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The Impact of Monetary Policy Indicators on Economic Growth in Iraq (2007-2022)

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Abstract

This research aims to measure and analyze the impact of monetary policy indicators on the rate of economic growth in Iraq during the period (2007-2022). To know the impact of monetary policy in maintaining the economic indicators through which economic growth occurs. The research problem revolves around answering the following questions: Is there a relationship and mutual influence between monetary policy indicators and the rate of economic growth? What are the effects of reducing and rising monetary policy indicators on the Iraqi economy? What are the expected results of the impact of monetary policy indicators on the Iraqi economy? The researcher was able to develop a hypothesis that:(that monetary policy indicators had an impact on the high rate of economic growth in Iraq), The researcher relied on the descriptive and quantitative approach, so each of (broad money supply M2, exchange rate, interest rate) were independent variables and economic growth (GDP) is a dependent variable, and using the statistical analysis program (Eviews- 12), The Toda Yamoto causality model was used to solve the problem of the study, the researcher reached the following most important results: The monetary policy indicators did not have an impact on economic growth (GDP) except for the broad money supply index (M2) had a significant impact on economic growth (GDP) with a long-term complementary relationship due to the main common factor between them is oil revenues.

Keywords: Exchange Rate Index, Economic Growth (GDP)

Introduction: Monetary policy is considered one of the most effective economic tools for strengthening the state's budget, as it aims to advance monetary theory. Due to the economic complexities the world has faced in recent years, the concept of monetary policy, which first emerged in the 19th century, has evolved significantly. This evolution has been directed towards maintaining the money supply at levels that ensure price stability in the national economy. The economic crisis in Europe, for instance, marked a turning point in the attention given to monetary policy and the stimulation of demand to combat economic recession. The nature and purposes of monetary policy vary from one country to another, depending on each nation's circumstances. There are numerous goals associated with monetary policy, which differ based on the economy of each country. For some nations, the focus is on addressing inflation and stabilizing prices, while others direct their

policies towards stabilizing financial markets, currency exchange rates, and achieving economic growth or high levels of employment. Thus, monetary policy is one of the key pillars of economic planning, as the impact of money on economic growth is undeniable.

Research Problem: The research problem arises from the fact that Iraq has a rentier economy that heavily relies on crude oil revenues, with other sources of income contributing only a small portion to the national economy. Any decline in oil prices leads to economic crises, and the rising value of the US dollar in global markets relative to the Iraqi dinar also poses a significant threat to the economy. Hence, the problem is clear: careful monitoring of monetary policy and the movement of funds through precise measures can help mitigate these challenges faced by the Iraqi economy.

Research Questions:

1. What are the foundations for formulating monetary policy in Iraq, and how can economic risks be avoided?
2. Do monetary policy indicators affect the growth of the Iraqi economy during the study period (2007-2022)?

Research Importance: The importance of this research is reflected in the following:

1. Understanding the significance of monetary policy in Iraq and how to avoid sudden economic risks.
2. Monitoring the movement of money and the trading of securities during times of economic prosperity and crisis periods.
3. Examining the importance of monetary policy and its contribution to economic growth.

Research Hypothesis: This research is based on the hypothesis that the monetary policy adopted by the monetary authority, through its indicators, has contributed to the increase in Iraq's economic growth rate during the study period.

Research Goals: The current research aims to:

1. Define monetary policy and the role it plays in the economic system, as well as its impact on achieving growth in production sectors and increasing individual income.
2. Understand how monetary policy contributes to maintaining the economic levels necessary for economic growth and achieving internal economic balance in Iraq.

Research Domain: The research is limited to the following:

1. **Spatial boundaries:** A study of monetary policy in Iraq.
2. **Temporal boundaries:** The period from 2007 to 2022.

Research Methodology: This research applies two main methodologies:

1. **Descriptive Methodology:** This approach relies on sources, references, theses, and dissertations that have addressed monetary policy, its objectives, justifications, and theoretical foundations. It also includes the definitions provided by these sources and the general frameworks of monetary policy theories.
2. **Inductive and Analytical Methodology:** This approach analyzes the data provided by the research, focusing on monetary policy data during the study period. It also involves extracting statistical results derived from monetary policy and evaluating its impact on economic growth for each year of the study period.

First Requirement: Theoretical Framework for the Exchange Rate Indicator and Economic Growth (GDP) in Iraq

First: The Concept of the Exchange Rate Indicator:

The exchange rate refers to the price of a nation's currency compared to the currency of another country. It is one of the most significant prices in an open economy, influencing the flow of goods, services, and capital into a country. It also exerts strong pressure on the balance of payments, inflation, and macroeconomic variables. Therefore, the choice of exchange rate regime and its management is a crucial aspect of economic administration to safeguard competitiveness and maintain economic stability (Fahrettin, 2001:1). The main exchange rate systems are as follows:

1. **Fixed Exchange Rate:** This system involves pegging the local currency to a foreign currency at a fixed rate. A specific value is determined for the local currency relative to one of the major currencies, with the US dollar being the most common anchor currency (Jubouri, 2013:72).
2. **Flexible or Floating Exchange Rate:** The value of the currency is determined by supply and demand in the foreign exchange market. The currency appreciates when its value rises (due to increased demand) and depreciates when its value falls (due to decreased demand) (Hamid, 2019:108).
3. **Managed Exchange Rate:** In this system, monetary authorities intervene in foreign exchange markets to mitigate short-term fluctuations and prevent the currency from deviating far from its perceived fundamental value (Hanaa, 2024:633).

Second: The Concept of Economic Growth:

Economic growth represents the relative increase in the value of goods and services produced within the national economy. This growth leads to higher profits for businesses, motivating them to expand their capital for investment and create more job opportunities. It also boosts consumer incomes, encouraging them to purchase more products and services, thereby increasing economic and market activity (Ismail et al., 2022:3). Economic growth refers to the rise in an individual's output or income, typically measured by Gross National Product (GNP) or Gross National Income (GNI) (Khalid, 2020:1).

Third: The Relationship Between the Exchange Rate and Economic Growth:

The relationship between the exchange rate and GDP, which represents economic growth, is an inverse one. The currency of a country directly reflects its GDP. The total amount of money in a country is equal to its total economic output. This means that as GDP rises, the strength of the currency and its purchasing power also increase (Mohammed, 2019:377).

Second Requirement: Analysis of the Exchange Rate Indicator and Economic Growth in Iraq for the Period (2007-2022)

First: The Development of the Exchange Rate Indicator in Iraq for the Period (2007-2022):

1. **The Development of the Exchange Rate in Iraq During the Period (2007-2009):**
   According to the data in Table (1), there was a gradual improvement in the value of the Iraqi dinar against the US dollar, particularly after the start of the currency auction (the window for buying and selling dollars) in 2004. The Central Bank of Iraq succeeded in achieving economic stability, avoiding inflation rates, and maintaining the value of the national currency by balancing supply and demand for the US dollar. During the period from 2007 to 2009, the Iraqi dinar exchange rate improved significantly compared to previous years, reaching (1182, 1203, 1267) dinars per US dollar in the years 2009, 2008, and 2007, respectively. This improvement led to negative annual growth rates of (14.1%, 5.1%, and 1.7%). This success was attributed to the monetary policy of the Central Bank, which built international reserves, strengthened confidence in the capital market, and increased demand for the Iraqi dinar, making it an attractive currency for the first time in over three decades.
2. **2. The Development of the Exchange Rate in Iraq During the Period (2010-2014):**
   In 2010, the exchange rate dropped to 1186 dinars per US dollar as the Central Bank of Iraq continued to maintain the exchange rate stability of the Iraqi dinar against the US dollar. In 2011, the official exchange rate remained stable at 1170 dinars per US dollar, while the parallel market rate decreased

to 1196 dinars per US dollar. This was due to the Central Bank's continued foreign currency auction aimed at stabilizing the dinar and building strong foreign currency reserves. In 2012, the Central Bank improved the exchange rate to 1166 dinars per US dollar to maintain stability, positively impacting overall price levels. However, the parallel rate dropped to 1233 dinars per US dollar due to regional crises and increased demand for the dollar for speculative purposes (Central Bank, 2012:26). The official rate remained at 1166 dinars per US dollar, while the parallel rate rose to 1232 dinars per US dollar due to increased dollar sales through the Central Bank's foreign currency auction in 2013, with total sales reaching $53.2 billion, including $41 billion in wire transfers and $12.2 billion in cash (Central Bank, 2013:26). By 2014, the official exchange rate remained at 1166 dinars per US dollar, while foreign reserves grew to $66.3 billion by the end of that year.

3. **3. The Development of the Exchange Rate in Iraq During the Period (2015-2019):**
   The Central Bank adjusted the exchange rate of the Iraqi dinar to 1190 dinars per US dollar during the period from 2015 to 2019 through the foreign currency auction. Meanwhile, the parallel exchange rate fell to 1247 dinars per US dollar due to the interaction of regular demand and speculative demand, widening the gap between the official and parallel rates. The parallel rate showed a marked improvement from 2016 to 2019, reaching (1196, 1209, 1258, 1275), with annual growth rates of (2.2%, -1.3%, -3.8%, -1.1%) respectively. This improvement was due to the Central Bank's continued efforts to support and strengthen the local currency, achieve monetary stability, and avoid inflation. These developments indicate the success of monetary policy tools in achieving high stability in the exchange rate of the Iraqi dinar.
4. **4. The Development of the Exchange Rate in Iraq During the Period (2020-2022):**
   In 2020, the Central Bank of Iraq managed to maintain the official exchange rate at 1190 dinars per US dollar, similar to previous years. However, the global crisis caused by the pandemic led to an economic recession, which impacted oil prices and created a further crisis for Iraq’s economy, known for its reliance on a single source of revenue (oil). This resulted in a decline in total revenues, forcing the monetary authorities to adopt a policy of devaluing the local currency to provide liquidity for the Iraqi government. The official exchange rate was changed to 1460 dinars per US dollar in late December 2020 (on 21/12/2020), which was higher than the parallel market rate of 1234 dinars per US dollar, causing disruption in the parallel market.
5. During the period from 2021 to 2022, the official exchange rate remained stable at 1460 dinars per US dollar. However, the parallel exchange rate experienced fluctuations, reaching 1482 and 1474 dinars per US dollar, with annual growth rates of 19.4% and 0.5%, respectively. This volatility

followed a decision by the US Federal Reserve to sanction four Iraqi banks, preventing them from dealing in US dollars, and threatening further sanctions on banks that did not comply with external financing regulations. In response, the Central Bank of Iraq excluded these four banks from participating in the currency auction and purchasing US dollars.

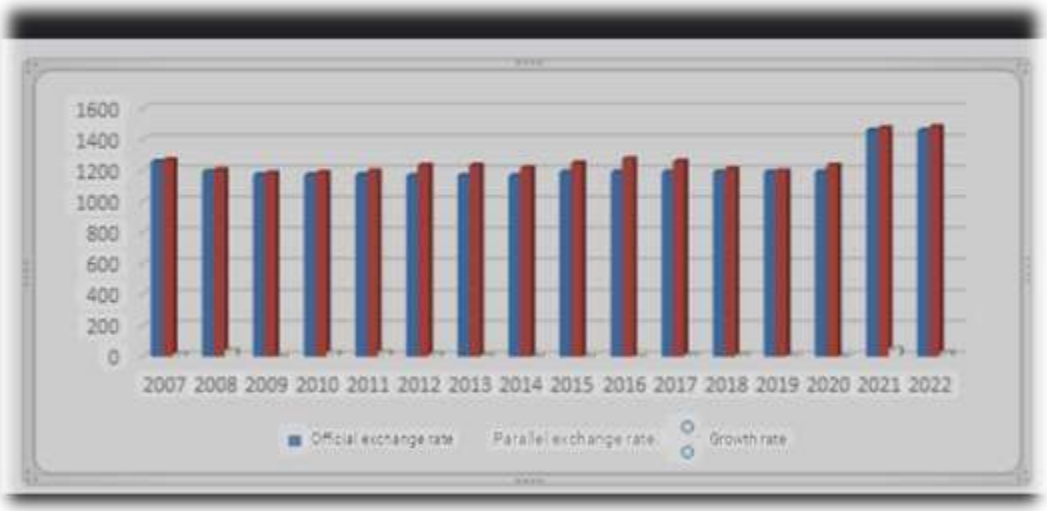
6. **Table (1): Exchange Rate Index and Economic Growth (GDP) in Iraq for the Period (2007-2022)**

Years	Official Exchange Rate (IQD/USD)	Annual Change Rate (%)	Parallel Exchange Rate (IQD/USD)	Annual Change Rate (%)	GDP (Million Dinars)	Annual Growth Rate (%)
2007	1255	-14.4	1267	-14.1	111,455,813	16.60
2008	1193	-4.9	1203	-5.0	157,026,062	40.88
2009	1170	-1.9	1182	-1.7	130,642,187	-16.80
2010	1170	0	1186	0.3	167,093,204	27.90
2011	1170	0	1196	0.8	217,327,107	30.06
2012	1166	-0.3	1233	3.0	254,225,490	16.97
2013	1166	0	1232	-0.1	273,587,529	7.61
2014	1166	0	1214	-1.4	266,420,384	-2.61
2015	1190	2.1	1247	2.7	199,715,699	-25.03
2016	1190	0	1275	2.2	203,869,832	2.08
2017	1190	0	1258	-1.3	225,995,179	10.85
2018	1190	0	1209	-3.8	251,064,479	11.09
2019	1190	0	1196	-1.1	262,917,150	4.72
2020	1190	0	1234	3.1	198,774,325	-24.39
2021	1460	22.6	1474	19.4	301,152,818	51.50
2022	1460	0	1482	0.5	383,064,152	27.19

The source: Prepared by the researcher based on:

- Central Bank of Iraq, General Directorate of Statistics and Research, Annual Bulletin, for the years (2007–2022).
- Columns (2-4-6): The annual rate of change (growth) was calculated using the following formula:
  y = (yt - yo) / yo × 100
  Where:
  - **(yt)** represents the current year, and
  - **(yo)** represents the previous year.

Figure (1): Exchange Rate Index and Economic Growth in Iraq for the period (2007–2022).



Source: Prepared by the researcher based on Table (1).

Second: The Relationship Between the Exchange Rate and Economic Growth in Iraq for the Period (2007–2022).

From Table (1), we observe that the Gross Domestic Product (GDP) fluctuated between increases and decreases. During the period (2007–2008), GDP experienced an increase, reaching **111,455,813** and **157,026,062** million dinars, with an annual growth rate of **16.60%** and **40.88%**, respectively. This increase was primarily due to the rise in crude oil revenues resulting from higher exported oil quantities and an increase in the price of oil per barrel by **35.8 USD/barrel**. Additionally, the relative improvement in the security situation in the country positively contributed to the recovery of some economic sectors (Central Bank, 2008:18).

However, in **2009**, GDP declined to **130,642,187** million dinars with a negative annual growth rate of **(-16.80%)**, due to the global financial crisis, which led to a drop in global oil prices. Gradually, GDP started to recover, reaching **273,587,529** million dinars in **2013**, with an annual growth rate of **7.61%**, driven by improvements in oil prices and increased global demand for oil.

During the period **2014–2016**, the annual GDP growth rate witnessed a decline, recording **(-2.61%), (-25.03%), and (-2.08%)**, respectively. This was due to the unprecedented drop in global oil prices, which fell below **50 USD/barrel**. The sharp decline in oil prices had a significant impact on Iraq's economy, causing a clear deficit in the general budget, as well as contraction and stagnation in economic activities. Moreover, the unstable security situation, resulting from the fall of most northern regions into the hands of terrorist groups, caused severe damage to infrastructure, assets, and other economic sectors.

From **2017–2022**, there was a clear improvement in GDP, except for the year **2020**, where GDP reached **198,774,325** million dinars with a low annual growth rate of **(4.72%)**. This decline was due to the COVID-19 pandemic and its associated global economic damage, which caused oil prices to fall as borders between countries were closed.

It is evident that GDP fluctuations—whether increases or decreases—were closely tied to the size of the oil sector, which constitutes the largest portion of Iraq's economy compared to other sectors.

Section Three: Measuring and Analyzing the Impact of the Exchange Rate Index on Economic Growth in Iraq

First: Description and Formulation of the Econometric Model

Table (2): Variables of the Econometric Model and Their Symbols

Variable in Arabic	Variable in English	Symbol	Type
الناتج المحلي الإجمالي	Gross Domestic Product	GDP	Dependent
سعر الصرف	Exchange Rate	ER	Independent

Source: Prepared by the researcher.

GDP=a−b1ER\text{GDP} = a - b_1 \text{ER}

Second: Results of Testing the Econometric Model Variables

1. **Results of Testing the Stationarity of Time Series**
   It was observed that the independent variable **(ER)** became stationary at the second difference **I(2)**, with only a constant term, at a **1% significance level**.

Table 3

Null Hypothesis: D(ER,2) has a unit root				
Exogenous: Constant				
Lag Length: 3 (Automatic - based on SIC, maxlag=10)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-8.882034	0.0000
Test critical values:	1% level		-3.538362	
	5% level		-2.908420	
	10% level		-2.591799	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(ER,3)				
Method: Least Squares				
Date: 05/26/24 Time: 21:21				
Sample (adjusted): 2006Q3 2022Q1				
Included observations: 63 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER(-1),2)	-1.700662	0.191472	-8.882034	0.0000
D(ER(-1),3)	0.700603	0.168986	4.145931	0.0001
D(ER(-2),3)	0.700543	0.143006	4.898701	0.0000
D(ER(-3),3)	0.700484	0.111109	6.304461	0.0000
C	1.597349	1.322160	1.208136	0.2319
R-squared	0.737726	Mean dependent var		0.833333
Adjusted R-squared	0.719639	S.D. dependent var		19.73790
S.E. of regression	10.45105	Akaike info criterion		7.607321
Sum squared resid	6335.023	Schwarz criterion		7.777411
Log likelihood	-234.6306	Hannan-Quinn criter.		7.674219
F-statistic	40.78577	Durbin-Watson stat		2.050626
Prob(F-statistic)	0.000000			

Source: Results from the **Eviews 12** software.
The dependent variable **(GDP)** became stationary at the first difference **I(1)**, without a constant term or a general trend, at a **1% significance level**.

Table 4

Null Hypothesis: D(GDPN) has a unit root				
Exogenous: None				
Lag Length: 0 (Automatic - based on SIC, maxlag=10)				
Prob.*	t-Statistic			
0.0182	-2.370686	Augmented Dickey-Fuller test statistic		
	-2.599934	1% level	Test critical values:	
	-1.945745	5% level		
	-1.613633	10% level		
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDPN,2)				
Method: Least Squares				
Date: 05/26/24 Time: 21:19				
Sample (adjusted): 2005Q3 2022Q1				
Included observations: 67 after adjustments				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0207	-2.370686	0.073690	-0.174695	D(GDPN(-1))
179092.8	Mean dependent var		0.077892	R-squared
7195448.	S.D. dependent var		0.077892	Adjusted R-squared
34.34952	Akaike info criterion		6909533.	S.E. of regression
34.38242	Schwarz criterion		3.15E+15	Sum squared resid
34.36254	Hannan-Quinn criter.		-1149.709	Log likelihood
			1.824282	Durbin-Watson stat

Source: Results from the **Eviews 12** software.

2. **Results of the Toda-Yamamoto Causality Test**
3. **Table (5): Results of the Toda-Yamamoto Causality Test**

VAR Granger Causality/Block Exogeneity Wald Tests			
Date: 05/26/24 Time: 21:37			
Sample: 2005Q1 2022Q4			
Included observations: 67			
Dependent variable: ER			
Prob.	df	Chi-sq	Excluded
0.0057	2	10.33849	GDPN
0.4736	2	1.494951	IR
0.0002	2	16.76825	M
---	5		All

			Dependent variable: GDPN
Prob.	df	Chi-sq	Excluded
0.5203	2	1.306638	ER
0.9978	2	0.004394	IR
0.0010	2	13.76491	M
0.0088	6	17.14312	All
			Dependent variable: IR
Prob.	df	Chi-sq	Excluded
0.0171	2	8.138044	ER
0.8089	2	0.424068	GDPN
0.1107	2	4.402601	M
0.0038	6	19.22433	All
			Dependent variable: M
Prob.	df	Chi-sq	Excluded
0.5713	2	1.119695	ER
0.3643	2	2.019427	GDPN
0.3913	2	1.876503	IR
---	5		All
Test statistics not available for lag coefficients with restrictions			

Source: Results from the **Eviews 12** software.

From **Table (5)**, it is observed that the **P-value** for the independent variable **(ER)** is **0.52**, which is not significant since it is greater than **0.05**. This indicates that there is no impact of the independent variable (exchange rate) on the dependent variable (GDP) in Iraq during the period **2007-2022**. This is because the rise and fall of the GDP during the study period were primarily due to the oil sector.

Conclusions and Recommendations:

1. The Iraqi economy is dependent on several factors, the most significant being oil prices in global markets, as Iraq relies on oil exports as the primary economic base. This dependency exposed the economy to crises in the years **2014** and **2020**, leading to a decline in GDP growth rates.
2. The Central Bank's monetary policy has succeeded in achieving its main goal of influencing the nominal exchange rate by reaching the real levels of the equilibrium exchange rate through currency auctions. This positively impacted the general price level and reduced inflation rates in the economy through interest rate hikes during the study period.
3. The exchange rate saw relative stability in some years but began to rise after the end of **2020**, reaching **2022** due to various reasons, including the **Covid-19** pandemic. The resulting global decline in oil prices and reduced oil

revenues led to a significant budget deficit, forcing the Ministry of Finance to borrow from banks to pay salaries and meet spending needs. This caused the current exchange rate to become misaligned with the exchange rates in other countries, prompting the Central Bank to decide to devalue the local currency.

4. The results of the causality test showed that the **P-value** for the independent variable **(ER)** was **0.52**, which is not significant since it is greater than **0.05**. This indicates that there is no impact of the independent variable (exchange rate) on the dependent variable (GDP) in Iraq during the period **2007-2022**. This is because the rise and fall in the GDP during the study period were primarily driven by the oil sector.

Here is the **English translation** of the recommendations:

Recommendations:

1. Continuous efforts should be made by monetary policy to achieve its objectives of maintaining stability in the general price level through monetary and financial stability, contributing to enhancing economic growth, and reducing unemployment rates in the economy.
2. Efforts should be made to develop monetary and financial markets. Monetary policy should play a significant and direct role in developing and strengthening financial intermediation activities and enhancing the banking infrastructure. The task of stabilizing and developing financial markets is just as important as the role of monetary policy in controlling inflation and providing the economic stability that forms a foundation for growth and accelerating economic prosperity.
3. Monetary policy should support the Iraqi economy by raising investment rates on the consumption side, while considering stimulating other economic sectors to boost the state budget, such as tourism, industry, trade, and others.
4. The Central Bank's monetary policy should maintain the exchange rate of the Iraqi dinar against the US dollar through the foreign currency sales window (in cash) and enhance bank accounts abroad. The Central Bank should continue diversifying its foreign investments to support exchange rate stability.

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