ANALYSIS OF THE DYNAMIC RELATIONSHIP BETWEEN EXCHANGE RATE SHOCKS AND MEASURING THEIR IMPACT ON UNEMPLOYMENT RATES IN IRAQ FOR THE PERIOD (2003-2022)

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Abstract
The effects of economic shocks represented by exchange rate shocks have repercussions of different dimensions on the labor market and any changes that may occur in the volume of employment and wages according to the prevailing economic and institutional conditions since wages are a major variable that receives the effects of economic shocks in the labor market when wages are elastic, while employment rates are affected more in countries where there is a stagnation in wages, as output or aggregate supply decreases due to negative shocks and thus the demand for work decreases, which leads to To increase unemployment and decrease employment levels The Iraqi economy depends on the oil sector as a main source of foreign currency and because of the changes that occur in oil prices globally This leads to the exposure of the exchange rate to large fluctuations. For example, the decline in international oil prices means a decrease in foreign currency reserves at the Central Bank of Iraq, as well as changes in the exchange rate of the dinar against the dollar, which generates shocks Cash exchange rate Since a large proportion of GDP depends on the oil sector in Iraq, therefore there are not enough employment opportunities, which leads to unemployment as a result of lack of economic diversification and dependence mainly on the oil sector, and it has been shown that changes in exchange rates significantly affect unemployment rates in Iraq and their continuity This makes it necessary to adopt effective monetary economic policies to control these changes and try to mitigate their effects, as well as to strengthen structural policies through continuous treatment by implementing planned structural reforms in the labor market to improve its flexibility and better absorb labor with the importance of managing the exchange rate through monetary policy under the supervision and control of the monetary authority (Central Bank) in line with the economic situation in question.

Keywords: Exchange rate shocks – unemployment – Iraqi economy.

Introduction

Unemployment is a condition or problem facing the economy in any country and under any temporal and spatial conditions resulting from the loss of a person to his work and thus becomes a consumer only without producing and has political and social repercussions that affect the stability of society, and unemployment varies from one country to another as each

country follows a policy on the issue of treating unemployment to reach full employment and this does not mean just that the unemployed get a job opportunity only, but there are no jobs for a number of unemployed and those looking for it And those who want it, in times of prosperity and high prices after reaching full use, then the state is required to follow a deflationary policy that would reduce the volume of actual public consumer and investment demand for the purpose of reducing the money supply, but in times of depression when actual demand decreases, prices fall, unemployment occurs and production declines, the state must follow a policy on the contrary to the above, i.e. an expansionary policy for the purpose of increasing the money supply. The results were measured and analyzed using the simple regression model and the Nardel model in analyzing the relationship between exchange rates and unemployment as a basic tool used to analyze non-linear and dynamic relationships, taking into account the importance of the temporal effects of exchange rates, especially the delayed effects that are more pronounced in some cases, so it requires work to achieve stability in exchange rates by decision makers. To avoid possible negative effects on unemployment rates, especially in the short and long term.

Importance of research
The research derives its importance from the importance of the exchange rate in the Iraqi economy and clarify the effects of shocks on the unemployment rate under research and try to measure the impact of the relationship between them by analyzing and interpreting the results.

Search problem
The research problem revolves around the important essential role played by the exchange rate in view of the dependence of the Iraqi economy largely on oil revenues evaluated in dollars, with the instability of the exchange rate and its fluctuations, monetary shocks are formed that directly or indirectly affect various economic sectors, especially employment levels.

Research hypothesis
Monetary shocks represented by changes in exchange rates significantly affect unemployment, making it necessary to adopt effective monetary economic policies to control these changes and mitigate their effects.

Research Objectives
1- Clarify the importance of the impact of monetary economic shocks represented by exchange rate shocks on the labor market and the level of employment , whether this impact is positive or negative.
2- Measuring the impact of the exchange rate on the unemployment rate in Iraq by analyzing the dynamic relationship between them and revealing its nature.
3- Using standard models to analyze and measure the impact of exchange rate shocks on unemployment rates in the Iraqi economy.

The first topic
Theoretical framework of research
First: Exchange Rate Shocks and Unemployment (Theoretical Introduction)

1- Exchange rate fluctuations

The exchange rate is defined as the number of units of a particular currency that must be paid to collect a unit of another currency and it also represents the exchange rate of one currency for another currency, which means that one of the two currencies is a commodity while the second currency is its cash price [1], and it can be defined as the ratio of exchanging national monetary units with foreign units during a certain time and the foreign monetary units are represented by deposits and credits, as well as payments due in a certain currency as well as remittances, bills of exchange and traveler's checks, and exchange rates are determined In the foreign exchange market when the required quantities are equal to the quantities offered of foreign exchange, in addition to that the currency exchange rate is determined for countries that adopt a flexible exchange rate policy in light of the forces of supply and demand and when they are equal, the equilibrium rate is determined, so the exchange rate is affected by the determinants of both supply and demand, as the demand for the currency of a particular country is determined by the demand for its exports or imports from the countries that request the exports of another country of goods and services, as well as the movement of capital Supply reflects the factors that determine demand, as the demand for the currency of a particular country is a derivative demand, as the basic demand represents a demand for the exports of the country concerned and therefore represents the demand for its currency to pay the value of exports [2].

2- Definition of exchange rate shocks

It is defined as sudden changes in the value of a currency due to changes in monetary or real factors or internal or external factors, which leads to many disturbances with negative effects on the economy in the country concerned [3].

3- Origin and sources of exchange rate shocks

Exchange rate shocks arise from fluctuations in supply and demand for foreign currencies, as these shocks occur as a result of changes in a number of economic factors, when you leave the exchange rate, it is determined according to supply and demand permanently, as the effects of shocks mean that there are fluctuations in a large way that lead to repercussions with great risks on import and export operations in the country concerned, causing instability, which negatively affects production and employment rates, and this is what generates significant effects on countries With a small and open economy on the one hand and less effects on countries with a large and closed economy on the other hand, as well as can arise as a result of technological developments and speculation in currencies or the liberalization of capital accounts, these reasons lead to fluctuations in exchange rates to very large degrees and thus instability in exchange rate movements [4].

4- Sources of cash shocks (exchange rate shocks)

Exchange rate shocks are generated by a number of random factors, assuming that exchange rates can be adjusted faster than the commodity market, so these shocks are generated through two dimensions:

A- Monetary and financial dimension: The shock occurs as a result of the intervention of the Central Bank in the foreign exchange market through the sale and purchase of foreign currency, which affects the monetary base by decline or rise, when the Central Bank buys bonds, the interest rate decreases, so this becomes a motivation for investors to shift on the foreign bond market to replace the local currency with foreign currencies, so the impact of this shock is the rise in the exchange rate and the decline in the value of the local currency [5].

B- The real dimension means that the growth in output generates additional demand for the currency of the country concerned and improves the current account, which reduces the foreign exchange rate against the local currency, and therefore the support for the local currency is greater, as then the difference between the domestic and global output increases positively in favor of the domestic product, so the impactleft by the domestic product is the opposite effect The relationship between them is inverse, with changes in output followed by adverse changes in the foreign exchange rate.[6]

5- **The main objectives of changing exchange rates and the occurrence of monetary shocks**

The most important of these objectives are as follows [7]:

- Resource allocation and import reduction

   The exchange rate makes the economy more competitive and diverts resources to the international export-oriented goods sector and thus works to expand the base of international goods so that the number of goods to be exported is large compared to imported goods.

- Distribution of income between sectors

   When the competitiveness of the traditional export sector such as raw materials or agricultural materials rises due to the decline in the real exchange rate, thus making it more profitable, we return to the owners of capital at the time of the decline in the purchasing power of workers.

- Developing and encouraging local industries

   The central bank may adopt a policy of exchange rate depreciation to encourage domestic industries, as happened when the Bundesbank in 1948 made a devaluation and thus encouraged exports on the one hand , as well as adopting a strong currency policy on the other hand, and the monetary authority adopted a policy of depreciation to protect the national market from competition at the external level and to encourage and develop exports.

- Prevention of inflation

   The exchange rate directly affects inflation rates as a tool linking the local economy with the external economy through the exported and imported goods market in foreign trade operations, asset markets and production elements, as setting an exchange rate ensures reducing imported inflation levels and working to improve the level of competitiveness of productive institutions.

   Second: Unemployment, its causes and types

1- **Definition of unemployment as a phenomenon of labor market imbalance**

   Unemployment is defined as the phenomenon of imbalance in the labor market, as part of the labor force in society is unable to obtain productive work despite being willing and able to do the work, and unemployment is the amount of difference between the volume of work offered and the volume of work used at the prevailing wage levels during a certain period of time [8].

2- **The main causes of unemployment**

There are many reasons leading to unemployment, the most important of which can be summarized as follows:

A- Economic recession: It represents the main cause of unemployment if any country is exposed to a decline in the growth of its economic sector or even stagnation in the growth and development of these sectors and at the same time the population growth rates are continuing at the same relatively high rates, if they are not escalating, the available job opportunities are less than the volume of demand for them, as the more the rates of economic recession, whether it is a stagnation or a decline Art gap between supply and demand for the labor force will rise widening [9].

B- The disproportion of supply with the workforce and the demand for it, which creates a deficit of job opportunities available to those looking for it, and the deficit increases in widening with the increase in the imbalance of the equation of supply and demand of the workforce, and in fact, this problem is located in many developing countries, as it deliberately increases the establishment and deployment of education and training institutions without taking into account the correct needs of the local market, so this is in addition to contributing to the creation and accumulation of unemployment as a prolonged expenditure behind it, as it represents a waste of state resources.

C- Cyclical fluctuations that occur in developed countries due to the succession of cycles of depression and boom on capitalist economies In periods of depression, the total demand for the products of certain industries decreases, which leads to the dispensation of labor in these sectors for a certain period that ends with the end of the depression and the entry of a new wave of boom.

D- The technological progress that occurs in certain areas leads to the transformation of production into a new field, as labor in traditional industries is dispensed with because they are unable to deal with new technology, and this type of unemployment is eliminated by retraining workers and qualifying them to work in other fields [10].

3- **The main types of unemployment**

Unemployment has multiple types that differ in their names according to the reasons in societies alike, and the most important types of unemployment can be highlighted as follows [11]:

- Frictional unemployment

It is unemployment that occurs when a person leaves his job to look for a better job because of the desire to increase his wage or get a better job status or because of the person's desire to move from one country to another or from one place to another within the country and this type of unemployment usually takes a short time and this type of unemployment is temporary unemployment.

- Structural unemployment

It is that the individual loses his job due to the change in the productive structure, as technological development and scientific progress have taken a prominent role in contemporary life and modern machines and equipment have been produced to raise the efficiency of production and this type of unemployment occurs due to the imbalance between supply and demand for labor in professions and economic activities that face economic

prosperity, so there is a surplus in the supply of labor in the markets of professions and economic sectors that face economic prosperity.

- Periodic unemployment

This type of unemployment occurs due to the decline in aggregate demand for goods and services, which in turn represents a decrease in demand for labor, in other words, the inability of the national economy to provide opportunities for the energy of those who want to work and are looking for it, and the size and duration of periodic unemployment increases as the recessionor depression that the economy is going through and it is called periodic unemployment because it results from the state of depression, which is a stage of the economic cycle, so this type of unemployment is related to the situation The economy that a country is going through [12].

- This type of unemployment occurs due to the lack of sufficient employment opportunities for a large part of the labor force, which is not a temporary phenomenon but a permanent phenomenon that rises continuously [13].

- Rigid unemployment This type is represented by the permanent unemployed who do not seek work even in times of economic prosperity, although they are able to work, such as the unemployed from the rich, who depend mainly on their surplus money and savings in banks, prices and real estate, and this type applies to beggars and loafers in the streets and chaotic movements [14].

Second: The theoretical relationship between the exchange rate and unemployment rates

1- **Explain the relationship between employment and the exchange rate according to economic theories**

Ideas, views, opinions and hypotheses differed regarding the orbit of interpreting the relationship between the money supply and the economic variables of economic activity, as the focus of controversy between them expanded and still exists until now that whether there is a role for money and whether this role is neutral or not.

A- The relationship between operation and the exchange rate according to classical theory

With regard to the analysis of the role of money in classical theory, it is only a means of exchange and a calculation tool for settling payments, i.e. stability on its neutrality by affecting the levels of production and employment, so the classical model denies the existence of compulsory unemployment in the economy, and if it exists, it represents an exceptional case and temporarily, it may be optional by choosing workers because of the rejection of the prevailing wages in the market, or it may be frictional unemployment that occurs due to the transfer of workers from one job to another, and according to the classical approach, they see that the flexibility of each of Wages and prices ensure a balance in the labor market at full employment levels in light of the prevailing full competition of the labor market and the absence of government and trade unions interference in this market [15].

B- The relationship between employment and the exchange rate according to Keynesian theory

From the point of view of Keynesian analysis, he has given an important role to money, unlike the classical that money is a means of exchange no more, but rather requires money for itself. It has been researched by Keynes for the impact and impact of moneyon various economic

variables through the interest rate determined by the convergence of demand curves and money supply. The money supply is related to the tendency to invest and is followed by income and thus its impact on employment levels.The lack of neutrality of money in the economy below the level of full employment, meaning that the economy is in a state of compulsory unemployment due to the lack of effective aggregate demand, and the ways to address it require government intervention and directing monetary authorities to use their economic policy in various directions, whether monetary or financial policy, either in the direction of expanding government spending or the money supply to stimulate and stimulate effective aggregate demand. When monetary expansion, the money supply will rise and the interest rate will decrease, and thus the cost of investment will decrease and efficiency will increase. The marginal capital rises investment spending accompanied by repeated increases in income and employment by the effect of the multiplier and vice versa by restrictive direction by reducing the money supply and increasing the interest rate, as for the relationship between employment and the exchange rate according to the modern monetary approach, the critics have stressed the important relationship between money and the variables of the economy and the role of monetary stability by providing the appropriate environment for the practice of economic activity and they have shown that the occurrence of fluctuations in the levels of income, production and employment increase or decrease caused by changesin the money supply and the interpretation of the occurrence of Unemployment due to monetary factors can be treated by the monetary policy tools adopted by the Central Bank in an expansionary or restrictive direction [16].

The second topic
Measuring the relationship between exchange rate shocks and analyzing their repercussions on unemployment rates in Iraq during the period (2003-2022)
First: Analysis of the reality of exchange rate shocks and unemployment in Iraq
1- Analysis of exchange rate fluctuations and unemployment rates in the Iraqi economy for the period (2003-2022)
 The exchange rate in Iraq has witnessed many stages and many changes inthe date (4/10/2003) occurred important changes to the exchange rate as this date represents the work of the foreign currency auction, which clearly reduced the severity of fluctuations in the exchange rate of the Iraqi dinar, but in 2004 there have been vast changes in monetary policy as the Central Bank obtained independence under the law (56 in 2004) This law has stipulated that the Central Bank is the monetary authority responsible for formulating and implementing monetary policies andCredit without adhering to any instructions issued by the government or other parties in order to maintain the exchange rate of the local currency and work on the stability of prices and thus improve the financial system [17], but the fixed exchange rate is no longer suitable for the movement of economic activity, so there was a decision to improve the exchange rate by choosing the exchange rate asan exchange system in The Iraqi economy by making it free determined according to the mechanism of supply and demand and under the supervision of the monetary authority (Central Bank) for the risk of foreign exchange movements and their effects on various economic activities It is more likely that this freedom is restricted under the supervision and supervision of the Central Bank and formed the freedom

of the exchange rate in the form of daily auctions covering the requests of commercial banks by the Central Bank, it is originally represented by requests for the private sectorIn addition to the remittances granted in dollars from the Central Bank, the average exchange rate in 2004 was (1469) dinars / dollar within the framework of the new exchange system and decreased to (1192) dinars / dollar in 2020, and the reason for this was attributed to the improvement in the policy of the monetary authority represented by the Central Bank with its control and control over the local currency exchange market (Iraqi dinar) and the establishment of an auction publicly for the currency to achieve balance in the foreign exchange market [18], However, the determination of the exchange rate by the Central Bank in 2020 led to an increase in the exchange rate of the Iraqi dinar to settle at (1450) dinars / dollar in 2021, while the reality of unemployment in the Iraqi economy fluctuated unemployment rates significantly in 2003 These rates rose significantly to reach (28.1%) due to the political and economic chaos that occurred as a result of the occupation in Iraq and the collapse of state institutions, and unemployment rates did not remain like this, but witnessed a significant decrease in (2005). To reach (17.9%), then decreased in 2010 to reach (13.9%) and then witnessed steady fluctuations between decline and rise during the years (from 2011 to 2018) to reach about (12.862) as a result of the war against terrorism, a large number of residents of the governorates were displaced and a large number of these were disrupted as a workforce, and unemployment rates continued to rise to (13%) and (15.5%) respectively during the years. 2020 to 2022 due to the Corona pandemic and the conditions imposed by public health, as well as the decline in oil prices in the absence of government planning during the mentioned years for the period studied in the research.

A. Table(1) Exchange rates and unemployment rates in the Iraqi economy for the period (2003-2022)

Years (2003-2022)	Exchange rate fluctuations of the Iraqi dinar against the dollar	Unemployment (%) of the total workforce
2003	1500	28.1
2004	1453.417	26.8
2005	1472	18
2006	1467.417	17.5
2007	1254.567	11.7
2008	1193.083	15.3
2009	1170	15.2
2010	1170	13.9
2011	1170	14.6
2012	1166.167	14.7
2013	1166	13.1
2014	1166	10.6
2015	1167.333	10.713
2016	1182	10.82
2017	1184	13.02
2018	1182	12.862
2019	1183	12.822
2020	1192	13.74
2021	1469	13
2022	1477	15.5

Second: Analysis and measurement of the relationship between exchange rate shocks and unemployment rates in the Iraqi economy for the period (2003-2022)

1- **Measuring the relationship between exchange rate shocks and analyzing their impact on unemployment rates in the Iraqi economy for the period (2003-2022) using a simple linear regression model**

   Table (2) deals with measuring and analyzing the relationship between exchange rate shocks and unemployment rates in the Iraqi economy during the period (2003-2022) using a simple linear regression model, as after analysis and obtaining results based on Table (1), the results indicate that there is a significant impact of each of the exchange rate shocks on unemployment rates during the research period, as statistical transactions show a clear indication of the importance of independent variables in explaining changes in unemployment rates. It was found that exchange rate shocks have a positive impact on unemployment rates, as the coefficient of (0.018) shown in Table (2) after analysis and obtaining the results indicates that the rise in exchange rates by one unit leads to an increase in unemployment rates by 0.018 units, as this effect is statistically significant, and the probability value reached (0.009) which is less than 0.05, which supports the hypothesis of a close correlation between the rise in exchange rates and the increase in unemployment rates on the one hand, and on the other hand shows The impact of the years is an opposite trend, as the coefficient of its value (-0.389) indicates a decrease in unemployment rates over time by 0.389 units per year, and this decrease reflects a gradual improvement in the Iraqi labor market over the years studied, and the impact is also statistically significant, as the probability value (0.014), and given the quality of the model, the value of the coefficient of determination (R-squared) The amount of (0.665) indicates that about 66.5% of the changes in unemployment rates can be explained by the variables entered in the model, which reflects an acceptable efficiency, and the adjusted R-squared value of (0.623) confirms this result, which means that the model is generally suitable for analyzing this relationship between exchange rate shocks and unemployment rates, while other model statistics such as F-statistic, which amounted to (15.848) with a probability value Prob(F-statistic) equal to 0.000, indicating the significance of the model as a whole. However, the Durbin-Watson stat value of (1.072) indicates the possibility of a problem with self-variance, which calls for verification of this aspect using additional tests. Overall, this analysis reflects the importance of economic policies with regard to exchange rate management as a tool to influence unemployment rates.However, further analysis is recommended to address technical issues such as autovariance, as well as the introduction of additional variables to enhance model accuracy and provide a deeper explanation of the factors affecting unemployment rates.

B. Table 2

C. Exchange rates and their impact on unemployment rates in the Iraqi economy for the period (2003-2022) using the simple linear regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Coefficient of stability	775.045	288.124	2.690	0.016
Exchange Rates	0.018	0.006	2.969	0.009
Years	-0.389	0.141	-2.751	0.014
R-squared	0.665	Mean dependent var		15.078
Adjusted R-squared	0.623	S.D. dependent var		4.808
S.E. of regression	2.954	Akaike info criterion		5.148
Sum squared resid	139.586	Schwarz criterion		5.297
Log likelihood	-45.905	Hannan-Quinn criter.		5.173
F-statistic	15.848	Durbin-Watson stat		1.072
Prob(F-statistic)	0.000			

**Source: Prepared by the researcher based on Table (1).**
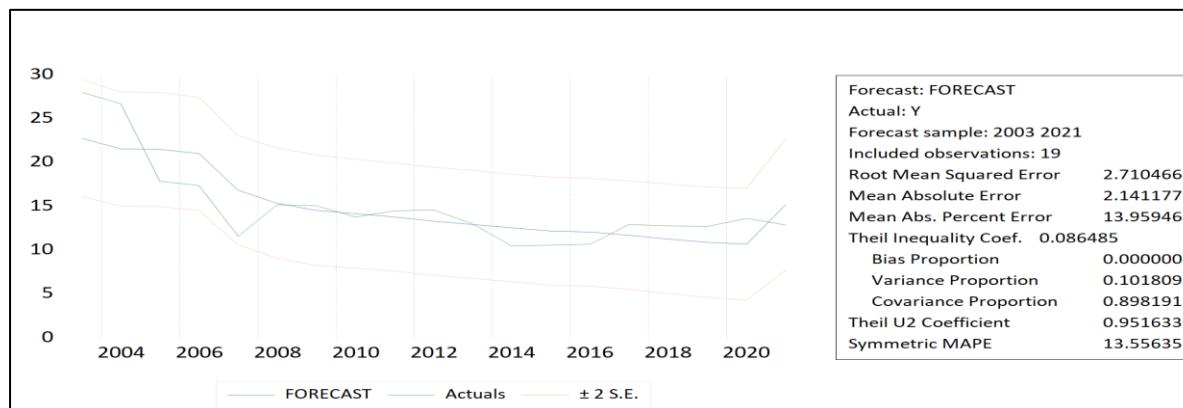
Figure 1 Compare Forecast, Actual and Calculate the Error Value of a Linear Regression Model

Source: Prepared by the researcher based on Table (2).

Figure 2 Criteria for the accuracy of the linear regression model
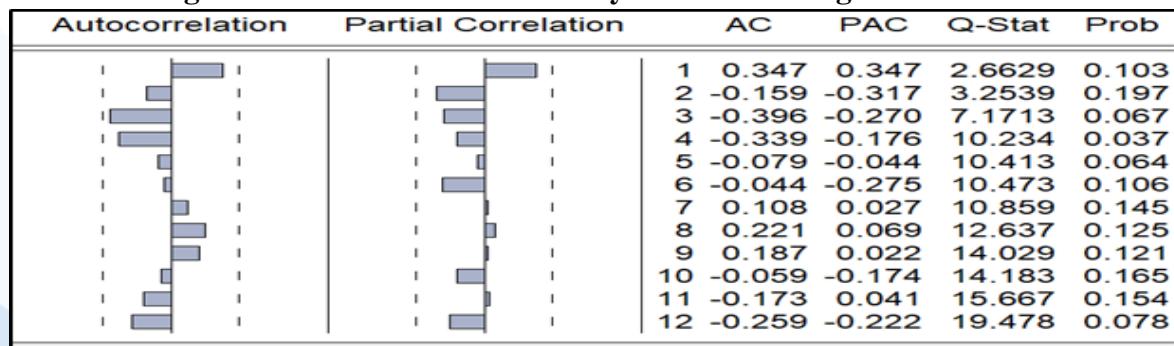
Source: Prepared by the researcher based on Table (2).

2- **Measuring the relationship between exchange rate shocks and analyzing their impact on unemployment rates in the Iraqi economy for the period (2003-2022) using the nonlinear model of self-delayed time differences (NARDL)**

The table aims to study the relationship between exchange rates (X) and unemployment rates (Y) in Iraq during the period 2003-2022 using the NARDL model (the nonlinear model of time differences with self-delay).

- **Results related to the studied variables relevant to the research:**

Variable Y(-1) (Previous year's unemployment):

The coefficient (0.337) indicates that the unemployment rates in the previous year positively affect the current unemployment rates, this means that unemployment tends to persist over time, reflecting relative stability in its levels.

The effect is statistically significant (Prob = 0.042), reinforcing the role of past unemployment rates in interpreting current values.

Variable X (exchange rates):

The value of the coefficient (0.005) means that there is a small positive effect of exchange rates on unemployment rates. That is, an increase in exchange rates by one unit leads to a slight rise in unemployment rates.

The effect is statistically significant (Prob = 0.035), indicating the importance of this variable.

Delayed variables of exchange rates X(-1) and X(-2)

X(-1):

Negative impact on unemployment rates by a factor of (-0.017), which means that the increase in exchange rates in the previous year may lead to a slight decrease in current unemployment.

The effect is significant (Prob = 0.028).

X(-2):

A slight positive effect with a factor of (0.014), indicating that the rise in exchange rates two years ago leads to an increase in the current unemployment rates. The effect is significant (Prob = 0.041).

Constant (C):

The value of the coefficient (5.739) reflects the level of unemployment expected in the absence of exchange rate effects. The effect is significant (Prob = 0.032), indicating the importance of stable fundamentals in explaining unemployment rates.

Model Quality:

Coefficient of determination (R-squared):

Its value is (0.892), which means that about 89.2% of the changes in unemployment rates can be explained by the model.

Adjusted R-squared:

Its value is (0.756), which reflects a significant improvement in the model taking into account the number of independent variables.

Statistic F and associated p-value (F-statistic) andProb(F-statistic)

A statistic value of (4.360) with a p-value of (0.021) confirms the significance of the model as a whole, which means that independent variables significantly explain changes in unemployment rates.

Durbin-Watson stat:

A value of (2.175) indicates the absence of the problem of self-correlation between errors, which enhances the reliability of the results.

Other standard indicators:

Standard error ofregression (S.E. of regression):

is (1.576), reflecting a reasonable level of error in the model.

Selection criteria AIC), Schwarz, Hannan-Quinn:)

Indicator values (3.987, 4.232, 4.012) show that the model is optimal out of 20 models evaluated according to the Akaike standard (AIC).

Sum squared resid:

It stood at 9.798, which is relatively low, indicating the accuracy of the model's prediction.

Economic interpretation:

The results show that exchange rates have complex effects on unemployment rates, as the effect varies between the moment (X) and the late.

(X(-1) andX(-2).)

The momentary effect is positive but small, while the delayed effects reflect the dynamics of the relationship between exchange rates and unemployment.

Therefore, economic policies should monitor the stability of exchange rates as a means of reducing unemployment, taking into account the delayed effects **over time.**

Table (3)The results of the analysis of shocks of exchange rate changes and their impact on unemployment rates in the Iraqi economy For the period (2003-2022) using the NARDL model

Dependent Variable: Y				
Method: NARDL				
Model selection method: Akaike info criterion (AIC)				
Number of models evaluated: 20				
Selected model: ARDL(1,2)				
Variable	Coefficient	Std. Error	t-Statistic	Problem.*
Y(-1)	0.337	0.162	2.078	0.042*
X	0.005	0.005	1.049	* 0.035
X(-1)	-0.017	0.010	-1.633	* 0.028*
X(-2)	0.014	0.007	1.840	0.041*
C	5.739	5.673	1.012	0.032*
R-squared	0.892	Mean dependent var		3.622
Adjusted R-squared	0.756	S.D. dependent var		2.137
S.E. of regression	1.576	Akaike info criterion		3.987
Sum squared resid	9.798	Schwarz criterion		4.232
Log likelihood	-8.892	Hannan-Quinn criter.		4.012
F-statistic	4.360	Durbin-Watson stat		2.175
Prob(F-statistic)	0.021			

(Eviews13) Source: Prepared by the researcher using theeconometric program
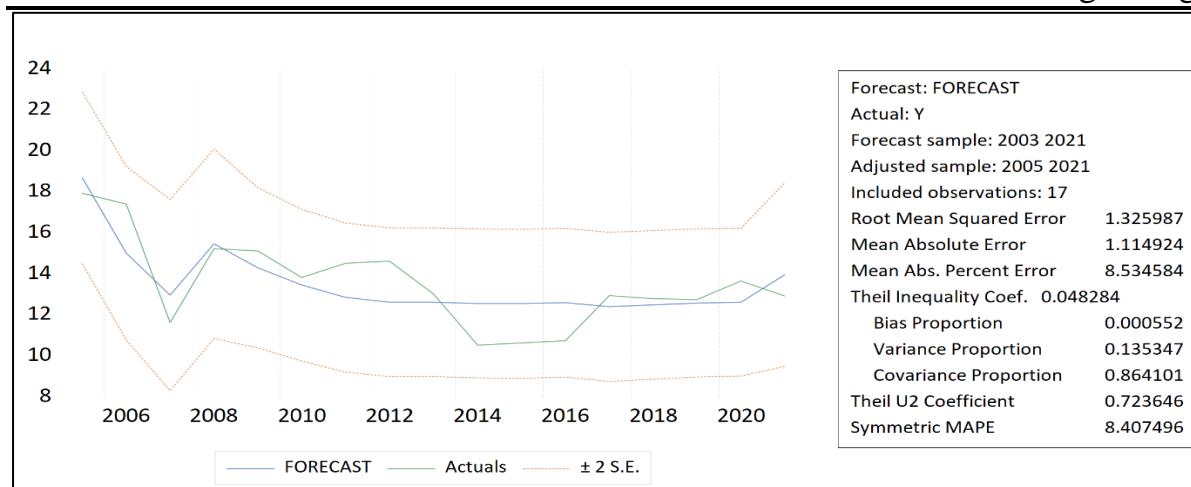
Figure 3 Compare Forecast , Actual and calculate the error value of the NRADL model

(Eviews13) Source: Prepared by the researcher according to the outputs of the Econometric Program

D. Figure 4
E. NARDL Model Accuracy Standards

.(Eviews13) Source: Prepared by the researcher according to the outputs of the Econometric Program

Conclusions and recommendations
First: Conclusions
1- **The existence of a strong relationship between exchange rates and unemployment rates, as** statistical analyzes indicate a significant relationship between exchange rates and unemployment rates, with immediate and delayed effects, which reflects the importance of this factor in explaining unemployment changes.
2- The importance of monetary policies and exchange rates has been confirmed, as the results indicate that changes in exchange rates significantly affect unemployment, which makes it necessary to adopt effective monetary economic policies to control these changes and mitigate their effects.

3- Delayed exchange rate variables (X(-1) and X(-2)) have significant effects on unemployment rates, reflecting the dynamic nature of this relationship and its long-term impact.

4- **Continuity of unemployment rates** The Y(-1) coefficient shows that the unemployment rates of the previous year positively affect current unemployment rates, indicating structural challenges that lead to continued unemployment over time.

5- It turns out that a NARDL model (II) has higher accuracy than the first model (the simple regression), as the R-squared coefficient reached a value of (0.892) in the second model compared to (0.665) in the first model, which reflects its superiority in explaining changes in unemployment rates.

Second: Recommendations:

1- The need to adopt effective monetary economic policies to control changes in exchange rates that generate monetary shocks and mitigate their potential negative effects on employment levels, as the results indicate that changes in exchange rates significantly affect unemployment. Especially in the short and long term.

2- When designing economic policies , the temporal effects of exchange rates are taken into account, especially since delayed effects can be more pronounced in some cases.

3- **Work to strengthen structural policies by** addressing the continuity in unemployment rates, and this requires the implementation of structural reforms in the labor market to improve its flexibility and better absorb labor.

4- **Additional analyses can be performed** using more advanced analytical models that include other variables, such as investment and economic growth, to better explain the relationship between exchange rates and unemployment.

5- Given the superiority of the second model (NARDL) in analyzing the relationship between exchange rates and unemployment, it is best used as a basis for analyzing nonlinear and dynamic relationships in future studies or research.

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