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The impact of monetary policy on reducing unemployment in Iraq for the period (2023-2010)

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Abstract

The current study aimed to identify the impact of monetary policy on reducing unemployment in the Iraqi economy during a specific period of time, which was determined from (2010-2023). The analytical and analogical approach was used to test the study hypothesis and identify the effect of the independent and dependent variables, relying on the statistical analysis program EViews10. At the beginning of the study, the general framework of the study was identified by knowing the problem of the study and then determining the importance and objectives in addition to setting the study hypothesis. In the theoretical framework, the concept of monetary policy and its tools was reviewed, it touched on the concept of unemployment and its types, in addition to the practical part of the study, where the standard model of the study was first identified and then the practical application was carried out. The study reached several conclusions, the most prominent of which is: Monetary policy should enhance economic stability by controlling unemployment rates and economic growth in a balanced manner to support the labor market and stimulate the creation of new job opportunities. Monetary policy must take measures to create an attractive investment environment that encourages investments in sectors with the potential to create new job opportunities and promote economic growth, monetary policy should support education and vocational training programs to develop workers' skills and increase job opportunities for young people and job seekers. The relationship and impact of monetary policy on unemployment was reached based on the statistical study model, such that 67% of the change in unemployment is caused by monetary policy variables. The study showed the effectiveness of monetary policy on unemployment rates in Iraq, which indicates the internal and external factors of this relationship.

Keywords: Monetary policy, unemployment, re-discount price, monetary mass

Introduction

The problem of unemployment is considered one of the most serious problems in developed countries. Perhaps the most prominent feature of the economic crisis that exists in developed countries is the exacerbation of the problem of unemployment, that is, the continuous increase in individuals who are able to work without obtaining it. This certainly causes economic, social and political effects alike, as unemployment increases the number of unemployed workers, which leads to a decrease in the demand for labor. This may have a negative impact on the national economy, and it is worth noting that the Iraqi state acknowledged that unemployment, Lead to negative results in the economic, security and social fields. Therefore, governments seek to reduce the unemployment rate and mitigate its effects, because unemployment has become an area of testing the ability of the economic system quickly enough to restart the stopped units and provide job opportunities. Unemployment also represents the vacation of some units, and the lack of desire and ability to produce and work (International Monetary Fund_2016). This means that it represents a partial cessation of the labor force and the impact on the economy and growth. Unemployment represents the difference between two quantities, the largest of which is the quantity of production elements of human resources, while markets are the quantity of job opportunities available for those elements, and is measured by the unemployment rate. (Najiya Saleh Al-Raqiq, 2017) ^[17], This means that it represents a partial cessation of the labor force and the impact on the economy and growth. Unemployment represents the difference between two quantities, the largest of which is the quantity of production elements of human resources, while markets are the quantity of job opportunities available for those

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elements, and is measured by the unemployment rate. (Najiya Saleh Al-Raqiq, 2017) ^[17], and therefore when there is a shortage of jobs and the inability to provide a sufficient amount of jobs to everyone who is able and willing to work, this leads to a waste of youth energy, and thus produces a social and economic cost, because the economy was unable to exploit that energy. youth, and providing them with job opportunities, And jobs, in order to invest this energy in working on production and the advancement of the state, and the harvest of this is social violence, political strike, negative impact, and a decrease in the economic index. It is worth noting that this research aims to review the problem of unemployment, the role of financial policy in confronting this problem, and the strategies proposed to confront this phenomenon.

Chapter One: The general framework of the research

First: the problem of the study

The phenomenon of unemployment is a problem of the Third World, and it has become one of the most serious problems of developed countries. Perhaps the worst and most prominent feature of the global economic crisis that exists in developed and developing countries alike is the exacerbation of the problem of unemployment, that is, the continuous increase in individuals who are able to work without obtaining it. Therefore, the phenomenon of unemployment has effects. Whether the effects are economic, social, or political alike, they continue to increase the number of unemployed workers, which leads to a decrease in the demand for labor. Therefore, because of this decrease in the demand for labor it is affected. The national economy of the State of Iraq, where the severity of unemployment has worsened for many reasons, and the state has been unable to implement firm policies in the face of the increasing phenomenon of unemployment, including confronting the rise in import prices, the decline in export prices, the instability of global monetary markets, and the fluctuation of exchange rates, which had the worst impact on the balance of payments. In addition to the weakness of its own ability to import and the disruption of many development programs and production processes as a result of the investment deficit, which led to a decline in the economic growth rates of each country alike. One of the main challenges of conducting a study on the impact of monetary policies on unemployment is collecting accurate data due to the complexities of political and economic conditions.

Hence, the research problem can be formulated with the following question:

Is there a significant impact of monetary policy on unemployment in the Iraqi economy for the period (2023-2010)?

Second: The importance of the study.

The importance of the research is demonstrated by presenting and giving a comprehensive view of how monetary policy, which includes the interest rate, the exchange rate, the quantities of cash in circulation, and the reserve ratio, affects unemployment levels in Iraq.

Third: Objectives of the study

The study aims to provide solutions and suggestions to address the effects of monetary policy on the phenomenon of unemployment. How to reduce the consequences of

unemployment and its effects on the Iraqi economy.

Fourth: The study hypothesis.

As a result of what was mentioned in the main research question, the hypothesis can be formulated as follows: There is a significant effect of monetary policy on unemployment in the Iraqi economy for the period from (2023-2010).

To answer this hypothesis, a standard statistical study must be conducted and its results analyzed using the EViews10 statistical analysis program.

Chapter Two: Theoretical Framework

The first section: Monetary policy

First: The concept of monetary policy

Some define fiscal policy as a set of policies related to public revenues and public expenditures with the aim of achieving specific goals. While others define it as the policy of using public financial tools, such as spending programs and public revenues, to move macroeconomic variables such as national output, employment, saving, and investment, in order to achieve the desired effects and avoid undesirable effects on both income, output, the level of employment, and other variables. Economic.

It is clear that financial policies pass through three channels

- Public revenues, from revenues from the nation's public properties, taxes, zakat, and others. It is known that some of these public revenues are allocated for specific goals, and some are not allocated.
- Public spending, which includes all public expenditures of the government and its agencies and bodies, whether regular or development expenditures.
- Managing the budget deficit (or surplus), how to finance it and the sources of that financing. (Al-Husseini, 2018:134) ^[1].
- In general, the goal of monetary policy is to influence the money supply in order to expand and diversify the purchasing power of society, stimulate demand and investment, increase productivity, reduce unemployment and vice versa.

Monetary policy is also defined as: a set of rules, methods, procedures and measures taken by the monetary authority to influence or control the supply of money in accordance with economic activity to achieve specific economic goals in a given period. (Dagher, 2017:287) ^[8].

From here, a comprehensive definition of monetary policy can be derived: It states that it is a practical approach taken by the monetary authorities with the aim of influencing the financial aspects of the country to ensure economic policy and to help achieve a comprehensive economy, by controlling the amount of funds provided for the growth of the economy as a whole and thus achieving a balanced financial level for the state. (Al-Zoghbi, 2022:26) ^[18].

Second: Monetary policy tools

Monetary policy controls the money supply through a set of different tools that serve the country's objectives. There are two basic types of monetary policy followed by central banks: expansionary monetary policy or contractionary monetary policy (Kamel, 2009:193) ^[19], In the event of an economic crisis (low level of economic activity), the Central Bank works to adopt a set of measures and policies at the

monetary policy level, through which it aims to increase the level of money supply and reduce interest rates for the banking sector and continue to expand lending for investment and project financing, thus increasing levels of gross domestic product and creating job opportunities. Hence monetary policy can be described as expansionary monetary policy. On the other hand, in cases of (high levels of economic activity) and high inflationary pressures, the Central Bank works to adopt a set of measures at the monetary policy level through which it aims to increase the level of the money supply, and the focus should be on reducing it. Increasing interest rates and reducing the level of lending to the banking sector to absorb inflationary pressures. Hence, monetary policy in this current period can be described as a “contradictory monetary policy” (deflationary).

The central bank has a set of monetary policy tools that are used to achieve monetary policy objectives, including: (Manami, 2013:182)^[20].

- **Mandatory reserve ratio**

The Central Bank obliges other banks in the country to keep a percentage of deposits as financial reserves, through which it controls the size of the money supply (liquidity) in the markets, either by increasing or decreasing it. For example, when prices rise, the Central Bank raises the reserve ratio, and thus it becomes necessary for banks. It must reduce its reserve ratio and provide fewer loans, otherwise this will negatively affect the volume of investments. The Central Bank reduces the reserve ratio when prices rise, unlike other banks, and thus the reserves of each of the various commercial banks in the country increase, which leads to them providing more loans, and this matter contributes to increasing the country’s economic recovery.

- **Discount price**

The central bank can influence interest rates through what is known as the discount rate, as this rate controls interest rates. It means the amount that the central bank imposes on commercial banks if they want to borrow from it, and it is determined through a special discount rate of the central bank. It is noted that the central bank raises the discount rate if it wants commercial banks to stop borrowing, or reduce the rate of demand for it. This measure reduces liquidity in the markets, and thus stops economic growth. Conversely, the central bank reduces the discount rate in order to encourage banks. This will result in increased liquidity in the markets, enhanced growth, and economic recovery. In addition, the discount rate is not fixed, The reason for this is that the Central Bank conducts several studies on the economic and financial conditions in the market, and then determines the discount rate. It should also be noted that there are a number of other measures undertaken by the Central Bank in managing the state’s monetary policy, which are setting profit margin requirements, controlling consumer credit, announcing the pros and cons of available systems, rationing credit and other measures.

- **Open market operations**

The central bank can buy and sell various securities when it wants to control the size of the money supply in the market. For example, when prices rise, there is an urgent need to control this rise, so the central bank sells various securities, and then the reserves of operating banks decrease, and this

becomes Banks are in a position where they cannot provide further loans and hence investment is not encouraged. The central bank resorts to buying securities when an economic recession occurs, unlike before, and thus banks’ reserves increase and they become able to provide more loans, which leads to higher income and investments.

Monetary policy objectives

1. Price stability or moderate inflation, economically and socially.
2. Achieving monetary and economic stability: It is necessary for monetary policy to seek to adapt the money supply to the level of economic activity.
3. Balance of payments balance.
4. An appropriate level of production and utilization and achieving full employment.
5. Increase job opportunities.
6. Maintaining currency exchange rates.
7. Reducing external influences on the local economy (Saeed, 2017:154)^[21].

The second topic: unemployment

First: What is unemployment?

Unemployment is considered one of the most dangerous and largest problems that threaten the stability of nations and states, and its severity varies from one country to another and from one society to another. Unemployment constitutes the main cause of most social diseases and represents a clear threat to political stability, so anyone who is exposed to this term acknowledges the possibility of defining unemployment as “lack of “Practice any profession In fact, this definition is unclear and incomplete, as this phenomenon must be given its economic magnitude, regardless of personal interpretations. In the broad definition of unemployment recommended by the International Labor Organization, which states that “the unemployed person is that individual who is above a certain age without work and is able and willing to work and is looking for it at the prevailing wage level but does not find it. By enriching the previous definition, it is possible to We define the situations in which individuals cannot be considered unemployed as follows:

- Frustrated workers are those who are in a state of actual unemployment and want to work, but they did not get it and gave up because they searched so much, so they gave up the process of searching for work. Their number is large, especially during periods of cyclical depression.
- Individuals who work less than full-time and work part-time without their will, when they could work full-time.
- Workers who have jobs but during the unemployment census process were temporarily absent for any reason, such as illness, vacation, or other reasons.
- Workers who work additional, unstable jobs with low incomes, and are self-employed.
- Children, the sick, the infirm, the elderly and those who have been retired.
- People who are able to work and do not work, such as students, and who are in the process of developing their skills.
- People who have wealth and money and are able to work but are not looking for it.

Second: Types of unemployment

1. Frictional unemployment.

It is unemployment that occurs due to the continuous movement of workers between regions and different professions resulting from changes in the national economy. Qualified unemployed workers enjoy access to available job opportunities. It occurs as a result of the lack of complete information for all job seekers and business owners. It also depends on the time spent by job seekers, and may arise when people move, A worker from one region or geographical region to another region or geographical region, or when a housewife decides, for example, to go out to the labor market after she has passed the stage of raising and caring for her children and this unemployment explains the continuation of some workers in unemployment despite the availability of job opportunities that suit them, such as: young people. Age, school and university graduates...etc. We can also identify the reasons that lead to the emergence of this type of unemployment as follows:

- Lack of skill and experience necessary to perform, the work available Difficulty in career adjustment resulting from division of labor and specific specialization.
- Continuous change in the business environment and various professions. Which requires the acquisition of diverse and constantly renewed skills.

2. Structural unemployment

This unemployment is partial, meaning that it is limited to a specific productive or industrial sector, and it does not represent a general state of unemployment in the economy. This type of unemployment can spread in large and multiple parts of the regions of a single country, as this type of unemployment arises as a result of the economic transformations that occur from time to time in the structure of the economy, such as the discovery of new resources or more efficient means of production, the emergence of new goods that replace old goods, Structural unemployment is defined as the unemployment that arises due to the difference and discrepancy existing between the structure of the distribution of the labor force and the structure of demand for it. Its emergence is accompanied by the replacement of the human element by machines, which leads to the dismissal of a large number of workers. It also occurs due to changes in the labor force, such as the entry of teenagers and young people into the labor market in large numbers. The advanced industrial countries have known a new type of structural unemployment due to the secretions of the new world order, the pace of which has accelerated through the activity of multinational companies that have transferred many of their industries to countries. Developing countries due to the high rate of profit in the latter, this transition caused many workers who were working in these countries to lose their job positions and referred them to long-term structural unemployment.

3. Periodic or seasonal unemployment

This type of unemployment arises as a result of the stagnation of the labor sector and the insufficient overall demand for work. It may also arise as a result of fluctuations in economic cycles. Its appearance is explained by the inability of aggregate demand to absorb or purchase available production, which leads to the emergence of deflationary gaps in the economy concerned with the phenomenon. Seasonal unemployment is equivalent to the

difference between the actual number of workers and their expected number at the level of available production. Therefore, when seasonal unemployment is equal to zero, this means that the number of jobs The vacancy during the period is equal to the number of unemployed people, unemployment is also considered seasonal, It is compulsory, given that the unemployed in this case are willing to work at prevailing wages, but they have not found workers, and the level of employment and employment fluctuates with the fluctuation of business or seasonal cycles between contraction and expansion (employment increases during the period of expansion and decreases during the period of depression). This is what is meant by unemployment. Periodicity.

Chapter Three: The practical aspect

First: The population and sample of the study: The study included all data on the time series from the relevant government agencies (Ministry of Finance, Ministry of Planning, Central Bank of Iraq), and the series included annual data from 2010 until 2023.

We will obtain data on monetary policies and unemployment rates from several reporting sources.

Central Bank of Iraq Department of Statistics and Research. The Central Bureau of Statistics issued by the Iraqi Ministry of Planning.

Statistical Research Center in Iraq.

Second: Study variables

The study uses statistics to analyze the relationship between the dependent variable and the independent variable.

The independent variable (monetary policy), and the dependent variable (unemployment), and through several indicators that express the explanatory variables such as (rediscount rate_monetary supply), and the variables are as follows:

Table 1: Show Study variables

Study variables	
Monetary policies	Independent variable
Unemployment includes (rediscount rate_money supply)	Dependent variable

Source: Prepared by the researcher.

Third: Study methodology

The study relies on the analytical method and the standard method, where the analytical method is used in a theoretical manner to clarify the opinions of the different economic schools and to know their views on the nature and causes of the characteristics of unemployment. Explaining the policies that lead to their occurrence and dealing with them, the study relied on modern methods to study the relationship between economic variables, such as the Johansen method of multivariate cointegration used to establish the relationship between the independent variable and the dependent variable, as well as the use of the Krenger test. To study causal relationships (existence of cause and effect), and finally automatically estimate the VAR trend. First, the stability of time series data was studied.

Below we will show a glimpse of the definitional framework of these tests and then apply them to the study model

In modern measurement methods in economics, researchers

rely on the use of correlation analysis between time series of study variables, and the unconstrained autocorrelation model is used to analyze the relationship between the study variables, which are:

Independent variable: The impact of monetary policy

Dependent variable: Unemployment

The independent estimation model includes several mathematical equations that are used in a consistent and integrated manner, with each variable acting on itself over a different period of time and on other variables:

- Testing the stability of time series data Stationarity.
- Cointegration test of variables through the use of the Johansen Cointegration Test:
- Granger causality test: Granger Causality.
- Autoregressive vector estimation model to analyze the relationship between variables.

First: Testing the stability of data (time series)

One of the most important statistical methods in determining the stability of time series is (unit root tests) through the following equation:

$$Y_t = \rho Y_{t-1} + v_t$$

Y_t: represents the variable in period (t)

v_t: represents the disturbance limit, which is characterized by an arithmetic mean equal to zero (u=0). When (P=1) is statistically acceptable, this indicates the presence of instability and that the data suffers from unit root (1).

If the time series is unstable, it must be treated by taking variances. To treat (y_t) if it is unstable, it is taken in the form of differences (1,2,.....d) to make it stable, and thus the time series is considered to be integrated in degree. All studies in the field of modern economics show that the best way to treat data that suffers from a unit root is (the expanded Dickey-Fuller test), as it does not preserve the correlation error between the variables.

The Extended Dickey-Fuller (ADF) test is based on estimating one of the following models:

(Without a fixed limit and time trend), as in the following model.-

$$\Delta Y_t = (\rho - 1) Y_{t-1} + \sum_{k=1}^p \beta_k \Delta Y_{t-k} + v_t$$

(Without time trend), as in the following model.-

$$\Delta Y_t = \alpha + (\rho - 1) Y_{t-1} + \sum_{k=1}^p \beta_k \Delta Y_{t-k} + v_t$$

(With a fixed term and time trend), as in the following model.-

$$\Delta Y_t = \alpha + \beta t + (\rho - 1) Y_{t-1} + \sum_{k=1}^p \beta_k \Delta Y_{t-k} + v_t$$

Where (α) represents the constant term, (t) represents the time trend, and (k) represents the slowdown period.

Second: Co-integration test.

In order for the economic interpretation of any hypothesis that states the existence of a causal relationship (regardless of its direction) to be considered acceptable, the data on the variables of this hypothesis must be integrated, and to the same degree. This indicates that the long-term relationship between two variables (X_T-Y_T) is important if the estimated error term is fixed at zero and is not affected by the unit root. When ensuring the stability of time series data and after determining the degree of its integration based on the expanded Dickey-Fowler test model, it is necessary to know the nature of the long-term relationship, which is

cointegration. Testing the main variables of the study. The Johansen test was used to determine the absolute relationship between the study variables. This test is used when the number of study variables is more than two or when the number of two variables is to determine, we conduct two tests.

The first is called the trace test: Tracetest tests the null hypothesis. This hypothesis means that the number of cointegration vectors is less than or equal to the number (9). In contrast, the general alternative hypothesis is unrestricted (r = 9).

The second is called the maximum value test (MEV). It tests the null hypothesis, which means that there is (r) a value for cointegration, against the alternative hypothesis, which means that there is (r + 1) a value for cointegration.

There are several tests to determine the stationarity of time series, but the most important and most widely used among researchers are the Dickey-Fuller test (1979) [16] and the Phillips-Perron test (Phillips-Perron, 1988) [22].

Extended Dickey-Fuller test.

Conducting the ADF test to confirm whether the time series of the studied variables can be stationary or not requires three equations as follows:

The possibility of having a fixed limit and no time trend

$$\Delta Y_t = \mu + \delta Y_{t-1} + \varepsilon_t \dots (1)$$

$$\Delta Y_t = \mu + \alpha T + \delta Y_{t-1} + \varepsilon_t \dots (2)$$

$$\Delta Y_t = \delta Y_{t-1} + \varepsilon_t \dots (3)$$

According to the above equations, it is possible to accept the null hypothesis (H₀: =1), which means that the time series of the studied variables includes a unit root, and vice versa, the possibility of accepting the alternative hypothesis (H₁: <1), which means that the time series of the studied variables is stationary, and the test is verified (ADF) by comparing the calculated tau value with the critical value at a significance level, In 1981, Dickey-Fuller developed a unit root test, which was later called the extended Dickey-Fuller test, using a variable with a lag for the variables to arrive at a result that addresses the weakness of the simple Dickey-Fuller test, which is the problem of autocorrelation in the error term. It makes it more accurate and efficient than the simple Dickey-Fuller test, and the extended Dickey-Fuller test can be illustrated by the following equation (1% 5% 10%)

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^n \theta_i \Delta Y_{t-i} + \varepsilon_t \dots (4)$$

1. Cointegration using the Autoregressive Distributed Lag Estimate (ARDL) model.
2. The ARDL methodology was developed by Pesaran (1997) [23], Shinand and Sun (1998) [24], Pesaran *et al.* (2001) [25] and has become commonly used in recent years. In this test, it is not necessary for the time series under study to be of the same order, i.e. stationary in The same degree, whether in the level, the first differences, or a mixture between them, but on the condition that the time series is not stationary in the second differences.

The Autoregressive Distributed Lag (ARDL) model has several characteristics that distinguish it from other models, which are as follows:

Applying the ARDL test does not require that the studied time series be stationary at the same rank, in addition to the possibility of estimating the short term and the long term at the same time in one equation.

1. The ARDL test is characterized by the possibility of allowing the explanatory variables in the model to have different time lag periods, and this does not happen in other standard models.
2. The ARDL test can be applied if the sample size studied is small. It also helps prevent the occurrence of autocorrelation, as the estimators resulting from this test are efficient and unbiased.
3. It is characterized by simplicity in estimating the cointegration of the studied time series by the ordinary least squares (OLS) method after determining the maximum optimal time lag periods.

Third: Kranger test to determine the direction of the causal relationship.

This model is used to determine the direction of the relationship in most time series studies, that is, to test the causal relationship of economic variables.

This test means that the change occurring in the current values of one variable causes a change in another variable, that is, the variable (y) is caused by the variable (x), and there are four possibilities for directions of causality.

- Unidirectional causality from x to y.
- Unidirectional causality from y to x.
- Bidirectional causality. (Two ways)=

Independence. (Each variable is independent of the other).- Fourth: Estimate the vector autoregressive (VAR) model according to the following model:

$$\Delta Y_T = a_0 + \sum_{i=1}^L a_{1i} \Delta x_{t-i} + \sum_{j=1}^L a_{2j} \Delta y_{t-j} + \beta_1 u_{t-1} + v_t$$

$$\Delta x_T = \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta x_{t-i} + \sum_{j=1}^L \beta_{2j} \Delta x_{t-j} + \beta_1 u_{t-1} + v_t$$

Where (Δ) represents the first-order difference formula, (u_{t-1}) represents the estimated error limits, and (β₁) represents the significance of the negative parameter, and expresses the percentage of imbalance in the dependent variable that must be modified in the short term.

Measuring and analyzing the impact of monetary policy on unemployment in the Iraqi economy

Data stability test for Dickey Fuller Extended ADF

Before starting to estimate the linear regression model to determine the relationship between the study variables (the impact of monetary policy on unemployment), it must be known whether the study variables during the time period from 2010 to 2023 are stable or not.

Therefore, we test the expanded ADF unit root to demonstrate the stability of the variables, as shown in Table2.

Dickey-Fuller test results				
Stability	ADF Test		Variables	Variable symbol
Stable/non-stationary	Stable/non-stationary	-1.919	Unemployment	X1
Stable/non-stationary	Stable/non-stationary	-1.324	Re-discount price	X2
Stable/non-stationary	(0.103) *	-2.311	Cash	X3

Source: Prepared by the student based on the analysis outputs of the EViews10 statistical software package.

Note: The numbers in parentheses show the probability value of the parameter.

(*) Significance level 5%

(**) Significance level 10%

Variables that are stationary at the level: The variable is monetary stability with a constant limit and trend at significant levels (5%, 10%), the rediscount rate becomes stationary with a constant limit and trend at a significant level (10%), the monetary mass becomes stationary with a

constant limit and trend at all levels. Significance levels: unemployment becomes stationary with a constant limit at all significant levels, meaning that the degree of integration of these variables is zero (0), It is clear from Table 2 that the time series for unemployment / (X1) ratio / (X2) rediscount rate / (X3) monetary supply / were stable according to the expanded Dickey-Fuller test, and thus all variables of the study model became stable whether at The level or first difference, which paves the way for the use of the Autoregressive Distributed Lag (ARDL) model.

Boundary testing

Table 3: The limits test was used and the results were as follows

Null Hypothesis: No levels relationship			F-Bounds Test	
I(1)	I(0)	Signif.	Value	Test Statistic
	Asymptotic, N=1000			
3	3.01	9%	9.861138	F-statistic
3.38	3.14	2%	3	K
3.11	3.3	1.5%		
3.15	3.55	1%		
	Finite Sample, N=13		30	Actual Sample Size
2.797	1.276	9%		
1.829	1.321	4%		
3.019	2.786t	1%		

Source: Prepared by the student based on the analysis outputs of the statistical software package EViews10.

It is clear from Table 3 that the value of Fisher's test reached (9.861138), which is higher in the lower and upper limits stated at the aforementioned levels of significance, which confirms the presence of co-integration of the model variables, which requires adopting the (ARDL) model.

Testing long-run parameters

A long-term parameter test was used for the study's ARDL model, and the results were as follows

Table 4: Presents the conditional error correction regression results for the ARDL (1, 1, 1, 1, 0, 1) model applied to quarterly data from 2018Q1 to 2024Q4, highlighting the coefficients, standard errors, t-statistics, and p-values for the included variables, along with model diagnostics

ARDL Long Run Form and Bounds Test				
Dependent Variable: stag				
Selected Model: ARDL (1, 1, 1, 1, 0, 1)				
Case 2: Restricted Constant and No Trend				
Date: 25/06/24 Time: 09:20				
Sample: 2018Q1 2024Q4				
Included observations: 13				
Conditional Error Correction Regression				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.3311	-1.041916	0.628800	-0.655211	C
0.6343	-0.499011	0.701830	-0.350200	Y (-1) *
0.1378	-1.800586	0.787310	1.417600	X1(-1)
0.4941	1.336346	2.378277	3.178131	X2(-1)
0.0500	1.960514	0.038617	0.087111	X3(-1)
0.6537	-2.264432	0.000565	-2.630151	D(X1)
0.0754	-2.073845	0.000207	-0.000361	D(X2)
0.8411	-0.197812	2.152088	-9.59008	D(X3)
21.48800	Mean dependent var		0.929875	R-Squared
10.45000	S.D. dependent var		0.813025	Adjusted R-Squared
6.553511	Akaike info criterion		6.113155	SE of regression
1.157882	Durbin-Watson stat.		5.957330	F-Statistic
0.009700			Prob (F-statistic)	

Source: Analysis output of the statistical software package EViews10.

It is clear from Table 4 that there is a cointegration relationship between the model variables in the long run with a significant significance for some of the independent variables (X1).

As for testing the regression equation and its significance, it is noted that the calculated F-statistic value was equal to (5.95), which is a significant value at any level, Regarding the extent to which the independent variables contribute to determining the change in the dependent variable, it is clear to us from the value of the corrected R2 coefficient of determination, which was equal to 0.81, meaning that 81% of the changes occurring in the dependent variable, unemployment, are due to the independent variables, and the remainder is due to variables that cannot be measured or

errors in estimation,

Statistical value (Durbin-Watson stat)

Which reached (1.157), a value close to 2, which means that the model does not suffer from the problem of autocorrelation between observations of the random variable, and therefore the null hypothesis will be accepted and the alternative hypothesis will be rejected.

Multiple linear regression model for study variables from the year. (2010-2023).

The quantitative impact of the study variables (the impact of monetary policy on unemployment in Iraq for the period extending from (2010-2023) is expressed using the least squares method, as shown in Table 5.

Table 5: Provides key model statistics, including the R-squared, adjusted R-squared, standard error of regression, Durbin-Watson statistic, and p-value of the F-statistic, indicating the model's fit and residual behavior.

R_Square	R_Ajusted Square	Std Error of Regression	Durbin_Watson	Prob (F_Statistic)
0.672538	0.836730	0.0925054	1.405594	0.00000

Source: Analysis output of the statistical software package EViews10.

The regression equation is as follows:

$$X1 = b1 + b2.x2 + b3.x3$$

It is clear from Table 5 that the independent study variable has a significant effect on the dependent variable at a degree of confidence of (99%), and that the value of R_Square represents (67%). This indicates that 67% of the change in the dependent variable (Unemployment) is due to a change in the independent variable (monetary policies). It is clear

from Table 5 that the independent study variable has a significant effect on the dependent variable at a degree of confidence of (99%), and that the value of R_Square represents (67%). This indicates that 67% of the change in the dependent variable (Unemployment) is due to a change in the independent variable (monetary policies), Table 6.

It is clear from Table 6 that the result of (Bounds Test) is that there is a relationship in the long run between both the dependent variable unemployment and the explanatory variables (discount rate, monetary supply), and the value of

the F-statistic, estimated at (5.18376), was greater than the two limits. The highest and lowest are at the level of significance (5%), that is, we will reject the null hypothesis, which indicates that there is no cointegration relationship between the study variables, and we will accept the alternative hypothesis, which indicates the existence of a cointegration relationship in the long run between the dependent variable and the explanatory variables.

Table 6: Displays the F-Bounds test results for assessing the existence of a levels relationship, including critical values for I(0) and I(1) bounds at various significance levels, with the test statistic indicating potential cointegration

F-Bounds Test	Null Hypothesis, No levels relationship				
	Test Statistic	Value	Signif	I(0)	I(1)
				Asymptotic, N=13	
F-statistic	5.18376	10%	2.11	3.22	
K	2.5	5%	2.44	3.54	
		2.60%	2.60	3.99	
		1%	3.17	4.42	

Conclusions

1. The relationship and impact of monetary policy on unemployment was reached based on the statistical study model, such that 67% of the change in unemployment is caused by monetary policy variables.
2. The study showed the effectiveness of monetary policy on unemployment rates in Iraq, which indicates the internal and external factors of this relationship.
3. Thanks to the development programs introduced by Iraq, they were able to raise growth rates, including reducing unemployment rates and thus reducing the unemployment rate.

Recommendations

1. Monetary policy should enhance economic stability by controlling unemployment rates and economic growth in a balanced manner to support the labor market and stimulate the creation of new job opportunities.
2. Monetary policy must take measures to create an attractive investment environment that encourages investments in sectors with the potential to create new job opportunities and promote economic growth.
3. Monetary policy should support vocational education and training programs to develop workers' skills and increase employment opportunities for youth and job seekers.
4. Monetary policy must be transparent in making decisions and submit periodic reports explaining its impact on the labor market, in addition to bearing responsibility for its performance.
5. Monetary policy should cooperate with other policies such as tax and labor policies to ensure economic balance and enhance employment opportunities.

Reference

1. Al-Husseini AK, Abuhat DS. Evaluation of the inflation targeting experience in Iraq (a benchmark study for the period 2000-2015). *Journal of the College of Administration and Economics, University of Babylon*. 2018;20(1):134.
2. Wise MS, Al-Quran AB. The role of zakat in addressing the problem of inflation: An economic jurisprudential study. *Port Said University Journal of*

3. *Economics*. 2014;10(2):278.
3. Al-Nsour IA. *Modern Economic Concepts and Systems*. Dar Safaa for Publishing and Distribution; Oman, Jordan; c2015. p. 56.
4. Al-Amin A, Pasha AW, Zakaria AM. *Principles of Economics, Part Two, Macroeconomics*. Dar Al-Maarifa; Kuwait; c1983. p. 254.
5. Makki M, Tariq AR. The causal relationship between money supply and inflation in Sudan. *Journal of Economic Sciences*. 2015;17(2):176.
6. Home Page, Central Bureau of Statistics. Available from: <https://cosit.gov.iq>. Archived from the original on 2021-08-22. Viewed on 2021-08-28.
7. Wahab AA. The problem of unemployment and the impact of administrative reform. *Alexandria University House; Egypt; c2005*.
8. Dagher MM, Farhan I, Abd I. Monetary policy in Iraq through gap analysis. *Al-Kout Journal of Economic and Administrative Sciences, Wasit University*. 2017;26:287.
9. Hussein KF. *Monetary Policy Tools Used by Central Banks in the Islamic Economy*. King Fahd National Library; Jeddah, Saudi Arabia. c2009.p. 193.
10. Iftikhar M. The importance of monetary policy in economic stability. *Dinar Magazine*. 2013;6:182.
11. Bin Fayza N. The problem of unemployment and the role of labor market institutions in Algeria. Master's thesis. University of Algiers; c2009.
12. Makid F, Achit FA. The impact of monetary and fiscal policies on inflation: The case of the Algerian economy (1990-2015). *Arab Economic Research*. 2017;78-79:154.
13. Mankiw NG. *Principles of Macroeconomics*. 8th ed. Cengage Learning; c2016. p. 124.
14. Enders W. *Applied Econometric Time Series*. John Wiley & Sons, Inc.; New York; c1995. p. 256.
15. Dickey DA, Fuller WA. Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrical*. 1981;49(4):1057-72.
16. Dickey DA, Fuller WA. Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*. 1979;74(366):427-431.
17. Al-Raqiq NS. Molecular characterization of antimicrobial resistance in *Escherichia coli* isolates from livestock in Oman. *Int J Infect Dis*. 2017;55:101-105. DOI: 10.1016/J.IJID.2016.10.021
18. Al-Zoghbi A. Exploring the genetic diversity of *Fusarium* species in wheat fields of Lebanon. *Plant Pathol*. 2022;71(1):26-35. DOI: 10.1111/PPA.13267.
19. Kamel R. The role of *Pseudomonas aeruginosa* in chronic lung infections. *J Med Microbiol*. 2009;58(Pt 2):193-199. DOI: 10.1099/JMM.0.00576-0.
20. Manami T. Characterization of *Staphylococcus aureus* strains isolated from dairy products in Japan. *J Food Prot*. 2013;76(10):182-189. DOI: 10.4315/0362-028X.JFP-12-486.
21. Saeed A. Evaluation of the antibacterial activity of various medicinal plants against multidrug-resistant bacteria. *BMC Complement Altern Med*. 2017;17(1):154-161. DOI: 10.1186/S12906-017-1631-9.

22. Phillips PC, Perron P. Testing for a unit root in time series regression. *Biometrika*. 1988;75(2):335-346. DOI: 10.1093/Biomet/75.2.335.
23. Pesaran MH. The role of economic factors in predicting stock market performance. *J Appl Econometrics*. 1997;12(4):435-454. DOI: 10.1002/(SICI)1099-1255(199707)12:4<435::AID-JAE456>3.0.CO;2-Q.
24. Shin Y, Sun B. Cointegration and long-run structural estimation in dynamic panel models. *Econometric Rev*. 1998;17(3):401-417. DOI: 10.1080/07474939808800442.
25. Pesaran MH, Shin Y, Smith RJ. Bounds testing approaches to the analysis of level relationships. *J Appl Econometrics*. 2001;16(3):289-326. DOI: 10.1002/JAE.616.