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DOES DOMESTIC CREDIT TO THE PRIVATE SECTOR BY BANK INFLUENCE ECONOMIC GROWTH IN SAUDI ARABIA

Mohamed Sharif Bashir*

Department of Administrative and Financial Sciences, Applied College,
Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia
ORCID: https://orcid.org/0000-0001-5110-8503
*Corresponding Author Email: mbelsharif@imamu.edu.sa / msharief@hotmail.com

Abstract

This paper investigated the impact of Saudi Arabia's domestic bank credit on the private sector and different macroeconomic variables on economic growth in the long and short term to advise what kind of financial and monetary policies should be supervised to guide the kingdom toward a sustainable development path. The autoregressive distributed lag (ARDL) bounds testing approach was used to examine both the short- and long-term relationships among variables, and the speed of adjustment at which the economic growth returns to a long-run equilibrium relationship after a shock in a short-run is estimated by an error correction model (ECM), focusing on historical trends and financial dynamics of annual data from 1970 to 2023. According to the findings, the domestic bank credit to the domestic private sector has a strong positive effect on economic growth in both the short- and long-term; economic growth is negatively affected by money supply in both periods, and inflation has a positive impact on economic growth in the long run, while its effect is ambiguous and negative in the short run. These results demonstrate the need for bank credit to advance Saudi Arabia's economic development. To achieve the goals of Saudi Vision 2030, credit policy should be in place to buttress the nation's economic stability and extend its long-standing growth. Proper regulation of money supply and inflation is crucial for ensuring long-run economic sustainability.

Keywords: *Bank credit, cointegration analysis, economic growth, inflation, Saudi Arabia.*

1. Introduction

Bank credit is a channel between the lender and the borrower that allows them to obtain the required funds to engage in such profitable activities. Such financing stimulates private sector investment, and it is a major source of financing. The widening of credit allows potential investors to encompass a wider pool. It encourages internal investment (Miyajima et al., 2023). Such investment improves the economy as income and employment both rise. In many developing nations, a strong positive correlation exists between economic and financial growth, particularly in the banking sector. Technological advancement, liquid debt (liquid liabilities), and bank credit promote investment, fierce competition between firms, and increase production efficiency (Alzyadat et al., 2021). Financial inclusion, productivity, and promoting local economies have a big role in fostering a country's gross domestic product (GDP) and boosting lending to remote and underserved populations. Financial institutions providing credit to people and firms in remote areas help promote entrepreneurship, attract jobs, and promote

income generation, which ultimately helps the general growth of the economy. Private sector involvement in remote financing is less efficient and more innovative, and it provides for more sustainable economic development than government lending.

Increasing economic participation for marginalized communities includes reducing poverty and fostering long-term national economic expansion through financial institutions' ability to empower marginalized communities with capital. Saudi banks play a significant role in the Country by employing nationals, flowing capital, and supporting the government and private sector with project-expanding loans. The latest report from the Saudi Central Bank (SAMA) (Formerly known as the Saudi Arabian Monetary Authority) shows that as the private sector picked up, bank lending to it in Saudi Arabia reached approximately SAR 2.3Tn, up from 13 % at the end of 2022. Besides, the count of point-of-sale devices climbed to 1 million simultaneously, with electronic fees sharing 57 % compared to 55 % (SAMA, 2023). Bank claims on the private sector, however, rose by 12.6 % (SAR 255.5 billion) from SAR 2,029.3 billion in the previous year to approximately SAR 2,289.6 billion in 2022, while it increased by 15.4 % (SAR 271.6 billion) during the last year with increasing of 12.6 % (SAR 255.5 billion) concerning the previous year. The $12.2% growth of total bank credit was given to the private and public sectors during 2022. At the end of 2022, these claims comprised 99.7 % of total bank deposits, against 96.7 % at the end of 2021 (SAMA, 2023).

The company sector creates domestic loans through loans, purchases of non-state capital stocks, other securities, trade loans, and other claims arising. Some of these claims also extend to the creditworthiness of public companies in a particular Country. Credit is an important link to money transfer in financing production, consumption, and capital formation, which affects economic activity (Herasymenko et al., 2022). Some financial companies include financial authorities with data available, cash deposits, and businesses, which are institutions that do not accept transferable deposits but have liabilities such as time and savings. Many financial companies are financial and leasing companies, monetary creditors, insurance companies, pension funds, and forex companies.

Bank credit has been an important trigger for economic growth in Saudi Arabia in the context of the country. With Saudi Vision 2030, the Country's banking sector has undergone considerable changes to begin the diversification of its economy and the reduction of oil dependence. Domestic credit to the private sector has increased entrepreneurs and contributed to infrastructure development and technological innovations, which are long-term economic sustainability. In Saudi Arabia, the interrelationship between economic growth and bank credit is a major point whereby financial policy and regulation that facilitate the sector's efficiency in servicing customers while mitigating the risk that is associated with it —the over lending and credit defaults take utmost importance (Herasymenko et al., 2022).

Given that, its complete impact on economic growth as the reliance on private sector credit grows is highly important. The main goal of this study is to investigate whether private-sector domestic loans from banks impact Saudi Arabia's economic growth. The nifty ways a country can make its financial policies and banking strategy come together to help progress and stability in an economic arena are taught in the research for the relationship.

In recent years, the Kingdom of Saudi Arabia has dramatically reformed its financial and economic sector to develop the country with financial and economic sustainability aid and end its dependence on the oil industry. The changes cited above are key drivers in the reforms of

Vision 2030, which are to diversify the economy, increase private sector participation, and increase access to SMEs' finances. The government supported these efforts through financial sector development, such as reform of regulatory framework, strengthening banking sector sustainability, and investment policies. The establishment of the Saudi Arabian Monetary Authority (SAMA), a firm financial system, and the reforms have been overseen. Contemporary finance has seen its fair share of fast-growing fintech that has been profoundly transformed along the same lines as fast-growing fintech, from the newest payment methods, such as advanced digital banking platforms and crowdfunding ventures. Through this expansion, businesses and people have been able to find and use financial credit. These are Saudi Arabia's strategic goals of encouraging economic longevity promoting innovation and financial inclusion together.

This relationship is rather complex and incremental. Bank credit can create a growth stimulus by making available funds for investment and consumption, but excessive credit growth may create economic instability and lower growth prospects. Existing literature indicates that the impact of banking credit on economic growth has been determined by many aspects, including financial development level, institutional quality, and macroeconomic stability (Mishkin et al., 2024).

Based on the ARDL approach, Bamba et al. (2023) stated that bank credit availability negatively influences economic growth in the Malian economy and positively in the long term. This helps Adhikari et al. (2024) to use the ARDL model to investigate how bank credit helped the Nepalese economy's growth from 1975 to 2023. They performed empirical analysis for the positive correlation between economic growth and bank credit both in the short and long run.

Homsombath et al. (2024) studied the effects of bank credit from 1992 to 2022 on the economic expansion of Lao PDR. On the other hand, the credit to both bank and private sectors and the labour credit to private sectors played a positive role. In contrast, credit to state enterprises played a negative role in the short and long run, using the ARDL bounds testing approach for estimation based on cointegration and the Error Correction Model. It is suggested that the government can control nonperforming loans by supporting lenient approval for credit to the private sector by commercial banks and a hard stance on credit to state enterprises.

After that, Rusydiana and Ikhwan (2024) investigated the impact of independent variables other than population, employment, and inflation on economic growth in the Organisation of Islamic Cooperation's 55 member nations and another independent variable, the bank credit. Thus, the study will use annual panel data from 2010 to 2021, and the analysis method will be static panel data regression. The results revealed that, together with independently, all the independent variables, the population, employment, inflation, and total bank credit significantly affect economic growth (Shah et al., 2021).

3. Methodology and Data Sources

3.1 Model Specification

As indicated in the theoretical literature, the adopted model follows the functional relationship between the dependent and explanatory variables (Shah et al., 2021). The efficient form can be expressed as follows:

$$GDP=f(BCR, MS, INF) \quad (1)$$

The precise form of Equation (1) illustrates that there is a linear relationship between the dependent and explanatory variables, as depicted below:

$$GDP=\beta_0+\beta_1 BCR + \beta_2 MS + \beta_3 INF + \varepsilon_t \quad (2)$$

GDP = per capita GDP growth
BCR = domestic credit to private sector by bank
MS= broad money supply measures by M3
INF= inflation rate measured by consumer price index
β_0 = intercept
β_1, β_2, β_3 = Coefficients
ε = error term
t = the period
The coefficients are expected to be positive, implying that an increase in domestic bank credit will increase economic growth. Inflation is expected to negatively affect economic growth, suggesting that an increase in inflation leads to a decrease in GDP.

3.2 Unit Root Test

The stationarity test is essential for analysing the time-series data (Alam et al., 2022). Time-series data are considered stationary if they exhibit a time-invariant mean and variance. This test evaluates the order of data integration. Non-stationary data, characterized by the presence of a unit root in its characteristic equation, must be transformed into a stationary form through differencing. Accordingly, this study employs the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for unit root testing. These tests assume that the simulation is a unit root and, therefore, not stationary; the unit root also forms the null hypothesis, and the non-unit root is the alternative hypothesis. If the null is not rejected, the variable is non-stationary or has a unit root. First, we conduct the testing process by evaluating the variable at its level and, subsequently, by examining the first difference, which includes both the intercept and time trend, to allow more flexibility and robustness of the tests.

3.3 ARDL Approach to Cointegration

Developed by Islam et al. (2022), the ARDL model is used widely to investigate the relationship between the underlying variables where the variables may be integrated into an order zero I(0), an order one I(1), or a combination of both. Using the ARDL and Error correction model, the following analysis is made of the determinants of inflation in Saudi Arabia. It is then specified that the primary model is as follows:

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 \Delta GDP_{t-i} + \sum_{i=1}^{n} \alpha_2 \Delta lBCR + \sum_{i=1}^{n} \alpha_3 \Delta lMS_{t-i} + \sum_{i=1}^{n} \alpha_4 \Delta NF_{t-i} + \lambda\, ECT_{t-1} + \mu_t \quad (3)$$

Assuming the notation ‘Δ’ as the first difference operator. The short run coefficients can be interpreted as parameters α and λ while the corresponding long run coefficients having α_1, α_2 , α_3, α_4 and ‘*l*’ indicate the logarithm for the variable. In addition, U_t is the residual term for the

model described. The cointegration bounds test is used to determine if a long-run equilibrium relationship exists between the selected variables. The hypotheses tested in a long-run relationship can be formulated as follows: H_0: $\alpha_1=\alpha_1=\alpha_1=\alpha_4=0$; Cointegration does not exist; H_1: Cointegration exists.

If cointegration is found in the bounds test, the researcher defines the variables to be related in the long run or simply for the duration of. Pesaran et al. (2001) recommend contrasting the values of F-Statistic with the values. Suppose the F statistic obtained from the result is greater than the highest value of the upper bound of F critical values. In that case, one has to reject, i.e., the null hypothesis that no co-integration is present is rejected. On the other hand, a smaller F statistic magnitude indicates that the null hypothesis is true and cannot be rejected (go back to the null hypothesis). We refer to the result as indeterminate when we know that the value of F Statistic falls between the above-stated values of F Stat Au and F Stat Bu.

3.4 Data Sources:

To conduct this study, the World Bank databases gathered annual time series data for the period 1970–2023. The key variables include GDP growth rate (measured as per capita GDP growth), inflation rate (measured by the consumer price index (CPI) as a % of GDP), bank credit to the private sector (defined as financial resources provided by banks to the private sector) and money supply (defined as a broad measure of money supply in the economy).

Except for the inflation rate, variables are made invariant in log form to stabilize the variance and improve the model efficiency.

4. Results and Discussion

4.1 Phillips-Perron (PP) test

Table 1 Phillips-Perron (PP) test

	At Level				
		GDP	LBCR	LMS	INF
Constant	t-Statistic	-7.3898***	-2.9343**	-3.2874**	-2.8142*
Constant and Trend	t-Statistic	-7.2215***	-2.4794	-3.5022**	-3.0466
Without constant and Trend	t-Statistic	-7.3119***	3.6213	2.8654	-2.4767**
	At First Difference				
		D(GDP)	D(LBCR)	d(LMS)	d(INF)
Constant	t-Statistics	-12.6034***	-4.2286***	-2.2255	-6.5740***
Constant and Trend	t-Statistic	-14.0857***	-4.6194***	-2.4541	-6.4644***
Without Constant and Trend	t-Statistic	-12.6991***	-2.9090***	-1.6051	-6.5455***

In Table 1, by using the Phillips-Perron (PP) test, the stationarity of four economic variables is tested: GDP, bank credit (LBCR), money supply (LMS), and inflation (INF). The test is

performed at two levels, with the first difference being under three different circumstances: with constant and linear trends and without continuous and linear trends.

On the level, stationarity is strong at 1% for all three conditions. Tested with a constant but significant at the 5% level, LBCR and LMS lose significance under other conditions. The inflation (INF) is significant at 10% under the constant condition and at 5% without constant and trend, therefore yielding evidence of weak stationarity.

GDP is found to be strongly stationary at the 1% level at the first difference across all conditions; that is, it is an I(1) process. Under both constant and constant and trend, LBCR also achieves significance at the 1% level, thus suggesting the stationarity at the first difference. The indication of a need for further differencing or an alternative transformation is provided by the fact that LMS is mostly non-stationary. The effect of inflation (INF) is highly significant at the 1% level in all conditions after the inflation variable is differenced, indicating that inflation is stationary.

Based on the PP test, we find that the first difference between GDP and INF is stationary. In contrast, the first difference between LBCR and LMS possesses mixed stationarity behavior, evidence that the dataset consists of a mix of I(0) and I(1) variables.

4.2 Augmented Dickey-Fuller (ADF) test

Table 2 Augmented Dickey-Fuller (ADF) test

	At Level				
		GDP	LBCR	LMS	INF
Constant	t-Statistic	-2.2606	-1.6699	-2.3666	-3.4210**
Constant and Trend	t-Statistic	-2.8771	-3.3354*	-4.3729***	-2.7246
Without Constant and Trend	t-Statistic	-2.1091**	1.8089	1.0745	-3.0320**
	At First Difference				
		d(GDP)	d(LBCR)	d(LMS)	d(INF)
Constant	t-Statistic	-1.9284	-3.1915**	-2.2544	-5.5952***
Constant and Trend	t-Statistic	-1.8692	-3.2724*	-2.4732	-5.5351***
Without Constant and Trend	t-Statistic	-1.9587**	-2.3260**	-1.7707*	-5.6515***

In Table 2, the level of GDP is not statistically significant under any condition, implying non-stationarity. As the constant and trend condition, LBCR is significant at 10% but remains nonstationary. The result indicates weak evidence of stationarity; therefore, LMS is only significant at a 1% level with constant and trend. Results indicate that INF is statistically significant at 5% under the constant condition and 5% without constant and trend, i.e., partial stationarity.

The results confirm the stationarity of LBCR at the first difference, becoming significant at the 5% level with a constant and at the 10% level with a constant and trend. A potential transformation beyond LMS endorses will be non-stationary; thus, this randomness must be

dealt with. The first difference of the given series is highly significant at the 1% level under all conditions, confirming its stationarity.

Regarding the ADF test results, it is clear that GDP, LBCR, and INF become stationary after differencing and can be classified as I(1), and LMS is mixed stationary. The results confirm the existence of a mixture of I(0) and I(1) variables because of the agreement with the results of the PP test.

4.3 Optimal lag selection

Table 3 Optimal Lag Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-271.0710	NA	0.705643	11.00284	11.15580	11.06109
1	-64.32791	372.1376	0.000344	3.373116	4.137926*	3.664360
2	-39.00558	41.52862	0.000240	3.000223	4.376880	3.524462
3	-15.34626	35.01580*	0.000182*	2.693850*	4.682354	3.451084*
4	-7.217991	10.72931	0.000267	3.008720	5.609071	3.998948

From Table 3, an asterisk (*) marks that the minimum AIC is selected at lag 3 (2.693850), indicating that a three-lag structure balances model fit and complexity well. Another key metric, the Final Prediction Error (FPE), also has a minimum value at lag of 3 (0.000182), supporting the above selection of lag 3. The Likelihood Ratio (LR) test comparing different lag lengths indicates the selection of lag 3 as the most statistically significant, showing its adoption of it.

The Schwarz Criterion (SC), as an example of a penalty on the number of additional parameters selected lag 1 because it penalises more parsimonious models; however, it is less good for complex economic relationships. Also, there is support for lag 3 as optimal using the Hannan-Quinn (HQ) criterion, which lies between AIC and SC.

The VAR model is then determined to have a lag length of 3, the best in terms of AIC and FPE, which the one strongly supported by the LR and HQ criteria. That selection guarantee the model represents the dynamic relationship among variables less complex.

4.4 ARDL Bounds Test for Cointegration

Table 4 ARDL Bounds Test Result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	11.50037	10%	2.01	3.1
K	3	5%	2.45	3.63
		2.5%	2.87	4.16
		1%	3.42	4.84

F statistic is calculated (11.50) in table 4, and based on the comparison between this statistic and the critical bound, at different levels of significance, the decision is made to reject or fail to reject this hypothesis.

The critical bounds are 3.42 and 4.84 and the same at the same 1% significance. The F statistic is very large (11.50), so you reject the null hypothesis of no cointegration. Likewise, the F statistic is sufficiently high about the upper bounds at the 5% and 10% significance levels, respectively wishing to indicate such a long-run equilibrium relationship. When cointegration is present, it is the case, as there is no need for short-term fluctuations of the explanatory variables to influence GDP jointly in the long run.

The ARDL Bounds Test results confirm a strong and statistically significant cointegration relationship between GDP and its independent variables.

4.5 ARDL Regression Model

Table 5 Estimation of the ARDL Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.892172	0.149195	-5.979923	0.0000
LBCR	5.028653	2.585601	1.944868	0.0590
LMS (-1)	-4.866848	2.552157	-1.906955	0.0639
INF(-1)	1.019911	0.304647	3.347845	0.0018
D(LMS)	13.81737	16.07162	0.859737	0.3952
D(LMS (-1))	-23.15921	14.58975	-1.587362	0.1205
D(LMS (-2))	0.745296	14.56715	0.051163	0.9595
D(LMS (-3))	-31.67024	12.94615	-2.446305	0.0190
D(INF)	-0.020756	0.249483	-0.083197	0.9341
D(INF(-1))	-0.315553	0.254826	-1.238311	0.2230
D(INF(-2))	-0.842256	0.213140	-3.951652	0.0003

The estimation results based on the ARDL regression model that explains the relationship of GDP, LBCR, LMS, and inflation are presented in Table 5. The significance of the lagged GDP coefficient (-0.8922) implies a strong negative effect on current GDP. The coefficient associated with LBCR is positive [5.0287] but significant at only p = 0.0590. LMS negatively affects GDP (-4.8668, p = 0.0639) while LMS is (-1). INF(-1) positively influences GDP (1.0199, p = 0.0018). Some other differenced LMS and INF terms have important (e.g., D(LMS(-3)), (-31.6702, p=0.0190), D(INF(-2)), (-0.8423, p=0.0003)) effects due to short term fluctuations in GDP.

4.6 Long-run results

Table 6 Long-run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LBCR	5.636415	2.570126	2.193050	0.0343
LMS	-5.455055	2.533788	-2.152925	0.0376
INF	1.143177	0.379205	3.014667	0.0045
EC = GDP - (5.6364*LBCR -5.4551*LMS + 1.1432*INF)				

Table 6 shows the long-run results of the ARDL model on how the key economic variables affect GDP. Bank credit has a positive but insignificant impact on the LBCR coefficient (5.6364, P = 0.0343). On the contrary, a negative coefficient (-5.4551, P = 0.0376) implies that the higher the money supply, the worse the GDP. Since controlled inflation promotes long-term

economic expansion, GDP (1.1432, P = 0.0045) positively correlates with inflation (INF). The error correction equation (EC) shows how GDP' error corrected' to the long run equilibrium,

4.7 ARDL Error correction model

Table 7: ARDL Error correction model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LMS)	13.81737	13.91908	0.992693	0.3270
D(LMS3(-1))	-23.15921	13.65051	-1.696582	0.0977
D(LMS3(-2))	0.745296	13.91336	0.053567	0.9576
D(LMS (-3))	-31.67024	12.22779	-2.590022	0.0134
D(INF)	-0.020756	0.194020	-0.106980	0.9154
D(INF(-1))	-0.315553	0.228617	-1.380268	0.1754
D(INF(-2))	-0.842256	0.180876	-4.656542	0.0000
CointEq(-1)*	-0.892172	0.126757	-7.038470	0.0000
R-squared	0.657621	Mean dependent var		-0.410294
Adjusted R-squared	0.600558	S.D. dependent var		7.364836
S.E. of regression	4.654682	Akaike info criterion		6.059271
Sum squared resid	909.9746	Schwarz criterion		6.365194
Log-likelihood	-143.4818	Hannan-Quinn criter.		6.175768
Durbin-Watson stat	2.093654			

The results of the ARDL Error Correction Model (ECM) capturing short-term relationships and adjustment towards the long-run equilibrium are presented in Table 7. The negative and highly significant error correction term, CointEq(-1) =-0.8922 (p = 0.0000), shows that the adjustment speeds are very strong. About 89.2 percent of disequilibrium is corrected each period. A significant negative impact on GDP (-31.6702, p = 0.0134) is indicated by the past changes to M in D(LMS (-3)), which means that changes in the money supply negatively affect economic growth. As D(INF(-2)) is also quite significant and negative (-0.8423, p = 0.0000), an inflationary shock has a delayed, adverse impact. The model succeeded in explaining 65.76 % variations in GDP (R^2 = 0.6576), and the Durbin-Watson statistic (2.0937) shows no strong autocorrelation, hence validating the model.

We conclude that bank credit significantly impacts economic growth over the long term. This finding aligns with Adhikari et al.'s (2024) and Homsombath et al. (2024) results. Overall, our research demonstrates that lending to the private sector enhances GDP both in the short and long term. In line with economic theory and previous studies, private sector credit stimulates investment and competition, thereby contributing to increased GDP (AlHarbi et al., 2024; Poudel and Acharya, 2020; Timsina, 2014; Yakubu and Affoi, 2014). Conversely, the money supply exerts a detrimental effect on economic growth. This may be attributed to monetary policy measures aimed at controlling inflation through the expansion of the money supply, which, in turn, discourages investment, increases unemployment, and hampers economic growth.

4.8 Diagnostic tests

The diagnostic statistics confirm the absence of specification errors, indicating that the ARDL model is data-congruent. The results demonstrate that the error terms are dynamically stable, as evidenced by the Ramsey test, serially independent, according to the LM test, and normally distributed, based on the Jarque-Bera (JB) test. Thus, the strong correlation among the targeted variables is not spurious. The study also employed both statistical and visual methods to assess normality. The Jarque-Bera test was applied to determine whether the model conforms to normality assumptions. The results indicated that the null hypothesis could not be rejected, as the model's p-value for the Jarque-Bera test exceeded the 0.05 significance threshold. Therefore, it can be concluded that the research data follow a normal distribution.

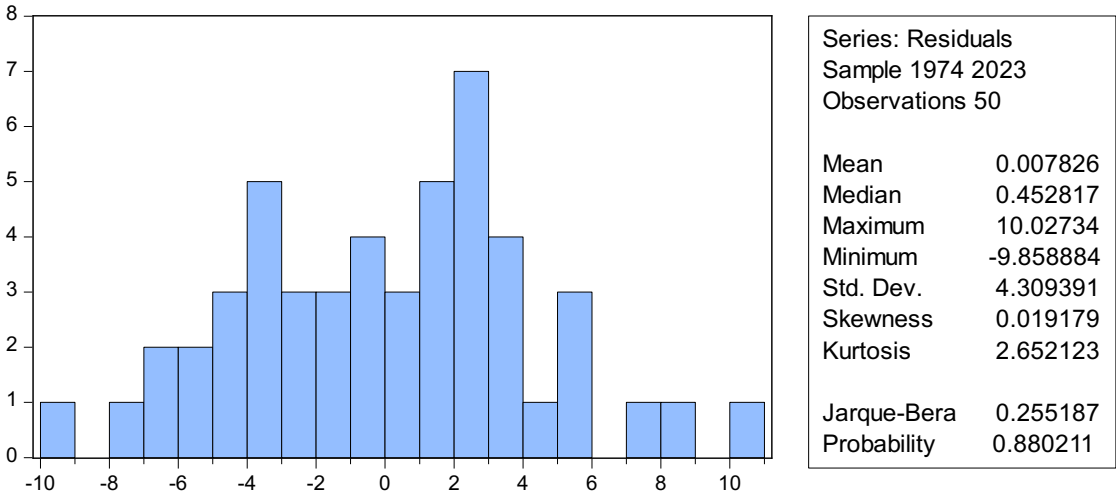

Figure 1: Jarque-Bera Normality Test

4.9 Serial correlation and Heteroskedasticity tests

The p-value for Table 8 is 0.7328; again, it cannot be rejected, so the null hypothesis will not be rejected. Because the p-values for the LM statistic are more significant than the 5% significance threshold, the result suggests no evidence of heteroskedasticity in the variables contained in the model.

Table 8 Serial correlation and Heteroskedasticity tests

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.313489	Prob. F(2,37)	0.7328
Obs*R-squared	0.833149	Prob. Chi-Square(2)	0.6593
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.149101	Prob. F(11,38)	0.3532
Obs*R-squared	12.48034	Prob. Chi-Square(11)	0.3286
Scaled explained SS	6.272857	Prob. Chi-Square(11)	0.8546

4.10 Stability test:

The Cumulative Sum (CUSUM) of Recursive Residuals and the Cumulative Sum of Squares (CUSUMSQ) of Recursive Residuals stability tests were conducted in this study. The CUSUM test measures consistent parameter changes, while the CUSUMSQ test detects sudden shifts. Figures 2 and 3 present the CUSUM and CUSUMSQ plots, respectively. Both plots fall within the critical bounds, indicating that the models remain stable.

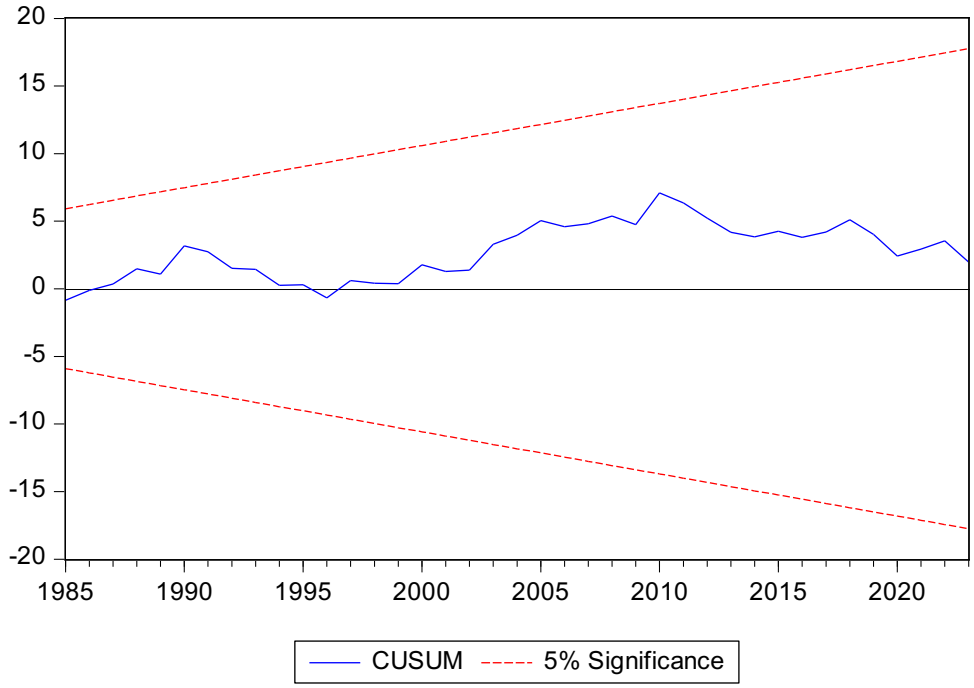

Figure 2: CUSUM Plot for Stability Test

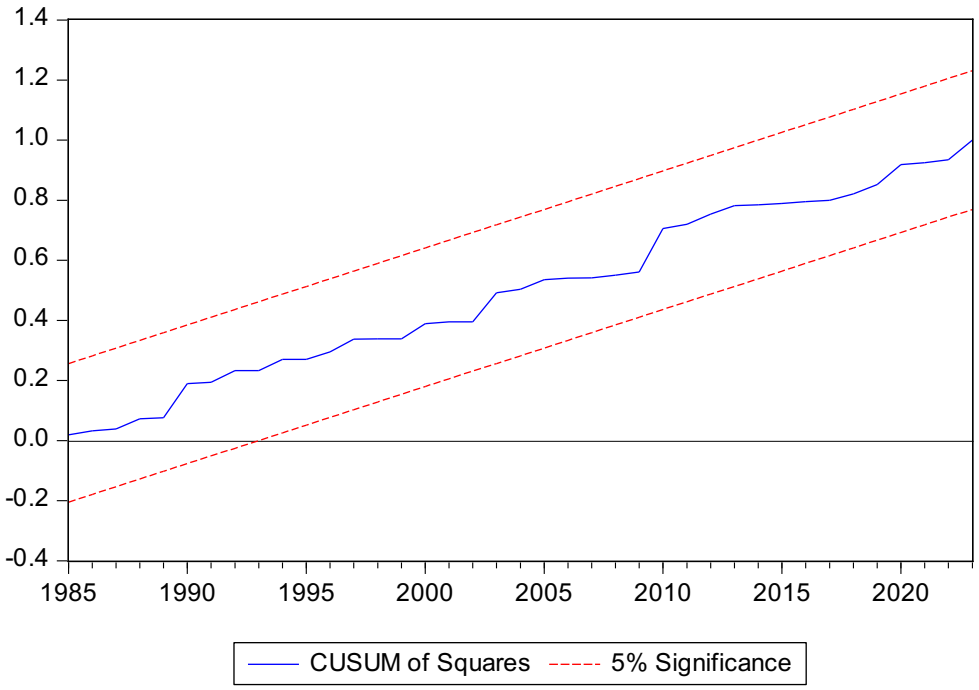

Figure 3: CUSUMSQ Plots for Stability Test

4.11Discussion

This finding is important because it supports domestic bank credit's important role in Saudi Arabia's economic progress. The empirical results from the ARDL model illustrated that banks' credits are positively related to a very high level (consistent with previous studies such as Adhikari et al., 2024). Accordingly, these results reflect the economic view that financial development contributes to investment, productivity growth, and economic performance (Beck and Levine, 2004). By then, the long-run results show that higher bank credit positively

intervenes in economic growth because it gives businesses and entrepreneurs enough credit to expand business, create employment, and improve production (Homsombath et al., 2024).

Even though bank credit has positive effects, some challenges may serve as catch factors on the impact of bank credit on economic growth. The findings reveal that credit availability enhances economic activity; thus, drawing from the data, increased credit would lead to economic activity. However, random regulations in the banking industry would create financial risks such as non-performing loans and credit defaults. This is consistent with previous works that state that beyond a threshold of the credit supply, bank lending has consequences for efficiency and financial instability. Therefore, they should ensure that there is a follow-up to resort to credit expansion by strong regulation to avoid financial instability and economic vulnerability (Shah et al., 2021).

Among other things, the results have shown several significant results, one of which is that dirty money has something terrible for the economy in the short and long run. Thus, an increase in the money supply tends to increase inflationary pressures because an increase in the money supply may reduce the purchasing power of consumers and discourage private investment (Almutairi et al., 2022). Using the ARDL model results, it is found that a high money supply has a negative effect on GDP, which means that monetary policies will have to be adopted to avoid liquidity expansion as a tool for increasing instability in the economy. Causal of the need for a proactive monetary policy intervention to eliminate economic volatility (Mishkin 2024), the range of the short-run effects exceeds that of the money supply.

Despite that, the impact of inflation on economic growth is not simple, resulting in positive or negative benefits based on time. Falling into the short run, inflation negatively affects GDP because it increases prices, diminishes consumption power, and lowers the return on investment (Homsombath et al., 2024). Such spending and economic activities are discouraged. While moderate inflation can positively affect the economy in the long term, encouraging business investment, expansion of production, and employment, moderate inflation can also effectively increase inflation. Controlled inflation incentivizes firms to increase their output, creating economic jobs and stability. For this reason, it is necessary to carefully control inflation, avoid the adverse side effects, and take advantage of the positive aspects of inflation to promote sustainable economic growth.

The policy implications are significant in the study findings. First, financial regulation has to be balanced and extreme imbalance in the process of expansion of credit to the private sector as well as to avoid excessive risk, which leads to maintaining the flow of credit to the private sector to prevent undermining economic growth (Rusydiana and Ikhwan, 2024). Secondly, monetary authorities need to be cautious about the growth of the money supply to avoid the pressures of inflation that would impede the economy's performance. Last, policymakers should take an integrated view, combining the development of the financial sector with other economic policies for increasing financial inclusion and economic diversification following Saudi Vision 2030 (Peng et al., 2025). These aspects will ensure the Saudi Arabian financial system can continue long-term economic growth and resilience amid global financial uncertainties.

Again, the results reconfirm the fundamental role of bank credit for economic development and the need to design strategic financial policy to maximize its effect. Future research could

further explore the sectoral components of credit distribution to identify which sectors credit is allocated and how efficiently financial resources are allocated across sectors for Saudi Arabia.

5. Conclusions

This research paper investigated the impact of domestic bank credit and selected macroeconomic variables on economic growth in Saudi Arabia during the period 1970–2023. It analysed the relationships between economic growth, domestic bank credit, and some macroeconomic variables, employing a methodology based on the ARDL approach to cointegration analysis and error correction model. The empirical results of bounds testing indicated a long-run relationship between economic growth, domestic bank credit, and macroeconomic variables. The signs and values of ECT coefficients confirmed that the disequilibrium for the economic growth equation has converged rapidly. The findings reinforce that domestic bank credit is of great importance to the economy in Saudi Arabia, as an efficient banking sector contributes to economic growth through investment and economic stability. Bank credit was found to positively affect economic growth in the short and the long run. At the same time, expanding the money supply may lead to adverse effects, thus requiring careful monetary regulation. Inflation was found to have a mixed impact; controlled inflation can increase growth, but excessive inflation can negatively affect economic performance.

The results thus indicate the importance of well-structured financial and monetary policies to support credit expansion while minimizing the risk of credit default and economic instability. Therefore, policymakers should strive to facilitate sustainable credit growth that aligns with economic diversification strategies as outlined in Saudi Vision 2030 and support clear long-term economic development goals. A balanced monetary policy is crucial to prevent excessive money supply growth from disrupting economic stability.

Future research on the sectoral impact of bank credit in light of additional financial variables would further elucidate Saudi Arabia's economic growth dynamics. In the long run, these would have to strengthen the financial inclusivity and expand credit accessibility to ensure sustainable economic progress.

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