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THE IMPACT OF MONETARY SHOCKS ON ECONOMIC VOLATILITY IN IRAQ DURING THE PERIOD 2004-2023

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Abstract:

The paper examines the issue of monetary shocks and likely impacts on economic volatility in Iraq between the years 2004 and 2023. It demonstrates that the variation in the supply of money, inflation, and exchange rates has a huge impact on GDP, investment, and expenditure. Based on the SVAR model, the study discovers that the growth policies, which includes injecting more money into the economy, have a positive effect in the short run, and the effects of inflation and currency fluctuation are negative. It also comes out in the results that government policy is constrained by structural factors such as overdependence on oil and poor harmonization between monetary and fiscal plans. The impulse response analysis proves that the exchange rate shocks have the highest long-term impact across all sectors. The study advises that two possible areas to focus on are stabilizing the inflation and the exchange rates and advancing the budget control and oil independence. It is also an indication of improved coordination among the institutions of the government to prevent further economic risks. With transparent fiscal roads and the prudent use of money, Iraq will be able to stabilize its economic growth since it will be better equipped to absorb any shocks that are thrown at it in the future.

Keywords: Monetary shocks - Economic volatility - SVAR model – Inflation - Exchange rate

INTRODUCTION:

Monetary policy is one of the most important tools available to economic policymakers to correct the macroeconomic trajectory. Its impact on economic variables can sometimes be unexpected and undesirable. In international economic literature (Elahi, Salimi, & Masoomzadeh, 2016), researchers have distinguished between two types of policies: accommodative and stable. Accommodative policy is defined as a policy that provides a regular supply of credit to an expanding economy. Stable policy is a policy used to curb or compensate for undesirable changes affecting the economy (Kandil, 2014). Changes in monetary policy affect bank lending as much as they affect credit demand through their impact on the business cycle, leading to the emergence of internal factors that contaminate the supply-side effect (Yahyaei, Singh, & Smith, 2024). A supply shock poses a difficult trade-off for policymakers, while a demand shock does not pose a trade-off regardless of the structural shocks underlying economic volatility. Therefore, monetary policy has played a pivotal role in modern monetary business cycle models (Shirota, 2019). Accordingly, the shock is the beginning of the crisis, and its effect is the collapse of the balance. When the situation worsens, the crisis enters a new phase, and the various parties face difficulty in bearing the severity of the changes it causes. There are those who believe that anticipating and forecasting it enables control of the results of the shock and reducing its effects by taking the necessary preventive measures in this regard, which provides an opportunity for rapid movement towards taking planned measures to absorb its effects and mitigate its severity to reach the real causes that led to this shock (Al-Kubaisi, 2010).

Theoretical framework

1- Monetary Shocks:

Monetary shocks are a sudden event that changes the money supply in the market, disrupting the monetary balance, as a result of an increase in the money supply or a decrease in the money supply (Hamdān, 2017). Monetary policy shocks reflect volatility in monetary variables that are beyond the control of monetary authorities and cause direct and indirect effects on economic activity. quantitative monetary shocks and price monetary shocks. Quantitative monetary shocks are imbalances that occur when the quantity of money available in the economy, or people's desire to hold it, changes unexpectedly. These irregular changes can destabilize financial markets and the overall economy. Price monetary shocks are sudden volatility resulting from unexpected movements in interest rates or exchange rates due to

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random and unintended factors that influence monetary policy decisions. These are changes in a random variable that lead to a complete shift in the economic function curve, either to the right or to the left. Generally speaking, there are two main types of monetary shocks (Khalifa, Batal, & Hamad, 2024):

1. Money supply shocks: These are any unexpected changes in the size of the nominal money supply available in the economy. These shocks can have a significant impact on the overall economy. If a shock occurs A negative (contractionary) money supply shock occurs when the money supply suddenly decreases. This decrease often leads to a decrease in real output and greater difficulty in borrowing and investing. This drop is reflected in the general level of prices and inflation due to the scarcity of money in circulation, and consequently, changes in the exchange rate, as the value of the local currency may rise. A positive (expansionary) money supply shock occurs when the money supply increases unexpectedly. This increase can lead to an increase in economic output, with more liquidity available for investment and aggregate spending, which stimulates economic growth and, consequently, a potential rise in inflation if the increase in money exceeds the economy's productive capacity.
2. Cash demand shocks: These are unexpected disturbances that arise when individuals' and businesses' desire to hold cash changes suddenly and irregularly. These shocks are not related to the amount of money available (money supply), but rather to the amount of money people are willing to demand and hold. This desire is greatly influenced by factors such as changes in income levels and changes in price levels (inflation/deflation). For example, rising prices (inflation) mean that goods and services become. Therefore, individuals and businesses need more cash to conduct the same transactions, which increases the demand for money. Conversely, falling prices (deflation) make goods and services cheaper, reducing the need for cash to complete transactions, which reduces demand for them. Monetary shocks are defined from a structural perspective, meaning that they represent an innovation in monetary policy independent of other macroeconomic disturbances, such as supply and demand shocks (Coman, 2025). A supply shock poses a difficult trade-off for policymakers, while a demand shock does not pose a trade-off regardless of the structural shocks underlying economic volatility. Therefore, monetary shocks have played a pivotal role in modern monetary business cycle models (Shirota, 2019). Following a negative supply shock, demand contracts by less than supply, and thus the natural interest rate rises. Inflation rises during the shock period but quickly returns to its normal trend after it subsides. Monetary policy alone can mitigate the inflationary impact of supply disruptions by slowing the economy and creating a negative output gap. Negative supply shocks create lasting negative effects on the economy, prompting firms to reduce their investments and thus destroying the economy's future productive capacity (Fornaro & Wolf, 2023). Conversely, a positive supply shock can make production more efficient and thus increase output. A decline in prices (Hall & Lieberman, 2012), and it is estimated that a 100 basis point shock to US monetary policy would lead to a decline in output and investment in other countries of 0.4% and 1.6%, respectively. The repercussions depend on the state of the economic cycle in the recipient country, with greater negative effects when economic activity is weak (Arbatli-Saxegaard et al., 2024). Monetary policy news shocks can appear to create a boom-and-bust cycle in a monetary version of the real business cycle model (Arin et al., 2025) and reflect the direct impact of announced monetary policy actions such as forward guidance and asset purchase programs. The announcement of these policies may have additional indirect effects that include new information about the state of the economy (Breitenlechner, Gründler, & Scharler, 2021). Thus, unconventional expansionary policy shocks lead to an increase in real GDP in the economy.

2- Economic Volatility:

The economic volatility, which Juglar called "economic cycles" in 1862, is defined as regular, periodic volatility in the level of economic activity (Farhi & Benkaddour, 2014). These volatilities are volatility in aggregate economic activity, such as levels of production, employment, and prices. Gordon (J.) defined the economic cycle as recurring but non-periodic volatility in the level of aggregate economic activity, such as changes in the level of real GDP, income, and employment. This volatility usually lasts between two and ten years and is characterized by expansion and contraction on a broad scale, encompassing most sectors of the economy (Gordon, 1986). R. Lucas believes that cycles are not characterized by the cyclicality and regularity described by traditional economists (Lucas, 1975). He believes that economic activity fluctuates for one reason or another, but not with the degree of regularity described. Therefore, he uses the term "economic volatility" instead of "economic cycles." He states, "Cyclical movements do not exhibit complete consistency in their amplitude or frequency. The observed disturbances are related to changes in a series of different groups" (Bouali & Abdelkarim, 2017), and thus the various shocks in demand and supply produce volatility in the gross domestic product, i.e., the product moves around An unknown equilibrium or an unlikely outcome. Here, the volatility is irregular and not strictly cyclical. This is called economic volatility. Economic volatility can be defined as the recurring, fluctuating, but sudden, unpredictable pulses that form an integral part of the overall course of economic activity over time. They are not just random ups and downs but rather a comprehensive movement encompassing key macroeconomic variables such as output, income, and employment. They often occur in the same direction and simultaneously, but at varying rates.

3- The economic relationship between monetary shocks and economic volatility

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The monetary shocks into the economic volatility turn out to be one of the pillars of the macroeconomic theory. This correlation suggests that we experience sudden and unexpected changes in money variables (the money supply, the demand of money, interest rates or exchange rates) leading to changes in the overall activity of the economy and this is what we refer to as economic volatility. The monetary shocks are transmitted into several key channels to the real economy that is the output, employment and investment:

1 .Interest Rate Channel: With a positive (expansionary) monetary shock, things happen differently where money supply is suddenly accelerated (or the key interest rates are decreased by the central bank authorities). This will result in reduced interest rates at the financial markets. This lowering of the cost of borrowing lowers the cost of doing business for the companies and the individuals, eliciting more investment (as there is a lower cost in order to finance any investment), as well as consumer spending (where people spend more money on durable goods since the money used in financing those goods is cheap). This boost in consumption and investments results in expansion in output and employment. On the contrary, a negative (contractionary) monetary shock may be experienced when money supply declines or interest rates increase, hence making borrowing money very costly, which may discourage saving and spending, resulting in an economic slowdown or a recession .

2. Exchange Rate Channel: The Exchange rate channel has an expansionary monetary shock (low domestic interest rates), which causes domestic assets to be less appealing to foreign investors than the assets in other nations, causing capital flight and depreciation of local currency (exchange rate). When the currency depreciates, it causes exports to be more competitive and cheaper, especially abroad, whereas imports would be more expensive; hence, there are more exports and fewer imports, which has the effect of increasing the net exports and thereby the GDP. However, a contractionary monetary shock (an increase in domestic interest rates) causes the inflow of foreign capital, which increases local currency value and makes exports expensive and imports cheaper, which adversely affects the net export and GDP.

3. Credit Channel: This channel refers to the interest rate but deals more with the provision of credit. With expansionary monetary shock, credit conditions of banks and businesses will be better, allowing access to loans and expansion of the levels of credit. This effect, in its turn, helps investment and expenditure. On the other hand, the credit binds in the case of a negative shock, and it becomes difficult to borrow money even in the case of a business that can be trusted, and it hurts economic activity.

4. Asset Price Channel: There is a likelihood of increased asset prices, like property and stock, when there is an expansionary monetary shock. This has the so-called wealth effect because people think they are richer, and thus they are ready to spend. An increase in stock prices also lowers the cost of corporate financing that is achieved by equity issues, and this promotes investment. Contractionary monetary shocks, however, reduce the prices of the assets and increase the impairment of wealth and investment.

5. Expectations Channel: The monetary shocks, in particular, the results of unforeseen decisions of the monetary authorities, can have a large effect on the future expectations of individuals and businesses (inflation, growth, interest rates). Such expectations, in their turn, affect the present consumption and investment decision, exacerbating or modifying the path of economic volatility.

Data, tools and Econometrics methods:

To examine dynamic interactions between major macroeconomic variables in Iraq, the analysis will use time series data on a quarterly basis that has been derived using sources that are reputable and have national and international recognition. In particular, policy interest rates, parallel exchange rates, money supply (M2), gross domestic product (GDP), and the total government expenditure, operating expenditure, and investment expenditure statistics were extracted by requesting it from the Central Bank of Iraq, General Directorate of Statistics and Research, at its Annual Statistical Bulletin over 2004-2023 (https://cbi.iq/page/142). Additionally, what we had was the series of net foreign direct investment (FDI), which is obtained at the world Investment Report 2024 through the United Nations conference on trade and development (UNCTAD) (https://unctad.org/publication/world-investment-report-2024). The reputability of these data sources will guarantee the soundness of the econometric survey to be performed in the following sections, using the structural econometric instruments to determine the influence of the monetary shocks on the economic turbulences.

Table 1. *Variables and Codes*

Code	Variable Name in English
PRR	Policy Rate
INF	Inflation
ERM	Parallel Exchange Rate

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M2S	Money Supply (M2) (Million Dinars)
GDP	Gross Domestic Product (Million Dinars)
FDI	Net Foreign Direct Investment (Million Dinars)
GEX	Government Expenditure (Million Dinars)
OEX	Operating Expenditure
IEX	Investment Expenditure

Structural Unit Root Test:

Through this test, we aim to explore the extent to which the research variables have experienced shocks that have led to a shift at the secant and trend levels, and the extent of their impact on the stability of the variable. Structural change refers to a shift in a variable at the secant or trend level. There are a variety of reasons that may lead to structural changes in economic time series, often related to changes in economic policy or changes in the structure of the economy as a result of economic crises. To test structural changes in the study variables, we use the Breakpoint Unit Root Test (BURT) developed by Perron and Pierre (2006). This test differs from other structural change tests, such as Quandt-Anderson, in that it assumes the following:

- The change can occur abruptly or gradually.
- It consists of a level shift, a trend break, or both.
- The date of the change is known, or unknown and estimated from the data.
- The data follow a general trend or are random.

The variables are first characterized by defining the following variables from the specified structural change date T_b (Perron and Pierre, 2006):

- A structural change with an intercept break: $DU_t(T_b) = 1(t \geq T_b)$, which takes the value 0 for the period before the change and 1 after the change.
- A structural change with a trend break: $DT_t(T_b) = 1(t \geq T_b).(t - T_b + 1)$, which takes the value 0 for the period before the change, and a trend based on the change date for all subsequent dates.
- A one-time structural change dummy: $D_t(T_b) = 1(t = T_b)$, which takes the value 1 only on the change date and 0 otherwise.

Accordingly, the models are divided according to the dynamics of the structural change: either a gradual innovational break, with changes following the same dynamic trajectory of events (innovations), or an abrupt additive break. Through the graphical representation of our research variables, we can describe the appropriate model, as structural change occurs gradually because it does not change direction twice during two successive periods. Innovations. The model is chosen with a direction and a categorical one, as all variables had a general direction before the structural change and fluctuated around it. Therefore, based on the work of Perron (1989) and Perron and Vogelsang (1992), our study model can be described in light of the exploratory phase of the data. We test the points of structural change according to the following equation:

$$y_t = c + \alpha t + \theta DU_t(T_b) + \gamma DT_t(T_b) + \omega D_t(T_b) + \delta y_{t-1} + \sum_{i=1}^{p} \varphi_i \Delta y_{t-i} + \varepsilon_t$$

where α, θ, γ, and ω are the parameters of trend and structural changes, DU_t, DT_t, D_t are dummy variables that represent structural changes at the trend and categorical levels, c: categorical, p: lag score of the autoregressive model. The test is conducted according to the null hypothesis δ=0 (non-stationary with or without structural change), and the alternative hypothesis δ<0 (stationary with or without structural change).

Structural Vector Autoregression (SVAR) Model:

To achieve the study's objective, by measuring shocks and analyzing their impact, while taking structural changes into account, we use the SVAR model. The Structural Vector Autoregression (SVAR) model is an economic model, which is employed to estimate causal relationship among economic variables. The model is comprised of a number of mathematical equations that characterize the relationships amongst variables. Assume that we are different economic variables. The SVAR model can be expressed in the following way:

$$y_t = C + \beta_1 y_{t-1} + \cdots + \beta_P y_{t-P} + \epsilon_t \qquad \epsilon_t \sim (0, \Sigma)$$

Where y_t is a K×1 vector of endogenous variables (economic variables), β_P is the coefficient matrix, which specifies the dynamic relationships between the variables corresponding to a specific lag in y_t, ϵ_t is the random error term with mean

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0, and Σ is the variance – covariance. We then find out how many lags the model variables have by a set of criteria of information such as the Akaike information criterion (AIC) through the equation:

$$-2log\ L(\hat{\theta}) + 2k$$

and k the number of independent variables, and 0 the maximum of the likelihood. The model aims at examining these causal relationships and identifying the influence. The equations in the reduced-form form the SVAR model, and they are described as the relationship between the economic variables and the shocks. These equations will be of the form:

$$y_t = A_1 y_{t-1} + u_t$$

where A_1 is the reduced-form coefficient, u_t is the weighted average of the structural coefficients, and u_t is the shock vector representing random or unexpected changes in the variables. Structural identification techniques are used to determine the A matrix and they seek to establish causal relationships between the variables. Structural identification methods are many; we shall employ the Cholesky method. The Cholesky process of calculation of the reduced form of the structural model of the structural autoregressive (SVAR) is employed to decompose the structural matrix (B) into the reduced triangular matrix (A). The simplified version of SVAR model entails the economic variables being represented in terms of variables that lack a direct correlation with one another. This implies that the variables do not have a causal direct impact. Rather, the other variables in the model express the variables. SVAR model uses a matrix (B) where the structural constraints are added:

$$Bu_t = e_t$$

where $e_t$is the agent of structural shocks, which are not predetermined. Adding a matrix (B) is aimed at converting random errors (u) to structural shocks (e) that are economically interpretable. The Cholesky analysis is used to calculate the matrix (B). Cholesky analysis is a mathematical method which performs the imposition of the constraint of structure in the SVAR model. The random error matrix in the normal VAR model is converted to the structural shock matrix in the SVAR model through this analysis. Its fundamental concept is that the random error matrix (u) can be described as a linear sum of structural shocks, which are not correlated. We have in the standard VAR model (Hu et al., 2018):

$$u_t = A\varepsilon_t$$

in which (A) is a transformation matrix to give the structural relationships between the shocks. The assumption of cholesky analysis is that (A) is a lower triangular matrix i.e. the effect of structural shocks on the variables is experienced in a particular way. Suppose we assume a random error matrix ε_t, which is the variance- covariance matrix of the errors (u_t). The cholesky analysis is broken down into the form:

$$\Sigma = LL^T$$

where (L) is a lower triangular matrix and (L^T) is an upper triangular matrix (the homogeneous matrix of (L)). Now, we can use (L) as the transformation matrix of (A) in the previous equation. In this way, we can impose structural constraints on the model in a way that ensures that structural shocks are independent and affect the variables according to the order specified in the L matrix. This allows us to analyze how a particular shock affects the other variables in the model. From the variance-covariance matrix (Chen et al., 2016):

$$\Sigma = \begin{bmatrix} \sigma_{11} & \sigma_{12} \\ \sigma_{21} & \sigma_{22} \end{bmatrix}$$

After applying a Cholesky decomposition, we obtain:

$$L = \begin{bmatrix} l_{11} & 0 \\ l_{21} & l_{22} \end{bmatrix}$$

Now, we can use L to transform random errors into structural shocks:

$$\varepsilon_t = L^{-1}u_t$$

Cholesky method is used to convert the structural matrix (B) to the reduced triangular matrix (A) by the recursive long-run impulse response (F triangular) transformation. It is among the techniques that are applied in an analysis of structural vector autoregressive (SVAR) model to estimate the long-term effect of economic policy shocks or other major economic events on economic variables. SVAR model is a series of mathematical equations which relates the interactions of economic variables. The order of the variables in the equations is used to establish the sequence of causal shocks in the case of recursive SVAR. The recursive long-run impulse response (F triangular) methodology is meant to quantify the long-run effects of a shock on the variables in the economy. This approach is achieved by identifying the order of causal shocks depending on where the variables were ranked in the equations. The procedure is implemented in the following ways:

1 .Establish the structural matrix which identifies the cause and effect relationships among the variables.

2 .Linear transformations are used to transform the structural matrix into a triangular matrix. This is to enable calculation of regression response.

3 .Calculate the response of the impulse of one shock in the economic variables at consecutive temporal intervals. The first variable is shocked and a calculation is performed of its impact on the remaining variables according to the triangular matrix that was obtained as a result of the above step .

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4 .The repeat of the above step is done over a few time periods to determine the effect in the long run. This is the calculation of the regression reaction to the shock. Along the time line till we get to long-run equilibrium.
5 .The results are visualized in the form of graphs and tables to illustrate the long-run impact of the shock on economic variables.
The recursive long-run impulse response (F triangular) method is used to measure the long-run impact of the shock and understand the causal relationships between economic variables.

RESULTS AND DISCUSSION:

Table 2. *Descriptive Statistics of GDP, FDI, GEX, OEX, and IEX, PRR, M2S, INF, and ERM*

	GDP	FDI	GEX	OEX	IEX
Mean	2.15E+08	-863515.6	82400225	65022333	17367864
Median	2.23E+08	497529.9	79002715	61685263	15634605
Maximum	3.83E+08	5731941.	1.57E+08	1.24E+08	40380750
Minimum	53235359	-7575777.	26375175	21803157	3014733.
Std. Dev.	85679998	4098810.	32491299	25915083	9994143.
Skewness	-0.041279	-0.116197	0.117638	0.365420	0.629558
Kurtosis	2.261115	1.709369	2.365483	2.593060	2.506477
Jarque-Bera	1.842554	5.732449	1.526556	2.332430	6.096460
Probability	0.398010	0.056913	0.466136	0.311544	0.047443
Observations	80	80	80	80	80
	PRR	M2S	INF	ERM	
Mean	7.062698	84476337	8.793011	1303.755	
Median	6.000000	87319443	3.130092	1236.907	
Maximum	20.34267	1.89E+08	53.20000	1594.049	
Minimum	3.691147	12254000	-3.073089	1181.217	
Std. Dev.	4.146833	48078191	14.62372	126.0734	
Skewness	1.972705	0.424322	1.870297	0.836190	
Kurtosis	6.037824	2.577583	5.157229	2.082394	
Jarque-Bera	82.64879	2.995438	62.15228	12.12952	
Probability	0.000000	0.223640	0.000000	0.002323	
Observations	80	80	80	80	

Table 2 forms a summary of the key macroeconomic variables' performances each quarter from 2004–2023 in Iraq. An analysis of central tendencies, how spread apart the data is and their distributions gives useful information for future econometric models. There is considerable change in Iraq's economic output because the Gross Domestic Product (GDP) shows an average of approximately 215 billion IQD and a high standard deviation. The GDP values have a shape almost symmetrical (Skewness is close to -0.04) and the value of kurtosis is 2.26 which shows that the form is almost similar to a normal distribution. The JB test value indicates that the null hypothesis of normality is true (p = 0.398) indicating that models whose errors are normally distributed can be used. The net foreign direct investment (FDI) has a mean of =863,515IQD and a large standard deviation of approximately 4.1 million implying large fluctuations and many times when the country received less FDI. The skewness of the data is also slightly left-skewed (-0.12) and the kurtosis of the data is platykurtic (1.71), and the JB test enabled us to reject the hypothesis of symmetry at the 10 percent level with a p-value of 0.056. This leads to the fact that time series modeling has to be analyzed sensibly, primarily in terms of tails. The positive signs are present in all three types of Government Expenditure (GEX), Operating Expenditure (OEX) and Investment Expenditure (IEX) and do not indicate very high differences. The values of skewness are moderate with a range of 0.12 to 0.63 which indicates a slight skewed trend. The Kurtosis of all the three sets of data is near 2.5 indicating that it is near normal distribution. Interestingly, IEX is the only model that rejects the normality (p = 0.047) and this makes one home a hint that there is a possibility of difference in capital spending between companies. The central tendency of the Policy Rate (PRR) is 7.06 and high of over 20 indicating cases where the monetary policy drives aggressively. The value of skewness (1.97) is very high and the value of excess kurtosis (6.04) is very large, indicating a skewed distribution, which is leptokurtic to the right. The JB test strongly rejects normality (p < 0.01), implying the presence of extreme values, possibly linked to macro-financial instability or abrupt policy responses. Money Supply (M2S) records an average of approximately 84 billion IQD, with a substantial range and variance (SD ≈ 48 billion). The mild right-skewness (0.42) and moderate kurtosis (2.58) imply a slightly heavy-tailed distribution, although the normality hypothesis is not rejected (p = 0.223), indicating relative stability in monetary expansion patterns. Inflation (INF) is

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greatly skewed (1.87) and kurtosed (High 5.16), which suggests the existence of extreme bouts of inflation or deflation. The JB test shows a significant difference from what is normal ($p < 0.01$), which matches the inflation patterns of an oil-based economy that is sensitive to supply issues, changes in exchange rates, and the effects of fiscal policy. Exchange Rate (ERM) exhibits neither heavy dispersion nor any right-skewness (0.84) nor leptokurtic behavior (kurtosis 2.08). The JB test ($p = 0.002$) indicates a non-normal behavior, which means that the possible external sector vulnerabilities, devaluations, or speculative pressures within the parallel currency market have been observed or felt. However, the descriptive statistics indicate that Iraq's macroeconomic variables (GDP and most expenditures) have near-normal behavior, whereas there are non-Gaussian characteristics of the PRR, INF, and ERM which mark the occurrence of economic stresses. These properties make the application of powerful econometric methods that satisfy non-linearities, structural breaks, and non-normal residuals. The time covered by research contains important stages of post-war reconstruction in Iraq, instability of oil revenues, as well as changes in policies, and this is why the identified statistical regularities were observed.

Table 3. ***Breakpoint Unit Root Test Results (Perron and Pierre, 2006)***

Variable	Code	Break Date	Lag Length	Trend Spec.	Break Spec.	Break Type	ADF t-Stat	Critical (1%)	Critical (5%)	Critical (10%)	p-Value
Exchange Rate	ERM	2015Q3	5	Trend + Intercept	Intercept only	Innovational Outlier	-5.58	-5.347	-4.859	-4.607	< 0.01
Foreign Direct Investment	FDI	2015Q3	1	Trend + Intercept	Intercept only	Innovational Outlier	-9.482	-5.347	-4.85	-4.607	< 0.01
Gross Domestic Product	GDP	2019Q4	1	Trend + Intercept	Intercept only	Innovational Outlier	-6.015	-5.347	-4.859	-4.607	< 0.01
Government Expenditure	GEX	2013Q4	5	Trend + Intercept	Trend + Intercept	Innovational Outlier	-5.935	-5.719	-5.175	-4.893	0.0030
Investment Expenditure	IEX	2020Q1	3	Trend + Intercept	Trend + Intercept	Innovational Outlier	-10.53	-5.719	-5.175	-4.893	< 0.01
Inflation	INF	2006Q3	0	Intercept only	Intercept only	Innovational Outlier	-10.68	-4.949	-4.443	-4.193	< 0.01
Money Supply (M2)	M2S	2010Q3	11	Intercept only	Intercept only	Innovational Outlier	-6.308	-4.949	-4.443	-4.193	< 0.01
Operating Expenditure	OEX	2005Q2	0	Intercept only	Intercept only	Innovational Outlier	-6.479	-4.949	-4.443	-4.193	< 0.01
Policy Rate	PRR	2009Q2	6	Intercept only	Intercept only	Innovational Outlier	-6.17	-4.94	-4.44	-4.193	< 0.01

This means that statistically significant structural breaks were found for all the macroeconomic and monetary variables analyzed, according to the Breakpoint Unit Root Test using the Perron and Pierre (2006) procedure. Each of the variables shows that the null hypothesis of a unit root with structural change can be rejected at the 1% significance level based on the Augmented Dickey-Fuller (ADF) work. Innovational breaks display a sudden jump or dip in the series because of economic shocks, whether from outside or within the economy. Changes in both the exchange rate (ERM) and foreign

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direct investment (FDI) happened in the third quarter of 2015 due to more severe government pressure, shifts in the currency market and investors withdrawing as a result of lower oil prices and greater political uncertainty. GDP growth broke in the fourth quarter of 2019 as political instability and uncertainty took hold across the world, just before the COVID-19 pandemic appeared. Spending in the fiscal sector also changed in 2013Q4 for government expenditure (GEX) and in 2020Q1 for investment expenditure (IEX), suggesting that new strategies might have appeared due to revenue swings, reform efforts or coping with crises. Early signs of structural change in the inflation rate (INF) appeared in 2006Q3, reflecting the impacts of economic liberalization and initial attempts to fight inflation brought by the invasion. There were breaks in money supply (M2S) in 2010Q3 and in operating expenditure (OEX) in 2005Q2, signaling that monetary policy and fiscal steps were starting to happen at that time. the policy interest rate (PRR) shows a significant break in 2009Q2, aligning with global financial crisis dynamics and the central bank's policy shift toward rate reductions. These findings confirm the non-stationary nature of the variables under standard assumptions and highlight the importance of accounting for structural breaks in econometric modeling. Ignoring such breaks could lead to biased inference and misleading policy implications. The test outcomes justify the subsequent use of structural time series models, such as SVAR, that explicitly incorporate the effects of these breaks in trend and level behavior.

Table 4. *Structural VAR Estimates – Coefficients and Statistical Significance*

Structural VAR Estimates								
Sample (adjusted): 2005Q4 2023Q4								
Included observations: 73 after adjustments								
Estimation method: Maximum likelihood via Newton-Raphson (analytic derivatives)								
Convergence achieved after 59 iterations								
Structural VAR is just-identified								
Model: e = Phi*Fu where E[uu']=I								
F =								
C(1)	0	0	0	0	0	0	0	0
C(2)	C(10)	0	0	0	0	0	0	0
C(3)	C(11)	C(18)	0	0	0	0	0	0
C(4)	C(12)	C(19)	C(25)	0	0	0	0	0
C(5)	C(13)	C(20)	C(26)	C(31)	0	0	0	0
C(6)	C(14)	C(21)	C(27)	C(32)	C(36)	0	0	0
C(7)	C(15)	C(22)	C(28)	C(33)	C(37)	C(40)	0	0
C(8)	C(16)	C(23)	C(29)	C(34)	C(38)	C(41)	C(43)	0
C(9)	C(17)	C(24)	C(30)	C(35)	C(39)	C(42)	C(44)	C(45)

	Coefficient	Std. Error	z-Statistic	Prob.
C(1)	3.384495	0.280130	12.08188	0.0000
C(2)	13.55415	2.067737	6.555064	0.0000
C(3)	2.478051	0.574034	4.316903	0.0000
C(4)	2.710600	0.340034	7.971547	0.0000
C(5)	-2.191187	1.611295	-1.359892	0.1739
C(6)	-0.102572	0.320958	-0.319580	0.7493
C(7)	-0.038650	0.383649	-0.100742	0.9198
C(8)	0.989771	0.714482	1.385299	0.1660
C(9)	-1.081609	0.168731	-6.410242	0.0000
C(10)	14.84074	1.228338	12.08197	0.0000
C(11)	2.449898	0.496237	4.936947	0.0000
C(12)	1.221789	0.234604	5.207882	0.0000
C(13)	3.027352	1.581382	1.914371	0.0556
C(14)	-0.255146	0.320218	-0.796789	0.4256
C(15)	-0.758871	0.378561	-2.004618	0.0450
C(16)	-1.249790	0.702427	-1.779246	0.0752
C(17)	-0.512712	0.136637	-3.752372	0.0002
C(18)	3.867073	0.320135	12.07951	0.0000
C(19)	1.648647	0.161755	10.19222	0.0000

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C(20)	12.45825	1.171311	10.63616	0.0000
C(21)	2.204238	0.262135	8.408800	0.0000
C(22)	2.687095	0.299583	8.969438	0.0000
C(23)	3.515324	0.630631	5.574296	0.0000
C(24)	0.788246	0.112230	7.023512	0.0000
C(25)	0.741882	0.061396	12.08359	0.0000
C(26)	-4.309288	0.425429	-10.12927	0.0000
C(27)	-1.370978	0.150116	-9.132817	0.0000
C(28)	-1.520678	0.156261	-9.731681	0.0000
C(29)	-3.947682	0.454117	-8.693093	0.0000
C(30)	-0.620646	0.075485	-8.222143	0.0000
C(31)	1.981942	0.164028	12.08297	0.0000
C(32)	-0.243328	0.096216	-2.528966	0.0114
C(33)	0.453207	0.084700	5.350725	0.0000
C(34)	-0.477569	0.312953	-1.526006	0.1270
C(35)	0.455796	0.040459	11.26575	0.0000
C(36)	-0.803855	0.066529	-12.08286	0.0000
C(37)	-0.635034	0.054819	-11.58430	0.0000
C(38)	-2.644470	0.220177	-12.01067	0.0000
C(39)	-0.076993	0.013165	-5.848126	0.0000
C(40)	0.133153	0.011020	12.08305	0.0000
C(41)	0.111143	0.022202	5.006012	0.0000
C(42)	0.004184	0.011515	0.363298	0.7164
C(43)	0.172648	0.014288	12.08304	0.0000
C(44)	-0.035900	0.011120	-3.228426	0.0012
C(45)	0.091556	0.007577	12.08304	0.0000
Log likelihood -341.8872				

The estimation findings of the Structural Vector Autoregression (SVAR) model (spanning 2005Q4 to 2023Q4 in quarterly frequency) show statistically and economically sensible structural interconnection between macroeconomic as well as monetary variables in Iraq. Demonstrating convergence and statistical accuracy, the model confirmed internal consistency and empirical robustness since it was determined in recursive order and estimated by the maximum likelihood method with the Newton-Raphson procedure. The coefficient estimates are a clear depiction of how changes in the monetary policy will impact the economy and the manner in which the impacts will propagate into the system. The coefficients of C(1), C(2), C(3), and C(4) are both significant and high valued, the descriptions of the direct and strong effects of the policy instruments and macroeconomic aggregates on the endogenous variables. To be more exact, the regressions are very robust indicators of the significance of the policy rate and money supply in influencing the direction of the economy and bearing on the magnitude of the nominal and real (C(2) and C(10) are very high). C(18), C(20), and C(21) again reiterate the fact that monetary expansion has had an ongoing and positive effect on aggregate demand, flow of investment and bills by the state, working to the advantage of the Keynesian transmission channel in the aggregate into a demand-shackled and financially constrained economy. The lagged channels also present the fact that the negative and contractionary responses are systematically brought out through the structural coefficients. There are large and substantial negative values on C(26), C(27), and C(28) and the above implies that past monetary tightening or inflation and exchange rate shocks place downward pressures on investment and expenditure components. The findings indicate how the economy is exposed to the external volatility and inflation pressures, which translate into less fiscal space and investment capabilities. Also present in the coefficients are C(36), C(37), C(38) that reflect a deflationary adjustment path, where the monetary authorities react to macroeconomic instability by imposing contractionary actions which reduces inflation and stabilizes the currency. C(9), C(17), C(30), and C(35), all significant and correctly signed, represent effective transmission from inflation and exchange rate dynamics to output, confirming the pass-through effects that characterize open and commodity-dependent economies. These findings underscore the structural vulnerabilities of Iraq's macroeconomic framework, where inflationary and currency shocks translate rapidly into the real economy through reduced purchasing power, investment disincentives, and pressure on fiscal balances. The general model construction confirms the vital role of monetary policy in stabilizing the economy in the short-run and dealing with changes in demand. The fact that most key coefficients are highly significant means GDP, government

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spending and investment show a clear relationship with changes in monetary aggregates and interest rates. Because Iraq's economy depends so much on oil and government spending, it is important that monetary policy targets inflation and that exchange rates are stable, while fiscal management is kept strict. According to SVAR, achieving lasting growth and standing up to shocks depends on strong structural policies, good macroeconomic coordination and having credible policy commitments.

Table 5. *Estimated Structural Matrix (S Matrix) from SVAR Model*

Estimated S matrix:								
0.377193	0.811844	0.188680	0.042066	0.321268	0.642242	-0.022982	0.135563	-0.141977
15.09123	18.65497	-2.016328	-5.766454	-4.732475	-2.405314	7.862950	-2.516384	-4.812376
-0.192999	1.858503	0.459365	0.387643	0.460697	0.329627	0.171050	0.258720	-0.230123
0.205828	1.598248	0.529280	0.354600	0.245423	0.279287	0.029351	0.173056	-0.071450
-1.760220	2.003324	-2.000177	2.840041	5.110199	0.718946	0.248115	0.639738	-1.228741
-0.000292	0.003625	0.004804	0.034674	-0.017208	0.003687	-0.009737	-0.008192	-0.000455
0.068198	0.097522	0.194190	-0.042841	0.028614	-0.002919	0.011499	-0.004821	-0.013086
0.025995	-0.053877	-0.075085	-0.113176	0.034649	-0.018346	0.000409	0.029120	-0.009258
-0.025998	0.003167	-0.025941	-0.101421	0.042586	-0.023552	-0.019810	0.000995	0.014221
Estimated F matrix:								
3.384495	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13.55415	14.84074	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2.478051	2.449898	3.867073	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2.710600	1.221789	1.648647	0.741882	0.000000	0.000000	0.000000	0.000000	0.000000
-2.191187	3.027352	12.45825	-4.309288	1.981942	0.000000	0.000000	0.000000	0.000000
-0.102572	-0.255146	2.204238	-1.370978	-0.243328	-0.803855	0.000000	0.000000	0.000000
-0.038650	-0.758871	2.687095	-1.520678	0.453207	-0.635034	0.133153	0.000000	0.000000
0.989771	-1.249790	3.515324	-3.947682	-0.477569	-2.644470	0.111143	0.172648	0.000000

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-1.081609	-0.512712	0.788246	-0.620646	0.455796	-0.076993	0.004184	-0.035900	0.091556

By taking out the independent structural shocks, the S matrix of the SVAR model captures the current relationships between Iraq's main economic variables. The structure of the matrix explains the initial effect and direction that certain variables have when each is shock with one unit from other variables. In the first row, the policy rate experiences a positive impact from the structural shock which is typically mild and directly moves influences other variables. Out of all the rows, the second one shows the biggest absolute values which reflect extreme responses, especially to monetary shocks in columns one and two (15.09 and 18.65). The clear connection between the fiscal system and money displays that the Iraqi economy is very sensitive to shifts in monetary policy and oil prices. There are more spread-out values in the other rows of the bar chart. We can see in the fifth row that investment, exchange rate and possibly inflation shocks are all involved in strong, mixed interactions, shown by the large values 2.84, 5.11 and –2.00. These findings show that certain nominal variables have a strong effect on real economic indicators which react differently. Because positions are negative such as –1.76 and –1.22, this suggests that investment and output are dampened by monetary tightening or by rising exchange rates. For the final variables, the coefficients are lower, suggesting sometimes the main influence comes later and this is captured by the F matrix. In rows 6 to 9 of s, the size of values suggests that shock absorption might happen more slowly for some variables, possibly related to public expenditures. The economic system is more suitable to an open economy, close relations between monetary and fiscal policies and no automatic stabilizers. The cross-sectoral entries are large so that the shocks in one sector can easily impact the others hence there is need to have international policy coordination. The trend identifies that a strong monetary policy, which controls inflation and collaborative fiscal initiatives can be used to cope with threats and enhance the capacity of the economy to overcome obstacles.

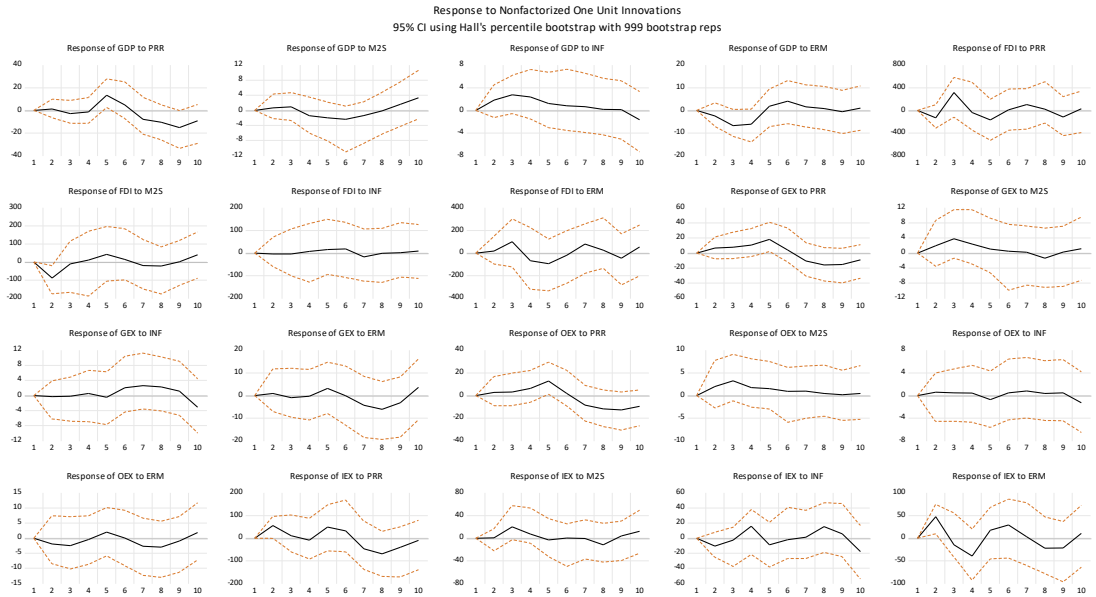

Figure 1. ***Impulse Response of Macroeconomic Variables to Structural Shocks (PRR, M2S, INF, ERM)***

Table 6. ***Impulse Response of Macroeconomic Variables to Structural Shocks (PRR, M2S, INF, ERM)***

Response of GDP:				
Period	PRR	M2S	INF	ERM
1	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	1.163075	0.648781	1.810936	-2.483882
	(17.7596)	(2.58357)	(1.98979)	(7.51356)
3	-2.947717	0.902436	2.760534	-6.752901
	(26.0719)	(3.43112)	(2.95908)	(9.64050)
4	-1.491484	-1.421233	2.381640	-6.151551
	(34.7488)	(5.32196)	(4.63199)	(13.5527)
5	13.42237	-1.972842	1.228586	1.787429

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	(46.8014)	(6.76591)	(5.93214)	(15.9293)
6	4.762637	-2.386604	0.802286	4.052617
	(64.8142)	(9.56293)	(8.23127)	(23.0975)
7	-7.961710	-1.377483	0.644175	1.527152
	(65.1902)	(7.91081)	(7.22243)	(23.8127)
8	-10.57083	-0.137738	0.157345	0.770504
	(65.2045)	(7.85673)	(7.22171)	(21.9321)
9	-15.25016	1.615230	0.144825	-0.649083
	(68.4522)	(9.09485)	(7.95535)	(23.6783)
10	-9.234775	3.309417	-1.666411	1.009227
	(72.3976)	(10.8311)	(9.21355)	(26.1228)
Response of FDI:				
Period	PRR	M2S	INF	ERM
1	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	-131.4901	-87.88058	-4.090671	18.37850
	(10389.2)	(1549.86)	(1079.34)	(3897.45)
3	315.5289	-10.54626	-4.446252	100.4246
	(31089.2)	(4545.81)	(2787.91)	(11546.5)
4	-40.23252	10.83774	6.618967	-67.62640
	(46035.1)	(7040.37)	(4379.99)	(18556.2)
5	-169.1598	42.70709	15.54383	-95.21830
	(36888.5)	(5769.28)	(3786.74)	(13833.2)
6	8.964346	14.33181	18.50668	-19.82194
	(33888.6)	(5178.11)	(3634.34)	(13695.9)
7	103.9112	-19.78945	-17.55806	79.03949
	(33293.6)	(4480.24)	(3377.15)	(12265.0)
8	21.97971	-21.97815	-1.266126	25.68621
	(32710.9)	(4385.36)	(3674.58)	(12497.3)
9	-118.4417	1.730223	1.264300	-45.19271
	(31097.9)	(3892.68)	(3469.48)	(12135.5)
10	27.89784	40.62319	8.809531	54.19038
	(33101.3)	(3797.09)	(3626.54)	(12660.5)
Response of GEX:				
Period	PRR	M2S	INF	ERM
1	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	6.555188	1.922377	-0.297597	0.893747
	(56.0652)	(8.61933)	(5.95812)	(23.1147)
3	7.679227	3.765431	-0.194079	-1.026362
	(78.4191)	(10.1112)	(8.32383)	(28.9884)
4	10.45602	2.378788	0.527301	-0.281535
	(90.7201)	(12.5977)	(11.2236)	(31.2229)
5	17.95841	1.057632	-0.456663	3.105616
	(104.195)	(13.4776)	(12.5580)	(32.3369)
6	4.149584	0.451595	2.061188	-0.186209
	(125.316)	(18.8196)	(15.0144)	(44.3976)
7	-10.42776	0.174348	2.614256	-4.383096
	(121.259)	(15.5632)	(13.0155)	(46.5632)
8	-15.73627	-1.392746	2.245978	-6.145906
	(125.377)	(15.0726)	(12.3255)	(40.6453)
9	-15.42038	0.256542	1.150456	-3.270798
	(135.871)	(16.2904)	(13.1530)	(42.2951)

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10	-9.005447	1.157729	-3.124532	3.584405
	(129.199)	(17.8022)	(13.9722)	(48.5117)
Response of OEX:				
Period	PRR	M2S	INF	ERM
1	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	2.803024	1.974743	0.594766	-1.940887
	(40.7783)	(6.16827)	(4.30898)	(16.6482)
3	3.089985	3.236478	0.452317	-2.483466
	(51.8243)	(6.36376)	(5.47692)	(18.4447)
4	6.295374	1.746561	0.424275	-0.467847
	(51.2107)	(7.09942)	(6.34084)	(17.2306)
5	12.86103	1.531492	-0.735631	2.000150
	(54.6855)	(6.93273)	(6.52097)	(16.8742)
6	1.861317	0.924612	0.476077	0.030634
	(62.8254)	(9.64945)	(7.68728)	(22.6343)
7	-8.491673	0.958814	0.787292	-2.688462
	(61.9682)	(8.02121)	(6.93320)	(24.3205)
8	-11.88657	0.458711	0.346538	-2.997065
	(64.8250)	(7.97146)	(6.55596)	(21.3379)
9	-12.86561	0.143602	0.456680	-0.971250
	(68.7545)	(8.12514)	(7.00398)	(21.3025)
10	-9.614955	0.464270	-1.294546	1.886757
	(66.4701)	(8.78452)	(7.38559)	(24.4854)
Response of IEX:				
Period	PRR	M2S	INF	ERM
1	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	55.84243	0.529290	-10.64900	47.64141
	(613.612)	(92.5153)	(70.6708)	(262.904)
3	11.04132	20.00238	-2.553754	-14.69850
	(1641.49)	(246.903)	(168.387)	(597.678)
4	-8.681859	7.234740	15.75902	-39.39198
	(2151.80)	(235.043)	(208.200)	(794.650)
5	49.50275	-2.993011	-8.918461	17.72906
	(2561.58)	(284.367)	(242.928)	(932.564)
6	32.62027	0.139954	-2.044459	29.34937
	(3411.10)	(390.448)	(320.067)	(1209.29)
7	-47.58704	-0.428468	1.247792	3.087448
	(3047.79)	(309.869)	(256.358)	(1176.81)
8	-69.74104	-11.92691	15.22212	-22.12570
	(2685.50)	(272.035)	(263.671)	(992.847)
9	-40.37766	4.108412	5.840740	-21.70030
	(2945.82)	(324.922)	(285.389)	(1116.52)
10	-9.432544	12.01775	-17.68671	10.39950
	(2976.74)	(393.805)	(326.564)	(1248.37)
Nonfactorized One Unit				
Standard Errors: Bootstrap (999 repetitions)				

The impulse response functions in Figure 1 and Table 6 all provide much information into the dynamic effect of the structural shocks impacted by monetary variables; that is, the policy rate (PRR), money supply (M2S), inflation (INF), and the parallel exchange rate (ERM) on the significat macroeconomic factors in Iraq: GDP, the foreign direct investment (FDI), the government expenditure (GEX), the operating expenditure (OEX), and the investment expenditure (IEX). The responses are followed in one way over ten quarterly time intervals the confidence interval of which is calculated with

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the help of 999 bootstrap replicates. Shocks in policy rate (PRR) lead to some direct and strong impacts on the real macroeconomic indicators. The effect of positive policy rate shock on GDP is positive but at a small scale and a negative scale in the later periods and the effect decreases towards the later periods. This trend has shown the character of the output reduction of the interest, according to the conventional monetary theory. The investment expenditure is highly responsive initially as it reaches its highest stage in period 2 and then oscillates before lowering towards the end. This early positive effect is likely caused by anticipation or delayed contracting, while the subsequent negative effect reflects the holdback effect of increased monetary policy on capital formation. government and operating expenditure also show the same pattern, i.e., a temporary rise then decline that shows an adjustment in the fiscal environment due to the restriction of the financial environment. The money supply solicits shock effects widely on just about any macroeconomic variable. There is a lagged but persistent positive reaction of GDP, and it corresponds to the stimulative effect of monetary expansion in an economy of excess capacity and limits in the availability of liquidity. Responses of FDI are mixed as volatility is observed in the first quarters; however, one can observe robust increases in subsequent quarters, implying better sentiment of investors and improvement in lending and inflow of capital because of the improvement in liquidity and lower uncertainty. Government and operating spending respond positively, which further confirms that raising money helps in creating higher fiscal space and increases in spending by the government. The investment spending is also quite responsive, reflecting the synergy between ease of money and capital formation. The shocks due to inflation (INF) are asymmetric and differ. GDP reacts positively in the short run, which is most probably an effect of nominal rigidities or the short-run Phillips effect, but it drops in the long run. FDI and investment spending display an extreme negative response that proves the negative effects of inflationary uncertainty on investments and the expectations of the investors. The government expenditure also rises along with inflation, which indicates the financial burden of indexation and social transfers, whereas operating expenditure goes the same way and proves again the financial impact of inflation. These tendencies are signs of the failure of the Iraqi economy to have a system of structural deficiency of an inflationary framework control and the absence of nominal anchors. The effects that are created by ERM are huge and enduring in all the variables and this is a pointer to the extreme seriousness of exchange rate stability. In case of depreciation shock the first immediate effect is a decrease in GDP due to the fact that the goods being imported are more expensive and people are not so wealthy. FDI originates with growth that can be as a result of valuation effect and decreases in the long run due to currency risks. The beginning changes in the government and operating expenditures imply that budgetary pressures increase and this decreases the level of money that can be spent by the officials. The expenditure on investments is very much different with a fluctuation in the exchange rates as the costs and prices make a significant influence on this expenditure. As the policy rate increases, the economy becomes smaller unlike raising money supply that boosts the economy and activities of businesses. The inflation complicates the investments which cost more to governments and monetary changes influence various spheres broadening economic disparities. It illustrates the interrelationship between monetary and fiscal measures and makes clear that managing different policies together helps the economy handle uncertainties and thrive.

CONCLUSIONS AND RECOMMENDATIONS:

The empirical findings of this study provide compelling evidence on the structural dynamics and transmission mechanisms of monetary shocks within the Iraqi economy over the period 2004–2023. The use of a Structural Vector Autoregression (SVAR) framework, supported by rigorous stationarity testing and variance decomposition, reveals that Iraq's macroeconomic environment is highly sensitive to monetary and nominal shocks—particularly those originating from changes in the money supply, inflationary pressures, and exchange rate volatility. The results show that monetary policy, while exhibiting short-run influence on key aggregates such as GDP, investment expenditure, and government spending, is constrained in its long-run effectiveness due to the dominance of structural factors, fiscal rigidities, and external vulnerabilities. The impulse response analysis confirms that expansionary monetary shocks, particularly via increased money supply, stimulate output and public spending in the short term. However, inflation shocks consistently generate contractionary effects on investment and real economic activity, highlighting the destabilizing role of price volatility in an oil-dependent and import-intensive economy. Exchange rate shocks further amplify macroeconomic volatility, with persistent effects on public finances and investment behavior, underscoring the critical role of currency management and external sector stability. The analysis of model errors finds that monetary factors are most important in explaining changes in real variables and the model passes the tests for statistical validity. Given what was found, the study recommends that Iraqi authorities unite their macroeconomic policies to improve both the impact of monetary policy and the progress of reforms. The Central Bank should mainly focus on lowering inflation and stabilizing the exchange rate by using clear and effective monetary plans. Besides, using fiscal policy to address economic changes is necessary which means ending reliance on excessive oil revenues. Making the budget more disciplined, using various sources of revenue and spending effectively is required to reduce the economy's risks from external shocks. Similarly, strong regulation, deep legal changes and transparent financial laws encourage influential investors and help the economy endure rising inflation and exchange rate worries. It is important that fiscal and monetary authorities work

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together to avoid shocks in the financial system becoming a lasting issue for the economy. Overall, these conclusions require managers to change their strategy by using research-based and rule-following approaches that successfully address both quick and lasting economic risks.

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