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THE IMPACT OF SOME MONETARY AND FINANCIAL VARIABLES ON THE BALANCE OF PAYMENTS A QUANTITATIVE STUDY FOR THE PERIOD 2004-2021 USING IRAQ AS A MODEL

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Abstract

The study aims to understand the level of development of certain variables in the monetary and fiscal policies in Iraq, and to identify their impact on the balance of payments. This is achieved by using both the descriptive-analytical method and the quantitative method. To achieve the objective of the study, a specific time frame from **2004** to **2021** was relied upon. Through the use of the ARDL model, the short-term relationship was estimated and the bounds of co-integration were measured using the bounds test. This methodology was applied automatically between monetary and financial variables, including exchange rate, broad money supply, public expenditures, and public revenues, as well as the balance of payments. Subsequently, the study estimated the long-term relationship through its parameters in the long run**.** The study concluded the necessity of adopting more monetary and fiscal reforms that suit the current situation of the Iraqi economy. The study also found a cointegration relationship between the dependent variable (balance of payments) and the independent variables (broad money supply, exchange rate, public revenues, and public expenditures). Test results inferred that both monetary variables (money supply and exchange rate) have a positive impact on the balance of payments. In contrast, regarding the fiscal variables (public revenues and public expenditures), the public revenue variable had a positive effect on Iraq's balance of payments, while public expenditures had a negative impact, indicating they do not influence the balance of payments in the short and long term. The most crucial recommendation was the need for coordination between the Central Bank and the Ministry of Finance in defining monetary objectives, with the Central Bank taking on the responsibility of formulating and selecting the appropriate tools to implement this policy.

Keywords: Exchange Rate, Broad Money Supply, Public Expenditures, Public Revenues, Balance of Payments.

This research is extracted from a doctoral dissertation titled "Analysis and Estimation of the Effectiveness of Certain Macroeconomic Variables on Economic Stability in Iraq for the Period 2004-2021.

INTRODUCTION

What distinguishes the economic relations between countries in the world is their extensive interdependence. This is due to the significant and continuous developments the world is witnessing, in addition to the increasing essential requirements necessary for development in both developing and advanced countries. All countries are now striving to establish international economic relations and agreements on both bilateral and multilateral levels. The increase in international movement of individuals has contributed to these relations, as well as the movement of factors of production, various goods, services, raw materials, and, in addition, the movement of capital. All these relationships result in external economic and accounting operations that require revenue collection and the fulfillment of foreign payments. As a result, countries incur obligations that need to be settled within a specific time frame. Therefore, every country needed to prepare a detailed plan to regulate the transactions that occur between the

The Seybold Report
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state and the external world, which is referred to as the balance of payments.

The balance of payments holds significant importance at the level of macroeconomic analysis for any country. This is because it contains economic indicators that reflect the strength of a country's economy and the degree of its integration with the global economy. Additionally, the economic transactions listed in the balance provide insight into the structure of production and its competitive ability, as well as how it responds to international production forces. Given this immense significance, various countries strive to maintain the stability of this balance by employing a set of policies and measures. The stability of the balance of payments helps in maintaining various macroeconomic balances, contributing to achieving the desired economic objectives for a country's economy. The monetary and fiscal policies are among the essential strategies that possess adequate tools that a country uses and directs to address economic imbalances and achieve the general economic policy objectives of the state.

Problem Statement

The broader Iraqi economy—and more specifically its balance of payments—has grappled with disruptions and imbalances throughout the study's timeframe. Such challenges have manifested in the growth trajectory and developmental efforts of Iraq. Consequently, this research seeks to address the pivotal question: How have monetary and fiscal variables influenced Iraq's balance of payments from **2004** to **2021**

OBJECTIVES

This study is centered on the following goals:

1- Analyzing the evolving dynamics of both the monetary and fiscal variables, as well as the balance of payments in Iraq between **2004** and **2021**.

2- Assessing the influence of select monetary and fiscal variables on Iraq's balance of payments during the same of **2004-20021** period.

Hypothesis

The study proceeds from the assumption that monetary and fiscal variables exert divergent effects on the indicators of the balance of payments, both in terms of the nature and magnitude of their relationships.

METHODOLOGY

Considering the essence of this research and in pursuit of its objectives, we adopted an inductive approach. This involved employing a descriptive-analytical style, revisiting established concepts and literature concerning select monetary and fiscal variables, as well as the balance of payments. Concurrently, a quantitative technique was utilized to discern the character of the relationship between monetary and fiscal variables and the balance of payments over the span of **2004** to **2021**.

The Seybold Report
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Spatial and Temporal Scope

Geographically, this study is anchored in the Iraqi economy. Temporally, it encompasses the period from **2004** to **2021**.

Research Structure

To achieve the set objectives and address the aforementioned queries, the research is segmented into four discussions. The first section is titled "Theoretical Framework of Certain Variables in Monetary and Fiscal Policies and the Balance of Payments." The second section presents an overview of some variables from both the monetary and fiscal policies, and delves into the Iraqi balance of payments for the period **2004-2021**. The third section zeroes in on measuring the impact of select monetary and fiscal variables on the levels of the balance of payments in Iraq during the same period. The research culminates in the fourth section, which outlines the conclusions and suggestions.

Literature Review: Previous studies serve as the foundational pillars enriching any scientific research, enabling the progression towards broader horizons. Numerous studies have examined the variables of monetary and fiscal policies as well as the balance of payments. Many of these have concluded with results affirming the existence of a relationship between them. This research endeavors to draw insights from various prior studies. In the following, a bibliographic review is presented, highlighting the most pivotal studies conducted by researchers in this domain.

1- Al-Lahibi Study 2018

Titled "The Influence of Macroeconomic Policies on the Iraqi Balance of Payments: **1968-2015**", this research aimed to illuminate the impact of macroeconomic policies on Iraq's balance of payments over the specified study period. The core question of the study was formulated around understanding the significant role those macroeconomic policies play in shaping Iraq's balance of payments. By employing a descriptive and analytical approach, the study yielded a series of conclusions and recommendations. Notably, it emphasized the profound influence of these overarching economic policies on Iraq's balance of payments.

2- Al-Hassan Study 2015

Titled "Measuring the Impact of Exchange Rate Fluctuations on the Balance of Payments: An Applied Study on the Sudanese Economy for the Period **1970-2013**", the research aimed to elucidate the influence of exchange rates on Sudan's balance of payments throughout the study duration. The study employed a descriptive methodology, leveraging economic measurement techniques, and utilized the Eviews software for analysis. The conclusions drawn indicated a positive relationship between the exchange rate and Sudan's balance of payments.

3- Hamad Study 2014

Titled "The Impact of Fiscal Policy on the Sudanese Balance of Payments **1990-2011**", this research examined the repercussions of fiscal policies on the Sudanese balance of payments during the study period. The study postulated that fiscal policies would likely have a positive

The Seybold Report
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outcome on the balance of payments. However, the findings revealed that an increase in the budgetary deficit had a detrimental effect on the balance of payments. This deficit was addressed by the government through borrowing from commercial banks, leading to an expansion in the money supply and consequently, heightened inflation. This inflation adversely affected the competitiveness of exports on the international front.

4- Study by Proso, Lnya, Lucky, and Emma 2016

Titled "Monetary Policy and the Balance of Payments", this research delved into the extent to which the adopted monetary policy in Nigeria either preserved the stability of the economic system or destabilized it. The study further explored the effectiveness of monetary policy measures in influencing the balance of payments. Relying on a descriptive approach, the study employed the quantitative methodology, specifically the Ordinary Least Squares (OLS) technique, for its analysis. The findings indicated a positive relationship between the money supply and the exchange rate in relation to the balance of payments.

5- Study by Sunyani 2013

Titled "An Empirical Analysis of the Balance of Payment in Ghana Using the Monetary Approach", this research aimed to conduct an empirical analysis of the impact of monetary policy on Ghana's balance of payments. Utilizing a descriptive analytical approach and relying on a quantitative model for its completion, the study concluded that the balance of payments is not solely influenced by monetary variables. Other factors, such as government expenditure and public debt, also play a significant role.

Chapter One

Theoretical Framework for Some Variables of Monetary and Fiscal Policies and the Balance of Payments

First: The Concept of Monetary Policy

The term "Monetary Policy" emerged in economic literature during the 19th century. It underwent significant evolution in the 20th century, especially as it adopted a broader dimension and gained more importance in addressing the economic challenges posed by recurrent economic cycles. As such, it became an integral part of the general economic strategy aimed at influencing the trajectory of economic activity to achieve specific goals and objectives. Monetary policy is defined as the actions taken by a state to influence the money supply in order to expand or contract the purchasing power of the community. Hubbard defined it as the measures adopted by the central bank in managing the money supply and interest rates, with the purpose of achieving macroeconomic objectives, such as maintaining price stability or combating inflation (Hubbard & O'Brien, 2013:455).

The Seybold Report
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Despite the differences among those interested in monetary policy issues regarding these variables and the effectiveness of each one, there is a consensus and emphasis on a particular set of variables, which we will attempt to summarize as follows:

1- Money Supply

The money supply (or monetary mass) is defined as the quantity of money available to purchase a specific good or service. It impacts a range of economic activities, and its analysis assists in reducing or increasing the supplied quantity in a manner appropriate to the existing economic situation (Mankiw, 2006: 738). It can be divided into three categories:

A- Narrow Money Supply (M1):

This refers to the amount of currency in circulation outside the banking system (Money in Circulation) plus demand deposits. It is represented by the following equation (Central Statistical Organization, 2012: 40):

$$M1 = DD + C$$

Where:

M1 = Narrow Money Supply

C = Currency in circulation outside the central system

DD = Demand Deposits

B- Broad Money Supply (M2):

This encompasses the narrow money supply (M) plus non-demand deposits (near-money or quasi-money). It can be expressed by the following equation (Charle, 1998: 55):

M2=

Where:

M2 = Broad Money Supply

M1 = Narrow Money Supply

TD = Time Deposits (Term Deposits)

C- Broadest Money Supply (M3):

Advanced countries have adopted a more comprehensive concept for the money supply, denoted as M3. This encompasses currency, demand deposits, savings deposits, and all other deposits created by governmental institutions involved in economic activities. This broader definition has arisen due to significant advancements in the monetary and financial sectors, the evolution of financial markets, the emergence of intermediary financial institutions, and their innovation in a diverse range of financial derivatives (Al-Shendi, 2006: 33).

D- Overall Economic Liquidity:

The Seybold Report
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This refers to the broadest money supply (M3), augmented by assets owned by non-banking economic entities such as public securities, bonds issued by specialized investment firms, real estate banks, government deposits, and commercial papers (George, 2020). The use of these concepts depends on the purpose for which the money supply is used, as well as the level of economic development. In the context of Iraq, and for the purposes of this study, we will rely on the broad money supply (M2), given its significance and its relevance to the realities of the Iraqi economy.

2- Exchange Rate

The concept of the exchange rate emerged as a result of international trade in goods and services among various countries worldwide. Commercial and economic transactions were settled using the exchange rate. It is defined as the price of one unit of foreign currency measured in terms of units of the domestic currency (Ahmad and Zaki, 2007:251).

The exchange rate plays a crucial role in the external economic activities of any country, whether that activity is commercial or investment-oriented. It serves as a vital linkage tool between the domestic economy and the rest of the global economies. Moreover, the exchange rate is a highly significant means of influencing the profitability of export industries and the cost of imported resources. This, in turn, reflects on inflation and employment. In addition to its use as an indicator, since it represents costs and prices both within and outside the country, it can be utilized as a gauge of a country's competitiveness, and subsequently, its balance of payments (Atros, 2000:11).

The criteria for determining the exchange rate can be distinguished, differentiating between fixed exchange rates and floating exchange rates. By "fixed exchange rates", it is meant that the relationship between currencies is administratively and theoretically set by agreement among the monetary authorities of various countries, based on both economic and political data. Each currency is pegged to a specific benchmark (Al-Hajjar, 2009:14). On the other hand, "floating exchange rates" refer to those rates determined by the forces of the free market without government intervention. Under this system, the exchange rate enjoys the freedom of movement (Al-Zawi, 2016:30).

Secondly: Fiscal Policy

The evolution of fiscal policy has gone hand in hand with the development of public finance in terms of its expenditures and revenues. Most countries need to spend in order to fulfill their mandated responsibilities and facilitate public interests. Throughout previous periods, there have been significant developments in the concept of public interests that countries must ensure. Whereas once the role of the state was limited to consolidating internal and external security and ensuring justice among individuals (a traditional concept), it now encompasses various economic, social, and cultural aspects (a modern concept of public finance). This means the state now undertakes various functions, including infrastructure development, improving living conditions, protecting the national economy, enhancing national wealth, promoting education, preserving public health, securing irrigation and drinking water, addressing economic crises, and so forth. As these functions increase, the state's need for funds becomes

The Seybold Report
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even more pronounced (Al-Qaisi, 2010: 82).

The researcher believes that the appropriate definition of fiscal policy is: a set of actions and measures taken by the government in the financial realm to determine its revenue sources and appropriate expenditure channels for these revenues. This is pursued to achieve the desired objectives, meaning it's a policy that aligns government spending with its revenues to meet public needs and economic fluctuations, aiming to reduce unemployment rates alongside achieving sustainable growth rates.

To achieve its objectives, fiscal policy primarily employs two tools, under which a range of other instruments fall: public expenditure and public revenue. Each of these tools has evolved with the economic progression of the economies that employ them. The distinctions based on varying economic developments are evident in the economies of developed and developing countries. Experts in finance, by categorizing the instruments of fiscal policy into these two primary tools, indicate their association with the financial quantities necessary to fulfill the state's fiscal function, which represents the demands of this performance.

1- Public Expenditure

Public expenditure policy is one of the most crucial instruments of fiscal policy. The significance of public expenditure has increased with the expanding role of the state in economic and social life, as well as the diversification of its varied functions. The state's role has evolved from being a mere guardian to an intervening entity and then to a producing state (Khalil and Al-Louzi, 2013: 89).

Defining public expenditure doesn't merely stop at outlining its components; it goes beyond that to emphasize the necessity of delineating the guidelines governing public spending, often referred to as the "constitution of public expenditure". These rules are (Abdullah, 2009: 65):

A- Rule of Maximum Benefit

B- Rule of Economy

C- Rule of Authorization

D- Rule of Equity in Expenditure Distribution.

2- Public Revenue

For a state to undertake public expenditure, it must have the necessary resources available. These financial means, which represent income for the state, are termed "public revenues."

For a state to fulfill its functions, it must utilize some human and non-human resources at the disposal of its communities. This means freeing up a portion of resources so that they are not utilized by individuals. Additionally, the state appropriates a fraction of the purchasing power available to individuals. The state can also generate additional purchasing power, given that the authority to issue currency is inherently its prerogative.

The Seybold Report
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From the above, it is evident that the state accrues public revenue through both the transfer of purchasing power and its creation, whether within the national economy or internationally. While public revenue can vary by source and form, it can be distinguished based on the element of compulsion in its acquisition. It no longer solely covers the public expenses advocated by classical thought. Instead, it has become an essential tool that impacts economic and social activity. Through public revenues, the state aims to achieve social and economic objectives (Abdullah and Al-Ajarimah, 2000: 124).

Public revenue is defined as "the income obtained by the government from all sources, typically in cash, used to cover its expenses" (Khalaf, 2008: 163).

Thirdly/ Concept of the Balance of Payments:

The balance of payments encompasses a large and diverse array of economic transactions. This implies that the classification of these operations adheres to specific rules. These rules, in turn, regulate a set of commercial activities, resulting in a subsidiary balance. By combining it with other subsidiary balances, we obtain the aggregate balance, which represents the balance of payments for a given country over a specific time period. This necessitates the presence of imbalances in these subsidiary accounts, arising from various reasons, which we will elucidate through the subsequent sections.

The concept of the balance of payments has been approached from various angles. Among these, the balance of payments is defined as an annual summary of all economic transactions between residents of a particular country and those residing in the rest of the world. The balance of payments records the sales of goods and services, as well as transfers of financial claims including stocks, bonds, loans, and property rights. The state of the balance of payments can be likened to an individual's dealings, where money is spent at the supermarket and, in return, money is earned through daily work. In the simplest scenarios, when there is no borrowing or lending, an individual's trade deficit should be offset by other trade surpluses (Cowen & Tabarrok, 2013:771).

The balance of payments represents the external equilibrium achieved under a fixed exchange rate system through state intervention. In the case of flexible exchange rates, it balances automatically without the intervention of any entity. It serves as a statistical record of all economic transactions between residents and non-residents, encompassing the exchange of goods and services, as well as the transfer of capital between countries (Al-Sabawi, 2012: 245).

According to the "Balance of Payments " from **2009**, issued by the International Monetary Fund (IMF), the balance of payments is defined as: "A statistical statement that summarizes transactions between residents and non-residents over a specific period. It comprises the goods and services account, the primary income account, the secondary income account, the capital account, and the financial account." Based on the double-entry system upon which the balance of payments relies, every transaction is recorded as two entries: "The sum of the credit entries equals the sum of the debit entries." (International Monetary Fund. IMF, 2009, p9).

The Seybold Report
ISSN 1533-9211
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Structure and Components of the Balance of Payments:

The concept of economic transactions with the external world and their registration in the balance of payments suggests that the balance is composed of specific items, often referred to as the sections of the balance of payments. These encompass three sections, or three balances (Al-Sisi, 2020:569-570):

A. Current Account: This includes all transactions that result from current production or that influence this production within the same period, exhibiting a cyclical nature. Some refer to it as the trade account, and it further consists of two sub-accounts:

1) Trade Balance: This records all tangible transactions, meaning those in the form of physical goods. Thus, it encompasses merchandise exports and imports, such as agricultural and industrial goods.

2) Services Balance: This records all intangible transactions, meaning those in the form of services. Hence, it includes exports and imports of services like tourism, transportation, shipping, insurance, educational services, and health services.

B. Transfer Balance: This encompasses remittances from overseas workers, gifts, grants, contributions, and compensations. All of these are recorded on the debit side of the balance of payments for the countries from which they originate and on the credit side for the countries receiving them. In other words, it includes all exchanges without any consideration. Gold exports and imports are also considered part of the transfer account.

C. Capital Account Balance: Also known as the capital balance, it includes investments, loans, and changes in assets owned by the residents of the country, as well as changes in assets owned by foreigners. These items influence the country's assets and liabilities. Its entries include receipts recorded on the credit side, most importantly, foreigners buying real estate, foreigners purchasing shares of companies, and foreign ownership of deposits in national banks. Then, there are short-term and long-term foreign loans, all of which are recorded on the credit side. On the other hand, payments recorded on the debit side include local citizens purchasing real estate in foreign countries, buying shares of foreign companies, owning deposits in foreign banks, and granting short-term or long-term loans to foreign countries. There are settlement or balancing items used for accounting purposes. If there is a deficit balance, it is offset with balancing items, the most important of which are a decrease in gold reserves, special drawing rights from the International Monetary Fund, or short-term loans, and vice versa for a surplus situation.

Chapter Two

Overview of Some Variables of Monetary and Fiscal Policies and the Iraqi Balance of Payments for the Period 2004-2021

First / The Evolution of Money Supply for the Period 2004-2021

After the political transition in **2003**, the Central Bank was granted full autonomy under the new Law No. 56 of **2004** in managing its tools and policies. The Central Bank of Iraq,

The Seybold Report
ISSN 1533-9211
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representing the monetary authority, put forth a series of measures and actions to manage the money supply and ensure the stability of its growth rates. This was done with the aim of achieving its economic objectives, especially stabilizing the general price level.

Table 1 illustrates that in **2004**, the money supply M2 amounted to 12,254,000 million dinars. By **2010**, it had taken a steadily ascending trend, reaching 60,386,086 million dinars, marking an increase of 48.132 trillion dinars from its level in **2004**. The money supply continued to rise at an increasing pace, reaching 92,988,876 million dinars with a growth rate of 3.88% in **2014**. This upward trajectory is attributed to the annual increase in government expenditure due to the rise in oil revenues. The money supply increased by 30% in **2014** compared to its level in **2010**. This was a result of the monetization process carried out by the Ministry of Finance on oil revenues to meet its needs for both recurrent and investment expenditures, especially security and military spending.

In **2015**, the money supply decreased to 84,527,272 million dinars, with a growth rate of -9.10%, reflecting a decline of 8.461 million dinars from its level in **2014**. This was primarily due to the significant drop in crude oil prices, which led to a substantial decrease in public revenues. Consequently, this had an adverse impact on government spending. The Iraqi government reduced investment expenditures significantly, prioritizing certain investment projects to continue, while the majority were halted. Current expenditures also faced reductions, though less than that of investment expenditures. In **2016** and **2017**, the money supply increased to 90,466,370 and 92,857,047 million dinars, with growth rates of 7.03% and 2.64% respectively. This was a result of the inflation that occurred in those years. By the end of **2019**, the broad money supply (M2) had increased by 8.44% compared to **2018**, reaching 103,440,475 million dinars, compared to 95,390,725 million dinars in **2018**, which had a growth rate of 2.73%. This was due to the increase in both M1 and other deposits (savings, insurance, postal, and fixed deposits). In **2020**, the broad money supply increased to 119,743,009 million dinars, a rise of 15.76%, and further increased to 139,885,978 million dinars in **2021**, representing a contribution rate of 16.82%. This rise in contribution can be attributed to the growing public confidence in the banking sector, especially with the rise in localization rates.

Second/ The Evolution of the Exchange Rate 2004-2021

The exchange rate has evolved due to the rigorous policies and efforts exerted by the Central Bank of Iraq to stabilize the Iraqi economy as a whole, and the exchange rate of the Iraqi dinar against the US dollar, in particular. This is clearly evident when observing the exchange rate of the Iraqi dinar compared to the dollar.

The foreign currency window is considered the official exchange market in Iraq and is one of the effective monetary policy methods in stabilizing the aggregate demand, leading to price level stability and reducing inflation rates by directly influencing the growth of the money supply and controlling liquidity (monetary sterilization). The foreign currency window has been able to satisfy the market's demand for foreign currency and meet the private sector's needs to finance its imports, all within balanced exchange rates that maintained a stable

The Seybold Report
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financial system. In this regard, the foreign currency window put an end to the fluctuations in the dinar exchange rate that the period before **2003** had suffered from. The foreign currency window contributed to achieving a balance between the supply of local currency (demand for foreign currency) and the demand for local currency (supply of foreign currency) (Al-Shibibi, 2007: 26). This led to the improvement and stability of the dollar/dinar exchange rate during the period **2004-2020**, a direct result of the increase in international reserves at the Central Bank of Iraq, mainly due to the bank monetizing the government's oil revenues, which represent the major source of foreign currency (Saleh, 2012: 5). The international reserves at the Central Bank of Iraq recorded approximately 78 billion dollars at the end of **2013**, which serves as a cover for the Iraqi currency and supports its value (Central Bank of Iraq, 2013: 15). As shown in Table 1, the exchange rate of the Iraqi dinar against the US dollar for the year **2004** was (1460), considered a value...

The value of the Iraqi currency was relatively high in **2004** compared to its value before **2003**, which was 1896 dinars per US dollar. This appreciation came after the initiation of the foreign currency window. However, this rate started to deteriorate in **2005**, reaching 1474 dinars per dollar, reflecting a growth rate of 0.07%. This means an increase of more than 14 dinars for each dollar. Nonetheless, this decline can be considered mild and is attributable to the deterioration of conditions.

Table 1: Monetary Policy Variables in Iraq for the Period 2004-2021 (in million dinars)

Years	Money Supply M2	Annual Growth Rate	Basic Exchange Rate	Annual Growth Rate
2004	12254000	--	1460	--
2005	14684000	19.83	1474	0.07
2006	21080000	43.56	1391	0.06
2007	26956076	27.88	1217	0.06
2008	34919675	29.54	1172	0.08
2009	45437918	30.12	1170	0.09
2010	60386086	32.90	1170	0.09
2011	72177951	19.53	1170	0.09
2012	77187497	6.94	1166	0.09
2013	89512076	15.97	1166	0.09
2014	92988876	3.88	1166	0.09
2015	84527272	-9.10	1182	0.09
2016	90466370	7.03	1182	0.08
2017	92857047	2.64	1184	0.08
2018	95390725	2.73	1182	0.08
2019	103440475	8.44	1182	0.08
2020	119743009	15.76	1304	0.09
2021	139885978	16.82	1450	0.09

Reference: Prepared by the researcher based on

- **Republic of Iraq, Central Bank of Iraq, Official Website, Annual Reports for various years, 2004-2021.**

The Seybold Report
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- **The ratios: were derived by the researcher using the formula: Growth Rate=(current value - previous value)/previous value)*100] .**

The security situation during that period led to a decline in the exchange rate. However, a consistent improvement, meaning an appreciation of the local currency, was observed from **2006** to **2019**. The Iraqi dinar's exchange rate exhibited notable stability in the central exchange market. As a result, the exchange rate increased by 292 dinars in **2019** compared to **2005**. This improvement was largely due to the rise in foreign reserves held by the Central Bank of Iraq, as these reserves play a crucial role in supporting the currency.

***Monetary sterilization refers to the change in relative balances of domestic and foreign assets held by the public without any change in the monetary base (Edison, 1993:9).**

Foreign reserves have become the main pivot for the exchange market, especially the Central Bank of Iraq's foreign currency auction, as it leads the central exchange rates of the Iraqi dinar against foreign currencies, particularly the dollar (Saleh, 2009:4). This indicates that the Central Bank now possesses the capability to stabilize and improve the exchange rate of the dinar in a manner suitable to the economic and political conditions the country is undergoing. In addition to the positive effects achieved by the Central Bank in raising the exchange rate of the Iraqi dinar, such as combating inflation and elevating the living standards of the community, there are constraints on the general budget expenses in Iraqi dinars due to decreased treasury revenues. This is because the Ministry of Finance obtains the local currency by selling dollars to the Central Bank. When the value of the dinar rises, the amount of local currency that the Ministry of Finance obtains will be less. This means that the Ministry of Finance will be obligated to pump a larger amount of dollars to obtain the same amount of local currency (Al-Jabbar, 2007:4). Table 1 shows that the exchange rate of the Iraqi dinar reached 1,304 in **2020**, with a growth rate of 0.09%. This resulted in an increase in the exchange rate by 122 dinars compared to **2019**, due to the challenges posed by COVID-19, plummeting oil prices, and escalating public debt. The exchange rate continued to rise, recording 1,450 in **2021**. The reason behind this is the consumer basket, which heavily relies on foreign imports that are bought in dollars. Therefore, the depreciation of the dinar against the dollar led to a rise in the prices of goods and services equivalent to the decrease in the local currency (**Dinar**) against the dollar, resulting in increased inflation rates.

Third/ Development of Public Revenues for the Period 2004-2021

When a government seeks to expand its size or influence, it tasks the Ministry of Public Finance (the Treasury) with adopting an expansionary approach using its fiscal instruments. Conversely, when aiming to reduce government influence, a contractionary approach is taken. The variables of Iraq's fiscal policy can be elucidated as follows:

Table 2 indicates that the total revenues amounted to 32,982,739 million dinars in **2004**, closely paralleling the estimated oil revenues of 32,593,011 million dinars. This suggests that the total revenues typically mirror the trajectory of the oil revenues, either increasing or decreasing. The years **2005**, **2009**, and **2015** saw a relative decline (compared to other years under study) in revenues, registering respectively 40,502,890; 55,209,353; and 66,470,252 million Iraqi dinars.

The Seybold Report
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This dip in oil revenues can be attributed to the terrorist attacks Iraq faced, impacting oil production, coupled with the decrease in oil prices. This underscores the rentier nature of the Iraqi economy. It's evident that the heavy imbalance in the revenue side, and the government's substantial reliance on a sector highly susceptible to external variables, exposes the Iraqi economy to severe fluctuations, further exacerbating its already fragile state. Subsequently, the general budget achieved a surplus during the period **2010-2012**, as depicted in Table 2. However, with the onset of successive crises, starting from the drop in crude oil prices in the global market post-mid-**2013** and the occupation of parts of Iraqi provinces by terrorist groups in **2014**, total revenues decreased to 105,386,623 million dinars. This downward trajectory persisted with revenues further dropping to 54,409,270 million dinars in **2016**. But they rebounded to 107,566,995 million dinars in **2019** due to the normalization of security, political, and economic conditions in Iraq. This indicates that the movements of public revenues and expenditures are completely aligned with the fluctuations in oil revenues, increasing with its rise and decreasing with its fall. As illustrated in Table 2, public revenues declined in **2020**, reaching 63,199,689 million dinars with a growth rate of -41.25% due to the COVID-19 pandemic. Accompanying restrictive measures and lockdown policies reduced the demand for oil, leading to a drop in oil prices, and consequently, a decline in oil revenues which form the major portion of public revenues.

Consequently, the Iraqi economy is characterized as a rentier (unidimensional) economy that heavily relies on oil, constituting more than 90% of the budget revenues. Additionally, it is an economy greatly open to the external world, significantly influenced by global events and crises, reflecting both negative and positive repercussions on it. In **2021**, the total revenues witnessed a substantial increase, amounting to 109,081,464 million dinars with a growth rate of 72.6%. This rise is attributed to the surge in oil revenues, which continue to dominate total revenues, accounting for 95,270,300 million Iraqi dinars, overshadowing all forms of taxes. This indicates the weakness of the fiscal policy tools in controlling inflation due to the lack of adopting modern methods to enhance the capacity of total revenues. The aim is to transition towards utilizing self-stabilization tools, complementing monetary policy tools in managing inflation.

Fourthly/The Evolution of Public Expenditure 2004-2021

The rentier nature of the Iraqi economy has led to significant structural imbalances in its public finance. The state's general budget relies predominantly on a singular source for its public revenues. Oil serves as the principal contributor in financing the state's general budget and also plays a decisive role in determining the size of public expenditures. This reliance leaves the economy vulnerable to external shocks stemming from fluctuations in the global oil market, as well as internal changes related to the conditions and volume of domestic crude oil production. Consumptive expenditures constitute the largest portion of these expenses. Difficulties often arise during the execution of expenditure items, hindering the completion of most investment projects. Consequently, the amounts allocated for such projects are not fully spent, resulting in a budget surplus at the end of the fiscal year. This surplus is mostly due to the slow pace of public spending, especially on the investment front (Report on the Prospects of the Iraqi

The Seybold Report
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Economy, 2021: 17).

In order to assess the government's commitment to the economic and financial reforms it has adopted, we can analyze this based on the goals announced by the government when approving its financial budget. For instance, the government announces a series of reforms related to financial procedures, with the most prominent being (Planning, 2013: 7) limiting the fiscal deficit by setting a cap on total expenditure and increasing non-oil revenues. This is achieved by supporting the budget's mechanisms to transition to a market economy, expanding the tax base, and increasing the share of investment spending to up to 50% of the total public expenditure. However, data from Table 2 indicates that the government did not adhere to the reformative measures it set. This non-compliance can be attributed to the increase in the government budget deficit. The public expenditures for the year **2004** amounted to 32,117,491 million dinars. This figure continued to rise due to an increase in revenue levels and an escalation in employment in the government sector. The expenditures kept surging, reaching their highest value in **2013** at 106,873,027 million dinars, with a growth rate of 18.26%.

Subsequently, public expenditures began to experience a consistent decline, registering negative growth until **2016**, when they reached 67,067,437 million dinars. Notably, this reduction in public expenditures also coincided with a significant and continual decrease in the country's overall revenues during those years. This was primarily due to the substantial decline in oil revenues, resulting from the ongoing drop in crude oil prices. Specifically, the prices for the OPEC basket of crude oils recorded $40.76, $49.49, and $96.29 per barrel for the years **2014**, **2015**, and **2016**, respectively. It's worth noting that **2016** registered the lowest oil price during the study period (OPec, 2017: 98). Additionally, the challenging political and security situations that Iraq underwent during those years played a role. This period, characterized by the war against terrorism and the substantial military expenditures, imposed hefty costs on Iraqi budgets. In the years **2017**, **2018**, and **2019**, public expenditures began to rise, registering 75,490,115; 80,873,189; and 111,723,523 million dinars consecutively, with growth rates of 12.6%, 7.13%, and 38.15%. This uptrend was due to an increase in the country's overall revenues during those years, primarily stemming from the rising oil prices.

In **2020**, these expenditures declined to 76,082,443 million dinars, with a negative growth rate of 31.90%, primarily due to the effects of the COVID-19 pandemic. In **2021**, public spending witnessed a notable increase, reaching approximately 102,849,569 million dinars, which represented a growth of 35.18% compared to the previous year. This modest increase in total actual expenditures is primarily attributed to the rise in investment expenditures, which surged to five times their value from the previous year due to the delay in approving the **2020** budget. Additionally, there was an increase in grants and subsidies expenditures, stemming from the rise in unemployment due to the COVID-19 pandemic. Furthermore, the cost of servicing both domestic and foreign debt escalated to cover recurrent expenditures, given the reduced revenues following the downturn in global oil prices.

The Seybold Report
ISSN 1533-9211
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Fifth/ Development of the Balance of Payments Indicators 2004-2021

The balance of payments is one of the most important economic indicators that reflects a country's position in economic relations with the outside world. In this regard, the Iraqi economy has witnessed several distinct phases in its foreign trade policy. We observe that the oil sector plays a significant role in many economic activities, including international trade dynamics (Al-Haidari, 2021: 225). Specifically for Iraq, which is among the developing countries grappling with imbalances in their balance of payments, data from Table 2 indicates a surplus in the Iraqi balance of payments during the period **2004-2008**. This surplus ranged from 4,212.0 million dinars to 18,000.8 million dinars, with a growth rate of 53.10% in **2008**, marking it as one of the best years in terms of surplus in the Iraqi balance of payments. Referring back to Table 1, the only observed deficit occurred in **2009**, amounting to -5,000.8 million dinars, representing an annual growth rate of -127.78%, primarily due to the global financial crisis.

In **2009**, Iraq faced a myriad of security disturbances, political and economic challenges, and internal upheavals. However, the situation of the balance of payments improved a year after this significant deficit. In **2010**, a surplus of 6,286.3 million dinars was achieved, reflecting a growth rate of 225.71%. This surplus continued until **2013**, albeit at varying rates. The deficit periods in the balance of payments occurred between **2014** and **2017**, recording annual rates of -11,871.2%, -13,473.6%, -8,344.1%, and -2,701.2%, respectively. This was a result of a decline in oil exports due to the events of **2014** and the accompanying security crisis, which heavily impacted the Iraqi economy. In **2018** and **2019**, a surplus in the balance of payments was recorded due to a surplus in the trade balance. However, **2020** witnessed a deficit of -8,272.2 million dinars, a decline rate of -194.82%. This was attributed to the dual crisis brought about by the pandemic. Specifically, Iraq recorded a deficit in the current account amounting to 6,231.6 million dinars and a capital account deficit of 8.1 million dinars (Annual Economic Report, 2020: 64-65). In **2021**, the Iraqi balance of payments registered a surplus of 10,791.9 million dinars, with a growth rate of 230.46%. This was due to the increase in the Central Bank's reserve assets during this period, alongside surpluses achieved in all components of the balance of payments.

Table 2: Variations in Iraq's Fiscal Policy for the Period 2004-2021 in million dinars

Years	Total Expenditures	Growth Rate %	Total Revenues	Growth Rate %	Balance of Payments	Growth Rate %
2004	32117491	-	32982739	-	4212	-
2005	26375175	-17.88	40502890	22.80	4122	-2.14
2006	38806679	47.13	49055545	21.12	7360.8	78.57
2007	39031232	0.58	54599451	11.30	11757.3	59.73
2008	59403375	52.19	80252182	46.98	18000.8	53.10
2009	52567025	11.51	55209353	-31.21	-5000.8	-127.78
2010	64351984	22.42	69521117	25.92	6286.3	225.71
2011	69639523	8.22	99998776	43.84	10393.7	65.34
2012	90374783	29.78	119466403	19.47	7986.8	-23.16
2013	106873027	18.26	113767395	-4.77	7860.9	-1.58

The Seybold Report
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2014	83556226	-21.82	105386623	-7.37	-11871.2	-251.02
2015	70397515	-15.75	66470252	-36.93	-13473.6	-13.50
2016	67067437	4.73	54409270	-18.14	-8344.1	-38.07
2017	75490115	12.56	77335955	42.14	-2701.2	-67.63
2018	80873189	7.13	106569834	37.80	6595.8	-344.18
2019	111723523	38.15	107566995	0.94	8724.2	32.27
2020	76082443	-31.90	63199689	-41.25	-8272.2	-194.82
2021	102849569	35.18	109081464	72.60	10791.9	230.46

Reference: Prepared by the researcher based on the Republic of Iraq, Central Bank of Iraq, official website, annual report, various years 2004-2021.

Chapter Three

Measuring the Impact of Certain Monetary and Financial Variables on the Iraqi Balance of Payments for the Period 2004-2021

First: Stationarity Test Results

To ensure the stability of the time series, we utilize the unit root test, relying on both the ADF and PP tests, as per the following results:

The results of the unit root test, as outlined in Tables (3A), indicate that based on the Dickey-Fuller test in its initial state (Level), the dependent variable (BOP) is not stable. The calculated t value is greater than the tabulated t value at significance levels of (1%, 5%, 10%). Therefore, this series is not stationary, leading us to accept the null hypothesis, suggesting the presence of a unit root, and reject the alternative hypothesis, which asserts the absence of a unit root. As for the independent variables (M2-ER-PR-PEX), all of them are unstable at (Level) across various significance levels (1%, 5%, 10%). Regarding its second state (First difference), as shown in the table, all dependent and independent variables are stable at the first difference across different significance levels (1%, 5%, 10%). Here, the calculated t value is less than its critical value, prompting us to reject the null hypothesis that suggests the presence of a unit root and accept the alternative hypothesis, which asserts the absence of a unit root. As for the Phillips-Perron test, illustrated in Table (3B) in its initial state (Level), we observe that all variables are unstable at the level across various significance levels, except for (PR-PEX), which is stable. The calculated t value is less than its critical value at significance levels (1%, 5%, 10%). In its second state (First difference), all variables appear to be stable, indicating the rejection of the null hypothesis and the acceptance of the alternative hypothesis, which affirms that the time series are devoid of a unit root.

After conducting stability tests for the time series of the studied variables, all variables were found to be stable after taking their first difference (meaning all variables are stationary at the same order or degree). Hence, it becomes possible to select the appropriate method, that is, to conduct the cointegration test; to ensure the existence of a long-term equilibrium relationship between the studied variables.

The Seybold Report
ISSN 1533-9211
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Table 3A Results of the Augmented Dickey-Fuller Test (Balance of Payments Model)

Variables		ADF Test					
		Level			First difference		
		Constant	Constant & Trend	None	Constant	Constant & Trend	None
BOP	T-statistic	-2.5781	-2.5869	-2.4132	-5.236	-5.1506	-5.3251
	Prop	0.107	0.2881	0.0173	0.0001	0.0011	0
M2	T-statistic	0.5934	-3.0158	4.7771	-4.492	-4.508	-0.0161
	Prop	0.9875	0.1437	1	0.0011	0.0053	0.6699
ER	T-statistic	-2.35	-0.9522	-0.6656	-4.196	-5.4429	-4.2194
	Prop	0.1632	0.9372	0.4211	0.0024	0.0005	0.0001
PEX	T-statistic	-1.5505	-2.8945	0.9761	-5.3603	-5.3411	-35.5431
	Prop	0.4956	0.177	0.9091	0.0001	0.0007	0
PR	T-statistic	-2.5276	-3.0116	-0.0924	-3.1507	-3.0126	-3.1305
	Prop	0.1183	0.1443	0.6444	0.0324	0.1441	0.0027

Reference: Prepared by the researcher based on the outputs of E-views10.

Table 3B: Results of the Phillips-Perron Test (Balance of Payments Model)

Variables		P.P Test					
		Level			First difference		
		Constant	Constant & Trend	None	Constant	Constant & Trend	None
BOP	T-statistic	-2.7135	-2.6706	-2.5396	-6.1081	-6.0452	-6.2449
	Prop	0.0819	0.2541	0.0127	0	0.0001	0
M2	T-statistic	0.2144	-1.6611	3.1111	-4.6945	-4.7412	-3.004
	Prop	0.9697	0.7471	0.9992	0.0006	0.003	0.0038
ER	T-statistic	-1.5506	-0.177	-0.1677	-2.9891	-3.4089	-3.0371
	Prop	0.4967	0.9911	0.6185	0.046	0.0669	0.0035
PEX	T-statistic	-7.5401	-10.5862	-2.878	-58.9694	-59.2677	-38.3196
	Prop	0	0	0.0053	0.0001	0	0
PR	T-statistic	-6.633	-7.3634	-3.0951	-21.4621	-21.8237	-21.4622
	Prop	0	0	0.0029	0.0001	0	0

Source: Prepared by the researcher based on the outputs of E-views10.

Second: Estimating the Balance of Payments Model according to the ARDL Methodology

The results shown in Table 4 indicate that the estimated model was satisfactory. The coefficient of determination, R^{-2}, was 79%, meaning that the independent variables used explain 79% of the variations in the dependent variable, BOP. The remaining 21% is due to the influence of external factors not present in the utilized model. As for the F-statistic value, it was approximately 10.60312, with a significance level of less than 5%. This indicates that the model as a whole is statistically significant, with a probability value (Prob) equal to 0.000004, making it statistically acceptable. With a Durbin-Watson stat of approximately 2.370530, this points to the model being free from the issue of autocorrelation.

ISSN 1533-9211

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Table 4: Statistical Test Results (Balance of Payments Model)

R-Squared Adjusted R- Square	0.878858 0.795971	F-Statistic	10.60312
(Durbin-Watson) stat	2.370530	Prob (F-Statistic)	0.000004

Reference: Prepared by the researcher based on the outputs of E-views10.

Third: the best model test

As shown in Figure 1, the ARDL model with lags (2,2,2,3,0), which has the lowest AKAIKC test value and is estimated at (19.82), is the best model.

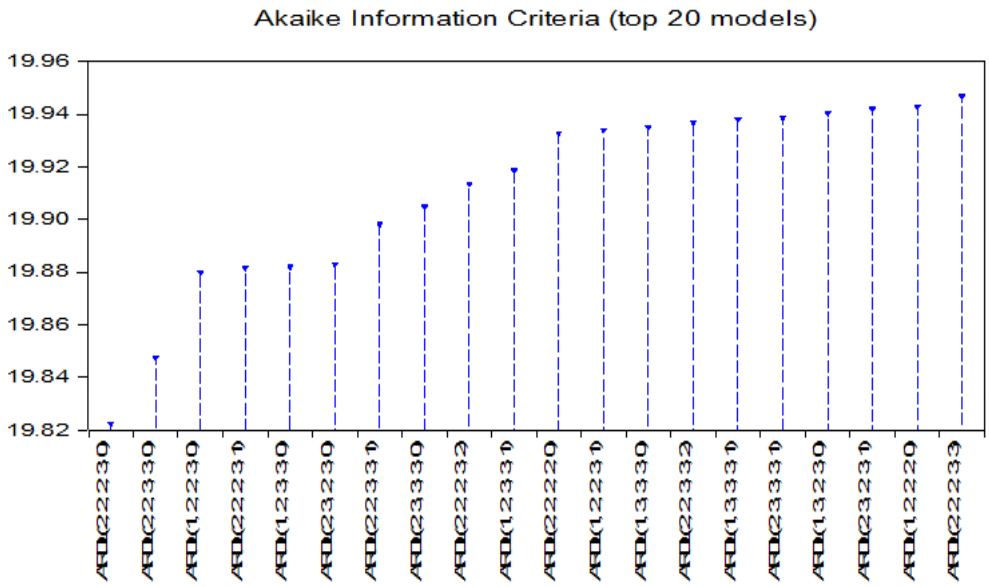

Figure 1: AKAIKE Test for the Best 20 Models (Balance of Payments Model)

Source: Prepared by the researcher based on outputs from E-views10.

Fourth: The Bound Test for Cointegration in the Balance of Payments Model

The cointegration bound test illustrates the integrated relationship among the variables under study in the balance of payments model. As depicted in Table 5, the bound test indicates a cointegrated relationship between the dependent variable (BOP) and the independent variables, namely (M2-ER-PR-PEX). The computed value for **F** is 5.412374, which exceeds the upper bound value of 4.37 and also surpasses the lower bound value of 2.2 at significance levels of 1%, 2.5%, 5%, and 10%. This suggests the presence of a cointegrated or a long-term equilibrium relationship between the independent variables and the dependent variable, leading to the acceptance of the alternative hypothesis and the rejection of the null hypothesis.

The Seybold Report
ISSN 1533-9211
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Table 5: Results of the Bound Test for Cointegration in the Balance of Payments Model.

Test Statistic	Value	K
F-stat	5.412374	4
(Critical Value Bounds) حدود القيمة الحرجة		
Significance Critical Value	I0 Bound Lower Bound	I1 Bound /Upper Bound
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Reference: Prepared by the researcher based on the outputs from E-views10.

Fifth: Estimating the Long-Term Relationship Based on the Bound Test for the Balance of Payments Model

After ensuring the presence of a cointegration relationship among the study variables and determining the optimal lag period, which is (2,2,2,3,0), we proceeded to estimate the long-term equilibrium relationship. The results reveal that the broad money supply (M2) has a positive and statistically significant impact on the balance of payments at the 10% significance level throughout the study period. Specifically, a one-unit increase in the broad money supply would enhance the balance of payments by 0.2450 units. This positive sign is consistent with economic theory, which posits a direct relationship between the money supply and the balance of payments. The logical economic explanation for this is that an increase in the money supply leads to a surge in aggregate demand. Given the weakness of genuine productive sectors, the external trade sector becomes the primary compensator. Consequently, heightened demand for foreign goods results in a deficit in the balance of payments. However, since the Iraqi economy is predominantly rentier, the value of oil exports covers this deficit, rendering a surplus in the balance of payments.

Regarding the independent variable, the exchange rate (ER), the long-term results indicate a direct relationship between it and the dependent variable (BOP). Specifically, an increase in the exchange rate by one unit leads to an increase in the balance of payments by 31.995 units. The economic rationale behind this is that most foreign economic transactions are settled in dollars. An increase in the exchange rate reduces the real value of the local currency, which in turn makes domestic goods cheaper compared to their counterparts in other countries. This stimulates foreign demand for these goods, resulting in a surplus in the balance of payments. Conversely, a decrease in the foreign exchange rate, accompanied by an appreciation of the local currency, has the opposite effect. Examining Table 6 provides insights into the impact of the two independent variables - public expenditures and public revenues (PEX, PR) - on the dependent variable (BOP) in the long run. Both have a significant effect, as evidenced by the estimated t-statistic at a confidence level (Prop<5%). The positive effect of revenues is evident; a one-unit increase leads to a 0.0003 unit increase in the balance of payments. On the other hand, the results show an inverse relationship between expenditures and the balance of payments. Specifically, a one-unit increase in expenditures results in a decrease of 0.0008 units in the BOP. This effect is significant at the 1% level. The reason behind this is that current

The Seybold Report
ISSN 1533-9211
DOI: 10.5281/zenodo.10089913

expenditures occupy a larger proportion, ranging between 70-90% of total public expenditures during the study period, at the expense of capital expenditures. This is due to the nature of the fiscal-economic structure and the elevated financial allocations for the activities of public institutions.

Table 6: Results of Estimating the Long Run Coefficients According to the Bound Test for the Balance of Payments Model.

Long Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
M2	**0.245063**	**0.120354**	**2.036191**	**0.0559**
ER	**31.99593**	**11.40765**	**2.804778**	**0.0113**
PR	**0.000305**	**7.168695**	**4.247753**	**0.0004**
PEX	**-0.000824**	**0.000274**	**-3.006348**	**0.0073**
C	**-36991.06**	**16633.37**	**-2.223906**	**0.0385**
EC= BOP-(0.2451*M2+31.9959*ER- 0.0008 *PEX+0.0003*PR-36991.0578)				

Reference: Prepared by the researcher based on the outputs from E-views10

Sixth: Error Correction Model (ECM) Based on the ARDL Methodology for the Balance of Payments Model

Table 7 illustrates the results of short-term estimates. It is evident that the error correction coefficient (CointEq (-1)) holds a negative value and is statistically significant at the 1% level, with a probability value (Prop) of 0.0000. This is a strong indicator of the credibility and strength of the cointegration relationship, confirming the convergence from short-term to long-term equilibrium. Its value was found to be (-1.037572), with a correction speed of approximately 0.9637, indicating that any imbalance in the balance of payments would require nearly 11 months and 16 days to restore long-term equilibrium. From Table 7, the elasticity parameter at the first difference for the broad money supply (DM2) was estimated to be 0.651942, suggesting a positive correlation between the independent variable M2 and the balance of payments indicator. This relationship is statistically significant at the 1% level. In the short term, the elasticity parameter for the first difference in the exchange rate was found to be 66.56741, having a positive and significant impact on the balance of payments at the 5% level, aligning with economic theory.

Regarding current period public expenditures (DPEX), their sign was positive across all periods, indicating a direct relationship between public expenditures and the balance of payments index. This means that an increase in expenditures by one unit would lead to a rise in the balance of payments index by 7.17%, 0.0009%, and 0.00026%, respectively. This finding contrasts with conventional economic theory and its assumptions.

The Seybold Report
ISSN 1533-9211
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Table 7: Results of Short-Term Parameters and the Error Correction Model (ECM) for the Balance of Payments Model.

Conditional Error Correction Regression				
Short Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-38380.88	19881.19	-1.930512	0.0686
D(BOP(-1))	-0.260093	0.117424	-2.214994	0.0392
D(M2)	0.651942	0.181343	3.595078	0.0019
(D(M2(-1))	0.540667	0.180182	3.000674	0.0074
D(ER)	66.56741	26.43178	2.518461	0.0209
D(ER(-1))	-135.5480	29.47929	-4.598077	0.0002
D(PEX)	7.17E-05	7.24E-05	0.990406	0.3344
D(PEX(-1))	0.000932	0.000193	4.820314	0.0001
D(PEX(-2))	0.000264	0.000122	2.161131	0.0437
CointEq(-1)*	-1.037572	0.162002	-6.404694	0.0000

Reference: Prepared by the researcher based on the outputs from E-views10.

Seventh: Diagnostic Tests:

Through these, the capability of the current model to pass standard tests is determined. Based on the results of the following tests:

A- Testing for autocorrelation using the LM Test (Serial correlation test)

According to the results presented in Table 8, it's evident that the current model (under study) is free from the problem of autocorrelation. This is because the value of the Chi-square prob 2 reached approximately 0.0671, which is greater than the significance level of 0.05. Therefore, we reject the alternative hypothesis and accept the null hypothesis, which suggests that there's no autocorrelation in the residuals.

Table 8: Results of the Autocorrelation Test based on the LM Test for the Balance of Payments Model.

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	2.035140	Prob. F(1,18)	0.1708
Obs*R-squared	3.352091	Prob. Chi- Square (1)	0.0671

Reference: Prepared by the researcher based on the outputs from E-views10.

B- Test for Heteroskedasticity:

Through this test, we can discern whether the residuals suffer from the issue of heteroskedasticity or not. As apparent from the data in Table 9, the value of Prob. Chi-Square (1) is approximately 0.1965, which is greater than 0.05. This indicates that it is not statistically significant. Thus, we accept the null hypothesis, which suggests that the residuals are homoscedastic, confirming that the model does not have the issue of heteroskedasticity.

ISSN 1533-9211

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Table 9: Test for Heteroskedasticity (Balance of Payments Model)

Heteroskedasticity Test: ARCH			
F-statistic	**1.649746**	Prob. F(1,**30**)	**0.2088**
Obs*R-squared	**1.668003**	Prob Chi-Square(1)	**0.1965**

Reference: Prepared by the researcher based on the outputs from E-views10.

C- Test for Normal Distribution:

The residuals were verified to follow a normal distribution as illustrated in Figure (2), using the Jarque-Berra test which recorded a value of 1.2659 with a significance level of 0.531. This is greater than the 5% significance level. Therefore, we will reject the null hypothesis which suggests that the residuals are not normally distributed and accept the alternative hypothesis which indicates that the residuals are normally distributed.

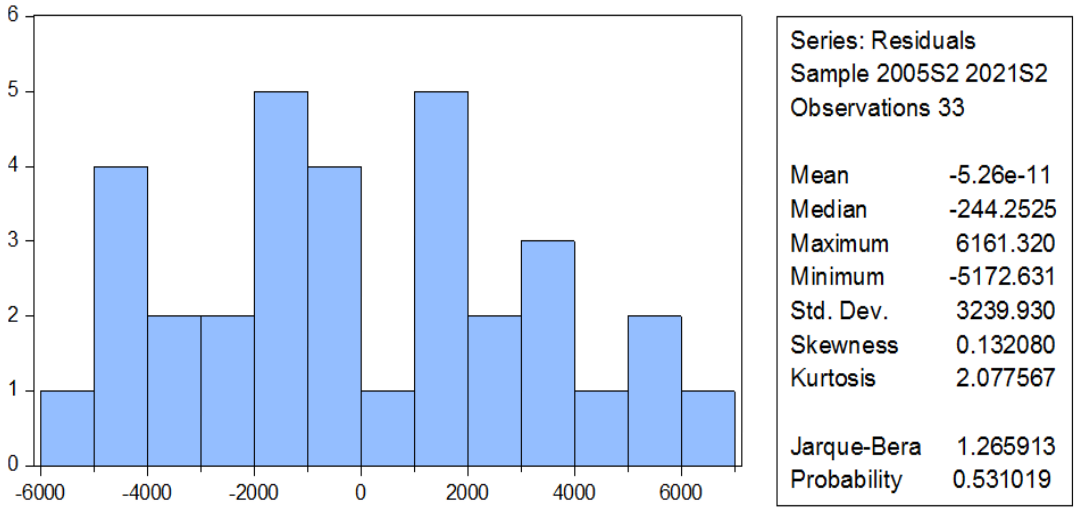

Figure 2: Test for Normal Distribution of Residuals (Balance of Payments Model)

Reference: Prepared by the researcher based on the outputs from E-views10.

Eighth: Stability Test (Stability) for the ARDL Model Coefficients for the Balance of Payments Model:

The stability of the parameters can be affirmed, and the following two tests elucidate this:

A. Cumulative Sum of Residuals (CUSUM): As evident from Figure 3, the estimates remain within the confidence bounds, or inside the critical boundaries at the 5% significance level. This confirms the stability of the studied variables over time and establishes the optimality of the ARDL model due to the congruence of the correction results in both the long-run and short-run.

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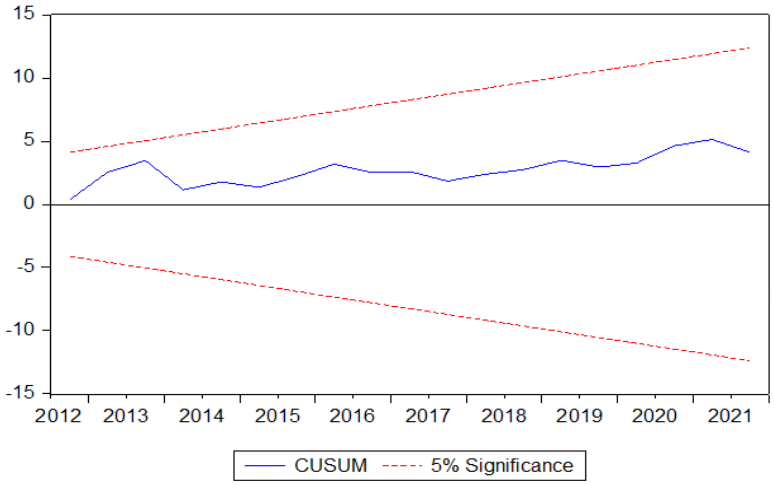

Figure 3: Cumulative Sum of Residuals (CUSUM) Test for the Balance of Payments Model.

Reference: Prepared by the researcher based on the outputs from E-views10.

B. Estimated and Actual Model Residues: It is observed from Figure (4) that the Cumulative Sum of Squares of Residuals (CUSUM SQ) statistic fell within the critical boundaries (upper and lower) at a 5% significance level, except for the period from the first half of **2014** to **2015**. This is attributed to significant fluctuations in the Iraqi economy and the deficit situations in the balance of payments during the period **2014-2015**. The deficit persisted throughout this period, and the onset of the deficit in **2014** amounted to -11,871.2. When the balance of payments surplus turned into a deficit, the highest rate of change was recorded in **2015**, amounting to -13,473.6, due to the decline in oil exports. This was a result of the events of **2014** and the accompanying dual crisis that led to a sharp deterioration in public financial conditions and foreign trade balance, exacerbating poverty conditions and having a negative impact on the Iraqi economy.

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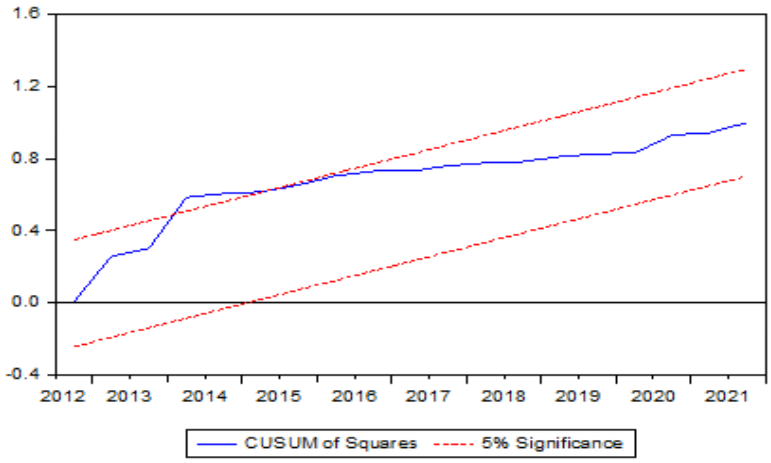

Figure 4: Cumulative Sum of Squares of Residuals (CUSUM SQ) Test for the Balance of Payments Model

Reference: Prepared by the researcher based on the outputs from E-views10.

CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS

First: Conclusions

After estimating the quantitative relationships between the variables included in the formulated econometric model, in accordance with the economic logic of the nature of the impact of certain monetary and fiscal variables on the balance of payments situation, the results include the following:

1. The monetary authorities, represented by the Central Bank, strive to stabilize monetary policy through the stabilization of the exchange rate. This can only be achieved by diversifying foreign exchange revenues and, consequently, diversifying the production environment in Iraq.
2. The nature of the relationship between fiscal policy tools and the balance of payments is clear and matches the assumptions formulated according to economic theory logic. This means that both public revenues and public expenditures do not deviate from the norm and are effective in changing the status of the balance of payments. They contribute significantly to its variations.
3. The balance of payments remains dependent on oil-based revenues and is influenced by massive imports from abroad, reflecting a structural imbalance in the Iraqi economy.
4. Stability tests, specifically the Augmented Dickey-Fuller and Phillips-Perron (PP) tests, show varying integration levels between stationary variables at level I(0) and those becoming stationary after first differencing I(1). Given the diverse stability levels of the variables under study, the Autoregressive Distributed Lag (ARDL) model was chosen for

The Seybold Report
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estimating the relationship between the variables since it provides optimal results for such scenarios.

5. It's evident from the cointegration test results that there's a significant relationship, with independent variables explaining 79% of the changes in the balance of payments. This indicates that changes in monetary and fiscal policy tools coincide with changes observed in the balance of payments during the study period. Thus, there's a long-term equilibrium relationship between monetary and fiscal policy variables and the balance of payments.
6. The Error Correction Mechanism (ECM) coefficient was found to be -1.037572. The speed of adjustment was calculated as 0.9637, implying that short-term imbalances in the balance of payments, influenced by monetary and fiscal variables, are corrected in approximately 11 months and 16 days.
7. It is clear that fiscal policy tools (PEX, PR) have a significant impact on the balance of payments index. A positive effect of public revenues and a negative effect of public expenditures on the balance of payments were observed, in line with the study's theory. The most influential factor is the exchange rate. The econometric results showed a strong correlation between the exchange rate and the balance of payments in Iraq for both short and long terms. Adjusting balance of payments imbalances through fixed and flexible exchange rates is an important and rapid means, influencing prices, income, and interest rates.
8. The research model is free from the typical problems of econometric, economic, and statistical models. The results showed unbiased and accurate estimates according to economic theory logic, ensuring the precision of the results and confirming the significant impact of monetary and fiscal policy variables on the balance of payments. It was evident that there are no issues of serial correlation or heteroscedasticity among random observations. Moreover, residuals showed a normal distribution according to the Jarque-Bera test.

Secondly/Recommendations

1. Diversify sources of income, reducing reliance on the oil sector as it's susceptible to external fluctuations in oil prices due to various crises.
2. Implement additional monetary and fiscal reforms that align with the current state of the Iraqi economy.
3. Allocate a larger proportion of public expenditure to investment expenses that contribute to increasing Iraq's exports to the international market, thereby strengthening the trade balance and subsequently the balance of payments.
4. It's essential to coordinate between the planners and executors of both monetary and fiscal policies in both the short and long term to ensure their desired impact on the trajectory of the Iraqi economy in terms of stability, balance, and growth.

The Seybold Report
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5. Adopt an effective fiscal policy by rationalizing public spending, financing investment projects that support economic growth, and curbing the increase in government expenditure on wages and salaries to mitigate inflationary pressures.
6. Enhance coordination between the Central Bank and the Ministry of Finance in defining monetary targets, with the Central Bank taking the lead in formulating and choosing the appropriate tools to implement this policy.
7. Benefit from global experiences in resolving economic issues and increasing hard currency revenue rates.

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Monetary Variables, Fiscal Indicators, and Balance of Payments Indices **Semi-Annual**

	BOP	M2	ER	PR	PEX
2004S1	4212	9147	1458	13218342	15097975
2004S2	4212	12254	1460	32982739	32117491
2005S1	4122	13793	1465	18592689	10352309
2005S2	4122	14684	1474	40502890	26376175
2006S1	7360.8	17486	1477	21453026	16459986
2006S2	7360.8	21080	1391	49055545	38806679
2007S1	11757.3	18791	1256	20325291	13101040
2007S2	11757.3	26956	1217	54599451	39031232
2008S1	18000.8	28481	1197	45762082	22952019
2008S2	18000.8	34919	1172	80252182	59403375
2009S1	-5000.8	37811	1170	20263399	19308998
2009S2	-5000.8	45437	1170	55209353	52567025
2010S1	6286.3	55851	1170	34339563	26691602
2010S2	6286.3	60386	1170	69521117	64351984
2011S1	10393.7	62321	1170	50815526	28861156
2011S2	10393.7	72177	1170	99998776	69639523
2012S1	7986.8	72682	1166	60515609	37979778
2012S2	7986.8	77187	1166	119466403	90374783
2013S1	7860.9	85218	1166	55091931	41687042
2013S2	7860.9	89512	1166	113767395	106873027
2014S1	-11871.2	88852	1166	54637661	27602713
2014S2	-11871.2	92988	1166	105386623	83556226
2015S1	-13473.6	91422	1166	31004279	28186469
2015S2	-13473.6	84527	1182	66470252	70397515
2016S1	-8344.1	88901	1182	22416134	30328588
2016S2	-8344.1	90466	1182	54409270	67067437
2017S1	-2701.2	90045	1184	31723093	27924908
2017S2	-2701.2	92857	1184	77335955	75490115
2018S1	6595.8	90973	1182	45368207	30488415
2018S2	6595.8	95390	1182	106569834	80873189
2019S1	8724.2	98466	1182	46069604	48371033
2019S2	8724.2	103441	1182	107566995	111723523
2020S1	-8272.2	110254	1182	28082617	31354308
2020S2	-8272.2	119906	1304	63199689	76082443
2021S1	10791.9	133546	1450	39917498	38121117