The Potential Impact of Money Supply on Foreign Exchange Rates: An Analytical Study of Iraq for the Period (2010-2023)

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Abstract: This research analyzes the impact of money supply on the foreign exchange rate in Iraq during the period from 2004 to 2023. The exchange rate is considered one of the vital economic indicators that reflect the economic condition of the country, as it directly affects foreign trade, inflation, and investment. The study aims to highlight the importance of the relationship between money supply and the exchange rate, pointing out the influential factors that have contributed to significant fluctuations in the money supply and subsequently in the exchange rate. The research employs an analytical methodology that combines quantitative and qualitative data, analyzing economic data related to money supply and exchange rate. The findings indicate a positive relationship that flows from the money supply to the foreign exchange rate, represented by the U.S. dollar against the Iraqi dinar. In light of these findings, the researchers provide a set of recommendations, primarily aimed at guiding policymakers on how to manage the money supply to achieve exchange rate stability and enhance economic
growth.

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Keywords: Iraq, money supply, foreign exchange rate, parallel exchange rate, Central Bank of Iraq.

Introduction: Foreign exchange rates are vital components of the national economy, directly affecting various economic aspects such as foreign trade, inflation, and investment. When the exchange rate rises (i.e., when the local currency weakens against foreign currencies), it can lead to an increase in the cost of imports, which raises inflation levels and negatively impacts citizens' purchasing power. Conversely, when the exchange rate falls (i.e., when the local currency strengthens), it can improve the trade balance by reducing import costs and increasing exports.

Economic literature focuses on the importance of money supply as one of the factors influencing exchange rates. Money supply refers to the amount of money available in the economy, which is affected by several factors such as the monetary policies of the central bank, levels of money demand, and general economic changes. Therefore, understanding the relationship between money supply and the exchange rate is crucial for policymakers and economic analysts.

The relationship between money supply and the exchange rate is a central topic in economic studies, as changes in money supply can lead to significant fluctuations in the exchange rate, which in turn affects the economy as a whole. Moreover, Iraq has sought to use monetary policy tools to control money supply and thus influence the exchange rate. However, the economic and political challenges facing the country, such as corruption and oil price fluctuations, complicate these efforts and affect the effectiveness of monetary policies. Iraq has faced significant challenges related to rebuilding its economy, restoring political stability, and achieving economic growth. These changes have had a major impact on the structure of the Iraqi economy, including the monetary system and exchange rate. Therefore, studying the impact of money supply on the foreign exchange rate in Iraq during the period (2004-2023) is essential for understanding current economic dynamics.

Research Importance.

Studying the impact of money supply on the exchange rate is of great importance for the Iraqi economy, as Iraq is experiencing complex economic and political conditions. Understanding the relationship between money supply and the exchange rate can contribute to developing effective monetary policies that help stabilize the economy. This study also highlights how the exchange rate responds to changes in money supply, enabling policymakers to make decisions based on accurate data and analyses.

Research Problem.

The primary problem lies in how money supply affects the foreign exchange rate in Iraq during the period from 2004 to 2023. Despite the significant importance of this topic, there is a lack of comprehensive studies addressing this aspect. Hence, some questions arise:

1. What is the relationship between money supply and the foreign exchange rate in Iraq?
2. How do changes in money supply affect the exchange rate during different time periods?
3. What other factors might affect the exchange rate besides money supply?

Research Objectives.

The research aims to achieve the following objectives:

1. Analyze the relationship between money supply and the foreign exchange rate in Iraq during the period from 2004 to 2023.
2. Provide a comprehensive analysis of changes in money supply and their impact on the exchange rate.
3. Explore other factors that may affect the exchange rate and determine their extent of influence.
4. Provide recommendations for policymakers on how to manage money supply to achieve exchange rate stability.

Research Hypothesis.

This research is based on the following hypothesis: (Changes in money supply positively affect the foreign exchange rate in Iraq, and this relationship is influenced by multiple economic and political factors).

Research Methodology.

The research adopts an inductive approach in analyzing quantitative and qualitative data. Economic data related to money supply and the exchange rate during the period from 2004 to 2023 will be analyzed using descriptive analysis. This methodology will also include a review of previous literature to understand the theoretical and practical context of the relationship between money supply and the exchange rate.

Research Structure.

The research includes three sections, as follows:

Section One: Theoretical Implications of Research Variables

First: Concepts in Money Supply and Factors Affecting It

1. Concept of Money Supply

Money supply represents the quantity of money available in an economy during a specific period. It includes all currencies and deposits that can be used as a medium of exchange for goods and services. It is one of the main factors affecting economic activity, inflation, and financial stability. For the purpose of this research, we review the concepts of money supply, its types, and the factors affecting it.

It is the sum of all money available in the economy, including circulating cash (paper money and coins) and bank deposits that can be easily converted into cash. Money supply is used as a tool to measure liquidity in the economy, as it helps determine the purchasing power of individuals and companies (Abdo, 2021, 123). Money supply is a vital element in the economy, as an increase in money supply may lead to price inflation if not accompanied by an increase in production (Mussa, 2000, 5). Money supply is considered one of the most important tools used by the Central Bank, as the responsible monetary authority, to influence various economic variables. In this context, money supply, sometimes called "monetary mass," is defined as the total means of payment available in the economy during a specific period, which are at the disposal of individuals, institutions, and companies. This includes circulating money in the market in addition to funds in various bank accounts that can be easily converted into cash or used as a means of payment (Abdullah, 2020, 81). Traditional economics defines money as a medium of exchange generally accepted by all individuals and societies in transactions involving the exchange of goods and services. This medium of exchange can be anything recognized by everyone in society as a usable tool in economic transactions. On the other hand, modern economics defines money as a widely accepted medium for paying for goods and services, as well as for settling payments related to other assets and repaying debts. The International Monetary Fund (IMF) considered the monetary quantity as the total net circulating banknotes plus current deposits in commercial banks, thereby excluding time deposits and savings deposits from the classification of money, considering them as quasi-money. The IMF's definition of money supply focuses on assets that allow for immediate or near-immediate use in economic circulation, while less liquid assets (such as time deposits) are treated as part of quasi-money, which can be converted into cash but after a certain period or under certain conditions (Abdul Wahab, 2019, 581).

2. Measures of Money Supply

A. Narrow Money (M1)

This measure refers to the total means of payment available for settling financial transactions in society during a specific period. This volume of money is called "current operations cash" (Al-Wazni, 2004, 284) and is known in economics as M1 money supply. It includes paper and coin currencies circulated by individuals in their daily transactions (circulating money). Therefore, the M1 money supply equation expresses the following relationship: M1 = CR + DD.

B. Broad Money (M2)

Broad money supply is usually known as local liquidity or domestic liquidity, symbolized by (M2) in economic statistics. It consists of M1 money supply plus time deposits (deposits that can be withdrawn after a certain period) and special savings deposits with commercial banks. The broad money supply concept (M2) is considered the most appropriate for describing liquidity in the economy, as it reflects a comprehensive picture of the total available money. It goes beyond circulating cash and demand accounts to include money that can be converted into liquidity with relative ease but with some restrictions, such as time deposits and savings deposits (Al-Ghalibi & Al-Aaraji, 2016, 48).

C. Broadest Money (M3)

The broadest money supply definition (M3) includes, in addition to (M2), savings deposited outside commercial banks, such as funds deposited in mutual savings funds or savings institutions or lending associations and all institutions that do not have the status of traditional banks. However, this concept has been heavily criticized by a number of specialists in this field, as they considered that this concept neglected the role of money as a medium of exchange, and did not take into account that those institutions that deal with savings may not be directly subject to the control of the Central Bank, which controls the money supply (Al-Dulaimi, 1990, 115). With the development of financial institutions and the expansion of the scope of financial services they provide, new forms of marketable liquidity began to appear, which are widely accepted by the public and are widely traded in financial markets. This development made them part of the available liquidity that can be used in economic transactions.

3. Factors Affecting Money Supply

Money supply is considered one of the basic elements that determine liquidity in the economy and is affected by several interacting factors in a complex way. Understanding these factors helps to better analyze monetary and financial policies and enhances the ability of policymakers to make effective decisions to achieve stability and economic growth. The most important of these factors are:

A. Public Habits

Public preference and how they deal with money are important factors in determining money supply. If individuals prefer to hold large amounts of cash (i.e., outside the banking system), this reduces the amount of money available to banks for lending. If people prefer to deposit their money in banks, this enhances the money supply by increasing deposits, which banks can use to issue new loans. In general, the more individuals prefer to use money in the form of bank deposits instead of holding it as cash, the greater the money supply available to the economy.

B. Reserve Ratios

The percentage of public deposits that commercial banks hold as cash reserves directly affects the amount of funds that banks can lend. If the ratio is high, banks will be less able to grant credit and thus will reduce the money supply in the market. If the ratio is low, banks will be able to grant more loans, which increases the money supply (Al-Sayrafi, 2007, 32).

C. Capital Inflow from Abroad

The inflow of capital from abroad is an influencing factor in money supply. When foreign companies or individuals invest in the local economy, this can lead to an increase in money supply, as foreign currencies are converted into local currency. Conversely, if there is an outflow of capital from the local economy, this leads to a reduction in money supply.

D. Changes in Banking Laws and Regulations

Changes in laws or legislation related to banking activities or the banking system can also affect money supply. For example, amending cash reserve laws or credit granting procedures may enhance or restrict banks' ability to expand money supply.

E. Monetary Policy

Monetary policy is considered one of the most important factors affecting money supply. When the central bank raises interest rates, individuals and companies tend to reduce borrowing, which leads to a decrease in money supply. Conversely, when the central bank lowers interest rates, borrowing is encouraged, which increases money supply (Mussa, 2000, 5).

F. Inflation

Inflation directly affects money supply. Under high inflation rates, the central bank may need to increase money supply to maintain economic stability (Khan & Schimmelpfenning, 2006, 20).

G. Economic Changes

The quantity of money supply is affected by changes in GDP and economic growth. During periods of economic growth, money supply tends to increase, while during periods of recession, it can decrease (Abdo, 2021, 123).

H. Changes in Financial Technology

Innovations in financial technology, such as digital currencies, contribute to changing how money is supplied and traded (Al-Obaidi, 2023, 100).

I. Interest Rates

When the central bank raises interest rates, borrowing becomes more expensive, leading to a decrease in credit demand and reducing the money supply in the market.Conversely, when the bank lowers interest rates,borrowing becomes cheaper, which increases the money supply (Mussa, 2000, 7).

J. Economic Growth

During periods of growth, credit demand increases, leading to an increase in money supply. Companies need additional financing to expand their operations, and individuals need loans to buy homes and cars (Abdo, 2021, 123).

Second: Concepts in Money Supply and Factors Affecting It

1. Concept of Exchange Rate

It is the price at which one country's currency is exchanged for another. The exchange rate is considered a vital element in the global economy, as it affects international trade, investments, and monetary policies. In this section, we will review some basic concepts related to the foreign exchange rate. It is the relationship between two currencies, expressing the amount of local currency that can be obtained for one unit of foreign currency. For example, if the exchange rate of the US dollar against the Egyptian pound is 15, this means that 15 pounds can be obtained for every US dollar (Al-Obaidi, 2023, 100).

2. Types of Exchange Rates

There are two main types of exchange rates:

A. Fixed Exchange Rates

Here, the government sets the exchange rate at a certain level and commits to maintaining it. This strategy may require continuous intervention from the central bank to maintain the set rate (Khan & Schimmelpfenning, 2006, 20).

B. Floating Exchange Rates

Here, the exchange rate is determined based on supply and demand forces in the market. In this case, prices can change continuously based on economic and political factors (Mussa, 2000, 5).

3. Factors Affecting Exchange Rate

Exchange rates are affected by several factors, including:

A. Inflation

If inflation rates in one country are high compared to other countries, this may lead to a decrease in the value of the local currency against other currencies (Obstfeld & Rogoff, 1996, 12).

B. Interest Rates

Interest rates affect capital flows. When interest rates rise, more investors may flow into the country to benefit from higher returns, which increases demand for the local currency (Al-Zawawi, 2023, 45).

C. Political and Economic Stability

Countries with political and economic stability attract more investments, which increases demand for their currency (Abdo, 2021, 123).

D. Trade Balance

If a country exports more than it imports, it will need more of its currency to pay for exports, which leads to an increase in the currency's value. Conversely, if imports exceed exports, the exchange rate may decrease (Abdo, 2021, 123).

E. Market Expectations

Market expectations greatly affect the exchange rate. If investors expect the value of a currency to increase, they will tend to buy that currency, which leads to an increase in its price. Conversely, if investors expect the value of the currency to decrease, they may sell it, which leads to a decrease in its price.

F. External Factors

These factors include global economic and political events, such as financial crises and changes in commodity prices. These events can affect capital flows, which in turn affects the exchange rate. In the event of a global financial crisis, investors may turn to safer assets, which leads to a decrease in the value of riskier currencies (Obstfeld & Rogoff, 1996, 12).

Third: The Theoretical Relationship Between Money Supply and Exchange Rate

The relationship between money supply and the exchange rate is considered one of the vital topics in macroeconomics, as it plays a fundamental role in determining the stability of the national economy. Money supply refers to the quantity of money available in the economy, while the exchange rate is the relative value of the local currency compared to foreign currencies. In this context, we will review the quantity theory of money, how money supply affects the exchange rate, in addition to other factors that may affect this relationship.

1. The Relationship in the Framework of the Quantity Theory of Money

This is an economic theory that explains the relationship between the money supply and the price level. According to this theory, an increase in the money supply leads to an increase in the price level, which in turn affects the exchange rate. The theory expresses this relationship through the following equation:

MV=PQ. Where: M is money supply, V is the velocity of money circulation, P is the price level, and Q is the quantity of goods and services produced. This equation shows that any increase in money supply, with constant money velocity and quantity of goods and services, will lead to an increase in the price level, which may lead to a decrease in the value of the local currency against other currencies (Obstfeld & Rogoff, 1996, 12).

2. Impact of Money Supply on Exchange Rate

Exchange rates are greatly affected by money supply. When money supply in the economy increases, this leads to an increase in demand for goods and services, which may lead to rising prices. If prices rise faster than prices in other countries, the local currency will lose its value, leading to a decrease in the exchange rate. When the central bank increases money supply, this can happen through several mechanisms, such as lowering interest rates or buying financial assets. These measures lead to an increase in liquidity in the economy, which boosts demand for goods and services. However, if the increase in money supply exceeds the economy's ability to produce goods and services, this will lead to inflation, which negatively affects the exchange rate (Khan & Schimmelpfenning, 2006, 20). On the other hand, if the central bank reduces money supply, this may lead to an increase in the value of the local currency. Reducing money supply can occur by raising interest rates or selling financial assets.These measures lead to a decrease in liquidity in the economy, which may lead to a decrease in demand for goods and services, and thus lower prices. In this case, the exchange rate may rise (Mussa, 2000, 5).

Interest rates also affect the relationship between money supply and the exchange rate. When money supply increases and prices are expected to rise, the central bank may raise interest rates to combat inflation. This can attract foreign investments, which increases demand for the local currency and leads to an appreciation of its exchange rate. However, if interest rates do not rise enough to counter inflation, the currency will remain under pressure (Al-Zawawi, 2023, 15).

There are many empirical studies that support the relationship between money supply and the exchange rate. For example, a study conducted by Khan & Schimmelpfenning showed that there is a strong relationship between money supply and inflation in the Pakistani economy, which affected the exchange rate of the Pakistani Rupee. Other studies also showed that an increase in money supply leads to a decrease in currency value in many developing countries (Khan & Schimmelpfenning, 2006, 20).

Section Two: Analysis of Research Variables

First: Analysis of the Evolution of Broad Money (M2) in Iraq (2010-2023)

Broad money supply (M2) is one of the vital economic indicators that reflect the monetary and financial situation of a country. In Iraq, this indicator witnessed significant fluctuations between 2010 and 2023, influenced by several economic and political factors. This analysis aims to review the annual evolution of M2, focusing on the reasons that led to these changes, based on the annual reports of the Central Bank of Iraq and research from Iraqi journals. Table (1) illustrates the changes in money supply in Iraq during the period (2010-2023).

Table (1)
Evolution of Narrow Money (M1) and Broad Money (M2) in Iraq (2010-2023) in Billions of Dinars

Year	Net Currency in Circulation	Current Deposits	M1	Annual Growth %	Quasi-Money	M2	Annual Growth %
	1	2	3=1+2		4	5=3+4	
2010	24342.2	27401.3	51743.5	38.72	8542.6	60286.1	32.68
2011	28287.1	34186.8	62473.9	20.74	9704	72177.9	19.73
2012	30592.6	33029.6	63622.2	1.84	13565.3	77187.5	6.94
2013	34995.5	43322.6	78318.1	23.1	11194	89512.1	15.97

2014	36071.6	41521.7	77593.3	-0.93	15395.6	92988.9	3.88
2015	34855.3	34757.9	69613.2	-10.28	14914.1	84527.3	-9.1
2016	42075.2	33448.7	75523.9	8.49	14942.5	90466.4	7.03
2017	40343.3	36643.3	76986.6	1.94	15870.5	92857.1	2.64
2018	40498.1	34330.9	74829	-2.8	20561.7	95390.7	2.73
2019	47638.6	39132.4	86771	15.96	16670.1	103441.1	8.44
2020	59487.1	43866.5	103353.6	19.11	16552.7	119906.3	15.92
2021	71526.1	48418	119944.1	16.05	19941.8	139885.9	16.66
2022	82031.7	64456.2	146487.9	22.13	21803.5	168291.4	20.31
2023	94621	65697	160318		20657	180976	

Source:

1. Based on the Central Bank of Iraq website: https://cbi.iq/
2. Quasi-Money: Includes other deposits of all economic sectors (excluding the central government sector) with commercial banks in Iraqi Dinars and US Dollars, and postal savings deposits.

In 2010, broad money supply (M2) reached approximately 60,286.1 million dinars, with an annual growth rate of 32.68%. This increase was due to rising oil revenues after the global financial crisis, which allowed the government to increase public spending. The stability of the security situation also contributed to boosting confidence in the economy (Central Bank of Iraq, Annual Report 2010, 15). In 2011, it rose to 72,177.9 million dinars, with an annual growth of 19.73%. This period was characterized by increased foreign investments and expansion in the banking sector, which contributed to deepening economic activity. Financial reforms also strengthened banks' ability to provide credit (Central Bank of Iraq, Annual Report 2011, 22).

2012 witnessed a slowdown in growth, with M2 reaching approximately 77,187.5 million dinars, growing by 6.94%. This slowdown was due to political instability and its impact on economic confidence. There were also concerns about declining oil prices, which affected growth expectations (Central Bank of Iraq, Annual Report 2012, 30).

In 2013, M2 rose to 89,512.1 million dinars, with a growth of 15.9%. This recovery resulted from an improved security situation and increased oil production. Expansionary monetary policies adopted by the Central Bank also contributed to supporting growth (Central Bank of Iraq, Annual Report 2013, 10).

Although M2 reached 92,988.9 million dinars in 2014, growth declined to 3.88%. This year was fraught with many challenges, including escalating regional tensions and the ISIS crisis, which negatively affected investments (Central Bank of Iraq, Annual Report 2014, 18).

2015 also saw a sharp decline in M2 to 84,527.3 million dinars, with a negative growth of -9.10%. This decline was directly related to the deterioration of oil prices and its impact on government revenues, in addition to the worsening security crises (Central Bank of Iraq, Annual Report 2015, 12). In 2016, M2 rose again to 90,466.4 million dinars, with a growth of 7.03%. This stability was reflected in increased government support for economic sectors and an improved security situation after regaining control of territories (Central Bank of Iraq, Annual Report 2016, 25). In 2017, M2 reached 92,857.1 million dinars, with a growth of 2.64%. This growth was limited due to ongoing economic and political challenges. Nevertheless, there were attempts to improve the investment environment (Central Bank of Iraq, Annual Report 2017, 24). M2 stabilized in 2018 at 95,390.7 million dinars, with a growth rate of 2.73%. This period was characterized by government efforts to enhance financial stability and increase support for productive sectors (Central Bank of Iraq, Annual Report 2018, 20).

It continued to increase during the years (2019-2023) to reach growth levels in M2 of 139,885.9 million dinars, with a growth of 16.66%. This growth continued amidst improved oil prices and increased public spending, as well as due to regained confidence in the banking system (Central Bank of Iraq, 2021, 19). A significant improvement was recorded in the Iraqi economy, with a large increase in oil revenues in 2022, which helped enhance monetary liquidity (Central Bank of Iraq, 2022, 25). By 2023, M2 reached approximately 180,976 million dinars. This trend is expected to

continue with ongoing improvements in monetary and financial policies, but regional challenges may affect this growth (Central Bank of Iraq, 2023, 14).

Second: Analysis of the Evolution of the Foreign Exchange Rate in Iraq for the Period (2010-2023)
Exchange rate fluctuations are vital economic indicators that reflect the economic and political situation of any country. In Iraq, official and parallel exchange rates witnessed significant fluctuations between 2010 and 2023, affected by several factors including monetary policies, oil prices, and political conditions. This analysis aims to review the evolution of the official and parallel exchange rates and the exchange rate gap during this period, based on the data in Table (2).

Table (2)
Development of the foreign exchange rate in Iraq for the period (2010-2023)

Year	Official Exchange Rate (USD/Dinar)	Parallel Exchange Rate (USD/Dinar)	Exchange Rate Gap (USD/Dinar)
2010	1170	1185	15
2011	1170	1196	26
2012	1166	1233	67
2013	1166	1232	66
2014	1166	1214	48
2015	1190	1247	57
2016	1190	1275	85
2017	1190	1258	68
2018	1190	1209	19
2019	1190	1196	6
2020	1190	1242	52
2021	1474	1469	-5
2022	1460	1482	22
2023	1324	1531	207

Source:
 Central Bank of Iraq (2004-2020) Annual Bulletins, Baghdad, Research and Statistics Department.
In 2010, the official exchange rate was 1170 Iraqi dinars per US dollar, while the parallel exchange rate was 1185 Iraqi dinars, meaning an exchange rate gap of 15 dinars. This period reflected relative market stability, with an improvement in economic conditions after the 2008 crisis (Central Bank of Iraq, 2010, 15). In 2011, the official exchange rate remained at 1170 dinars, but the parallel exchange rate rose to 1196 dinars, increasing the exchange gap to 26 dinars. This rise was due to increased demand for the dollar in the parallel market due to political instability (Central Bank of Iraq, 2011, 22). However, the official rate decreased to 1166 dinars, while the parallel rate increased to 1233 dinars. The price gap significantly increased to 67 dinars, reflecting the increasing pressures on the Iraqi dinar due to political and economic tensions (Central Bank of Iraq, 2012, 30). In 2013, the official exchange rate remained

at 1166 dinars, while the parallel rate slightly decreased to 1232 dinars, resulting in a price gap of 66 dinars. These figures indicate relative market stability, despite ongoing security challenges (Central Bank of Iraq, 2013, 10).
In 2014, the official exchange rate remained at 1166 dinars, while the parallel rate decreased to 1214 dinars. The price gap narrowed to 48 dinars. This change indicates government efforts to enhance exchange rate stability amidst increasing security crises (Central Bank of Iraq, 2014, 18).
In 2015, the price gap increased to 57 dinars. This change was directly related to the deterioration of oil prices and its impact on the Iraqi economy. The price gap continued to increase in 2016 to 85 dinars, reflecting inflationary pressures in the economy due to increased demand for the dollar. In 2017, the official rate remained at 1190 dinars, while the parallel exchange rate decreased to 1258 dinars. The price gap narrowed to 68 dinars. This indicates a slight improvement in economic conditions.
Meanwhile, the parallel price rose to 1209 IQD in 2018, leading to a price gap of 19 IQD. These figures indicate relative stability in the exchange rate during that year. The price gap continued to be 6 IQD in 2019, reflecting an improvement in exchange rate stability (Central Bank of Iraq, 2019, 17). In 2020, while the official price remained at 1190 IQD, the parallel price rose to 1242 IQD, increasing the price gap to 52 IQD. This increase was a result of the impact of the COVID-19 pandemic on the economy (Central Bank of Iraq, 2020, 30). In 2021, there was a significant increase in the official price to 1474 IQD, while the parallel price decreased to 1469 IQD, with a price gap of -5 IQD, indicating new developments in monetary policy and its impact on the market. In 2022, the price gap increased to 22 IQD, indicating continued pressure on the Iraqi Dinar. By 2023, the official price decreased to 1324 IQD, while the parallel price increased to 1531 IQD. The price gap significantly increased to 207 IQD, indicating continued inflationary and economic pressures in the country.
It can be concluded that there were significant fluctuations related to economic and political factors during the research period. It is important for the Central Bank to adopt effective monetary policies to ensure exchange rate stability and promote economic growth.

Section Three: Analysis of the Relationship between Broad Money Supply and Exchange Rate in Iraq for the Period (2010-2023)

The relationship between money supply and exchange rate in Iraq during the period (2010-2023) can be identified by examining the changes in Table (3).

Table (3)
Evolution of the Relationship Between Broad Money Supply and Exchange Rate in Iraq for the Period (2010-2023)

Year	Broad Money Supply M2	Annual Growth %	Parallel Exchange Rate (USD/Dinar)	Exchange Rate Gap (USD/Dinar)
2010	60286.1	32.68	1185	15
2011	72177.9	19.73	1196	26
2012	77187.5	6.94	1233	67
2013	89512.1	15.97	1232	66
2014	92988.9	3.88	1214	48
2015	84527.3	-9.1	1247	57
2016	90466.4	7.03	1275	85
2017	92857.1	2.64	1258	68

2018	95390.7	2.73	1209	19
2019	103441.1	8.44	1196	6
2020	119906.3	15.92	1242	52
2021	139885.9	16.66	1469	-5
2022	168291.4	20.31	1482	22
2023	180976	22.01	1531	207

Source:

Based on Tables (1) and (2).

In 2010, the broad money supply (M2) was approximately 60286.1 million USD, with an annual growth rate of 32.68%. The parallel exchange rate was 1185 IQD per USD, reflecting relative stability in that year. The exchange rate gap was 15 IQD, indicating a slight difference between the official and parallel rates, which contributed to strengthening confidence in the economy (Central Bank of Iraq, 2010, 15).

M2 increased in 2011 to 72177.9 million USD, with an annual growth of 19.73%. The year witnessed a slight increase in the parallel exchange rate to 1196 IQD. The exchange rate gap increased to 26 IQD, indicating increasing pressure on the local currency due to increased demand for the USD (Central Bank of Iraq, 2011, 22).

In 2012, the money supply (M2) was approximately 77187.5 million USD, with a growth of 6.94%. The parallel exchange rate increased to 1233 IQD, while the exchange rate gap increased to 67 IQD. This change is attributed to political instability and its impact on confidence in the economy, leading to increased demand for the USD (Central Bank of Iraq, 2012, 30).

In 2013, M2 increased to 89512.1 million USD, with a growth of 15.97%. The parallel exchange rate stabilized at 1232 IQD, indicating some stability in the market. However, the exchange rate gap remained high at 66 IQD, indicating continued pressure on the Iraqi Dinar (Central Bank of Iraq, 2013, p. 10). Although M2 reached 92988.9 million USD in 2014, growth decreased to 3.88%. The parallel exchange rate witnessed a slight decrease to 1214 IQD, but the price gap fell to 48 IQD. The negative effects of the security crisis on the economy were clear, as demand for the USD began to rise (Central Bank of Iraq, 2014, p. 18). In 2015, Iraq witnessed a sharp decrease in M2 to 84527.3 million USD, with a negative growth of -9.10%. The parallel exchange rate increased to 1247 IQD, and the price gap increased to 57 IQD.

This decrease was directly related to the decline in oil prices and its repercussions on the economy (Central Bank of Iraq, 2015, 12). In 2016, M2 returned to an increase, reaching 90466.4 million USD, with a growth of 7.03%. The parallel exchange rate increased to 1275 IQD, while the price gap increased to 85 IQD. This indicates continued pressure on the Iraqi Dinar amid economic challenges (Central Bank of Iraq, 2016, p. 25).

M2 reached 92857.1 million USD in 2017, with a growth of 2.64%. The parallel exchange rate decreased to 1258 IQD, while the price gap fell to 68 IQD. These changes indicate some improvement in economic conditions, but pressures remain (Central Bank of Iraq, 2017, 14). In 2018, M2 stabilized at 95390.7 million USD, with a growth rate of 2.73%. The parallel exchange rate decreased to 1209 IQD, leading to a decrease in the price gap to 19 IQD. This stability reflects a slight improvement in economic conditions (Central Bank of Iraq, 2018, 20). In 2019, M2 witnessed a significant increase, reaching 103441.1 million USD, with a growth of 8.44%. The parallel exchange rate decreased to 1196 IQD, while the price gap fell to 6 IQD. These changes indicate relative stability in the exchange rate and an improvement in demand for the Dinar (Central Bank of Iraq, 2019, 17). In 2020, M2 reached approximately 119906.3 million USD, with a growth of 15.92%. The parallel exchange rate increased to 1242 IQD, and the price gap increased to 52 IQD. This increase was linked to economic stimulus measures to counter the effects of the COVID-19 pandemic, which affected demand for the USD (Central Bank of Iraq, 2020, 31). In 2021, M2 saw another increase, reaching 139885.9 million USD, with a growth of 16.66%. The parallel exchange rate increased to 1469 IQD, and the price gap recorded a slight decrease to -5 IQD. These changes reflect continuous pressures on the Iraqi Dinar amidst economic challenges (Central Bank of Iraq, 2021, 19). In 2022, M2 increased to 168291.4 million USD, with a growth of 20.31%. The parallel exchange rate continued to rise, reaching 1482 IQD, and the price gap increased to 22 IQD. These changes indicate increased inflationary pressures in the economy (Central Bank of Iraq, 2022, 25). By 2023, M2 reached approximately 180976 million USD. The parallel exchange rate increased to 1531 IQD, leading to a price gap increase to 207 IQD. These changes indicate continued pressures on the Iraqi Dinar, requiring effective monetary measures by the Central Bank (Central Bank of Iraq, 2023, 41).

It is concluded that the broad money supply (M2) witnessed a significant increase over the years from 2010 to 2023, rising from approximately 60286.1 million USD in 2010 to 180976 million USD in 2023, with fluctuating annual growth.

Conclusions and Recommendations

First: Conclusions

1. The official exchange rate experienced significant fluctuations, remaining relatively stable in the early years, then rising sharply in 2021 due to political and economic changes.

2. The parallel rate continuously increased, reaching 1531 IQD per USD in 2023, reflecting continuous pressures on the Iraqi Dinar.

3. The exchange rate gap witnessed a significant increase, from 15 IQD in 2010 to 207 IQD in 2023. This gap indicates tensions in the monetary market and increased demand for the USD.

4. The highest gap was recorded in 2023, reflecting increasing inflationary and economic pressures.

5. It can be observed that an increase in money supply has often been associated with an increase in the parallel exchange rate, indicating that increased monetary liquidity may lead to inflationary pressures that negatively affect the value of the Dinar.

6. The relationship between money supply and exchange rate is heavily influenced by oil prices. In years with rising oil prices, monetary liquidity increased, contributing to the stability of the official exchange rate.

7. Years coinciding with political instability such as (2014-2016) witnessed a clear increase in the exchange rate gap, reflecting a lack of confidence in the financial system.

8. The impact of the Central Bank's monetary policies was clear in exchange rate fluctuations, as changes in interest rates and open market operations contributed to affecting money supply and exchange rates.

Second: Recommendations:

1. It is crucial for the government and the Central Bank to adopt effective strategies to confront economic and political challenges to ensure monetary stability and promote economic growth.

2. The Central Bank of Iraq needs to move towards flexible monetary policies that adapt to economic changes and inflationary pressures. These policies should include effective tools for controlling money supply and interest rates.

3. It is essential for the Central Bank to enhance transparency in the monetary market by publishing periodic reports that clarify monetary policies and their impact on exchange rates, which helps build trust among investors and citizens.

4. The government should work on diversifying revenue sources and reducing reliance on oil, which helps reduce fluctuations resulting from oil prices and enhances the stability of the Dinar.

5. It is necessary for the government to take steps to improve the investment environment by providing incentives for local and foreign investors, which contributes to increasing demand for the Dinar and reduces the exchange rate gap.

6. It is essential to have an effective system for monitoring inflation and developing strategies to curb it, as high inflation negatively affects the purchasing power of the Dinar and widens the exchange rate gap.

7. The government and the Central Bank need to work on reforming the banking system and increasing its efficiency, which facilitates lending operations and enhances its ability to support the economy.

8. Developing effective strategies for dealing with exchange rate fluctuations, including strengthening foreign currency reserves to provide greater stability in the markets.

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