growth refers to the increase in production over a specific period, in addition to an increase in per capita income. It is defined as the continuous increase over time in average real per capita income (Abdul Rahman, 2015: 325). It is also the rate of change in average per capita share of the gross national product. Economic growth leads to technological advancement, increased investment, and improved workforce training and efficiency, which in turn contributes to increasing the productive capacity of society. A condition for economic growth is that the rate of economic growth must exceed the rate of population growth. If the rate of population growth equals the rate of growth of the gross domestic product, then average per capita income remains constant (Khodair, 2023: 310).

The Importance of Economic Growth

Economic growth is the most effective means of eradicating poverty and raising living standards, according to development studies carried out in certain emerging nations. The poverty rate decreases by 20–30% for every 10% rise in income. Economic growth has several objectives, including:
a) **Poverty Reduction:** Economic growth raises individual income levels quickly and effectively, leading to a decrease in poverty rates.

b) **Job Creation:** Economic growth contributes to job creation by increasing the demand for labor, which helps reduce poverty. It also balances economic restructuring and industrialization, improving productivity levels.

c) **Improvement of Health and Education:** Higher income levels resulting from economic growth contribute to improved healthcare services. Education is also affected by higher income levels, as increased enrollment in schools and universities leads to higher overall income levels.

The Relationship Between Investment and Economic Growth:

Economic studies and research have confirmed that investment has an immediate and favorable effect on rates of economic growth, particularly in light of the global shift towards a market economy and the private sector's leadership of the economic system, especially in developed countries. The private sector is considered the cornerstone of any real economic activity. Economic schools of thought affirm that private sector investment is the primary driver of economic growth, thanks to market competition, efficiency, sound organization of economic activity, and innovation. Numerous studies confirm that private sector development and increased investment in it contribute to achieving sustainable, long-term economic growth. Private sector investment in economic growth offers many advantages that support the private sector's economic and social objectives, namely expanding employment opportunities and lowering poverty, particularly in emerging nations and rentier states.

A. Gross Domestic Product (GDP)

It is defined as the total ultimate market value, determined at market prices, of the commodities and services produced by a society during a given time period, often one year. (Barkare, A. 2015).

B. Factors Affecting the Size of GDP (Al-Bakr, 2016: 28):

1. Humans' inability to predict and control it due to natural conditions, such as earthquakes and other weather phenomena.
2. The value and quantity of goods and services produced are affected by the country's political stability, and production is also impacted by wars through the destruction of factories.
3. The value of GDP is determined by the quantity and quality of economic resources, which in turn determine the quantity and quality of products.
4. The extent to which the state implements the division of labor in production, technological advancements, and the relationship between the factors of production and the surrounding environment.

C. Problems in Calculating Gross Domestic Product (GDP): (Mohannad, 2016: 29)

1. Difficulty in calculating total income generated from economic activity.
2. Difficulty in calculating the monetary value of goods and services produced.
3. Difficulty in estimating inventory levels and capital consumption for each factor of production.
4. Nominal and real GDP are affected by the continuous changes in the general and standard price structures.
5. The existence of more than one real and official exchange rate for the local currency leads to the problem of currency value discrepancies between countries.

Third: Economic Stability

Economically, stability can be defined as maintaining the existing economic situation, whether ideal or not, with the aim of creating suitable conditions for its improvement (Haydar, 2007: 4). Stability also means paving the way for restoring equilibrium. This is achieved when none of these economic variables tend to change negatively during a specific period, and equilibrium is reached when this condition is met. Furthermore, stability means achieving full employment without inflation, that is, reaching the highest possible level of material output or real national income, i.e., the highest levels of utilization of the economic resources available to the national economy, while simultaneously maintaining the value of the currency (Batoul, 2014: 192).Finally, economic stability can be defined as achieving full employment of available economic resources and avoiding large changes in the general price level while maintaining a reasonable real growth rate in national output. In other words, the concept of economic stability encompasses two fundamental objectives that fiscal policy, along with other policies, seeks to achieve:

1. Maintaining full employment of economic resources.
2. Achieving a degree of stability in the overall level of prices.

A. Inflation:

Global inflation is defined as a general rise in prices, not just the prices of specific goods and services, leading to a decrease in the purchasing power of currency and, consequently, a general and sustained increase in prices. Global inflation is a broad measure, as it is associated with a general rise in prices, along with a rise in the cost of living in a country or region. It is measured using price indices that compare the price levels of a basket of goods and services at different times. The Producer Price Index (PPI) and the Consumer Price Index (CPI) are among the most common price indices used to measure inflation, and they rely on two types of inflation: headline inflation, which includes the inflation rate for a specific commodity such as food and energy; and core inflation, which excludes food and energy

prices when calculating inflation. In other words, core inflation excludes food and energy due to their volatile prices. This allows us to observe deeper trends in price changes, the growth of production costs, and the relationship between supply and demand. Inflation is also defined as a sustained rise in the prices of goods and services that government officials are unable to control. Other definitions of economic inflation include a gradual increase in prices resulting from an increase in supply or demand, or an increase in costs. (Adel, 2025: 1)

B- Causes of Economic Inflation (Belkadi, 2013: 142)
Inflation is an economic phenomenon resulting from several causes, the most important of which are:
1. **Optimal Utilization:** This term refers to the economic situation in which all factors of production are fully utilized, leading to the production system's inability to meet increasing demand.
2. **Insufficient Production:** This occurs when the economy loses its elasticity and becomes unable to supply the market with high-demand goods because of a lack of production technology or the application of antiquated production techniques that don't satisfy the demands of the contemporary market.
3. **Increased Production Costs:** This term refers to the rise in prices of services and products as a result of increased production costs. Increased production costs are defined as an increase in the prices of services related to factors of production at a rate exceeding their marginal output. This apparent increase in factor costs, coupled with a fixed output, leads to a rise in the cost per unit of production, which in turn leads to a rise in the selling price. If the selling price does not rise, profits decrease.

C. Effects of Economic Inflation (Rania, 2021: 6)
1. **Impact on Purchasing Power:** This manifests as a decrease in purchasing power due to the continuous rise in prices. This leads to a decline in confidence in the national currency, prompting individuals to purchase goods, foreign currencies, and real estate.
2. **Negative Impact on the Balance of Payments:** High inflation rates lead to increased production of domestic goods, reducing their competitiveness in global markets. This results in a decrease in exports and an increase in demand for cheaper imported products compared to similar domestic products.
3. **The impact of inflation on wealth distribution:** This manifests as a haphazard

redistribution of wealth within society during periods of inflation. Individuals resort to selling their real assets, such as real estate, due to the continuous rise in prices in order to maintain their usual level of consumption. Those holding financial assets, on the other hand, will lose a portion of their real value as a result of rising prices and the decline in the purchasing power of their income.

Section Two: Calculating and Examining How Economic Growth and Stability Affect Investment in Iraq after 2004
First: Data Description
To ensure cointegration among the study variables, the ARDL model is applied, provided the condition of variable stability is met, using unit root test. The dataset used in this research covers the period from 2004 to 2024 and includes 80 observations. Gross Domestic Product (GDP) and inflation are used as independent variables. These variables were chosen due to their direct correlation and significant impact on public investment, as demonstrated by most previous studies. Both of these variables will be used to determine cointegration between the variables that are independent and dependent. researcher assumed Public investment (GF) is the dependent variable, while gross domestic product (GPT) and inflation (IN) are the independent variables.

The model can be formulated as follows:
$$= f(GPT, IN) \ GF$$

In a regression model, the model can be written as follows:
$$GF = \beta 0 + \beta 1 GPT + \beta 2 IN + \mu_t \ ....$$

where μ_t is the random error limit, $\beta 0$ is the constant, and $\beta 1$ and $\beta 2$ are the parameters that need to be estimated

Since the ARDL model will be rejected if any of the variables are constant in the second difference, all of these variables will be checked using constant tests, the results of which will show whether or not the ARDL model can be implemented.

Second: Unit Root Test to Check for Stationarity
Using the PP unit root test, we first determine whether the time series is stationary. This test can determine whether the variables in the study have a unit root problem, which would support the null hypothesis, or if the variables are stationary and not affected by the unit root problem, which would support the alternative hypothesis.

Table 1: Results of the Phillips-Pyron test for the GDP, inflation and public investment model

At the first 5% difference			At a level of 5%			Variable name
Without a fixed direction	Steady and directional	fixed	Without a fixed direction	Steady and directional	fixed	
0.0001	0.130	0.0020	0.4215	0.5212	0.1416	GF
0.0003	0.0600	0.0076	0.4321	0.0897	0.6215	In
0.0000	0.0001	0.0000	0.8124	0.1622	0.6824	GPT

Source: Prepared by the researcher using E-views 12 software

We observe that all variables have a probability value Indicating instability at the initial level, they are more than 5% at level I(0). The probability value for every variable, however, falls below 5% following the first difference, which is required to prevent spurious regression, indicating that the variables have stabilized at the first difference. Their aim at order is demonstrated by this (1).

Third: Results of the Autoregressive Distributed Lag (ARDL) model

To find the long-term link between the variables, we use cointegration analysis once all variables seem stable with the first difference (1).
ARDL can be implemented using the following steps:
1. The variables in the model must be stationary, provided that no variable is stationary with a second difference I (2).
2. The optimal lag period for the ARDL model is selected by the researcher or automatically by the E-Views 12 software.
3. A bounds test is performed to determine the presence of cointegration between the variables, and consequently, the existence of a long-term equilibrium relationship between them. If counteraction is not found, the model analysis should be stopped, and an alternative model should be sought.
4. Verifying that the error correction coefficient (ECT) is negative and statistically significant is crucial to definitively confirming the existence of a long-term equilibrium relationship between the variables.

After testing the stability of the time series as a prerequisite for using ARDL, it was found that the stability was at (1), and therefore ARDL can be used to ascertain how the model variables counterbalance one another.

1. Bound Test Results:

The F-statistic of the bound test is a preliminary step in determining the presence of cointegration, i.e., the presence of a relationship of long-term equilibrium between the variables in the model. Long-term counteraction, or a long-term equilibrium relationship between the model variables, is present if the F-statistic is higher than the upper boundary's critical values, rejecting the bound test's null hypothesis. Nonetheless, the null hypothesis is accepted if the F-statistic is below the critical values of the upper border, indicating the absence of long-term cointegration. This implies that the model variables may only have a temporary link, and in this instance, the analysis should stop here and proceed with the ARDL model analysis.

Table 2: Outcomes of the estimation of the limits test for the model of GDP, inflation, and public investment indicators

Null Hypothesis: No levels relationship			F-Bounds Test	
I (1)	I (0)	Signif.	Value	Test Statistic
Asymptotic: n=1000				
3.21	2.52	10%	4.86772	F-statistic
3.67	3.2	5%	2	K
4.31	3.34	2.5%		
5	4.13	%		

Table (2) demonstrates that there is a long-term correlation between GPT indexes, inflation, and public investment since the F-statistic is larger than the critical values for both the lower and upper boundaries. Cointegration is shown by the boundaries test's F-statistic of 4.88, which is higher than the critical values for both the lower and upper limits. This suggests that all variables are heading toward long-term equilibrium and that there is a long-term equilibrium relationship between the dependent and independent variables. We will analyze the long-term coefficient results to ascertain whether there is a positive or negative link between them.

1. Results of Estimating Long-Run and Short-Run ARDL Coefficients

After The results of the limits test verified that there was a long-term cointegration relationship between the independent and dependent variables. The long-term ARDL coefficients are displayed in the following table.

Table 3: Calculating Long-Term Coefficients for Public Investment, Inflation, and the GPT Model

Levels Equation				
Case 2: Restricted Constant and No Trend				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0102	-2.420214	0.102141	-0.258732	IN
0.0002	4.400251	0.131075	0.503478	GPT
0.0000	5.451132	2.650121	15.852310	C
EC = GFCF - (-0.3196*IN + 0.6063*GPT +16.3904)				

Source: Program outputs 12 EVIEWS

The ARDL model's estimated long-run coefficients are displayed in Table (3). The findings show that the independent variables' probability values are less than 5%, demonstrating the long-run effect of the independent variable's coefficient on the dependent variable's coefficient. Specifically, a one-unit increase in the GDP index leads to a 0.5-unit increase in total investment, assuming all other factors remain constant. Thus, there is a long-run positive effect of GDP on investment in Iraq. However, a one-unit increase in GDP leads to a 0.2-unit decrease in investment (GF), assuming all other factors remain constant. This results in a negative impact on long-term investment in Iraq. Table 3 displays the estimated ARDL model's short-term dynamics coefficients, with the error correction coefficient indicating the rate of return to long-term equilibrium. The following table displays the findings.

Table 4: Results of estimating short-term parameters for the estimator model

Dependent Variable: D (GFCF)				
Selected Model: ARDL (2, 2, 2)				
Case 2: Restricted Constant and No Trend				
Sample: 2004Q1 2024Q4				
Included observations: 80				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0005	3.783550	0.178489	0.695891	D (GF (-1))
0.0840	1.715021	0.185250	0.312120	D (GF (-2))
0.1214	1.512289	0.097610	0.132379	D (GPT)
0.0311	2.318554	0.099540	0.249805	D (GPT (-1))
0.0982	1.615022	0.099932	0.210156	D (GPT (-2))
0.6010	0.510401	0.095460	0.068931	D (IN)
0.0877	-1.751141	0.088231	-0.132359	D (IN (-1))
0.0355	-2.357801	0.095254	-0.201122	D (IN (-2))
0.0001	-4.312954	0.112145	-0.415121	CointEq (-1) *

Source: Program outputs 12 EVIEWS

Table (4) shows that the Since they show how the dynamic model's long-term equilibrium has been adjusted, error correction coefficients in counteraction models are crucial. They reached (43-0), meaning that deviations from the indicators used for short-term investment are adjusted by 43% towards the long-term equilibrium.

1. Statistical Test Results

To evaluate the robustness of the ARDL experimental model, we used diagnostic tests. The conclusive results, The ARDL model's error limitations or random residuals, as displayed in Table (5) are free from heterogeneity of variance, have no autocorrelation, and are normally distributed, since all test probability values are more than 5%. This increases the model's dependability and estimate accuracy.

The cumulative sum of residuals (CUSUM) and cumulative sum of residuals squared (CUSUMSQ) tests are also used. If the results of these tests fall within the safe range The stability of the structural regression coefficients is demonstrated by our acceptance of the null hypothesis between the two critical lines at a 5% significance level. As a result, the model has long-term structural stability. The stability and correctness of the structural property estimations of the long-run econometric model are confirmed by Figures 1 and 2, which display the CUSUM and CUSUMSQ curves falling within the 5% confidence interval.
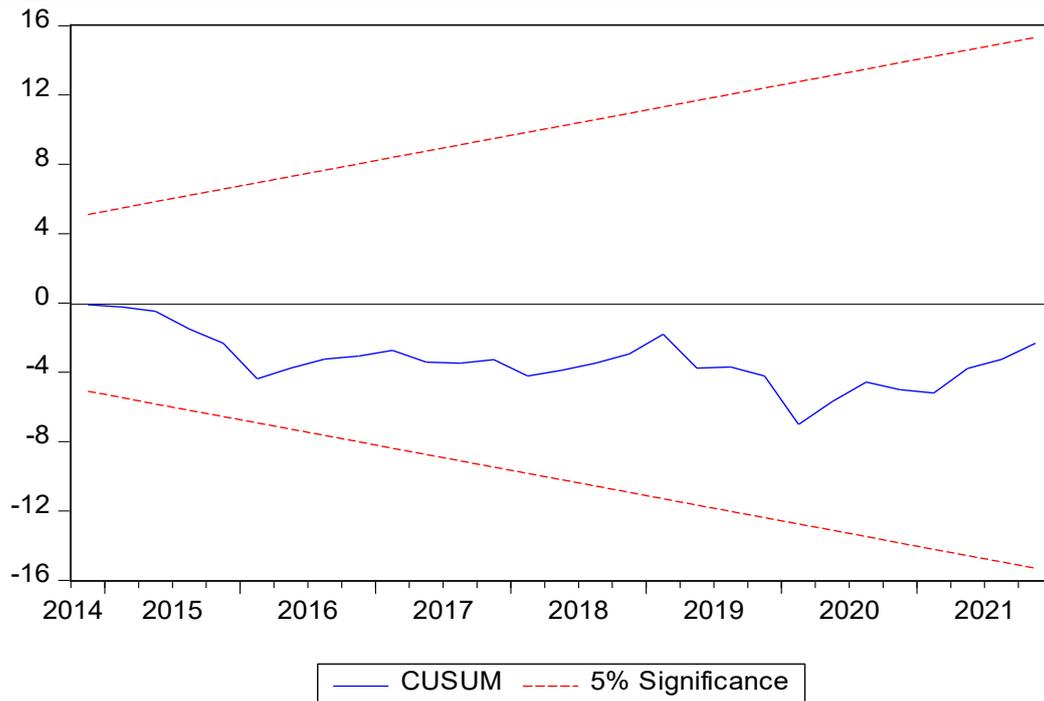
Figure 1: Results of the GPT model stability test, inflation, and investment according to the CUSUM formula
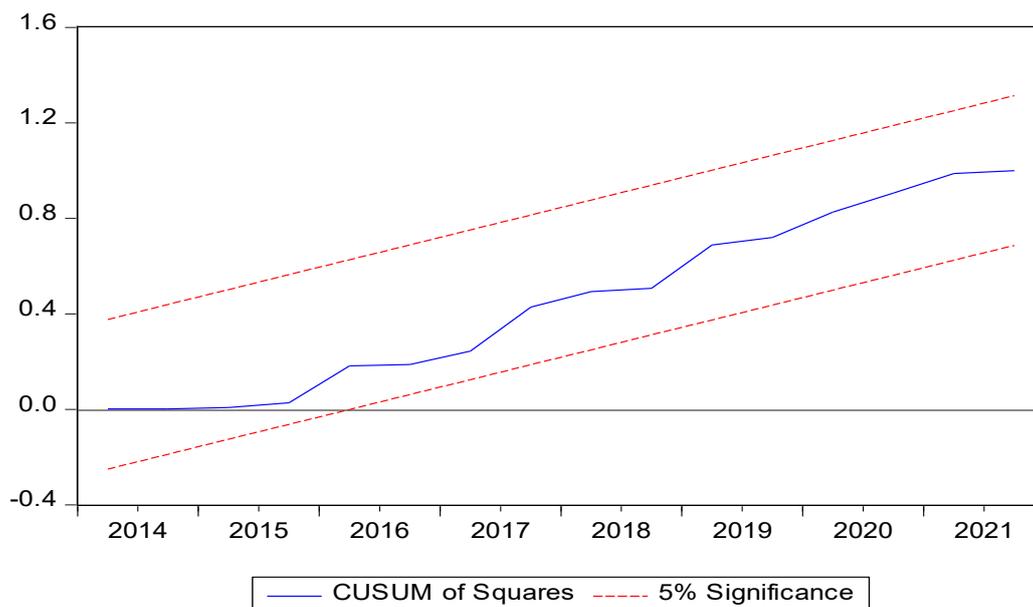**Source:** Program outputs 12 EVIEWS

Figure 2: Model stability test results according to the CUSUMSQ formula
Source: Program outputs 12 EVIEWS

CONCLUSIONS

1. There is a strong positive relationship between investment and economic growth, as increased investment leads to higher GDP in the medium and long term.
2. Economic stability attracts foreign and domestic investment, as investors seek a stable environment and clear economic policies.
3. GDP has a positive long-term impact on investment in Iraq; a one-unit increase in GDP leads to a 0.5-unit increase in GDP, assuming all other factors remain constant.
4. There is a negative long-term impact on investment in Iraq; a one-unit increase in GDP leads to a 0.2-unit decrease in GDP, assuming all other factors remain constant.

Recommendations:

1. Enhance economic stability through stable monetary, fiscal, and trade policies, providing a secure environment, and increasing investor

confidence to attract domestic and foreign investment.
2. Streamline investment procedures and regulations and increase investor confidence in the economic system.
3. Reduce dependence on the oil sector and diversify the economy by stimulating other sectors and developing infrastructure.
4. Enhance human and productive capital by increasing investment in education and training.

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