

أثر السياسة النقدية على تمويل المشاريع الصغيرة في العراق للمدة 2004-2023

Impact of Monetary policy on Financing Small Projects in Iraq for the period (2004 - 2023)

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المستخلص:

تلعب المشروعات الصغيرة أدورا حيوية في الاقتصاد والتي عادةً ما تكون مفيدة في تحقيق أهداف الاقتصاد الكلي. وقد اجتذب هذا اهتمام السلطة النقدية لوضع سياسات لتعزيز البيئة المواتية للمشروعات الصغيرة لتزدهر. لذلك تبحث هذه الدراسة بشكل تجريبي في تأثير السياسة النقدية على تمويل المشروعات الصغيرة في العراق والتي تمتد من عام 2004 إلى عام 2023. وقد خضعت بيانات السلاسل الزمنية لاختبار جذر الوحدة للتأكد من ثبات المتغيرات وبعد ذلك. وأظهرت نتائج ARDL وجود علاقة توازنه طويلة الاجل بين مؤشرات السلطة النقدية وتمويل المشروعات الصغيرة في الاقتصاد العراقي. وكشفت النتيجة أن سعر الفائدة له تأثير إيجابي على تمويل المشروعات الصغيرة. ومن ناحية أخرى، وجد أن معدل التضخم له تأثير ولكن سلبي على تمويل المشروعات الصغيرة. تبين أن عرض النقود وسعر الصرف لهما أهمية في التأثير على تمويل المشروعات الصغيرة. وبناء على هذه النتائج توصي الدراسة بضرورة إعطاء السلطة النقدية دورا واهمية أكبر للمشروعات الصغيرة في القطاعات المختلفة من خلال إنشاء صناديق للتمويل خاصة من خلال المؤسسات المالية المختلفة لمنح أسعار فائدة منخفضة. وهذا سيعزز نمو الأعمال وبالتالي تحقيق أهداف الاقتصاد الكلي.

Abstract:

Small Projects play vital roles in the economy, which are usually useful in achieving macroeconomic objectives. The research problem arises by asking how the relationship between the monetary authority and banks as a donor and Small Projects as a recipient can be organized and the nature of the relationship between them. The research aims to address the role of monetary policy in financing Small Projects. Therefore, this study empirically examines the impact of monetary policy on financing small enterprises in Iraq, which extends from 2004 to 2023. The time series data were subjected to the unit root test to ensure the stability of variables. The results of ARDL showed a long-term equilibrium relationship between the indicators of the monetary authority and financing Small Projects in the Iraqi economy. The result revealed that the interest rate has a positive effect on financing small enterprises. On the other hand, it was found that the inflation rate has an effect, but negatively, on financing Small Projects. It was found

that the money supply and the exchange rate are important in influencing financing Small Projects. Based on these results, the study recommends that the monetary authority should give greater role and importance to small projects in different sectors by establishing financing funds, especially through different financial institutions, to provide low interest rates. This will enhance business growth and thus achieve the macroeconomic objectives.

1 .Introduction:

Small projects have a great importance, whether at the individual or institutional level, by investors or at the level of decision-makers, due to their positive impact on economic activity. However, these projects face many challenges, most notably the financial challenges of providing financing sources that help enhance the size of capital and develop these projects. Bank financing for small projects has been hindered by difficulties on both the supply and demand sides, which requires the need to diversify financing tools when lending to this sector. These challenges may be clear with regard to financing small projects, as most of these projects depend on internal financing, and the Central Bank's financing of these projects represents one of the aspects that enhance small projects. Because these small projects have a distinguished position within the priorities of economic and social development, as they can be a means of economic growth and increasing employment opportunities. These projects are characterized by low capital, wages, and production capacity, in addition to relying on local raw materials and the ability to spread geographically. Government funding sources are among the most important sources of financing small projects, especially in the case of adopting a comprehensive national plan in the field of establishing and developing these projects as a method and means of employing the workforce, i.e. as a strategy approved by the state for their development, i.e. in other words, creating an incentive for members of society to undertake the investment process and enter the field of establishing various projects on a wide scale. It is possible to refer to the (Harrod-Domar) model in that the accumulation of capital plays a dual role in investment, as it generates income and at the same time increases production capacity and thus the process of capital accumulation. This requires resorting to the known financing methods in the financing process, which are divided into (governmental commercial banks, relevant ministries, specialized banks). These governmental financing bodies can provide the necessary financing to establish small projects according to specific standards and conditions that business owners can resort to (Khalaf, 2004). The financial systems of

the countries of the world are among the factors that have a major impact on the development and stimulation of small projects and strengthening their position in the field of competitiveness. In developing countries, the issue of financing has always been considered one of the obstacles facing small projects due to weak personal savings and the backwardness of the banking sector. In addition, the process of distributing capital at the global level is unfair among the countries of the world. The capital used is one of the most important requirements for carrying out small projects, as it gives permission to start the construction process and the continuity of operation. The issue of financing is one of the most important issues facing the investment process in these projects, despite their small size requiring a relatively small capital investment. Accordingly, and given the importance of this sector and the recent experience of Iraq in the field of financing small projects through various sources of financing, we attempt to clarify how monetary policy affects financing policies, which are among the factors for the success of these projects. Hence the need to develop recommendations and find appropriate solutions to address the obstacles that limit the success of small projects in Iraq. Despite the increasing interest in small projects at all global levels, at the local level we have not found the interest that is commensurate with their importance and they still suffer from chronic problems, including financing, although they are a lifeline to solve many problems. The role of small projects is indispensable in the comprehensive economic development of each country, especially for developing countries such as Iraq. Because these projects are labor-intensive with a short production period, they are able to increase national income as well as rapid employment. The Central Bank of Iraq has already provided many programs for the prosperity and expansion of small projects, as the refinancing plan financed by the bank has been facilitated to develop small projects. The importance of the research comes from the importance of the economic and social impact of small projects as the most important pillars of the economies of developing countries.

2 .Literature Review: The financing problem in general is considered one of the most prominent problems facing small projects, especially in the start-up phase, as they often rely on their own resources or family loans in their activity, as obtaining bank loans requires the availability of the necessary guarantees in addition to the necessity of a feasibility study for the project, which is rarely available. Some studies prepared by the World Bank have shown that financial institutions did not provide small projects

in developing countries with more than 1% of their needs, as they prefer to finance larger, more profitable projects that are characterized by a good reputation and financial solvency, in order to ensure that the borrowing conditions are met and sufficient guarantees are provided(Rashwan, 2022). Multiple methods are frequently used within the scope of economic policy to assess the state of the economy and establish objectives in order to accomplish particular goals. One of these policies is monetary policy, as the Central Bank of Iraq has launched an initiative to enhance and support financing for small projects. The Central Bank has launched several lending initiatives, including small projects Financing Initiative with a total amount of 15 trillion dinars to improve the reality of projects, increase their competitive capabilities and achieve the required goals(Central Bank, 2022). To expand and generate a respectable revenue and profit, small projects of all sizes require the right funding and managerial expertise. Small project development has emerged an important component of equal social and economic development, employment opportunities, and the advancement of impoverished and underprivileged areas. These projects also need financing throughout their life cycles, starting with the establishment and launch of the project, and during its development, growth and modernization, not to mention their need for financing in the areas of research, training, market monitoring and keeping pace with production developments, in addition to cases in which the project is exposed to any exceptional event (Ali, 2010). Monetary policy strategies include monetary targeting, interest rate targeting, inflation targeting and exchange rate targeting. Therefore, the monetary policy variables adopted for this are money supply, interest rate, inflation rate and exchange rate. Small projects are considered one of the important trends adopted by developed countries or developing, and achieved through it a remarkable development and improvement in its economic performance and treatment of unemployment problems and increased income levels and state resources. Small and medium enterprises are viewed as those projects that specialize in specific activities and are characterized by small labor and capital, in addition to the fact that the ownership of these projects is by one or more persons, so they rely on different forms of financing methods in order to practice their operational activities. We also find that the method of managing small projects depends primarily on the role of the project owner, his skills, efficiency, and experience in dealing with work procedures, and marketing his services and products, so countries have

created what are called small project incubators to provide the necessary technical and administrative facilities and support to support the project at the beginning of its operation and work on its success (Bin Abdullah et al., 2019). Small projects play a role in influencing the creation of many job opportunities, increasing savings, supporting exports, and achieving economic development, in addition to feeding large industries. In addition, small projects contribute effectively to playing a role in many goals that serve the economies of countries and form a broad base of skilled workers, attract savings, support exports, achieve integrated industrial development, and improve productivity (Page et al., 2017). From another perspective, (Kanjo, 2010) (Kurt, 2016) (Yue,et.al, 2017) address the issue of financing small projects through the method of borrowing from financing institutions, which may be in the form of commercial or governmental banks or specialized financing institutions. In this type of financing, the project owner borrows from individuals or institutions and signs a pledge to repay this borrowed money in addition to interest on this borrowed amount. The borrowed amount is repaid within a specific period agreed upon with the financing provider. The financing providers also play an important role in providing success factors for small projects in the form of support for expertise (or marketing) in addition to their role in the method of granting loans in terms of conditions, guarantees and seriousness of the project, as these guarantees are represented in providing certificates and documents about the project owner and partners, or documents related to an economic feasibility study for the project, in addition to signing payment documents and checks and committing to repay the periodic installments of the loan at the agreed time (Knemish, 2017). In order to clarify the new situation of these projects in light of the application of the standard and to demonstrate the extent of its impact on ensuring the continuity of their role in achieving sustainable development in all its dimensions, this study(Saad et al., 2022)examined the impact of the interactive relationship between the first independent variable, the International Financial Reporting Standard(IFRS 9), and the second independent variable, the Central Bank's policies. The study's goal was to show the extent of their impact on the dependent variable, which is the role of small and micro enterprises in achieving sustainable development. The study recommended the importance of the banking sector applying the expected credit loss model in order to accurately assess credit risks and thus raise security rates and avoid default. The Central Bank of Egypt must

also issue many initiatives to provide the necessary financing and address the bad debts of these projects to achieve sustainable development. (D, 2016) investigated how commercial bank lending helped SMEs in Nigeria expand. According to the results of the study, which used cointegration and error correction procedures, the lending rate and exchange rate are statistically relevant for SME credit. Additionally, it was discovered that while the inflation rate is noteworthy, it has a negative impact on SME lending. He believed that commercial banks should make it simple for SMEs to obtain financing. The monetary authority should make sure that commercial banks lend to SMEs at the lowest possible rate in order to accomplish this. It is not advisable to promote the devaluation of the national currency since it raises the price of capital goods and imported raw materials that SMEs need. Olaniun et al. (2021) examine the impact of monetary policy on Nigerian SMEs from 1991 to 2020. The study demonstrates how the relative output of SMEs to GDP is influenced by monetary policy factors as interest rates, money supply, and inflation rates. The estimator incorporates additional control variables, such as the secondary school enrollment rate and gross fixed capital formation, to represent labor and capital, respectively, in accordance with theoretical concerns. The outcome demonstrates that a long-term relationship between the SMEGDP factors under study is established by Johansen cointegration. The study concludes that while the inflation rate has a negative but negligible effect on output, the money supply and interest rate, respectively, have a large positive and negative impact on SME output. Interest rates are larger and more significant than the money supply. The report suggests that efforts to advance macroeconomic stability and SMEs should be supported by the discretionary application of monetary policy. Ferrando et al. (2021) investigated how small projects' financing practices during the Eurozone financial crisis were affected by sovereign stress and unconventional monetary policy. They discovered that following the crisis, businesses in high-stress nations used more debt securities and were initially more vulnerable to credit rationing, both in terms of quantity and price. They also discovered proof that the percentage of businesses restricting credit and businesses whose applications were discouraged immediately decreased when the ECB announced its OMT initiative. Additionally, businesses used less government-backed loans, trade credit, and debt securities. Easy access to borrowing was especially likely to help businesses with better credit records and future prospects. The study (Isola

& Mesagan, 2018) examined how monetary policy affected the performance of SMEs in Nigeria, Ghana, and The Gambia, three West African nations, between 1981 and 2016. SME output served as the dependent variable, and explanatory factors were private sector credit, interest rates, inflation rates, and exchange rates. SME output was found to be negatively impacted by private sector credit, interest rates, and inflation rates, while SME output was negatively impacted by exchange rates, interest rates, and rates during the period. The exchange rate had a favorable effect on SME output in The Gambia, whereas the interest rate was the only monetary policy indicator that directly affected SME performance in Ghana. Banks must provide more assistance to SMEs in order to boost the real economy and address the issues of project financing and lending (Jiang & Ruan, 2023). In June 2020, the People's Bank of China unveiled two direct monetary policy measures that are crucial for resolving financing issues for SMEs, enhancing the financial framework that supports the real economy, and encouraging economic development to rebound. This study uses the twofold difference model and the moderate impact model to empirically examine the consequences of applying direct monetary policy instruments. It does this by gathering annual data on the loan balances of SMEs of listed commercial banks in China from 2011 to 2021. It uses the double difference model and the moderate effect model to empirically examine the results of putting direct monetary policy tools into practice. The study's findings suggest that using direct monetary policy measures can boost commercial banks' lending to SMEs. Currently, there is no statistically significant moderating effect of inclusive digital finance on the influence of direct monetary policy on the loan supply of SMEs. Thus, a system for the sustainable growth of inclusive digital finance must be established, business operations must be guided, and the transmission mechanism of structural monetary policy must be improved. For the purpose of using structural monetary policy instruments, banks must increase their profitability and capital strength. By examining the experience of private banks in the Iraqi context through the creation of the Iraqi Company for Financing Small and Medium Enterprises and what it has accomplished in terms of increasing the volume of loans and the number of projects to achieve the desired goals, the study (Hamdan & Yaaqoob, 2018) addressed venture capital financing as one of the Islamic banking financial tools, which is one of the recent developments in the banking industry. The future vision envisions the integration of the Islamic

banking system in the Iraqi environment to finance small and medium-sized projects. In order to determine the extent to which venture capital is an effective approach for enhancing the role of small and medium-sized firms in supporting the national economy, the research problem is presented. The main recommendation of the research is to try to establish an institutional Islamic banking system based on financing participation at the national level. These banks should be supervised by an Islamic institution that handles its financial affairs while taking into consideration more efficient Islamic financing formulas. The literature review method is used in this research study (Pokhrel, 2024). The findings demonstrate that lowering lending rates and managing inflation produce advantageous circumstances that encourage MSMEs to develop and grow their enterprises. The sales and service sectors of MSMEs profit from price stability brought about by solid monetary policy, which preserves or boosts consumer purchasing power. The entire influence of monetary policy on MSMEs is, however, constrained by issues such as unstable currency exchange rates and restricted access to loan sources, particularly in the event of unforeseen policy changes that could cause MSME operations to become unstable. SMEs are a priority for the transmission of monetary policy to the real economy because they make up two-thirds of employment in the euro area, according to Finnegan & Kapoor (2023). Following the sovereign debt crisis, SMEs in Europe faced a loan crunch. In order to foster stronger economic development and higher inflation, the European Central Bank implemented unconventional monetary policy from 2014 to 2019 in an effort to repair financing conditions in the euro region. In the nations most impacted by the crisis—Greece, Ireland, Italy, Portugal, and Spain—the relationship between monetary policy and SME access to financing was investigated using the ECB/EC Survey on Corporate Access to Finance. We show that the implementation of the UMP increases the likelihood that firms with high debt-to-asset ratios will remain credit-constrained in stressed countries, although this effect becomes small in non-stressed countries. Our findings suggest that monetary policy is transmitted unevenly to leveraged SMEs across jurisdictions. In addition, we find little evidence that risky firms are credit constrained during UMP periods, when risk is measured from the firm's own perspective. However, our heterogeneous analysis shows that smaller, younger firms, which are also riskier, remain credit constrained during this period. Policy should ensure that UMP access reaches SMEs regardless of

their size, age, or location. Leveraged SMEs in credit-stressed countries are likely to remain credit constrained even when monetary policy is expansionary. Policy should do more to support small and younger firms' access to credit to facilitate increased investment and growth.

3. Research methodology and data:

3.1 Problem of the Research: The research problem is highlighted by the following research questions: How can policies and procedures be activated towards financing the development of small projects? How can the relationship between the monetary authority and banks as a donor and small projects as a recipient be organized and the nature of the relationship between them? What is the size and role of the monetary authority in financing small projects?

3.2 Objectives of the Research: The research aims to address the role of monetary policy in financing small projects in Iraq.

3.3 Research Hypothesis: Hypotheses of this research based on the problem and the goal he seeks to achieve to study the subject of the impact of monetary policy on financing small projects in Iraq during the period 2004 - 2023. This data was obtained from the economic reports published by the website of the Central Bank of Iraq and the Iraqi Ministry of Planning. Statistical aggregates provide this data with a valuable set of information for the researcher to analyze the relationship and answer the research problem, and to verify the significance of the following assumptions to determine the statistical correlations between the independent and dependent variables:

H₁: There is positive correlation between raising M2 liquidity and the provision of financing for small projects.

H₂: Exchange rate fluctuations negatively affect the ability of projects to obtain financing.

H₃: Interest rates and the quantity of funding given to small ventures are negatively correlated.

H₄: High inflation negatively affects the financing available to small projects.

4.1 Model Description:

Independent variables: Explanatory variables include broad money supply (MS₂), exchange rate (ER), interest rate (IR), inflation (INF).

Dependent variable: microenterprise financing (AF).

Broad Money Supply (MS₂): When the broad money supply in the economy increases, more liquidity is available to banks and financial

institutions, which provides greater opportunities for financing small projects. However, if the increase in money supply is not well thought out, it may lead to inflation that negatively affects the cost of financing.

Exchange Rate (ER): Exchange rate stability enhances investor confidence and contributes to providing easy financing for small projects, especially if they depend on importing equipment or raw materials. On the other hand, exchange rate fluctuations lead to increased risks for borrowers and may raise the cost of financing.

Interest Rate (IR): The interest rate represents the cost of borrowing, so its increase reduces the ability of small projects to obtain financing, while its decrease encourages borrowing and investment. In Iraq, interest rate policies reflect the general economic environment and the monetary policy implemented by the government and the central bank.

Inflation Rate (INF): High inflation negatively affects financing small projects by raising the cost of financing (real interest) and reducing the purchasing power of profits. Conversely, in an environment of stable inflation, small businesses can thrive as prices remain stable and costs remain stable. Pesaran's autoregressive distributed lag model (ARDL) was employed in the study to examine how monetary policy affected the funding of minor projects in Iraq. Since the explanatory economic factors under study take time to affect the dependent variable distributed between the short and long term, the ARDL test (Alabdulrazag & Alrajhi, 2016) can be used. The ARDL model also accounts for the time lag of the lag gap, and the explanatory variables are distributed over time periods that the ARDL model integrates into a number of distributed lags within limits (parameters) that correspond to the number of explanatory variables. The general model of the study is represented by the following formula:

$$FA = f (MS_2, ER, IR, INF) \dots\dots\dots (1)$$

Through the equations, it is possible to estimate the ARDL model to measure the short- and long-term relationship, as follows:

$$\Delta FA_t = C + \sum_{t-1}^n \alpha_1 FA_{t-1} + \sum_{t-1}^n \alpha_2 MS2_{t-1} + \sum_{t-1}^n \alpha_3 ER_{t-1} + \sum_{t-1}^n \alpha_4 IR_{t-1} + \sum_{t-1}^n \alpha_5 INF_{t-1} + \sum_{t-1}^n \beta_1 MS2_{t-1} + \sum_{t-1}^n \beta_2 ER_{t-1} + \sum_{t-1}^n \beta_3 IR_{t-1} + \sum_{t-1}^n \beta_4 INF_{t-1} + \mu_t \dots (2)$$

Where: FA: Small Business Financing. MS₂: Broad Money Supply.

ER: Exchange Rate. IR: Interest Rate. INF: Inflation Rate.

Δ: First difference of the variable. C: Constant term. n: Upper limit of the optimal slowing down period.

α₁, α₂, α₃, α₄, α₅ Short-term slope.

$\beta_1, \beta_2, \beta_3, \beta_4$ Long-term slope. μt : Random error term.

The ARDL test is based on Fisher's statistic to determine the complementary relationship between the dependent variable and the independent variables in the long and short run in the same equation, in addition to determining the size of the impact of each of the independent variables on the dependent variable (Nkoro & Uko, 2016). Through this research, we will try to explain the impact of monetary policy through monetary variables on the amount of financing for small projects.

5. Results and discussions:

5.1 Unit Root Test Analysis: The variables were put through a stability test using the augmented Dickey-Fuller(ADF)test to ascertain the degree of integration of the model variables and to avoid false regression. Stationarity tests were used to identify which models would be used to reveal the nature of the relationship between the variables. through which the stationarity of the series can be detected at($I_2 I_1 I_0$)by comparing the critical values test(table values)at the three levels(10% 5% 1%)with the calculated t value.

Table 1: Unit Root Test for Augmented Dickey-Fuller (ADF)

		At level			1 st difference		
		None	Intercept	Trend & Intercept	None	Intercept	Trend & Intercept
Prob 5%	AP	0.0269	0.0695	0.0031	-	-	-
	MS ₂	0.9877	0.8870	0.7228	0.0381	0.1863	0.0043
	ER	0.1976	0.5070	0.0196	0.0114	0.0393	0.0018
	IR	0.4048	0.4826	0.0484	0.0342	0.1563	0.0040
	INF	0.5353	0.8177	0.0759	0.0070	0.0243	0.0013

Source: Extracted from Stata₁₇ output

Table1 shows that the microfinance variable is stationary at level(I_0) (Trend & Intercept), and the explanatory variables including the broad money supply variable, exchange rate, interest rate and inflation rate are stationary at the first difference (I_1) at a significance level of 5%. the prob value is less than the significance level of 5%. From our analysis, it is clear that the variables are stationary at the first difference and level. Due to the small sample size and the stationarity of the variables at the level and first difference, it is possible to use the ARDL bounds test model, which is more appropriate and provides better results than multivariate cointegration methods in the case of small sample characteristics.

5.2 Cointegration Test: ARDL uses the F-Bound test to detect the presence of cointegration between variables, which is the first step in this model.

Table 2:F - Bound test of the model

ARDL Bounds Test			
Date: 15/11/24 Time: 10:32			
Sample: 2004 thru 2023			
Included observations: 19			
Null Hypothesis: No long-run relationships exist			
Test Statistic	Value	k	
F-statistic	7.057	4	
Critical Value Bounds			
Significance %	I ₀ Bound	I ₁ Bound	
10	2.45	3.52	
5	2.86	4.01	
2.5	3.25	4.49	
1	3.74	5.06	

Source: Extracted from Stata₁₇ output.

Table 2 shows that the value of the F-statistic(7.057)is higher than the upper limit(I1)at a significance level of 5%, which means that there is cointegration between the variables. Therefore, the null hypothesis(there is no cointegration between the two variables) is rejected and the hypothesis is accepted. The alternative(the existence of co-integration)which confirms the existence of a long-term equilibrium relationship, at least in one direction, between monetary policy and the volume of financing for small projects in Iraq.

5.3 ARDL Test Analysis and Estimation: Since the statistical value of (t) is greater than the tabular value and the value of(P-Value)is less than (5%), Table 3 shows that there is a significant long-term relationship between the research variables (the amount of financing small projects, broad money supply, exchange rate, interest rate, and inflation)This means that the null hypothesis is rejected and the alternative hypothesis is accepted. The financing of minor initiatives will rise by.0192137 when the broad money supply(MS₂)rises by 1%, and the opposite is true if it decreases. A1% increase in the exchange rate will result in a -2343.923 drop in the funding of small projects, and the effect is the opposite. A 1% increase in interest rates will result in an 18.89906 increase in financing small projects, and a drop will have the reverse effect. The financing of minor projects will drop by -501644.1 when the inflation rate rises by 1% and the opposite result will occur if it falls. Additionally, any short-term imbalance in this connection will eventually lead to equilibrium; the model will correct the inaccuracy by rebalancing at a rate of (-.5076496)per year. which means that (-50.76%) of the imbalance in the last year will be corrected in the current year.

Table 3: Estimators the error correction parameter of the model

ARDL (2,2,2,2,1) regression							
Sample: 2006 thru 2023				Number of obs = 19			
				R-squared = 0.9369			
				Adj R-squared = 0.7727			
Log likelihood = -259.21392				Root MSE = 3.969e+05			
	D.FA	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
ADJ	FA						
	L1.	-.5076496	.3955357	-1.28	0.256	-1.524406	.5091072
LR	MS ₂	.0192137	.0354707	0.54	0.611	-.0719666	.1103941
	ER	-2343.923	17104.1	-0.14	0.896	-46311.4	41623.56
	IR	18.89906	1968666	0.96	0.381	-3170710	6950522
	INF	-501644.1	461263	-1.09	0.326	-1687358	684070.2
	FA						
SR	LD.	-.370118	.2437988	-1.52	0.189	-.9968227	.2565867
	MS ₂						
	D1.	.0371743	.0252755	1.47	0.201	-.0277986	.1021471
	LD.	-.097008	.0210231	-4.61	0.006	-.1510497	-.0429664
	ER						
	D1.	84.57391	5544.563	0.02	0.988	-14168.18	14337.33
	LD.	14587.41	5813.006	2.51	0.054	-355.3993	29530.21
	IR						
	D1.	-232143.5	99532.3	-2.33	0.067	-487999.4	23712.4
	LD.	128601	61294.23	2.10	0.090	-28960.87	286162.8
	INF						
	D1.	291060.1	101210.9	2.88	0.035	30889.15	551231
	cons	-2675359	7805936	-0.34	0.746	-2.27e+07	1.74e+07

Source: Extracted from Stata₁₇ output.

Therefore, any deviations in the short-term dynamics from their long-term equilibrium will be suitably corrected by the effect mechanism on small projects. The money supply, interest rate, inflation rate, and currency rate are the explanatory variables that explain for 93.6% of the overall changes in small business finance, according to the coefficient of determination, or R², which is 0.93. Changes in the dependent variable that are not part of the equation account for the remaining 6.4%.

5.4 Hypothesis Testing:

H₁: There is a positive relationship between MS₂ liquidity increase and the provision of small business financing. The estimation result in Table 3 shows that money supply has a significant impact on small business financing in Iraq. This means that during the period under review, money supply affects small business financing. This result is consistent with the intuitive expectation that money supply positively affects small business financing.

H₂: Exchange rate fluctuations negatively affect the ability of enterprises to obtain financing. The hypothesis that the exchange rate negatively affects the financing of small enterprises in Iraq was accepted. According to the results

presented in Table3, there is a negative impact of the exchange rate on the financing of small enterprises during the period under review.

H₃: Interest rates and the quantity of funding given to small projects are negatively correlated. The results of interest rates and finance for small projects in Iraq are also displayed in Table 3. The findings indicate that interest rates have a positive effect on financing small projects. As a result, the null hypothesis—that interest rates have no discernible effect on financing small projects—is rejected, and the alternative hypothesis—that interest rates have a significant impact on financing small projects in Iraq—is accepted. This implies that banks typically extend more loans to small projects in an effort to increase profits when monetary authorities boost interest rates.

H₄: A high rate of inflation has a detrimental impact on small business funding options. The results of Iraq's financing of small projects and inflation rate are also displayed in Table 3. The findings indicate that financing small projects is significantly and negatively impacted by the rate of inflation. Therefore, the null hypothesis—that the rate of inflation has no discernible effect on funding small projects—is disproved. As monetary authorities tend to keep inflation under control by raising interest rates to drive inflation to drop, a high rate of inflation has a detrimental impact on the cost and availability of capital for small projects. This finding is consistent with the initial assumptions.

5.5 Model quality testing: To diagnose the quality of the model, there are a number of tests.

Table 4: Model Quality Test of the Model

Source	SS	df	MS	Number of obs = 16
Model	2.3001e+11	3	7.6670e+10	F (3, 81) = 1.77
Residual	5.1886e+11	12	4.3239e+10	Prob > F = 0.0205
Total	7.4887e+11	15	4.9925e+10	R-squared = 0.3071
				Root MSE = 2.1e+05
Parameters		Test values		
Breusch-Pagan/Cook-Weisberg test for heteroskedasticity Variable: Fitted values of residual term		chi2(1) = 0.16 Prob > chi2 = 0.6918		
Ramsey RESET test for omitted variables Omitted: Powers of fitted values of residual term		F(3, 9) = 2.34 Prob > F = 0.1412		
Durbin-Watson d-statistic (4, 16) = 2.013228				

Source: Extracted from Stata₁₇ output.

Table4 illustrates the model's inclusion or absence of standard problems. The results indicate that the independent variables explain about 30% of the changes in financing small projects in Iraq. The estimated model is also statistically acceptable. The value of the F-statistic test reached(1.77)and the p-value (0.0205), which is less than the significance level of 5%.

Therefore, the alternative hypothesis is accepted with the significance of the estimated model as a whole and the null hypothesis is rejected. It is also clear in Table 5 that the model does not suffer from the problem of serial correlation according to the (Breusch-Godfrey) test, as the probability value (Prob. Chai Square) reached (0.8978) and is not significant at 5%, thus the alternative hypothesis is rejected and the null hypothesis is accepted, i.e. the absence of serial correlation, meaning the independence of values from each other:

Table 5: Breusch–Godfrey LM test

Breusch–Godfrey LM test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	0.017	1	0.8978

Source: Extracted from Stata₁₇ output.

According to Table 4, the model does not have instability of variance, as demonstrated by the Breusch-Pagan test. The null hypothesis is accepted and the alternative hypothesis is rejected because the model's probability value is 0.6918, which is higher than 5%. The Ramsey Regression Equation Specification Error Test indicates that the estimated model is well described. The F test's statistical value is 2.34 and its P-Value is 0.1412, both of which are greater than 5%. This indicates that the null hypothesis is rejected and the alternative hypothesis is accepted, i.e., the estimated model is not affected by description error.

6. Conclusions and recommendations:

6.1 Conclusions: The purpose of this study is to use the ARDL limits test approach for cointegration to confirm the presence of a long-term relationship between monetary policy and small business finance in Iraq from 2003 to 2023. The Fisher statistical bounds test provides evidence of the existence of a long-run equilibrium relationship between the model variables in the Iraqi economy. The long-run estimation results reveal a positive and significant elasticity between the economic variables in the short and long run, thus accepting the research hypotheses. The results of the (RESET) test showed the quality of the model description adopted in the research, as the level of significance was greater than 5%, which means accepting the alternative hypothesis and rejecting the null hypothesis. The model does not suffer from the problem of instability of variance, as shown by the (Breusch – Pagan) test, as the value of (Prob) for it is (0.6918), which is greater than (5%), which means accepting the null hypothesis and rejecting the alternative hypothesis. There is a positive relationship with a significant impact on the broad money supply (MS_2) on financing small projects, as a change in the money supply by a certain percentage will lead to a change in financing small projects by (0.0192137) of that percentage in the long run. The inflation rate has a significant but negative

impact on financing small projects in Iraq when the inflation rate increases by(1%), it leads to a decrease in financing small projects by(-501644.1)and the opposite occurs in the case of a decrease. With a positive impact of the interest rate on financing small projects.

6.2 Recommendations:

The following suggestions are made in light of the findings: Small projects in particular industries should receive special attention from monetary authorities, who should set up special channels for low-interest loans through a variety of financial institutions. By doing this, business possibilities will increase and macroeconomic goals will be met. Based on the results, it was found that the inflation rate has a negative impact on financing small projects. This is evident in the inflation data in Iraq, especially in the early years. The monetary authority should use its monetary tools to direct the inflation rate towards a decline. This will help enhance the productivity of local small projects.

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Appendix 1: Research variables data for the period (2004-2023)

year	FA	MS ₂	ER	IR	INF
2004	824673	12254000	1460	6	26.8
2005	1717450	14684000	1474	6	37.1
2006	644329	21080000	1463	16	53.1
2007	1605552	26956076	1214	20	30.9
2008	166675	34919675	1180	15	12.7
2009	256293	34919675	1185	7	8.3
2010	210118	60386086	1185	6	2.5
2011	123978	72177951	1217	6	5.6
2012	238946	77187497	1207	6	6.1
2013	674550	89512076	1222	6	1.9
2014	1065604	92988876	1206	6	2.2
2015	1328025	84527272	1247	6	1.4
2016	3140528	90466370	1275	4	0.1
2017	1049714	92857047	1251	4	0.2
2018	1153776	95390725	1208	4	0.4
2019	854555	103441131	1201.7	4	-0.2
2020	1214405	119906260	1304	4	3.2
2021	1271288	139885978	1450	4	5.3
2022	1308167	168291372	1450	4	4.3
2023	1345049	180975628	1300	7.5	4