



THE ROLE OF EXCHANGE RATE FLUCTUATIONS IN INFLUENCING THE IRAQI TRADE BALANCE: AN ANALYTICAL STUDY FOR THE PERIOD (2010–2024)

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Article history:	Abstract:
<p>Received: 8th April 2026 Accepted: 7th May 2026</p>	<p>As Iraq's economy depends on imports and oil revenues; the aim of this research is to study the impact of the exchange rate change on the trade balance of Iraq during the period from 2010 to 2024. The significance of the topic is that the exchange rate affects imports and exports and international trade relations in general especially in rentier economies which don't have much output diversification.</p> <p>The study found that changes in exchange rates (X) greatly exert a negative effect on the trade balance (Y). A unit increase in exchange rate leads to a (-0.874567) unit fall in overall trade balance Y. This is true due to the fact that Iraq's trade balance is largely affected with the exchange rate and the profits from oil. Nevertheless, due to the small contribution of non-oil productive sectors to GDP and the dominance of oil exports in the structure of international trade, this effect remained relatively small. The findings suggest that the depreciation of the Iraqi dinar raised the costs of importations and inflationary effects without resulting in a noticeable increase in non-oil exports. Also, the findings indicated that the fluctuations in global oil prices have affected Iraq's trade balance more than the fluctuations in exchange rates.</p> <p>As a way to induce economic stability and improve the trade balance, the study suggested the implementation of economic policies that would seek to expand the production base, support the industrial and agricultural sectors, and reduce reliance on imports.</p>

Keywords: Exchange rates, trade balance, exports, imports

THE INTRODUCTION

The performance of any economy is influenced by exchange rate and trade balance especially in underdeveloped economies that are predominantly dependent on one export like tea, rubber etc. The fluctuations of the Iraqi dinar against the US dollar are among the most important variables impacting the Iraqi economy as a whole due to Iraq's almost total dependence on the exchange rate. The exchange rate may directly influence the level of investment and imports, purchasing power of the local currency, inflation, and production of Iraqi goods and services and competitiveness of the Iraqi economy in the world economy.

The Iraqi dinar value against the dollar has been volatile over the years despite the attempts of the Central Bank of Iraq to maintain monetary stability by keeping the exchange rate stable for long periods. Prior to experiencing a marked decline in subsequent years, the official exchange rate had peaked at its historical maximum. In various years the deviations from the parallel rate have been somewhat fluctuating at a similar level.

Alterations in the exchange rate greatly impact the Iraqi trade balance, although oil – which comprises the bulk of Iraqi exports – is an exception. Within the Iraqi economy, the trade balance performance is influenced by exchange rate fluctuations, according to studies. It has been submitted that Iraq's exports are dependent on oil and foreign markets, so the long run effects of an increase in the exchange rate are less clear than the short run effects according to certain common models.

The initial section of the study focuses on the concept of the exchange rate, its types, and its influencing factors. The second part discusses the trade balance and its significance, and it monitors how exchange rate changes had an effect on the Iraqi trade balance for the period 2010-2024, based on official data from the Central Bank of Iraq, as well as scholarly literature and scientific studies published in economic journals..



RESEARCH PROBLEM:

The latest study seeks to measure the effect of how disruptions in the exchange rate from 2010 to 2024 improved or worsened Iraq's trade balance.

Importance of the research:

The value of this research stems from its ability to understand Iraq's oil-dependent economy. Moreover, changes in the exchange rate and oil prices will create a surplus or deficit in the trade balance directly and accordingly. The technique adds to the understanding of relationship between monetary indicators and international trade in economic context and clarifies the influence of exchange rate policy on performance of foreign trade, both of which contribute to the discourse on rising nations.

Research objectives: This study aims to:

1. study of the appreciation in the value of the Iraqi dinar against the dollar from 2010 and 2024.
2. The concept of exchange rates, their types and the factors affecting them.
3. A study examining the concept of the trade balance and its importance in the Iraqi economy.
4. Study about the impact of currency rate change on Iraq's trade imbalance based on official data and previous research..

Research Methodology

The results and conclusions of the research were supported by a descriptive-analytical technique. In addition to a review of the previous studies on the subject matter, the researchers relied on the statistics of a Central Bank of Iraq. Moreover, the findings were based on official statistics and questionnaires..

Research hypothesis:

According to the study, there is a significant relationship between the exchange rate and the results of the trade balance in Iraq between 2010 and 2024. This means that the rise in the value of the dollar against the Iraqi dinar has a plausible positive effect on the trade balance in the short term while the long-term effect is not complicated.

First topic

Theoretical framework of exchange rate and trade balance

First: The concept of exchange rate:

It can be defined as "a dictionary phrase that can be translated into a local language in one word, where foreign language refers to foreign currency and local language refers to local currency (Na'ma, 2012: 78).

The exchange rate is also known as the relative price of one currency against another, i.e., the number of units of foreign currency that can be obtained for one unit of the local currency; it is the "value" of one unit of a national currency against units of a foreign currency (Al-Hamzawi, 2004: 71)

The International Monetary Fund defines it as: "The price at which one currency is exchanged for another, or in other words, the value of one country's currency relative to another country's currency, and it is a key tool for measuring the relative cost of goods and services between countries" (Sobhi and Awad, 2023: 210)

The World Bank defines the exchange rate in its report on "World Development Indicators 2022" as: "The price at which one currency is exchanged for another, i.e., the price of a country's currency valued in another currency, and it reflects the relative value of currencies in foreign exchange markets." It is a tool that allows for a relative comparison between the values of two currencies, an international mechanism for exchanging currencies in global markets, and an important economic indicator that gives an idea of the health of a country's economy (Al-Maamouri and Al-Zubaidi, 2022: 134)

The Organisation for Economic Co-operation and Development (OECD) defines the exchange rate as: the price at which one currency can be exchanged for another, reflecting the relative value of currencies in financial markets. It is a crucial tool in international trade and investment, as it affects the cost of goods and services across borders (Al-Tamimi, 2022: 160)

The exchange rate is also defined as "the main tool that has a direct impact on the relationship between domestic and foreign prices, and this tool often has an effective impact when it comes to weighing exports and imports ." (Al-Tamimi, 2022: 160)

From the previous definitions, it can be concluded that the exchange rate is an important factor that shows the health and strength of a country's economy; it is also considered one of the most important tools for measuring the relative cost of goods and services between countries.

Secondly, types of exchange rates:

Countries adopt different systems for determining and managing their exchange rates, depending on their economic conditions and policy objectives. Some of the most common exchange rate types include:

1. Fixed exchange rate:



In this system, the government or central bank pegs the local currency's exchange rate to a strong, stable currency (such as the US dollar), a basket of currencies, or a precious metal (such as gold). The rate remains fixed or within a narrow range, and the central bank continuously intervenes by buying and selling foreign currencies to maintain this stability. This system is applied, for example, in Gulf countries such as Qatar, where the Qatar Central Bank pegs the Qatari riyal to the US dollar at a fixed rate. One of the advantages of a fixed exchange rate is that it provides stability and certainty, which stimulates trade and investment and helps to curb domestic inflation. Conversely, one of its disadvantages is that it restricts monetary policy, as the state loses some freedom to adjust interest rates or allow the currency to adapt to economic shocks. Maintaining an unrealistic rate may also put pressure on the currency and create a parallel market if the central bank insists on a fixed rate that is far removed from market reality (Mukhtari, 2018: 14)

2. Floating exchange rate:

In this system, the price is determined by market forces of supply and demand for the currency, without a specific target value set by the government. The price of a freely floating currency fluctuates in response to trade and financial flows in the economy. Although the government and the central bank do not set a fixed price, they can sometimes intervene to influence the price if very sharp fluctuations occur. The floating exchange rate is characterized by giving the economy flexibility to adapt to shocks; for example, a decline in exports automatically leads to a decrease in the value of the currency, which makes exports more competitive and corrects the imbalance. However, one of its disadvantages is the possibility of rapid fluctuations in the value of the currency, which may disrupt economic planning and fuel imported inflation in the event of a large decrease in the value of the currency (Sobhi and Awad, 2023: 213)

3. Managed exchange rate:

It is a middle system that combines some characteristics of stability and flexibility. In a managed float, authorities allow market forces to determine the exchange rate in most cases, but intervene when necessary to prevent excessive volatility or undesirable long-term trends. In other words, there is an implicit target range or level within which the currency moves freely; if it exceeds this range, monetary authorities intervene through policies to stabilize it. This system is common in many developing countries that do not want their currencies to fluctuate wildly; examples include Algeria, Argentina, and Afghanistan, which use managed float. Managed float provides a degree of flexibility while retaining the possibility of correction at large deviations, balancing the advantages of relative stability with the advantages of adapting to market conditions (Al-Tamimi, 2022: 161)

Third: Factors affecting the exchange rate

The exchange rate is affected by numerous economic and financial factors that determine the supply and demand for the local currency against foreign currencies. Among the most prominent of these factors are:

1. Balance of payments and trade position

The balance of trade and the balance of external payments are among the most important determinants of currency value. When a country achieves a large trade surplus (i.e., exports exceed imports), global demand for its currency increases (to purchase its exports), which can lead to an appreciation of its exchange rate. Conversely, a persistent trade deficit causes an increase in the supply of the local currency in global markets (to pay for imports), putting downward pressure on its value. Global oil prices play a crucial role in influencing the dinar's exchange rate through the trade balance (Ziad and Daadoush, 2019: 335).

2. Monetary policies and interest rates:

The central bank's monetary policy affects the exchange rate. Raising the domestic interest rate often attracts foreign capital seeking higher returns, which increases demand for the national currency and supports its value. Conversely, massive monetary expansion and interest rate cuts can reduce the currency's attractiveness and lead to its depreciation. The money supply also plays a significant role; excessive money printing without productive backing causes a decline in the currency's value. (Musa'idiyah, 2019: 20)

3. Inflation rate:

Relative inflation between a country and its trading partners is a significant factor. A country where inflation is much higher than the rest of the world tends to see its currency depreciate because its purchasing power erodes both domestically and internationally. This means that domestic goods become more expensive compared to foreign goods, leading to increased imports and decreased exports, and consequently, a weaker currency. Therefore, maintaining low inflation supports a strong exchange rate in the long term.

4. Foreign reserves:

The central bank's foreign currency reserves represent an important confidence factor. The higher the foreign exchange reserves (dollars, euros, gold, etc.), the greater the central bank's ability to defend the currency in the exchange market



and inject hard currency when needed to achieve stability. A large reserve gives investors a signal that the national currency is supported and able to meet external obligations, which supports its price (Yara , 2018: 58)

5. Political and security stability:

Public confidence in the economy plays a significant role in determining currency demand. Major political or security disturbances, or uncertainty regarding government policies, can lead to capital flight and savings being transferred to safer foreign currencies, thus devaluing the local currency. Conversely, political and institutional stability attracts foreign investment and reassures locals to hold onto their currency, thereby supporting the exchange rate (Hussein, 2020: 10).

6. Other factors:

Additional factors include market expectations and speculation; speculators may move the currency price up or down based on future expectations. The level of public debt also affects confidence in the currency, as a high level of national debt may raise concerns about its financial stability and weaken its currency. Finally, global economic developments may be reflected in the local currencies of emerging markets by changing the flow of international investments . (Musa'idiyah, 2019: 22)

Fourth: The concept of the trade balance:

The trade balance is the difference between the value of a country's exports of goods and services and the value of its imports during a specific period. If the value of exports exceeds the value of imports, a trade surplus is achieved; however, if imports exceed exports, this is called a trade deficit. The trade balance is an essential part of the balance of payments and reflects the degree of trade with the outside world. The importance of the trade balance is evident in its being an indicator of the country's international competitiveness and the extent of its dependence on the outside world: a continuous trade surplus means that the country produces enough goods to cover its needs and export the surplus, while a chronic deficit may indicate a high dependence on imports and a weak export production base (Mohammed, 2016: 15)

The trade balance is generally defined as the difference between a country's exports and the value of its imports. There is also a difference in determining the contents of the trade balance. Some believe that it includes visible exports and imports, while the other group believes that it includes everything visible and invisible from international exchanges that take place across borders. In general, the trade balance is nothing but the indicator that reveals the financial situation of the country in terms of what it shows in terms of the difference in the value of its trade exchanges with the outside world, represented by its exports and imports, whether visible or invisible (Tayeh , 2024: 296)

Fifth: The importance of the trade balance:

The trade balance plays a crucial role in the formation of GDP through net exports (exports minus imports) and, as previously mentioned, directly impacts the exchange rate. Countries with trade surpluses tend to have stronger currencies, while the currencies of countries with large deficits experience depreciating pressure. Furthermore, the trade balance is linked to foreign exchange reserves. A surplus means an influx of foreign currency into the economy, which strengthens reserves and provides greater scope for monetary policy. Conversely, a deficit depletes reserves or necessitates financing through external debt. Furthermore, the trade balance reflects the structure and diversification of the economy; if it relies on a single commodity or a small number of commodities, the trade balance becomes sensitive to fluctuations in the prices and conditions of those commodities (Tayeh , 2024: 298.)

Sixth: Types of trade balance:

There are two types of trade balances:

1. The visible trade balance : This includes all items and services that have a tangible physical form (exports and imports of physical goods that move across customs borders). The visible trade balance records the value of the country's exports of physical goods.
2. The invisible trade balance : This refers to a country's exports of services. It is important to note that the trade balance does not encompass only the exchange of goods. In contrast, the services balance, the invisible component, includes the value of international exchanges of services provided by residents and non-residents to residents, trainees and non-residents, and non-residents to trainees. All services traded between countries fall under the umbrella of the services balance, which includes labor income, capital gains, tourism, insurance, and transportation (Al-Rubaie, 2024: 998)

Seventh: The basic components of the trade balance:

The trade balance is divided into two main components: the merchandise trade balance and the services trade balance, according to:

1. The merchandise trade balance, also called the visible trade balance, measures all goods and services that move across borders in a tangible, physical manner, such as exports and imports of physical goods that take place across physical borders.



2. The balance of trade in services includes all services traded between countries in the balance of trade in services , also known as the visible services balance (such as transportation services, tourism, catering, and capital goods). The invisible trade balance includes income from intangible sectors , represented by the value of exports and imports of intangible goods and services (visible and invisible income, transportation services , insurance, tourism, and services provided by the country to other countries)
3. The account for transfers is of one type. This account includes unpaid exchanges that take place in the country and abroad, and its registration procedures use the same procedures and non-refundable exchanges, SWIFTS, which are non-refundable by the state or governmental bodies and other bodies, and there are informal exchanges, grants and donations (Al-Rubaie, 2024: 999)

Second topic

Developments in the Iraqi exchange rate and trade balance 2010-2024

First: Exchange rate fluctuations 2010-2024:

The early years of the last decade saw a comfortable trade surplus for Iraq. In 2010, the surplus reached approximately \$8.6 billion, then jumped in 2011 to over \$35 billion with the rise in oil prices at that time. The trade balance reached a high of approximately \$ 35.4 billion in 2012, driven by record oil prices, with Brent crude averaging around \$112 per barrel in 2012. Iraq also maintained a large surplus in 2013 and 2014, around \$28 billion annually. Despite signs of declining oil prices in the second half of 2014 (Annual Financial Stability Report, 2014)

The picture changed dramatically in 2015, which saw a collapse in global oil prices and, as a result, a collapse in Iraqi oil export revenues. The trade surplus shrank rapidly and turned into a slight deficit of about \$0.94 billion in 2015. This was the first time in years that Iraq's trade balance had recorded a deficit, reflecting the price shock that the economy had experienced as a result. The government took austerity measures, but the exchange rate remained fixed at the time, meaning that the dinar was not devalued to help absorb the shock. The adjustment was mainly through a decrease in revenues and a reduction in spending.

In 2016, oil partially recovered, resulting in a renewed trade surplus of approximately \$6 billion. The improvement continued with the gradual rise in prices; in 2017 the surplus reached about \$12–15 billion, then jumped in 2018 to nearly \$35.95 billion. With a significant rise in oil prices that year 2018 saw the second-highest surplus of the decade, after 2012, bolstering Iraq's foreign reserves and financial position. However, this did not last long. By 2019 , prices had slowed and import spending had increased, causing the surplus to decline to approximately \$ 16.6 billion . (Bakhtiar, 2021: 180-185)

The shock of 2020 marked a new turning point, as the COVID-19 pandemic led to an unprecedented collapse in global oil demand and prices. Iraq's oil exports plummeted in both revenue and volume, while the country's need for imports remained constant. Consequently, Iraq's trade balance shifted into a significant deficit of approximately \$4.1 billion in 2020, the largest deficit in the country's modern history. This coincided with a severe financial crisis in which the government was unable to pay public sector salaries for several months due to the collapse of the exchange rate. During this critical period, the Central Bank maintained a fixed exchange rate (around 1190 dinars/dollar) for several months, depleting some of its reserves to support imports. Then, in December 2020, the authorities made a crucial decision to devalue the dinar by approximately 22%, adjusting the official rate from 1182 dinars to the dollar to 1450 dinars to the dollar. The aim of this devaluation was to reduce pressure on reserves and bolster public finances by increasing the value of the currency. Exchange rates in dinars , and also curbing excessive imports by raising their cost. This measure is described as a controlled partial float that came as an emergency response to the crisis (Sobhi and Awad, 2022: 224)

The positive momentum continued into 2022, an exceptional year, with oil prices surging to their highest levels in a decade due to the global economic recovery and the outbreak of the Ukrainian crisis. Brent crude averaged around \$100 per barrel in 2022, and Iraq achieved record oil revenues of nearly \$115 billion. As a result, the trade balance recorded its largest surplus in the past decade, reaching approximately \$53.5 billion in 2022. According to some other sources, the commodity surplus was estimated at about \$71 billion if we include all oil exports before deducting the dues owed to foreign companies. This figure represents a huge increase compared to 2021, more than double the surplus. Reports described this achievement as "the largest trade surplus achieved by Iraq in ten years. " This improvement was accompanied by a surge in the Central Bank's reserves, exceeding \$90 billion by the end of 2022, as a result of the accumulation of foreign currency surpluses from exports (Obaid, 2024: 285)

However, the other side of the over-reliance on oil quickly became apparent in 2023; with the relative decline in oil prices With Iraq adhering to its reduced OPEC + production quotas , the value of its oil exports fell by about 16 % compared to the previous year . At the same time, non-oil imports expanded by about 9.5% as government spending



and imports increased to support economic recovery. These two factors contributed to the trade surplus shrinking by nearly half compared to 2022. Official data shows that Iraq recorded a trade surplus of approximately \$ 43.2 billion in goods in 2023 before accounting for services, and the surplus decreased to about \$ 26.7 billion when accounting for the large deficit in the services sector, including shipping, travel, and remittance costs. In general, the weak trade surplus and the decline in hard currency income in 2023 were reflected in the decline of Iraq's non-oil economic growth, according to assessments by the International Monetary Fund (Abdul Latif, 2023: 7)

As for 2024, estimates indicate a continuation of the trade surplus but at a much slower pace, with the trade balance achieving a surplus of \$ 26.69 billion in 2024. The decline in the surplus compared to 2022 is attributed to the drop in oil prices from their peak and the continued rise in imports, coupled with increased government consumption and investment spending. On the other hand, in early 2023, the Central Bank of Iraq partially revalued the dinar, from 1,460 dinars to the dollar to 1,300 dinars to the dollar. This measure was taken to address the parallel market exchange rate crisis and inflationary pressures. While this revaluation made imports slightly cheaper in dinars, potentially increasing demand, its impact on the trade balance was not as significant as the effect of oil prices, given the substantial role of oil in Iraqi exports. This decision may have some limited negative impact by encouraging imports and reducing the competitiveness of domestic goods once again. However, the data clearly indicates that the decisive factor in the shrinking 2023–2024 surplus was primarily the decline in oil prices and export revenues. However, economists caution that changing the exchange rate twice within a few years has confused the economic community and somewhat weakened the credibility of monetary policy, necessitating caution in any future currency adjustments due to their potential impact on inflation and investor confidence . (Al-Khayyam, 2024) As shown in the table below:

Table (1) : Exchange rate fluctuations 2010-2024

Source: From the researcher's work based on previous data.

Second: The impact of exchange rate fluctuations on the performance of the trade balance 2010-2024:

The Iraqi dinar maintained a relatively stable exchange rate against the dollar during the years 2010-2014 . Authorities at the time did not use the exchange rate to correct trade imbalances. Despite the fixed exchange rate, high global oil prices led to significant trade surpluses. In other words, the stable exchange rate during that period enhanced trade confidence and encouraged imports and exports without monetary constraints. However, the surpluses were primarily driven by the booming oil sector, not the exchange rate itself. Pegging the dinar to the dollar at a relatively strong level made imports cheaper for Iraqi consumers and helped keep inflation low. At the same time, however, it weakened the competitiveness of non-oil domestic products, as the dinar was overvalued as long as it was supported

Impact on the trade balance	Change in exchange rate	Exchange rate policy	Year
Large trade surpluses	—	A relatively stable price against the dollar	2010 – 2014
relative trade deficit	0% change	Maintaining stability and not reducing	2015
Surplus returns to rise	—	Continued stability in the exchange rate	2017 – 2019
The net trade balance improved in 2021	22% discount	Exchange rate reduction	End of 2020
Large trade surplus	—	Continued reduction	2021
Trade surplus declined	12% increase	Raising the value of the dinar to 1300	February 2023

by oil revenues. This explains the high imports during that period compared to the limited non-oil exports (Reda, 2022: 128)

Oil prices collapsed in 2015 and the fixed exchange rate was unable to absorb the trade shock. The authorities did not devalue the dinar at that time, so they were forced to draw on reserves and finance the trade deficit with accumulated hard currencies. The fixed exchange rate here exacerbated the trade deficit relatively because imports did not decrease at the same rate as exports; the strong dinar maintained the ability to import despite the decline in oil revenues. Consequently, Iraq had to finance the deficit difference from its other resources. This experience showed the limitations of a rigid peg system in the face of large external fluctuations (Reda, 2022: 129)

With the recovery of oil prices between 2017 and 2019, the trade surplus rebounded without any change in the exchange rate. The dinar remained stable, and the government's finances recovered. Here too, the exchange rate did not play an active role; rather, the oil factor was dominant. However, it is worth noting that throughout those years, the parallel market exchange rate was sometimes slightly higher than the official rate, indicating that the official rate



was consistently supported through the central bank's currency auction window. This support facilitated import financing and supplied the markets with dollars to maintain domestic price stability. It was largely successful in this regard, but at the cost of sometimes depleting reserves when foreign currency revenues became scarce (Al-Alousi, 2023: 439)

marked a significant turning point in the relationship between the exchange rate and the trade balance. The devaluation of the dinar by approximately 22% immediately increased the value of oil exports denominated in dinars, providing the government with higher revenues in the local currency. It also made imports more expensive in dinars. Although oil exports themselves depend on global prices and their volume did not increase due to the devaluation, imports actually contracted in 2021, either due to higher costs or austerity measures. This contraction in imports, coupled with the recovery in oil prices, led to a significant improvement in the net trade balance in 2021. In other words, monetary policy partially compensated for oil policy. When oil prices were low, Iraq devalued its currency to improve its trade position, and when prices rose again, the country benefited from both the price increase and the currency devaluation to maximize its trade surplus . (Reda, 2022: 134)

Revaluation of the dinar and limited impact The decision to raise the value of the dinar to 1300 in February 2023 came more as a reaction to problems in the exchange market than as a plan to improve the trade balance. At the beginning of 2023, Iraq faced a dollar shortage crisis and a rise in its parallel market price as a result of compliance restrictions imposed by the US Federal Reserve on dollar transfers. To reduce the gap between the official and parallel exchange rates and curb inflation, the value of the dinar was raised by approximately 12 %. This increase made imports somewhat cheaper and may help curb domestic inflation. However, theoretically, it did not benefit the trade balance because it boosted the purchasing power of imports and made (non-oil) exports more expensive internationally. Nevertheless, the structure of the Iraqi economy limits this effect. Non-oil exports are very small, and imports are essential with little flexibility to reduce them. Therefore, strengthening the dinar in 2023 contributed slightly to increasing imports, which did indeed rise that year. However, the largest share of the decline in the trade surplus is attributed to the drop in oil prices. Perhaps if the dinar's value hadn't been raised, the trade surplus would have been several billion higher due to additional import curbs, but this would have come at the cost of higher prices for imported goods domestically and continued inflationary pressure. Thus, trade and monetary policy intersect in their objectives. While the goal is to support citizens with stable prices through a stronger currency, this may conflict with the goal of strengthening the trade balance through a weaker currency that encourages local production (Al-Hajji, 2022, 66).

Third The reality of the Iraqi dinar exchange rate (2010–2024)

This study analyzes the exchange rate of the Iraqi dinar against the US dollar during the period 2010–2024, a period marked by significant economic and political transformations that have clearly impacted the value of the national currency. Statistical data on official and parallel exchange rates will be used, linking the numerical changes recorded each year to the context and events that produced them, in order to provide a comprehensive and accurate picture of the exchange rate dynamics.

Table (2) Exchange rate of the Iraqi dinar against the US dollar in Iraq 2010-2024

Annual change rate of the parallel exchange rate %	parallel exchange rate	Annual change rate of the official exchange rate %	official exchange rate	years
0.27	1185.00	0.00	1170.00	2010
0.90	1195.67	0.00	1170.00	2011
3.09	1232.67	-0.33	1166.17	2012
-0.06	1231.92	-0.01	1166.00	2013
-1.48	1213.67	0.00	1166.00	2014
2.78	1247.42	0.11	1167.33	2015



2.23	1275.25	1.26	1182.00	2016
-1.35	1258.00	0.17	1184.00	2017
-3.90	1208.92	-0.11	1182.75	2018
-1.06	1196.14	-0.06	1182.00	2019
3.16	1233.94	0.86	1192.17	2020
19.46	1474.05	21.63	1450.00	2021
0.54	1482.00	-1.20	1432.60	2022
3.31	1531.00	-8.16	1315.75	2023
-1.05	1515.00	-0.44	1310.00	2024

Source: From the researcher's work based on previous data.

1. Period of relative stability (2010–2014)

The period began with remarkable monetary stability in 2010 and 2011. Figures show complete stability in the official exchange rate at 1170.00 dinars (0.00% change). The parallel market rate saw a very slight change, rising from 1185.00 to 1195.67 dinars . This stability is attributed to the rise in global oil prices following the global financial crisis, which provided the central bank with substantial dollar liquidity, enabling it to meet demand and maintain market stability.

This year witnessed the first significant sign of volatility, with the parallel market rate jumping sharply by 3.09% to reach 1232.67 dinars . This surge coincided with the escalation of the Syrian crisis and regional tensions, leading to increased demand for the dollar in Iraq as a tool for speculation and a hedge against political uncertainty.

As for the years 2013 and 2014 The market returned to a state of relative calm, with the parallel market rate gradually declining by 1.48% in 2014 to reach 1213.67 dinars . However, this calm was merely the prelude to a major storm. In mid-2014, two significant events occurred that would pave the way for the coming crisis: ISIS's takeover of Mosul and the beginning of the collapse in global oil prices.

2. The Double Shock and Recovery Period (2015–2019)

The years 2015 and 2016 represent the stark numerical reflection of the double shock. In 2015, the parallel market rate rose by 2.78% and continued to climb in 2016, reaching 1275.25 dinars . These surges were a direct result of the exorbitant costs of the war against ISIS, coupled with a sharp decline in oil revenues, which placed immense pressure on the dinar and 2019 , the value of the dinar in the parallel market began to improve noticeably as the crisis began to subside. A decrease in the price (i.e., an improvement in the value of the dinar) of 3.90% was recorded in 2017, followed by a sharp decrease of 5.13% in 2018, reaching 1208.92 dinars. The improvement continued in 2019. These figures reflect the end of major military operations against ISIS, the return of relative security stability, and the improvement in oil prices, which restored confidence in the dinar.

3. Period of partial transitions and constraints (2020–2024)

The market trend reversed again in 2020 The parallel market exchange rate rose by 3.16% to reach 1233.94 dinars . This increase was a direct result of the global COVID-19 pandemic and the resulting lockdowns and further collapse in oil prices, creating a severe financial crisis for the Iraqi government.

In 2021 This year stands out as the most significant in the table, with the official exchange rate jumping by a staggering 21.63% (from 1192.17 to 1450.00). The parallel market rate followed suit with a similar surge of 19.46% (from 1233.94 to 1474.05). These figures are a direct result of the Central Bank's decision in December 2020 to officially devalue the dinar to address the budget deficit.

But in 2022 The market absorbed the shock of the reduction, and prices began to stabilize at the new reality, supported by the significant rise in oil prices following the war in Ukraine, with the parallel market price registering a slight change of 0.54%.

to attest The most complex phenomenon occurred in 2023. The official exchange rate fell significantly by 8.16% to 1315.75 , while the parallel market rate rose by 3.31% to 1531.00. This stark digital divergence resulted from the government's decision to officially revalue the dinar, coinciding with the implementation of new US Federal Reserve restrictions on transfers, leading to a dollar shortage in the market. In 2024 , this trend continued, widening the gap between the official rate (1310.00) and the parallel market rate (1515.00). These figures confirm the continued impact of external restrictions on dollar flow in the local market, and the persistence of a high exchange rate in the parallel market despite the low official rate.

Table (3) Iraq's Trade Balance 2010-2024



Coverage percentage	trade balance	Imports	Exports	Year
117.87	7.849	43.915	51.764	2010
166.69	31,878	74.803	79.681	2011
159.66	35.203	59.006	94.209	2012
151.26	30.420	59.349	89.769	2013
157.93	30.804	53.177	83.981	2014
106.91	3.318	48.009	51.327	2015
120.73	7.090	34.208	41.298	2016
148.48	18.793	38.766	57.559	2017
188.82	40.624	45.736	86.360	2018
140.33	23.447	58.138	81.585	2019
97.26	-1.320	48.149	46.829	2020
178.85	32.235	40.849	73.045	2021
213.8	62.851	55.194	118,045	2022
150.61	33.323	65.826	99.149	2023
115.54	13,580	87.410	100.990	2024

Source: From the researcher's work based on previous data.

Third topic

Estimating and analyzing the exchange rate volatility model and its impact on the trade balance in Iraq using the ARDL methodology

First requirement: Unit root.

Table (4)
Test – (Unit root (individual unit root process)

Null Hypothesis: Unit root (individual unit root process)			
Series: X, Y			
Prob.**	Statistic	Method	
0.00 02	8.67623	PP - Fisher Chi-square	
0.0003	-0.14276	PP - Choi Z-stat	
Intermediate Phillips-Perron test results UNTITLED			
Obs	Bandwidth	Prob.	Series
79	2	0.0052	X
79	2	0.0089	Y

Source: Table of outputs of the statistical program.

The results in the table above generally show that All study variables stabilized at the level Therefore, there is no need to move on to taking the first difference of the time series.

The second requirement: Assessing the impact of the exchange rate and its effect on the overall trade balance. the distributed lag autoregression (ARDL) model does not require prior stationary time series tests, but the essential condition for applying this model is the absence of a complete series of type (5). Thus, the estimation was performed, and the results were as follows:

1. Initial estimate of the model.

Table (5)

ARDL Preliminary Estimate Results

Dependent Variable: D(Y)			
Method: ARDL			
	Mean dependent var		R-squared
-0.065465		0.65461	
	SD dependent var		Adjusted R-squared
0.067575		0.64535	



223456 .2	Durbin-Watson stat	9.23455	F-statistic
		0.000000	Prob(F-statistic)
* p-values are incompatible with t-bonds distribution.			

Source: Researcher's work based on the output of E-Views13 software

The ARDL test results are presented in Table (5). The model results show that the model is acceptable because the coefficient of determination reached (64). This indicates that the independent variables account for 64 % of the variations that occurred in the dependent variable, while the remainder is ascribed to other variables. Fisher's statistic was found to be highly significant (9.23455). This suggests that the model does not have an autocorrelation problem..

Third: Cointegration testing according to the ARDL methodology:

Bound test is the cointegration test of Autoregressive Distributed Lag (ARDL) model. This is founded on Fisher's statistical value. The lower and upper critical value boundaries documented by Pasran and dispersed under different significance level are tested against, which are given in Table (6).

Table (6)

Testing the bounds for cointegration using ARDL approach

Value	Test Statistics	
6.64859		F-statistic
5%	I(1)	I(0)
	3.478	2.36

Source: Researcher's work relies on the output of E-Views13 software.

As per findings from table (6), we note that the bounds test confirms co-integration of dependent variable (exchange rate) and independent variable (trade balance). As depicted in Table (21), results obtained from bounds test can be stated to have rejected the null hypothesis meaning no cointegration has taken place.

The value of parameter (F) equals (6.64859), which is greater than its tabled upper limit Bound (I1) to reach value (3.478) at the significance level (5%).

ARDL methodology for the error correction model.:

There are two elements in the error correction model. The first component relates to the short-run elasticities in Table (7) while the second component refers to the long-run elasticities. Results were as follows.

The error correction model based on ARDL methodology in the short run is simple regression..

Table (7)

Error correction model (short term) following the ARDL methodology.

Dependent Variable: D(Y)				
Method: ARDL				
Selected model: ARDL(1,1)				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-3.557649	0.025327	-0.654678	COINTEQ*
0.0007	2.309987	0.032298	-0.654768	D(X)

Source: The E-Views13 output is the basis of the work which is done by the researcher..

Calculating the short-term equatio:

Table (8) shows that the long-term equation that shows the effect of the exchange rate on the trade balance for the period (2010 - 2024) is as follows:

It is noted from Table (7) that the percentage (-0.654678%) of the imbalances that occur in the balance between the exchange rate and the general budget deficit in given period are corrected after more than 1.5 years $\left\{ \frac{1}{-0.6546785} \cong 1.5 \right\}$.



t) test was The exchange rate index variable (0.0 00 7) is smaller than the significance level (5%), which proves the existence of a significant inverse effect of the exchange rate index (X) on the trade balance (Y). In the short term, a one-unit increase in the exchange rate leads to a decrease in the overall trade balance (Y) by (-0.654768) units. This is consistent with reality, as Iraq's trade balance is very heavily dependent on the exchange rate.

Simple regression is a long-run error correction model based on the ARDL methodology.

Table (8) Long Term ECM under the ARDL Methodology is known as

Prob.	t-Statistic	Std. Error	Coefficient	Variable *
0.0000	0.674584	0.657576	-0.674567	X(-1)
0.0000	4.786868	0.684855	0.656378	C

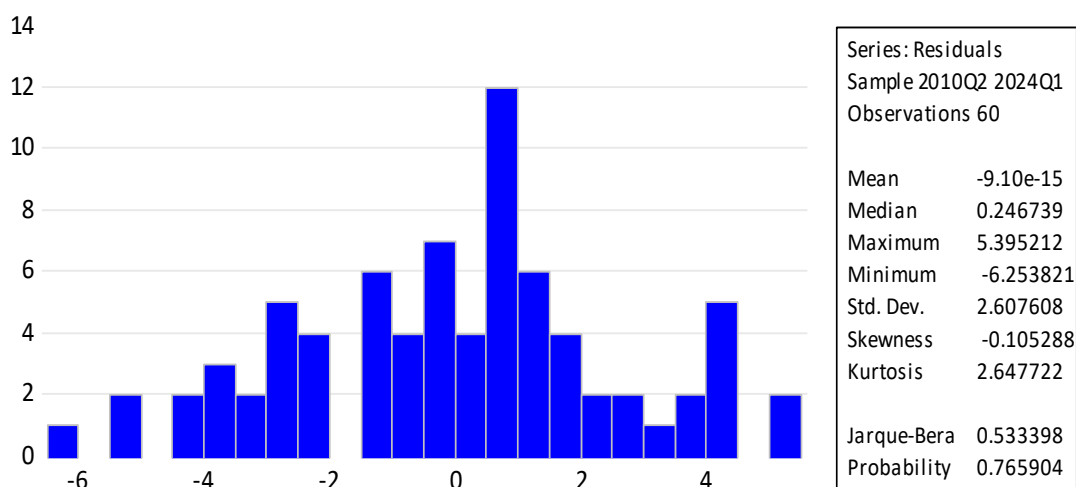
Source: The researcher uses results from E-Views13 program for working...

The t-test value of the exchange rate index variable (0.0000) is < (5%). As a result, is significant. Results indicate that, overall, in the short run, the exchange rate index (X) and trade balance (Y) are negatively impacting. In layman's term. unit increase in exchange rate would lead to trade balance(Y) decreasing to (-0.874567) unit. The trade balance of Iraq, according to the reality, is affected by oil revenues and exchange rate.

ARDL model quality tests:

Incorporates several evaluation tests for the quality of ARDL model.

The residuals have a normal distribution, which is a normality test for residual based on the Jarque-Bera stat's probability value. Visible in the illustration.



Source: Researcher's work is based on the output of E-Views13 software.

Redguided Figure (1)

The model residues are normally distributed.

As shown in Figure (1), the study residuals of the model show a "normal distribution" since the probability value is (0.765904) which is greater than (5%).Series correlation test for ARDL model residuals.

Table (9)

The (ARDL) model's residuals have a serial correlation test.

Test LM Breusch-Godfrey Serial Correlation:			
0.1123	Prob. F(2,62)	1.998786	F-statistic
0.2134	Prob. Chi-Square(2)	2.45346	Obs*R-squared

Source: Researcher's work based on the output of E-Views13 software



Table (9) indicates that the study model has a likelihood ratio chi-squared value of (0.7861). In simpler terms, this implies that the null model accepted or the model does not suffer from the serial association of errors and the alternative rejected or the model suffers from the serial association of errors is worth more than (5%).

CONCLUSIONS

1. The number of economic factors like trade, inflation and interest decide the value of currency. Along with that, psychological risk factors deal with the expectations of the people. As a result, central banks will monitor these measures and intervene when necessary to prevent disruption from taking place in the market from a rapid shift.
2. International institutions state that the economic stability of Iraq requires obtaining other revenues, in addition to oil. Will continue to efficiently become a temporarily solution to just exchange rate policy, as a result of repeated fluctuations in oil prices will keep trade valuable vulnerable.
3. The experience of Iraq during the period from 2010 to 2024 achieved some lessons on trade and exchange rate. When the exchange rate was fixed and backed by oil revenues, a fall in oil revenues created an apparent trade deficit as the exchange rate did not adjust to the shocks. Alternatively, rather than presenting data through 2020, the use of the exchange rate as a tool through the devaluation of the dinar led to faster correction of the trade balance towards surpluses, as the conditions of the 2021-2022 improved. Even so, there was a social cost, higher domestic prices. The variations of the exchange rate on Iraq's economy have undoubtedly affected the balance of trade, but, we think, within the limitations of the structures of the economy. In 2020, the dinar was devalued. This improved the trade balance by reducing imports and increasing domestic revenues. However, the effect of the 2023 partial revaluation was more subdued. It merely served to achieve other stability targets. An objective of sustainable equilibriums is the diversification of the production base and strengthening of local production.
4. Decision makers will continue to face what is perhaps one of the biggest challenges in the management of the exchange rate – to achieve a degree of stability in the exchange rate that provides the necessary flexibility for internal stability and external balance.
5. The result indicates that the index at an exchange rate X negatively affects the Y. An increase of 1 unit of the exchange rate will cause the trade balance Y to decrease by (-0.874567). Evidence shows that Iraq's trade balance is highly dependent on oil revenues and the exchange rate (Al-Wasat, 01/10/2022).

RECOMMENDATIONS

1. The government must reinforce the autonomy of the Central Bank in the management of the exchange rate and minimize the intervention to determine the Iraqi dinar value.
2. In Iraq, studies and research on the exchange rate are limited in magnitude, and the bulk of studies and research are concerned with the impact on domestic economic variables as well as the international economy.
3. A measure to check the entry and circulation of foreign currency would be adoption of clear policies. Apart from surveillance, it is also necessary to develop a currency basket and avoid overdependence on the US dollar. In other words, there is a need to mitigate risks arising from the volatility of global markets.
4. Economic policies directed towards the promotion and development of local production and lesser dependence on imports will make the change in currency value and the spendthriftism also get reduced which will raise the living standard..

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