Measuring And Analyzing the Effectiveness of Monetary Policy Tools to Manage the Internal Public Debt Structure in Iraq

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Abstract

The research aims to analyze the relationship between monetary policy tools and the structure of domestic debt in Iraq based on the multiple regression model after testing the stability of the series under study using approved tests based on monthly data (2016-2024). The research reached several conclusions confirming a relationship between the variables. Using the standard method, it became clear that the relationship between the independent variable Policy Price (PP), which expresses the policy rate, the cash reserve variable Monetary Reserves (R), and the dependent variable, remittances discounted from the Central Bank (CBC), is an inverse relationship, i.e. if the value of Policy Price (PP) decreases by (1%), the variable Central Bank Discounted Transfers (CBC) increases by (-.0584246) million dinars. If R decreases by 1%, Central Bank Discounted Transfers (CBC) increases by (-.0323548) million dinars, and the relationship is insignificant. The effect of the open market is positive and insignificant, i.e., if the Open Market (OM) increases by (1%), the value of remittances discounted from the Central Bank increases by (.0019696) million dinars. The relationship between the Policy Price (PP) variable and the cash reserve variable Monetary Reserves (R) with the dependent variable domestic debt TID is an inverse relationship, i.e., if the Policy Price (PP) value decreases by (1%), Total Internal Debt (TID) increases by (-.0186893) million dinars. If Monetary Reserves (R) decreased by 1%, Total Internal Debt (TID) increased by (-.0327224) million dinars, and the relationship is not significant. Accordingly, the study recommends implementing appropriate policies for domestic public debt and adhering to rules that include loan terms and usage. This reduces the debt burden while enhancing effectiveness in projects stimulating investment flows.

Introduction

This study analyzes the interaction between monetary policy and the management of domestic public debt in the context of financial instability characterized by financial vulnerabilities, high risks, and a significant degree of uncertainty regarding future interest rates, exchange rates, and the money supply. To address this issue more effectively, which policymakers understand better, much caution should be exercised regarding the monetary and political implications of the circumstances under which debt management may conflict with financial dominance (Blommestein & Turner, 2012). Against this backdrop, in most economies worldwide, monetary policy plays a fundamental role in regulating banking activities and using monitoring policies to ensure a stable economy for debt management. The monetary authority acts as a supervisor of banking activities and sets regulatory standards. Debt is one of the most critical issues that directly affect the country's economic situation, the living standards of its people, and the future of its current and future generations. Therefore, the process of managing debt in Iraq is of utmost importance. Despite the theoretical and practical debates about the feasibility of resorting to public debt and the discussions about its negative and positive effects, the reality we live in, characterized by financial instability and financial dominance, requires effective management of monetary

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policy to handle public debt. It is considered an important source of public revenue.

Developed and developing countries resort to it equally to finance financial deficits in their public budgets, especially when public revenues are insufficient to cover expenditures. Public debt is understood as the amounts that the state commits to or borrows to finance the deficit in its public budget, with a commitment to repay the debt along with the accrued interest after a period according to the terms of the debt's establishment. Public debt represents the amount of the state's debts to lenders both within and outside the country itself. It is viewed as an accumulated balance rather than a flow. The government is obligated to repay it according to a specific timetable. This repayment constitutes a financial debt that the government must return to the entity from which it borrowed the debt, along with interest, as a commitment. In other words, it balances the government's obligations with different time dimensions (Al-Hamidy, 2013). Governments and central banks are active in most developing economies' sovereign bond markets. Governments issue debts with different maturities to finance the public finance deficit. Central banks issue their securities to finance asset purchases. They also conduct open market operations, which include buying and selling government debt. As a result, the central bank directly influences the mix of short-term and long-term securities held by the public. The actions of debt managers in choosing the structure of their debt maturities can have effects similar to monetary policy. However, debt management decisions are somewhat discretionary and depend on the assessment of market conditions. From this standpoint, decisions related to the unified debt of the official sector are made, and the monetary authority determines the size and structure of the debt maturity that the private sector holds. Given the inability to replace assets over the maturity period, this will usually affect the shape of the yield curve. Regarding a particular trajectory of expected short-term interest rates in the future, and among other complexities, banks' lending behavior may be influenced by the size of their holdings of government bonds on their balance sheets (Filardo et al., n.d.).

The field of study we are addressing holds excellent importance at the level of the Iraqi economy in light of economic developments under the monetary economic policy and the increasing burdens of sovereign debt and its effects on economic activity. Sovereign debts are considered one of the most critical problems and obstacles facing monetary and financial economic policies, affecting their financing and investment decisions. Hence, the study's problem lies in the extent of the impact that the expansion of public debt has on the performance of monetary policy, the effectiveness of monetary policy's response in managing sovereign debts, and their reflections on financial stability in the Iraqi economy. In this context, the study analyzes the effectiveness of monetary policy responses to sovereign debt management under financial dominance. The analysis of the monetary space takes a somewhat direct approach and attempts to interpret the sub-aspects of the formation of domestic debt. In reality, central banks often play the role of the lender of last resort for governments when investors abandon government bonds and shift towards other investments. If it weren't for the intervention of central banks, government bond prices would drop significantly, leading to higher interest rates and embarrassing the government.

The paper was organized as follows. The literature review and explanation of methodological issues discuss the theoretical links between monetary policy and domestic debt structure. Test the direction of the relationship through hypotheses to examine the relationship between economic policy and domestic debt discussion and presentation of the experimental results, as well as a summary of the discussion of the results and the implications for the structure of the debt.

Literature Review

In a study (Implications et al., 2010), it has been established that monetary shocks can substantially impact debt management. This article does a preliminary analysis of the historical impact of monetary policy alterations on the cost of servicing government debt in Barbados. This study will benefit monetary and financial policymakers and those managing government debt.

A study (Zampolli, 2012) showed that the composition of public debt by maturity date has no significance in the standard New Keynesian model of monetary policy. However, central banks have continued to purchase large quantities of government bonds since the beginning of the crisis to support economic activity and halt deflationary pressures since the start of the crisis. The effects of portfolio rebalancing have often justified such moves.

A study (Blommestein & Turner, 2012) emphasized significant financial vulnerabilities arising from prolonged elevated government debt-to-GDP ratios, establishing novel and intricate relationships between public debt management and monetary policy. Despite

the absence of alterations in their statutory mandates, new balance sheet strategies and numerous central banks have further obscured the distinctions between their operations and fiscal policy. Debt management offices typically concentrate on microeconomics, explicitly aiming to decrease long-term borrowing expenses while mitigating repayment risks. It typically circumvents explicit elements of macroeconomic policy. However, specific fundamental policies are intrinsically interconnected. A political framework is necessary for all official activities that influence the composition of public debt held by the public. This necessitates enhanced macroeconomic analysis for the management of government debt.

A study (Singh, 2015) confirmed that debt management aims to raise resources from the market at the lowest cost while containing risks. In contrast, the goal of the monetary authority is to achieve price stability. Effective debt management is essential for preserving the integrity and autonomy of the central bank, promoting openness and responsibility, and enhancing debt management by delegating duties to portfolio managers proficient in contemporary risk management methodologies. In India, debt is administered by the central government, state governments, and the Reserve Bank of India. The debt management chapter aims to concentrate on the administration of assets and liabilities related to government commitments, conduct risk analysis, and assist the government in prioritizing public expenditure by enhancing awareness of interest expenses. This may broaden the investor base and establish a suitable market yield curve. However, following the significant financial recession of 2008, the issue reemerged. In numerous nations, particularly in developed economies, the magnitude of financial transactions was augmented, liabilities were diminished, and GDP ratios experienced substantial growth. The same applies to the topic's sensitivity, particularly for underdeveloped financial markets. The Reserve Bank of India has reevaluated separation and appears reluctant in the present economic climate.

A study (Chen, 2023) indicated a correlation between monetary tightening and the expansion of commercial loans. Using partial data, it was explained that this expansion is driven by the demand for loans to cope with the cyclical fluctuations of financing among large unlisted companies: they are rebalancing towards bank loans and away from corporate bonds, where the spread of bonds over loans is increasing, while it is small for companies that are raising more equity. To justify these results, estimating the heterogeneous factor in the new Keynesian model shows that bank loans are higher and safer than defaultable bonds but are issued at a higher intermediation cost. This means that high-risk small companies disproportionately reduce their investments in response to the rise in interest rates.

The paper (Canofari et al., 2023) examines the effects of external shocks on government debt within an incomplete monetary union. It posits that financial stability is universal and that sovereign debt shocks can be compromised by the vulnerable (peripheral) member states. The model demonstrates that contrary to prevalent belief, active monetary policies do not incentivize peripheral governments to alleviate their financial restrictions. Conversely, these policies promote budgetary discipline by lowering the expenses associated with balance sheet consolidation. Indeed, effective monetary policies partially redistribute stability costs, uphold the union for the collective benefit, and promote fiscal discipline in peripheral regions.

1. The Structure of Domestic Debt:

Internal Public Debt: These are the debts issued by the state in the national currency, with the subscription taking place in the internal market, and they are subscribed to by citizens or residents within the state's territory. The structure of internal debts can be classified according to the creditors into the following categories (https://cbi.iq):

Ministry of Finance Debt: Transfers are issued under the Financial Management and Public Debt Law No. (95) of 2004, which grants the Ministry of Finance the authority to issue treasury transfers, a short-term government debt instrument. These instruments are issued by the Ministry of Finance and sold at auctions under the central bank's supervision, which acts as the ministry's financial agent. Transactions within Iraq occur through an auction process, sold at a pre-determined discounted price and redeemed at its nominal value upon maturity, with government support. The issuance of these payments aims to facilitate the government's borrowing to address a temporary budget deficit.

Loans From Financial Institutions: Borrowing from financial institutions and loans provided by the issuing authority are among the factors influencing the country's monetary development.

Discounted Transfers by The Central Bank: They enjoy high liquidity, as they constitute short-term loans, achieved through the purchase of treasury bonds and

commercial papers at interest rates lower than those of medium- or long-term bonds.

National Bonds: They are financial bonds to obtain cash flow, meaning they are debt instruments that the state resorts to in case of unavailability of financial allocations and cash liquidity when needed for obtaining financing, purchasing, importing, or refinancing due government bonds .

2. Methodology and Data:

This research examines and quantifies the efficacy of monetary policy in managing the internal debt structure amid economic volatility. The dataset comprises a monthly time series of monetary policy instruments and the internal debt structure, with 102 monthly observations from January 2016 to May 2024. The data was sourced from the monthly economic reports published on the Central Bank of Iraq's website, where it was transformed into logarithmic form. This dataset offers a significant resource for the researcher to examine the relationship and address the previously posed research questions. The subsequent hypotheses were established:

Hypothesis $_1$: Monetary policy positively manages domestic debt structure, indicating a statistically significant relationship.

Hypothesis $_2$: There is no statistically significant relationship between monetary policy and domestic debt structure.

The multiple regression model was used with the ordinary least squares method, as it is one of the techniques used in econometrics. The general model of the study is represented in the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + u \ \dots \ (1)$$

Where:

(Y) Dependent variable.

$(X_1, X_2, X_3, \dots X_K)$ Independent variables.

$(\beta_0, \beta_1, \dots \beta_k)$ Model parameters.

(k) Independent variables.

(u) Random variable.

$$TID = \beta_0 + \beta_1 PP + \beta_2 OM + \beta_3 R + u \ \dots \ (2)$$

$$CBD = \beta_0 + \beta_1 PP + \beta_2 OM + \beta_3 R + u \ \dots \ (3)$$

$$FIL = \beta_0 + \beta_1 PP + \beta_2 OM + \beta_3 R + u \ \dots \ (4)$$

$$MFD = \beta_0 + \beta_1 PP + \beta_2 OM + \beta_3 R + u \ \dots \ (5)$$

$$BD = \beta_0 + \beta_1 PP + \beta_2 OM + \beta_3 R + u \ \dots \ (6)$$

Open Market (OM): The process of buying and selling securities in the open market by the central bank. It is a primary tool the central bank uses in implementing monetary policy (Cabanilla et al., 2023).

Monetary Reserves (R): Monetary reserves represent large quantities of currencies held by central banks and financial institutions for meeting investment, import, transaction, and external debt service obligations, as well as controlling the exchange rate of the national currency locally. Goods and services are usually valued based on the central bank's monetary reserves (Maccarthy, 2016).

Policy Price (PP): It plays an essential role in the design and implementation of monetary policy, and it is the interest rate imposed by the central bank on loans granted to commercial banks. There is a broad consensus among economists that central banks do not understand interest rate determination well. In particular, in the sense that they appear more divergent than justified by economic fundamentals, and if these excessive fluctuations are significant enough, they could reduce the informational content related to interest rates and make them of little value for the variables by weakening the correlation between them. Excessive fluctuations could make it more difficult for the central bank, thereby complicating the conduct of monetary policy (Gerlach, 2011).

Total Internal Debt (TID): When the government borrows from natural or legal persons within the country, regardless of their nationalities, this is a debt and represents the total debts owed by the government and public bodies and institutions towards the national economy. In other words, borrowing is internal when the state issues internal loan bonds in its national currency, and citizens and residents of the country, individuals, or other financial institutions subscribe to them. Internal borrowing requires citizens' confidence and the state's ability to achieve financial stability internally and avoid economic crises (Panizza, 2008). The structure of the internal debt includes the details below:

Central Bank Discounted Transfers (CBD): Discounted transfers constitute the second category of assets and possess a significant level of liquidity, as they represent short-term loans. This is achieved through acquiring treasury bills and commercial papers, which inherently offer lower interest rates than medium- or long-term securities (https://cbi.iq).

Financial Institution Loans (FIL): The financial institution is an integral component of the financial system, delivering essential services to the community for daily operations and economic development. The financial system comprises a network of financial institutions, intermediaries, entrepreneurs, and individuals, together with the components that engage in and govern its operations according to established rules and legislation. The primary role of financial institutions within this system is to facilitate the transfer of funds from lenders to borrowers or entities with a financial surplus to those with a deficit, thereby connecting capital providers and seekers, as well as through intermediary financial institutions such as banks and finance companies.

Ministry of Finance Debt (MFD): In numerous emerging nations, the central bank operates in conjunction with the Ministry of Finance within the sovereign bond market. The government issues bonds with varying maturities to fund the budget deficit. The central bank borrows to mitigate excess liquidity, sterilize surplus foreign currency acquisitions in non-oil nations, or procure foreign currency from the government in oil-exporting countries. Central banks participate in open market activities, encompassing the purchase and sale of government securities. Consequently, both the central bank and the government affect the composition of debt instruments based on the maturities possessed by the public. Short-term government debt may be regarded as a substitute for currency, and financial institutions frequently allocate their excess reserves to acquire short-term government securities. They are readily liquid and devoid of danger, possessing currency attributes. Consequently, when banks see a more advantageous chance in the market, they forsake the current one. Consequently, short-term official borrowing instruments are regarded as the most suitable for monetary policy, as they facilitate liquidity control through their purchase and sale (Saleh , et al , 2019).

National Bonds (BD): A debt-based venture wherein one lends capital to a government in return for a pre-determined interest rate. Governments utilize them to generate capital for infrastructure or new initiatives, while investors employ them to obtain fixed returns disbursed at regular periods (https://cbi.iq).

3. Results and Discussion:

a. Unit Root Test: Before starting the statistical estimation of the model, it is necessary to test the stability of the time series, as relying on unstable variables gives misleading results, and the relationship between these variables is not real, which is called misleading or false regression (Damodar Gujarati, 2015). The unit root test for stability, the Augmented Dickey-Fuller Test, was used to verify the suitability of the data for applying the model. The stationarity of the model variables was verified. The integration rank of each variable was determined separately by the unit root test for stability to examine the properties of the time series for all variables during the period under study, verify the extent of their stationarity, and determine the integration rank of each variable separately. When interpreting the results of the extended Dickey-Fuller test, presented in Table 1, it becomes clear that for all variables included in the model, since the estimated absolute calculated value of the test is smaller than the absolute table value, the unit root hypothesis cannot be rejected, i.e., the series is not stationary at the level except for the variable (OM), which is stationary at the level. Therefore, the stationarity of the first difference of the series was tested, and its value was more significant than the table value for the variables (PP, R, TID, CBD, FIL, MFD, BD), i.e., those time series are stationary at the first difference I_1.

Table 1: Augmented Dickey-Fuller (ADF) Unit Root Test of The Model

		At level			1st difference		
		None	**Intercept**	**Trend & Intercept**	**None**	**Intercept**	**Trend & Intercept**
	PP	0.9119	0.8823	0.3491	0.0000	0.0000	0.0000
	OM	0.0019	0.0060	0.0001	-	-	-
	R	0.9984	0.9803	0.9637	0.0000	0.0000	0.0000
	TID	0.9294	0.8651	0.3933	0.0005	0.0034	0.0000

Prob	CBD	0.8040	0.8878	0.1987	0.0010	0.0067	0.0000
5%	FIL	0.6986	0.6690	0.1285	0.0000	0.0000	0.0000
	MFD	0.7960	0.1757	0.1918	0.0000	0.0000	0.0000
	BD	0.6772	0.7854	0.1182	0.0000	0.0000	0.0000

Source: Extracted from Stata$_{17}$ output.

b. Estimation and Analysis of The Relationship Between Variables:

Table 2 shows the estimation of the relationship between the dependent and independent variables through multiple regression estimation. Through the analysis, we find that the explanatory power of the models, which appears in the value of the coefficient of determination (R2) as is evident in the value of the model (TID), which is 0.57, means that about 57% of the domestic debt is explained by the independent variables. The remaining 43% is due to variables outside the model.

The explanatory power of the (CBD) model reached 0.56, meaning that the quantitative monetary policy tools explain 56% of the changes in the remittances discounted by the central bank. The remaining 44% is due to variables outside the model.

As for the (FIL) model, the explanatory power reached 42% for the independent variables, and the remaining 58% is due to variables outside the model. While the explanation coefficient R2 was 0.64 for the (MFD) model, the value of the coefficient of determination indicates that the explanatory power of the model is somewhat high as the independent variables together explain about 64% of the changes that occur in the Ministry of Finance's indebtedness and the remaining 36% is explained by random error.

It was 0.23 in the (BD) national bonds model, which means that the explanatory factors, monetary policy instruments, explain 23% of the changes in the dependent variable national bonds, and the remaining 77% is due to random factors not formulated in the estimated model. As for the significance of the model, it is significant considering prob(f) as it is less than 0.05 at a 95% confidence level for all models. It is noted that the policy rate and the cash reserve have an insignificant effect on the domestic public debt (TID), that the relationship between them is inverse, and that the impact of the open market is positive and insignificant, i.e., if the open market increases by (1%), the domestic debt increases by (.0026223) million dinars and this applies to what is stated in the study hypothesis, which is that monetary policy has a positive effect on the management of the domestic debt structure in Iraq. The results indicate that the relationship between the independent variable PP, which expresses the policy rate, the cash reserve variable R, and the dependent variable domestic debt TID is an inverse relationship, i.e., if the value of PP decreases by (1%), the dependent variable increases by (-.0186893) million dinars. If R decreases by 1%, TID increases by (-.0327224) million dinars, and the relationship is insignificant. The results indicate that the relationship between the independent variable PP, which represents the policy rate, the cash reserve variable R, and the dependent variable, remittances discounted by the central bank CBC, is an inverse relationship, i.e., if the value of PP decreases by (1%), the dependent variable increases by (-.0584246) million dinars. If R decreases by 1%, CBC increases by (-.0323548) million dinars, and the relationship is insignificant. The effect of the open market is positive and insignificant, i.e., if the open market increases by (1%), the value of remittances discounted by the central bank increases by (.0019696) million dinars.

The results indicate that the relationship of the FIL model between the independent variable OM, the PP variable, and the dependent variable FIL is a direct relationship, i.e., if the value of PP increases by (1%), the dependent variable, financial institutions' loans, increases by (.0303093) million dinars. If OM increases by 1%, FIL increases by (.0119508) million dinars, and their relationship is insignificant. The effect of the cash reserve is inverse and insignificant, i.e., if it decreases by (1%), financial institutions' loans increase by (-.1084209) million dinars. The results of the MFD model showed that the relationship between the monetary policy variables (OM, R) is an inverse and insignificant relationship with the dependent variable, which is the debt of the Ministry of Finance. The relationship is positive with the policy rate variable (pp), so if it increases by 1%, the debt of the Ministry of Finance increases by (.0173366) million dinars. The results indicate that the relationship between the independent variable PP, which represents the policy rate, the open market variable OM, and the national bond variable BD, is an inverse relationship, i.e., if the value of PP decreases by (1%), the dependent variable

increases by (-.060823) million dinars. If OM decreases by 1%, BD increases by (-.0033933) million dinars, and the relationship is insignificant. As for the monetary policy variable R, the relationship is positive; if it increases by 1%, BD increases by (.129995) million dinars. Based on the measurement results shown above, it is possible to judge the study hypothesis, which states that monetary policy plays a positive role in managing sovereign debts, indicating a statistically significant relationship. This hypothesis is acceptable regarding some monetary policy variables and their impact on the dependent variables.

Table 2: Estimators of the model

Equation	Obs	Parms	RMSE	"R-sq"	F	P>F
D_TID	102	4	8722487	0.5734	43.90992	0.0000
D_CBD	102	4	9172654	0.5673	42.83615	0.0000
D_FIL	102	4	2158511	0.4260	24.24854	0.0000
D_MFD	102	4	212634.2	0.6462	59.67489	0.0000
D_BD	102	4	991211.4	0.2372	10.15698	0.0000

	Coefficient	Std. err.	t	P>|t|	[95% conf. interval]	
TID						
PPD1.	-.0186893	.0485131	-0.39	0.701	-.114962	.0775833
OM	.0026223	.0088938	0.29	0.769	-.0150272	.0202718
R D1.	-.0327224	.0588243	-0.56	0.579	-.1494572	.0840125
__cons	.0468181	.0666046	0.70	0.484	-.0853735	.1790097
CBD						
PPD1.	-.0584246	.086208	-0.68	0.500	-.2295016	.1126525
OM	.0019696	.0158044	0.12	0.901	-.0293937	.0333329
R D1.	-.0323548	.1045311	-0.31	0.758	-.2397933	.1750837
_cons	.0136449	.1178498	0.12	0.908	-.2202543	.2475441
FIL						
PPD1.	.0303093	.0780192	0.39	0.698	-.1245172	.1851358
OM	.0119508	.0143031	0.84	0.405	-.0164333	.0403349
R D1.	-.1084209	.0946017	-1.15	0.255	-.2961549	.0793131
_cons	-.0157297	.1110046	-0.14	0.888	-.2360431	.2045838
MFD						
PPD1.	.0173366	.0511541	0.34	0.735	-.084177	.1188502
OM	-.0064619	.009378	-0.69	0.492	-.0250722	.0121484

R D1.	-.0579471	.0620266	-0.93	0.352	-.1810368	.0651427
_cons	.0502302	.0716919	0.70	0.485	-.0920584	.1925188
BD						
PPD1.	-.060823	.4175997	-0.15	0.884	-.8895361	.7678901
OM	-.0033933	.0765579	-0.04	0.965	-.15532	.1485333
R D1.	.129995	.5063582	0.26	0.798	-.8748564	1.134846
_cons	.836011	.5755804	1.45	0.150	-.3063567	1.978379

Source: Extracted from Stata$_{17}$ output

c. Model Quality Test: To verify the quality of the models, there are several tests through which it is possible to detect the absence or containment of standard problems in the model, such as the problem of autocorrelation instability of variance homogeneity. The data in Table 3 indicate no standard issues in the standard model. Tests were conducted to examine the problem of variance difference, namely: (Breusch-Pagan-Godfrey) and the (RESET) test. The results indicated that the probability value of the tests was more significant than 5%. Thus, this suggests that the model does not suffer from the problem of variance difference or description error. The table indicates that the probability value of the (Breusch–Godfrey LM test) is greater than 5%. Therefore, there is no problem with the autocorrelation of the residuals since the value of (Chi square) reached about (0.2599), which is greater than the significance level (5%). Thus, the estimated model does not suffer from the problem of serial correlation between the residuals. Hence, we accept the null hypothesis and reject the alternative hypothesis that states the problem's existence.

Table 3: Model Quality Test of the Model

Source	SS	df	MS	Number of obs		= 98
Model	5.8526	4	1.9509	F (3, 94)		= 1.15
Residual	1.5921	94	1.6937	Prob > F		= 0.3324
				R-squared		= 0.1366
Total	1.4447	98	1.6446	Adj R-squared		= 0.1091
				Root MSE		= 4.1e+05

Residual term	Coefficient	Std. err.	t	P>|t|	[95% conf. interval]	
residual_term L1.	.0320213	.1015001	0.32	0.753	-.1695096	.2335521
L2.	.0643243	.1069798	0.60	0.549	-.1480867	.2767352
L3.	-.1895561	.1068624	-1.77	0.079	-.4017339	.0226216
__cons	4715.465	41601.47	0.11	0.910	-77885.22	87316.15

Parameters	Test values
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity	chi2(1) = 0.87
Variable: Fitted values of residual_term	Prob > chi2 = 0.3520
Ramsey RESET test for omitted variables	F(3, 91) = 0.68
Omitted: Powers of fitted values of residual_term	Prob > F = 0.5680

Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	1.269	1	0.2599

Durbin–Watson d-statistic	(4, 98) = 2.113405

Source: Extracted from Stata$_{17}$ output.

Results and Recommendations:

❖ Results:

Accepting the research hypothesis, which states that there is a statistically significant relationship between monetary policy tools and the structure of domestic debt during the period from January 2016 to May 2024, based on the standard analysis of the models using multiple regression, where they were estimated using the ordinary least squares method. The research concluded that the results of both the applied framework and the standard model are identical and that the hypothesis is acceptable.

The statistical results (ADF) showed that all research variables are stable at the first difference, except for the open market variable (OM), which is stable at the level.

The results of (Breusch-Pagan-Godfrey) and (RESET) tests indicated that the model does not suffer from the problem of heterogeneity instability and the problem of description error.

The coefficient of determination, R^2, for the MFD model, was 0.64, indicating that the independent variables explain about 64% of the Ministry of Finance's debt changes. In comparison, the remaining 36% is attributed to random error.

The results show that the relationship between the independent variable PP, which denotes the policy rate, the open market variable OM, and the national bond variable BD is an inverse relationship.

Addressing the domestic debt requires reviving the economy by developing and diversifying the productive base. The roles of banks are significant in monetary operations and policies. This study has shown the interaction between domestic debt indicators and monetary policy instruments.

From this perspective, the central bank should include interest rates on new government issues in its liquidity management strategy. In this context, investment in government debt instruments depends on estimates of future interest rates.

❖ Recommendations:

Implementing appropriate domestic public debt policies requires adherence to rules, including the terms and use of loans. This reduces the debt burden while enhancing efficiency in projects that stimulate investment flows.

Reducing the dependence on imports in the Iraqi economy is essential, as this may lead to a trade deficit, which subsequently requires financing through domestic debt.

Maintaining awareness of domestic public debt by coordinating fiscal and monetary policy while monitoring the government's efforts to enhance financial performance by improving the efficiency of financial institutions.

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