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Measuring and analyzing the impact of some monetary policy indicators on the trading volume of the Iraq stock exchange for the period 2004-2023

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Abstract
Based on the great importance of financial markets in the economy as an indicator and mirror of the extent of the development of the economy, this study aimed to measure and then analyze the impact of both the broad money supply M2 and the real interest rate of banks in Iraq on the trading volume of the Iraq Stock Exchange for the period 2003-2024, and showed from the results of the standard test and after the logarithmic formula of the data was determined and using the program (Eviews12) show that the time series of the variables of the study were stable between the level and between the first difference, and using the methodology of the self-regression model of the distributed slowdown (ARDL) shows a statistically significant relationship between the dependent variable represented by the volume of trading and independent variables represented by the broad money supply and the real interest rate, and the results of the border test showed a long-term common integration relationship in the estimated model, and the study recommends the need to develop and expand the Iraqi market for banknotes and the use of modern methods in trading Ensuring the rights of traders and benefiting from the developed financial markets in Arab and regional countries.

Keywords: Monetary policy, broad money supply, stock market, trading volume, real interest rate

Introduction
Monetary policy and through its various indicators is one of the most important economic policies that contribute to the development and progress of the national economy and thus contribute to enhancing the financial stability of the country through financial markets, which is one of the most important areas that reflect the extent of the development of the local economy on the one hand and the effectiveness of monetary policy indicators in controlling the size of the monetary mass in the economy and maintaining its value on the other hand, so the issue of establishing stock markets has become one of the main objectives For many developing countries because of their effective role in achieving economic development.

The stability of the financial markets in part reflects the effectiveness of the economic policies followed in the country and on this basis, full knowledge of the causes of fluctuations that may occur in the financial markets for various reasons and the interpretation of these reasons through their relationship to monetary variables is one of the important matters in understanding and interpreting the nature of the relationship that links these variables to the financial markets and thus the possibility of harnessing these monetary indicators to achieve the greatest possible stability in the financial markets.

Search problem
The research problem is summarized in how to measure and analyze the impact of the narrow money supply and the broad money supply in the Iraq Stock Exchange using appropriate standard tools taking into account economic principles and how to deal with field data in light of an emerging and narrow financial market and operating under unfavorable economic conditions.

The importance of research

The importance of research stems from the importance of financial markets in the country, as the stability of these markets is an indicator of the extent of economic stability in the country and the success of economic policies, including monetary policy, in achieving that success.

Research hypothesis

The research proceeds from the premise that:

The Iraqi Stock Exchange is affected by the money supply as one of the important monetary variables, and this explains the existence of a short and long-term equilibrium relationship between the variables.

Research Methodology

The research relied on the descriptive analytical approach coupled with and supported by the standard approach to show the extent of verification of the research hypothesis.

The first topic: the theoretical rooting of the efficiency of monetary policy and its developments in Iraq

The efficiency of monetary policy in a particular economy can be identified by identifying the effectiveness of the tools of this policy in directing the macroeconomic face that achieves monetary and financial stability and thus achieving the long-term goal of monetary policy, which is to maintain the general level of prices and determine the mechanism for reaching acceptable inflation rates. Independence of the Central Bank.

At the level of the Iraqi economy, the monetary policy before 2003 was a policy of financing the budget deficit and submissive to the procedures of fiscal policy, and after 2003 the new Central Bank Law No. 56 of 2004 was issued, which represents an important turning point in the stages of development of monetary policy in Iraq (Al-Khazraji, 2010: 8) [15].

The monetary policy in Iraq after 2003 has faced a number of challenges accumulated since the nineties of the last century, perhaps the most prominent of which is the hyperinflation witnessed by the Iraqi economy, where the annual growth rate of prices reached nearly 50% and these rates continued to worsen to reach their highest limit at the level of 77% in 2006 and the reason for this is the exposure of the Iraqi economy to a supply shock on the one hand and the increase in government expenditures of a consumer nature on the other hand (Saleh, 2008: 1) [2] in addition to what Previously, the rentier nature of the Iraqi economy was the reason for the Iraqi economy's exposure to many shocks associated with the fluctuation of oil prices in the global market, which affected economic stability, which reflected negatively on monetary policy measures, forcing it to take measures and use mechanisms to confront economic instability, which would negatively affect the achievement of the goals that had already been determined by monetary policy and the value of the local currency, and despite the fact that the economy was not exposed Iraqi to inflationary pressures that the speed of money turnover was decreasing, as it recorded its lowest levels in 2020 (Jado, 2021: 2) [3].

Monetary Policy Indicators

Some of the monetary policy indicators that are believed to have a clear impact on the Iraqi stock market will be addressed as follows:

Cash supply in the broad sense M2

The broad money supply M2, according to the opinion of many economists, is a more accurate indicator in expressing the money supply in the economy compared to the narrow supply of money M1, because the components of the broad money supply are more comprehensive than the components of the narrow money supply, in addition to the currency in circulation outside the banking system and current deposits, the components of the broad money supply include time deposits and savings deposits, which are the so-called quasi-money. Despite the fact that they represent indirect payment methods It is part of the money supply because of the possibility of converting it into direct payment methods within a short period of time and limited financial costs, and often the focus in economic policies and scientific research on the components of the broad money supply more than is the case for the narrow money supply and the reason for this is the great impact that the broad money supply can have as an important indicator of monetary policy at the level of economic activity as it represents a type of investment and access to the price of capital, which is Interest rate for time and savings deposits, hence the broad money supply gives a clear picture of the volume of savings, investments and trends of economic activity in the short and medium term, thus estimating the volume of aggregate supply and aggregate demand (Al-Karawi, 2023: 12) [16].

From Table (1) can explain the trends of development of the broad money supply and other deposits and the ratios of their contribution to domestic liquidity, and can explain the reason for the continuous increase in the broad money supply throughout the study period to the expansionary monetary policies during the study period to face many of the crises that faced the economy this with the existence of an expansionary fiscal policy for the same period represented in the increase in government spending at large rates, which led to the expansion of the volume of liquidity in the economy and the accompanying relative development in The banking system quantitatively and qualitatively, which increased the volume of bank deposits, not to mention the increase in government revenues resulting from the rise in oil prices and the increase in the volume of oil exports, which enhanced the size of cash reserves in the country, all these factors were a direct cause of the increase in the broad money supply throughout the study period, and this can be clearly seen through the annual growth rates, although these rates fluctuate due to the economic, political and security conditions, their general trend was upward except for the year 2015.

Where the annual growth rate was decreasing by -9.09, and the reason for this can be attributed to the decline in government revenues due to the decline in oil prices in 2014, and this coincided with the increase in military expenditures, which negatively affected the volume of public expenditures of the state, in addition to the significant decline in the volume of bank deposits due to security conditions, all of which was the reason for the decline in the broad money supply in Iraq in 2015.

While the ratio of the contribution of the broad money supply M2 in local liquidity represents the volume of funds available in the economy that can be used and benefited from in various economic activities, and the more the ratio of M2 contribution to local liquidity is large, the volume of cash available in the economy is large and be an incentive to support the growth of the economy and the lower this ratio,

the volume of liquidity in the economy is low, and this may lead to an economic slowdown, and from the table it becomes clear to us the percentage of contribution The narrow money supply M1 in the components of the broad money supply, which represents the volume of liquidity in the economy, where we have the contribution of the narrow money supply high contribution, the lowest was 73.33% in 2006 and the highest 88.3% in 2023, this means, on the other hand, a decrease in the contribution ratio of other deposits (fixed deposits, savings deposits, mail and insurance), which recorded the highest contribution rate in liquidity in 2006 by 26.66%, while the lowest contribution ratio was recorded in 2023 by 11.4%, and these percentages represent low figures that reflect Structural imbalance suffered by the banking sector in Iraq.

Table 1: Developments in the money supply in Iraq and the contribution ratios to local liquidity (billion dinars)

Contribution of other deposits to domestic liquidity%M2	Other Deposits	M1 contribution to domestic liquidity M2%	M1	Annual Growth %	M2	Sunnah
17,18	2105	82,81	10148	-	12254	2004
22,37	3284	77,62	11399	19,83	14684	2005
26,66	2619	73,33	15460	43,55	21080	2006
19,42	5234	80,57	21721	27,87	26956	2007
19,27	6729	80,72	28189	29,54	34919	2008
17,90	8137	82,09	37300	30,12	45437	2009
14,31	8642	85,68	51743	32,89	60386	2010
13,44	9704	86,55	62473	19,52	72177	2011
12,39	9565	87,60	67622	6,94	77187	2012
12,50	11193	87,49	78318	15,96	89512	2013
16,55	15395	83,44	77593	3,88	92988	2014
17,64	14914	82,35	69613	-9.09	84527	2015
16,51	14942	83,48	75523	7,02	90466	2016
17,09	15870	82,90	76986	2,63	92857	2017
18,41	17561	81,58	77828	2,72	95390	2018
16,11	16669	83,88	86771	8,43	103440	2019
13,68	16389	86,31	10335	15,76	119743	2020
14,3	19942	85,7	11994	16,8	139886	2021
12,9	21803	87,0	14639	20,2	168202	2022
11,4	20657	88,3	16 0318	7,5	180976	2023

***Source*:** Central Bank of Iraq, Department of Statistics and Research, Central Bank of Iraq monetary policy report, various issues

Real interest rate for banks

Interest rates are the wheel on which economic activity revolves and one of the most influential monetary variables in the value of the local currency, and interest rates are the price or return on the use of capital, the higher the cost of money intended for lending, the lower its contribution to the production process, and the impact of interest rates extends to other economic variables such as currency exchange rates, balance of payments and stock markets, when the credit granted by banks decreases due to high interest rates It will negatively affect the volume of investment and production, and thus the movement of trade and the rest of the economic variables in one way or another (Ministry of Planning, 292022).

Table (2) shows us the interest rate of the bank and the real interest rate of banks in Iraq, where they were identical for the period 2004-2006 and the reason for this can be attributed to the significant deterioration in the banking sector and the low level of competition between commercial banks and the lack of financial markets and banks to financial tools such as government bonds that can be used to determine interest rates and Iraq's entry into a new stage of establishment of monetary policy, and it is noted from the table that there is a semi-fixed relationship between the bank's interest rate and the interest rate The real for banks, every increase in the interest rate of the bank is offset by an increase in the real interest rate of banks, and the regulatory aspect can be one of the reasons for this, as the monetary authority sought to create a kind of compatibility in the objectives with the central bank on the one hand, and from other aspects, since banks rely a lot on borrowing from the central bank, the bank's policy rate in this case will represent the cost borne by banks, so there will be a close relationship between the two interest rates This consensus will make banks work to achieve financial stability and reduce liquidity crises that may occur, and the conclusion of the above is that a change in the bank's interest rate will directly affect the real interest rates of banks because one of the objectives of monetary policy is to regulate the supply and demand for liquidity, stabilize the banking system, avoid financial risks and control inflation rates.

Table 2: The evolution of nominal and real interest rates for banks in Iraq (2004-2023)

Real Interest Rate for Banks%	Nominal Interest Rate %	Sunnah
6	6	2004
7	7.0	2005
16	16.0	2006
23.3	20.0	2007
23.3	16.75	2008
13.4	8.83	2009
12.4	6.25	2010
8.4	6.0	2011
9.2	6.0	2012
13.39	6.0	2013
12.4	6.0	2014
12.29	6.0	2015
12.38	4.33	2016
12.57	4.0	2017
12.34	4.0	2018
12.28	4.0	2019
12.13	4.0	2020
12.50	4.0	2021
11.6	5.9	2022
11.7	4.99	2023

***Source*:** Central Bank of Iraq, Department of Statistics and Research, Central Bank of Iraq Monetary Policy Report, various numbers

The second topic: The stock market is a theoretical framework.

Financial markets in the modern era are the real mirror that reflects the reality of economic activity in the country because the financial markets give a total picture of the state's economy and the extent to which this economy is affected by political, social and economic variables.

The concept of the stock market

Financial markets usually derive their concept from the concept of the market in general, which represents the meeting point of sellers and buyers regardless of the unity of the place, and on this basis there are many concepts of financial markets, which all agree that the financial market is "the employment of savings in investments, and therefore the financial market represents the meeting place of the supply of funds with the demand for them" (Kunduz, 2021: 8) [6]. Also, the financial market "is the area through which certain instruments are issued to obtain the necessary funds for projects." productivity and others and the circulation of these instruments" (Al-Fawaz, 2010: 5) [7] and defined by the economist Mishkin "the place where financial assets are issued and traded, as securities are traded at low transaction costs and at prices that reflect supply and demand" (Mishkin, 2004: 59) [20] and accordingly and from the above can be defined as the stock market as the best way to combine the surplus income of a group of the public with the income deficit of a group of the public through effective communication channels.

The Economic Importance of Financial Markets

The securities markets in many countries contribute to providing the necessary funds to accelerate development on the one hand and reduce the burden of the state in saving funds by recruiting the private sector in financing projects on behalf of the state's resort to external borrowing to finance projects (Moussa, 2005: 14) [8]. Through the financial markets, it is possible to judge the efficiency of the fiscal and monetary policies in reducing high inflation rates, the more effective the financial markets, the more able they are to support the stability of the economy through: (Ismail, Sultan, 2021: 147) [9].

1. Providing the required protection to the parties to the exchange by achieving justice for the prices of securities and this is an incentive for investors.
2. Providing direct support for investments, whether in the short, medium or long term, through the ability of these markets to provide the necessary funds.
3. Supporting and motivating the public and transforming them from inactive individuals to active individuals in the economy through their dealings in the stock market.
4. Contribute to increasing the per capita national income after improving unemployment rates resulting from supporting investment opportunities and increasing production resulting from the activity of financial markets.
5. Resorting to internal public debt and borrowing from the public to finance development programs and dispensing with external public debt because of its negative effects on the economy.

Financial Market Indices

Financial market indicators are one of the most important economic indicators in analyzing financial markets and predicting the future of markets, and the most important of these indicators are.

First: Stock Price Index

This index serves as a tool to measure the changes that may occur in stocks and on this basis it is a "statistical indicator that can be used to measure the overall performance of the financial market and on this basis, the stock price index is a measure of the general movement of the capital market and consists of a group of securities that reflect the state of the entire market (Khadrawi, 1998: 24) [10]. Since the companies whose securities are traded in the stock market represent the largest part of the volume of economic activity in the country, the market index is used to measure the state of the market as a whole, however, there is a difference in views on the use of this indicator, including focusing on the traditional model in determining the share price as representing cash flows linking stock prices to profit expectations, and there are those who take the psychological aspect into account, pessimism and optimism can lead To the rise or fall of stock prices (Shakarji and Taj al-Din, 2008: 5) [11].

Second: Volume Index

This indicator depends on daily market data and is a tool to help traders choose the right time to sell or buy securities, and in general the movements of securities prices are news to investors about the number of shares that can be traded during a specific period of time, and this indicator can also cross the volume of financial flows to and from the financial market depending on the pip price data and to calculate the trading volume index, you must know the minimum pip value for the security and then calculate In general, traders take advantage of volume indicators to get signals to trade at a certain price point, when the trading signals are strong, this means that the market size has made an important change in price.

Third: Market Value Index of Shares: This indicator is

one of the important indicators that dealers looking for profits are interested in through their use of data and information available in the analysis and evaluation of these shares, predicting their future returns and identifying the risks that may be exposed to them, and these data are the basis for determining stock prices, the more accurate these data are, the more possible to determine the factors through which the selling prices of shares in the financial market can be predicted, and in general, the market value of shares is many changes and volatility Affected by the financial situation of the issuing company and also the factors of demand and supply and often affected by supply and demand psychological factors related to individual decisions and rumors and thus affect the market value of shares, and many economists agree that the sale prices of shares also depend on the market value of the company, which is determined by relying on cash flows on the one hand and the discount rate of these flows and the discount rate is determined by relying on both the real interest rate and inflation rates prevailing in the market as well as the rate of return that compensates Other factors that directly affect the market value of shares are dividends distributed on shares, share of profits achieved, book value per share, as well as the number of times the share traded during a year (Kilani, 2002: 16) [12].

Fourth: Index of the number of traded shares

It is a statistical indicator that represents the indicator of the number of shares traded what is traded from the number of shares during the period of the activity and regardless of their prices, in other words, it is used as a tool to measure the movement of the general market by representing the number of shares of companies and economic sectors that have already been registered in the capital market. The number of shares traded in the financial market can be calculated based on the weight of the profits traders receive, the number of shares issued by the company traded in the market and the amount they own. Company shares, for example, if a company owns 1000 easy traded and one of the traders owns 100 shares of it, it can be said that the share of this trader has become 10 percent of the company's total shares (www.iq.com).

Iraq Stock Exchange 2004-2023

The Iraq Stock Exchange is one of the modern markets, which was established in accordance with Law No. 24 of 1991 under the name of the Baghdad Stock Exchange, which was able to list 113 Iraqi joint stock companies, whether private or joint, and the approved trading system was a manual system that relies on registration in plastic panels prepared in advance for this purpose (Abdul Rahim, Daloul, 2016: 22) [14]. In 2014, a more advanced system was adopted in the Iraq Stock Exchange known as the stream-x system prepared by OMX NASDAQ (Habib, Nada, 2012: 5) [5]. The Iraq Stock Exchange aims to: (Al-Ani, 2002: 22) [13].

1. Improving the reality of the financial market in Iraq, expanding it and supporting investment by providing the necessary funds for that.
2. Encouraging and increasing the degree of awareness among capital owners and converting them into traders in the market and working in a safe environment characterized by transparency and working on the basis of competition.
3. Providing protection for traders in the market and enhancing their confidence by regulating the shares of companies and sectors listed in the market trading by making securities transactions in the market simple, regular and effective.
4. Enhancing traders' confidence through full transparency in the dissemination of data and statistics in companies and sectors traded and mechanisms of financial market management in order to achieve the stated objectives
5. Benefiting from the experiences of leading global and regional financial markets in this field in developing and expanding the Iraq Stock Exchange.

Despite the recent developments in the Iraqi Stock Exchange, it still needs more work to keep pace with the global and regional financial markets because of the features and characteristics that it suffers from, including: (Abdul Nabi, No: 3) [14].

1. The bulk of the working capital in the Iraq Stock Exchange is due to monetary policy measures by limiting the capital of banks to at least 250 billion dinars, while the participation of other sectors combined does not exceed 20 billion, which indicates a structural imbalance in the rates of capital participation.
2. The need for modern legislation commensurate with the market economy and with the existing legislation in the regional financial markets.
3. Strengthening control procedures to support disclosure and transparency and gain the confidence of local and foreign investors and traders.
4. Directing companies that suffer from weak database to update it and provide the necessary information to traders
5. Banks and insurance companies suffer from weak interest rate flexibility.
6. The weak role of financial intermediary institutions compared to the need for them, as well as the weakness of the performance evaluation departments of companies and creditor or debtor sectors and even offered their shares in the financial market.

Analysis of the trading volume index in the Iraq Stock Exchange

After the financial market indicators have been addressed in general in the theoretical framework, we will now analyze the trends of the trading volume index in the Iraq Stock Exchange and then measure the impact of money supply on the volume of trading in the Iraqi financial market. The reason for focusing on this indicator in the study is that it is one of the best technical indicators for traders, as traders, whether individuals or institutions, monitor the large trading volume by large companies and sectors and consider it an indicator of high activity, whether in Buying or selling the shares of these companies, when the rise in stock prices leads to a rise in trading volume and the market takes an upward trend, but if the trading volume is large accompanied by a decrease in prices, the market trend is descending and on this basis it can be said that the trading volume index gives a clear picture of the price movements of the name can be used in the technical analysis of market trends in general (Gallaher, 2018: 52) [21].

It is clear from Table (3) that the volume of trading in the Iraq Stock Exchange was the dominant characteristic of it is the fluctuation between rising at times and falling at other times, and the reason for this can be attributed to the

political, economic and social conditions and legislation issued after 2003 in Iraq, not to mention the economic crises that the world has witnessed, such as the global financial crisis, the debt crisis, and the latest of which is the Corona pandemic, all of which misled the global economy, including the Iraqi economy, however, the trend remains The year of the time series throughout the duration of the study is an upward trend. After the volume of trading in the Iraq Stock Exchange 127951 billion dinars in 2004 became 366810 billion dinars in 2005 and a large annual increase rate of 186.68% and the reason for this can be attributed to the large increase in the number of companies traded in the market by 80 companies after it was 59 companies in 2004, not to mention the political climate that prevailed and the transition to a free economy, but this increase did not last long as the volume of trading decreased by 60% approximately in 2006 The researchers believe that the reason for this political differences and the subsequent deterioration of the security situation and the high degree of risk in the financial markets, which prompted investors to keep the safest assets such as gold and foreign exchange, and the year 2007 again witnessed a significant rise in the volume of trading amounted to 191% and the reason for this is the issuance of legislation that allowed non-Iraqis to trade in the Iraq Financial Market, where the volume of their trading nearly 20 billion dinars, and during the period From 2008 to 2012, the general trend was to increase the volume of trading due to the electronic reforms that were introduced to improve the performance of the market and the significant rise in oil prices, which contributed a lot to increasing the cash liquidity available for investment, including the Iraq Stock Exchange, despite the negative growth rates for the years 2008 and 2010, and the year 2013 witnessed the largest jump in trading volume during the study period, reaching an average of about 218%, and the reason for that, according to the annual report of the Securities Commission. The reason for this is that 38 companies traded in the Iraq Financial Market increased their capital according to the decisions of the general bodies of these companies, while the period from 2014 to 2019 witnessed successive declines in the volume of trading due to the worsening security situation significantly with the departure of a number of provinces from the control of the central government and the accompanying significant decline in oil prices, which reflected negatively on the volume of cash liquidity intended for investment and the adoption of austerity policies from the government and the cessation of a number of companies. About trading and shaking confidence in the traded companies, to return the recovery to the volume of trading in the Iraq Stock Exchange for the years 2020 and 2021 with positive growth rates of 43.9% and 188%, respectively, supported by the significant improvement in oil prices in the global markets, and the year 2022 witnessed a decrease in trading volume by an average of 54.8%, and the reason for this, according to the report of the Securities Commission, is the decrease in trading value by 35.8% and the decrease in traded shares by 39.3% with a decrease in market value by 1.8% For the year 2021, the year 2023 witnessed an increase in trading volume by 48.2%, due to the increase in the value of trading by 28.8% and the increase in traded shares by 23.7%, while the market value increased by 19.7% from the year 2022.

Table 3: Stock trading volume index in Iraq Stock Exchange

Number of Traded Companies	Number of listed companies	Annual rate of change %	Stock Volume Index Billion dinars	Sunnah
59	80	-	127951	2004
80	85	186.68	366810	2005
84	93	-59.95	146891	2006
85	94	191	427367	2007
87	94	-29.5	310350	2008
89	91	36.7	411928	2009
83	85	-2.8	400359	2010
83	87	135.1	941198	2011
80	85	-5.03	893825	2012
79	83	217.8	2840220	2013
78	83	-68.4	898316	2014
76	98	-49.2	456179	2015
75	97	-6.4	426788	2016
88	101	-9.4	386879	2017
78	104	-39.3	232681	2018
61	102	-29.3	164592	2019
75	104	43.9	236818	2020
80	105	188	683335	2021
91	103	-54.8	308582	2022
91	103	48.2	457342	2023

***Source*:** Iraq Stock Exchange Annual Reports, Various Issues, Central Bank Annual Statistical Bulletins Various Issues

The third topic: the results of the standard tests of the model

Study variables

In this study, the independent variables of the study were determined by both the broad money supply M2 and the real interest rate of banks TR and their impact on the dependent variable, which is the volume of trading in the Iraq Stock Exchange TV, for the period 2004-2023.

Dickie Fuller Extended Sleep Test Results: Table (4) shows us the results of the dormant test for the time series of the study variables for the period 2004-2023

According to the expanded Dickie Fuller test, where the results indicate the stability of the study variables, integrated between the degree of zero I(0) and integrated from the first degree I(1) after taking the first difference to it, and on this basis, the long-term relationship and the extent to which the joint integration between the study variables can be tested using the boundary test within the framework of the ARDL model.

Table 4: Dickey Fuller's Extended Stability Test

UNT Root Test Table (ADF)				
At Level				
Variables		M2	Tr	TV
With Constant	t- Statistic	-3.857	-3.139	-2.971
	Prob	0.263	0.043	0.055
	Result	No	**	*
With Constant & Trend	t- Statistic	-3.739	-3.156	-2.879
	Prob	0.041	0.127	0.189
	Result	**	No	No
Without Constant & Trend	t- Statistic	-2.699	-1.188	-1.882
	Prob	0.460	0.059	0.058
	Result	No	*	*
At First Difference				
With Constant	t- Statistic	-2.248	-5.509	-6.055
	Prob	0.077	0.000	0.000
	Result	**	***	***
With Constant & Trend	t- Statistic	-2.321	-6.775	-5.889
	Prob	0.040	0.000	0.000
	Result	**	***	***
Without Constant & Trend	t- Statistic	-4.581	-5.077	-6.241
	Prob	0.005	0.000	0.000
	Result	***	***	***

***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

The preliminary estimate of the ARDL model: Shows us the countries (5) that 98% of the changes in the trading volume in the Iraq Stock Exchange are caused by changes in the broad money supply and interest rates, and 2% of the changes are due to external variables under the Adjusted R-squared coefficient, and the model as a whole was statistically significant and with a probability level less than 0.05 as in the F test for the significance of the model.

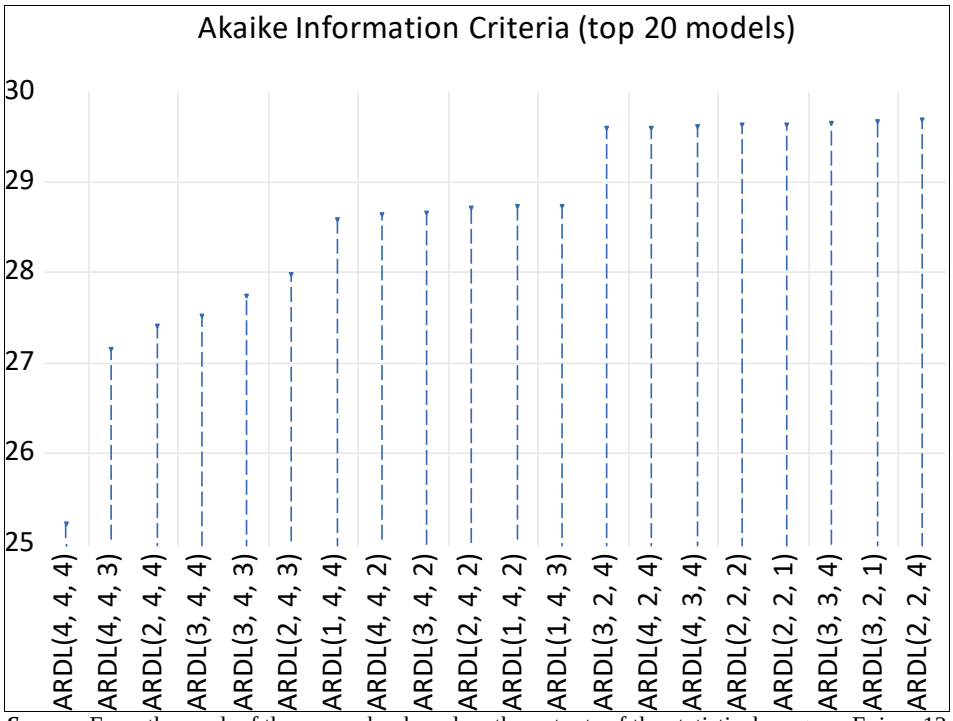
Table 5: Preliminary estimate of the relationship between the variables of the study ARDL model

R-squared	0.989974	F-statistic	1540.775
Adjusted R-squared	0.94595	Durbin-Watson	1.66871
Prob (F-statistic)	0.000		

***Source*:** From the work of the researcher based on the outputs of the statistical program E views 12

Periods of time slowdowns

It is noted from Figure (1) that the optimal number of slowdown periods is (4) depending on the Aikiki standard (AIC), which represents the lowest value as in the figure.



***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Fig 1: Optimal time slowdown periods

Cointegration test results

Bound Test Methodology

Table (6) shows us the results of the joint integration test according to the methodology of the boundary test, where the calculated value of (F) was (6.622831), which is greater than the upper limit of the given tabular value of (4.96) at the level of significance probability (5%) and this means that there is a common integration relationship between the volume of trading in the Iraq Stock Exchange as a dependent variable on the one hand and the variables of monetary policy, the broad money supply and the real interest rate of banks as independent variables on the other hand.

Table 6: Results of the polytheist integration relationship test boundary test

Test Statistic	Value	K
F-statistic	6.622831	2
Critical Value Bounds		
Significance	I (0)Bound	I(1) Bound
10%	2.63	3.36
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	4.96

***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Estimating the response of the short- and long-term parameters

From Table (7) it is clear to us the results of the error correction model within the framework of the ARDL model and the short- and long-term flexibility, where the results of ECM error correction were negative (-0.064426) and significant at the level of (0.001) and thus the necessary and sufficient condition for the long-term relationship between the variables is achieved, and that the imbalance in the short term can be corrected during 0.06 of the current year, and it is clear from the table and in the short term that the broad money supply index M2 has Direct effect When it increases by one unit, the trading volume will increase by 506019.0, while the effect of the real interest rateIR of banks is reversed, but it increases by one unit, the trading volume in the Iraq Stock Exchange decreases by (-1.973565). The results of the standard test in the long term showed that there was no significant relationship or effect of the independent variables in the dependent variable.

Table 7: Results of estimating the response of the short and long-term parameters of the model

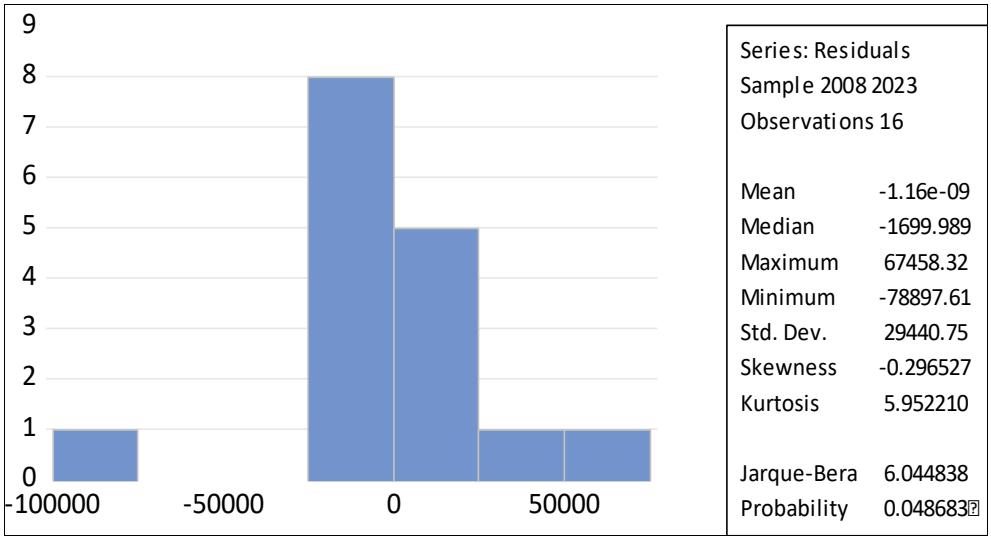
Cointegrating Form				
Variable	**Coefficient**	**Std.Error**	**T-Statistic**	**Prob**
D(M2)	506019.0	6.214870	-9.292690	0.022
D(IR)	-1.973565	3.597181	-5.486482	0.014
CointEq(-1)	-0.064426	0.005534	-8.013113	0.001
Long Run Coefficients				
Variable	**Coefficient**	**Std.Error**	**T-Statistic**	**Prob**
TR	-578224.7	57160.52	-10.11581	0.6027
M2	-30.35909	3.252697	-9.333514	0.6079
C	10034217	930460.9	10.78414	0.2691

***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Estimated Model Quality Test

Normal Distribution Test

It is noted from Figure (2) the results of the test of the normal distribution of the remainders, as the result of the test was non-significant and amounted to (JB = 6.044838) while its probability value was significant to some extent, and this means that random errors may not be distributed normally.



***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Fig 2: Normal distribution of the remainder of the estimated model

Autocorrelation Test

Table (8) shows us through the results of the LM test that it is not significant and therefore there is no autocorrelation problem in the estimated model.

Table 8: LM Test Autocorrelation Test Results

Breusch-Godfrey Serial LM Test			
F-statistic	0.654398	Prob. F(2.39)	0.3763
Obs*R-squared	3.421687	Prob. Chi-Square(2)	0.4635

***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Variance Homogeneity Stability Test

Table (9) shows us the results of the test of consistency of homogeneity of variance (ARCH) and according to the results of the F-Test statistic showed of its insignificance (0.3306) and this indicates the absence of the problem of homogeneity of error variance in the estimated model.

Table 9: Results of the Consistency of Homogeneity Test

Test Statistic	Value	Probability
F-statistic	5.884076	Prob. F (1, 13) = 0.3306
Obs*R-squared	4.673839	Prob. Chi-Squared = 0.3306

***Source*:** From the work of the researcher based on the outputs of the statistical program Eviews12

Conclusion

1. The Iraq Stock Exchange suffers from regulatory and

structural problems, as most of the trading volume is exercised by banks at the expense of other sectors.
2. The Iraqi Stock Exchange needs to benefit from the experiences of Arab and regional countries in this field.
3. Ensuring the rights of traders in the market as the annual market bulletins showed the presence of many traders' complaints.
4. The results of the standard test using Dickey Fuller's test showed the stability of the time series of economic variables between the level and the first difference.
5. The results of the boundary test showed a common integration relationship between the variables of the model
6. The error correction coefficient test showed the significance of the model at a level of less than 5%.

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