

Between Ambition and Reality: The Effectiveness of Financial Development Indicators in Driving Economic Growth in Algeria

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ABSTRACT

This study aims to measure and analyze the impact of financial development indicators on economic growth in Algeria over the period 1995–2023, using the Autoregressive Distributed Lag (ARDL) model. The results indicate the presence of a long-run equilibrium relationship among the variables. The financial intermediation indicator (M2) had a positive long-run effect on economic growth (0.15), highlighting the role of banks in supporting economic activity through project financing and savings allocation. In contrast, the financial depth indicator (CP) showed a negative long-run impact (-0.40), reflecting the limited effectiveness of long-term financial reforms and the weak productivity orientation of credit distribution. Moreover, the efficiency of financial intermediation (I) showed no significant effect on economic growth, which may be attributed to structural weaknesses in the financial system, such as poor governance, lack of financial innovation, and the dominance of public banks. These findings underscore the importance of improving the quality of financial intermediation and channeling funding toward productive sectors to foster sustainable economic growth.

1. Introduction

Economic growth and financial development have long been major topics in economic research and policy discussions. The financial sector is becoming more and more important as economies change because it helps to mobilize funds, allocate resources effectively, facilitate investment, and boost productivity. In addition to facilitating the growth of the private sector, a healthy financial system also promotes inclusive growth and macroeconomic stability.

According to both theoretical and empirical research, financial development as shown by metrics like financial depth, financial intermediation, and financial institution efficiency has a big influence on economic performance. A healthy financial system facilitates improved capital allocation and encourages innovation by cutting transaction costs, minimizing information asymmetries, and diversifying risk.

The relationship between financial development and economic growth is complicated and context-dependent, especially in developing and rising economies. Although a growing financial sector can stimulate economic expansion, ineffective or poorly regulated financial institutions can result in inequality, financial instability, or misallocation of resources. Thus, it is still crucial to do research to determine the nature and extent of this link, particularly in areas looking to improve long-term economic performance through structural reforms.

By concentrating on important financial indicators and evaluating their long- and short-term correlations with GDP, this study seeks to experimentally investigate the effect of financial development on economic growth in Algeria. The results are meant to give policymakers ideas on how to fortify the financial industry in a way that promotes equitable and sustainable growth.

2. Literature Review

The literature currently in publication is insufficient for a comprehensive understanding of financial development's many dimensions, especially its influence on economic growth in developing nations like Algeria, despite the fact that many studies have looked at it using a range of indicators and econometric techniques. Therefore, we urgently need more research to thoroughly examine the major factors influencing financial development. For instance, **(Panizza, 2014)** highlighted the beneficial effects of financial development through financial innovation services in addition to conventional measures of size and financial intermediation. The study examined the ways in which financing influences economic growth in a set of rising nations between 1970 and 2010. **(Guru & Yadav, 2019)** examined, using the SYS-GMM model, the connection between financial development and economic growth for five rising economies from 1993 to 2014. The findings demonstrated that measures of banking development, like the size of financial intermediaries, significantly boost economic expansion. **(TARIQ & et al, 2020)** Using the OLS method, this study sought to examine the non-linear relationship between financial development and economic growth in Pakistan between 1980 and 2017. The findings indicate that economic growth responds positively to financial development when it exceeds a threshold value of 0.151, while negative effects on economic growth occur when it falls below this threshold. Additionally, the study found that economic growth is linked to various types of financial development, resulting in a U-shaped relationship between financial development and economic growth in Pakistan. **(Benhaddou, 2023)** his study investigates the relationship between financial development and economic growth in Algeria (1995–2021) using the ARDL model. Results reveal a significant long-run cointegration, with a negative error correction coefficient (-0.77). Financial intermediation efficiency and financial depth negatively affect growth, while financial intermediation itself has a positive impact. The findings highlight the importance of enhancing financial intermediation to support economic growth. **(Gull, S., Farid, T., & Maqsood, Z., 2023)** examined the impact of financial development and green financing on Pakistan's economic growth (1990–2020) using time series analysis. Financial development, measured via value added by manufacturing and services, shows a significant positive effect on growth in both the short and long term. Green financing positively influences long-term growth but is insignificant in the short term. Control variables include population and education. The findings highlight the need to integrate green finance into economic policy to support sustainable development. However, the study's scope is limited to Pakistan, suggesting future research should expand to cross-country analysis. In a similar vein, **(Ikhsan, A., & Satrianto, A., 2023)** aimed to determine the impact of financial development on economic growth in high-income countries, focusing on institutional and market dimensions, along with savings and investment. Using panel data and the Fixed Effects Model (FEM), results show that financial development significantly promotes growth by enhancing capital mobilization and resource allocation. The findings suggest that strong financial institutions and markets, supported by effective policies, are essential for sustaining economic activity. Savings and investment also play a vital role in meeting financial needs. Thus, reinforcing financial sector policies is key to fostering long-term growth in high-income countries. In an additional study, **(Yıldırım, D.Ç., Yumusak, I.G., & Gürçek, D., 2024)** explored the effect of financial development on economic growth in the case of Türkiye. Financial development is considered the one of the basic elements of economic development. It provides an important reference to better understand the relationship between financial development and economic growth in Turkey and to predict the effects of economic policies. In the study, quarterly data for the period January 1999 - January 2023 are analysed for the Turkish economy with the help of ARDL (Autoregressive Distributed Lag-ARDL) cointegration methodology. According to the results, it has been seen that the stock market index, which is an indicator of financial development, consumption and net exports has a positive effect on growth. On the other hand, investment has no effect on growth rate and government expenditure has negative effect on growth rate. **(Gizaw, T., Getachew, Z., & Mancha, M., 2024)** aimed to establish the relationship between financial development (FSD) and economic growth in 22 emerging African and Asian countries using panel data from 1981 to 2021. Employing the Dynamic Common Correlated Effects (DCCE) model, the analysis accounts for cross-sectional dependence and parameter heterogeneity. Descriptive results show that FSD is higher in emerging Asian countries (30.98%) than in African counterparts (17.71%). Econometric findings reveal a positive but marginal impact of FSD on economic growth, indicating that current FSD levels are inadequate to sustain long-term growth. The study recommends strengthening institutions, promoting financial openness, advancing technology, and accelerating digital transformation to enhance financial sector development and economic sustainability. **(Mabasa, T., Tipoy, C. K., Nyati, M. C., & Msomi, S., 2025)** Examined the non-linear relationship between financial development and economic growth in

English-speaking and French-speaking African countries from 1970 to 2017, using Smooth Transition Regression and Granger Causality models. Findings reveal significant short- and long-term linkages in English-speaking countries, with rapid adjustment during downturns and weaker responses during expansions. In French-speaking countries, adjustments are slower but steady under economic stress. Granger causality highlights distinct patterns across both groups, rejecting linearity and underscoring the need for tailored, context-specific financial policies to support sustainable growth in diverse African economies. (Girma, A.G., Huseynov, F., 2025) aimed to search the link between financial development and economic growth in 30 African countries over the period 2000–2020 using a panel ARDL model. It examines four key dimensions of financial development: financial deepening, efficiency, liquidity, and stability. The results show that while financial deepening and efficiency contribute positively to economic growth, higher levels of liquidity and stability are associated with a dampening effect on growth. Moreover, the impact of financial sector development varies by income level, with a stronger influence observed in upper middle-income countries. These findings highlight the limitations of a uniform policy approach, underscoring the need for tailored financial strategies that consider both regional and income-specific factors. Finally, (Duong, N. D., 2025), This paper investigates the impact of the financial system on economic growth in emerging economies from 2012 to 2023, considering the role of national development (measured by per capita income) in shaping this relationship. Using Pooled OLS, FEM, REM, and GLS methods, the study identifies key financial development indicators banking system development, liquid liabilities to GDP, and stock market capitalization as positively associated with economic growth. The effect is more significant in low-income countries. Government spending and trade openness support growth, while inflation hinders it. The study concludes with policy recommendations to strengthen financial markets and promote sustainable growth in emerging economies. (Mennad, Meskini, & BENHADDU, 2025) Using the Panel ARDL model, a recent study examined the connection between economic growth and financial development in 31 African nations between 1990 and 2021. The study made a distinction between financial depth, efficiency, and access, and found that while efficiency has a detrimental effect, depth and access foster long-term growth. While financial depth may impede GDP owing to structural or transitional barriers, financial access has a short-term positive impact. In order to promote sustainable growth, the study suggested strengthening financial inclusion and regulatory frameworks and underlined the significance of institutional and economic elements in forming this link.

3. Model, Methods, And data

3.1 Empirical Model

In order to account the impacts of role of determinants of financial development on economic growth in ALGERIA, the model for the study is hereby specified as follows :

$$GDP_t = \beta_0 + \beta_1 CP_t + \beta_2 I_t + \beta_3 M2_t + \varepsilon_t \dots \dots (1)$$

Where β_0 is the intercept. $\beta_1, \dots, \beta_3$ respectively are the estimation coefficients to be estimated. It is the error term. ($t = 1, 2, \dots, 29$).

• **Economic Growth (GDP: GDP growth annual %)** : The steady rise in output over an extended period of time is referred to as economic growth. It is seen as a crucial feature of advanced economies. Economists frequently use the term "expansion" to refer to the degree of growth within the business cycle in the short and medium term.

• **Financial Depth Indicator (CP: Domestic credit to private sector % of GDP)** : The size and degree of development of an economy's financial sector are referred to as financial depth. It is frequently quantified by dividing the GDP by the amount of credit that financial institutions extend to the private sector. The financial system's ability to finance economic and productive activity is indicated by a larger ratio. Among its significance are:

- ✓ It is among the key metrics used to evaluate how much the financial sector contributes to economic expansion.
- ✓ It shows how well banks and other financial organizations can mobilize and distribute resources.

• **Financial Intermediation Efficiency Indicator (I: Interest rate spread lending rate minus deposit rate %):** This measure assesses how well the financial sector converts accessible savings into profitable loans and investments. It evaluates the effectiveness and caliber of resource use in addition to the amount of intermediation.

Among its significance are:

- ✓ Better resource allocation is guaranteed by a more effective financial system, which strengthens support for economic expansion.
- ✓ It is a reflection of banking institutions' operational transparency and good risk management.

• **Financial Intermediation Indicator (M2: Broad money % of GDP):** Financial intermediation is the process by which financial institutions, like banks, link savers and investors; that is, by lending, accepting deposits, and offering payment methods and financial services, they convert savings into investments. Among its significance are:

- ✓ Strong financial inclusion, or the integration of people and enterprises into the official financial system, is indicated by a high degree of financial intermediation.
- ✓ It improves the effective distribution of financial resources and lessens dependency on the unorganized sector.

3.2. Data and Estimation Techniques

The World Development Indicator (WDI) provided all of the data used in the study for Algeria from 1995 to 2023.

It uses a number of pertinent approaches to investigate how the factors influencing financial development affect economic expansion. The ARDL model is utilized for both short-run parameters and long-run estimates, and the ADF test is employed to examine stationarity.

3.3 Empirical Results

3.3.1. Results of Unit Root Test

To investigate the stationary and determine the integration level of the selected variables, we employed developed test, The ADF

- H0: variable has unit root
- H1: variable has not unit root

Table 1: ADF unit root tests

At Level					
	VAR	GDP	I	M2	CP
Intercept	prob.	(0.001)	(0.005)	(0.417)	(0.625)
Trend and intercept	prob.	(0.001)	(0.733)	(0.218)	(0.248)
None	Prob	(0.049)	(0.917)	(0.817)	(0.248)
At First Difference					
Intercept	prob.	/	(0.046)	(0.000)	(0.0016)
Trend and intercept	prob.	/	(0.014)	(0.017)	(0.008)
None	Prob	/	(0.019)	(0.000)	(0.001)
Order of integration		I(0)	I(1)	I(1)	I(1)

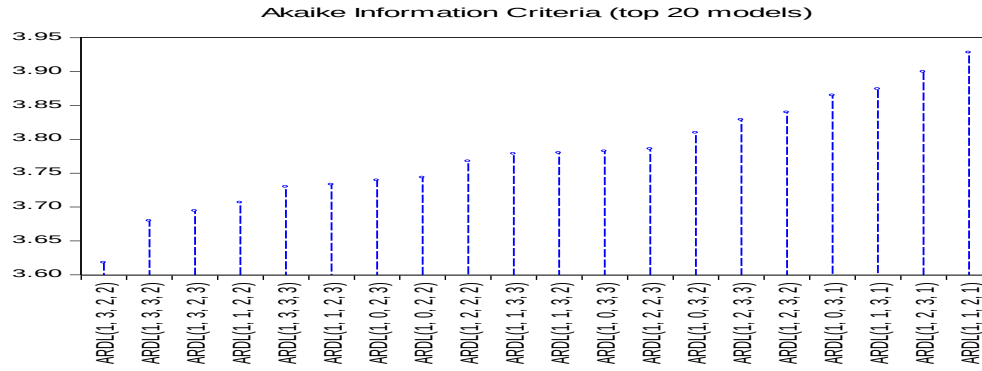
Source: Author's estimate of results using EViews 9.0

The ADF unit root test results for the variables' level and initial differences are compiled in Table 1. The unit root test validates that the ARDL approach may be used for the cointegration relationship since the findings indicated that all of the series are stationary in their first differences, indicating that they are integrated of order one I(1) except GDP at level.

3.3.2. ARDL model

We applied the auto-regressive distributed lag (ARDL) bound testing approach to cointegration, as suggested by Pesaran et al. (2001), to evaluate the long-term connection between the variables. Regardless of whether the underlying regressors are I(0) or I(1), recent research has demonstrated that the ARDL model is a favored approach for estimating cointegration connections because of its dependability and relevance.

Figure 1: Optimum lag of the model



Source: Author's estimate of results using EViews 9.0

The above figure shows us Optimum lag is (3, 1, 2, 2)

Table 2: Short term ARDL model estimation

Dependent Variable: GDP Selected Model: ARDL(1, 3, 2, 2) Adj Rsq= 0,6825 Prob F(0.001)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	-0.470663	0.213422	-2.205318	0.0447
I	1.094016	0.891822	1.226720	0.2402
I(-1)	-1.480699	1.154789	-1.282225	0.2206
I(-2)	0.809704	0.829435	0.976212	0.3455
I(-3)	-0.941718	0.499039	-1.887065	0.0801
M2	-0.135199	0.079355	-1.703730	0.1105
M2(-1)	0.044854	0.076262	0.588160	0.5658
M2(-2)	0.316117	0.066528	4.751607	0.0003
CP	0.634530	0.224452	2.827021	0.0134
CP(-1)	-0.618167	0.240947	-2.565576	0.0224
CP(-2)	-0.605340	0.217008	-2.789476	0.0145
C	0.829725	2.952166	0.281056	0.7828

Source: Author's estimate of results using EViews 9.0

The short-term estimation results are shown in the above table, with a Fisher probability value of 0.001, confirming the overall goodness of fit and showing a statistically significant model. This indicates that 68.25% of the variation in the dependent variable, which stands for economic growth, can be explained by the independent variables of financial depth, financial intermediation, and financial intermediation efficiency.

The dependability of the estimations is further supported by the fact that the p-values of some variables fall below the traditional significance limits of 1%, 5%, and 10%. According to accepted economic theory, the lagged M2 indicator, which has a two-period lag, exhibits a positive correlation with economic growth. The credit to the private sector (CP), on the other hand, shows a negative correlation, which could indicate inefficiencies in the distribution of credit or a crowding-out effect.

Table 3 :ARDL Bounds Test

Test Statistic	Value	Signif	I(0)	I(1)
F-statistic K	16.78559 3	10%	2.72	3.77
		5%	3.23	4.35
		2.5%	3.69	4.89

		1%	4.29	5.61
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Source: Author's estimate of results using EViews 9.0

The computed F-statistic value of 16.78559 surpasses the upper critical limits at the 10%, 5%, 2.5%, and 1% significance levels, according to the findings of the bounds testing method, which are displayed in the above table. As a result, the alternative hypothesis that there is a long-term cointegrating relationship between the variables under consideration is accepted, while the null hypothesis that there is no long-term cointegration is rejected. This suggests that the variables have a long-term equilibrium connection. Consequently, the following phase will include estimating the long-run model parameters.

Table 4: long-term model parameters

Cointegrating Form				
CointEq(-1)	Coefficient	Std. Error	t-Statistic	Prob.
	-1.470663	0.213422	-6.890869	0.0000
Cointeq = GDP - (-0.3527*I + 0.1535*M2 -0.4005*CP + 0.5642)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
I	-0.352696	0.259442	-1.359439	0.1955
M2	0.153517	0.067554	2.272498	0.0393
CP	-0.400483	0.124057	-3.228224	0.0061
C	0.564184	1.977300	0.285331	0.7796

Source: Author's estimate of results using EViews 9.0

With a p-value of 0.000, or less than 1%, the error correction term (ECT) is statistically significant and negative (-1.470663). This fulfills the required condition and validates that the independent variables (I, M2, CP) and the dependent variable (GDP) have a long-term cointegrating relationship.

The coefficients of the variables CP and M2 are also statistically significant at the 5% level, according to the long-run estimation results, underscoring their important long-term impact on economic growth.

3.3.3. Validity test of the model

Table 5: Validity test of the model

Test	Statistic	Degrees of Freedom (df)	Probability (p-value)
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.914995	(2,12)	0.4267
Obs*R-squared	3.440332	(2)	0.1790
Heteroskedasticity Test: ARCH			
F-statistic	1.547478	(5,15)	0.2344
Obs*R-squared	7.146166	(5)	0.2100
Ramsey RESET Test			
F-statistic	2.261916	(3,11)	0.1382

Source: Author's estimate of results using EViews 9.0

It is evident from the test results in the preceding table that the probability values exceed 5%. Consequently, we accept the null hypothesis, proving that the model is free of common problems with the residual variance's homogeneity. Heteroscedasticity is thus not present since we may presume that the variance of the residuals remains constant across a range of values of the predicted variable.

4. Conclusion:

This study examines the relationship between Algeria's economic growth and the factors that influence financial development. between 1995 and 2023. The empirical findings of the study can be summed up as follows: The findings indicate that, at the 1% level, the CP variable has a negative long-term impact (-0.40) on Algeria's economic growth but a positive short-term impact (0.63). This implies that changes made to the financial sector have not resulted in long-term growth, maybe as a result of ineffective loan distribution and government control over the industry. Additionally, the results show a weak connection between the financial and real sectors, underscoring the need for more market-oriented and balanced financial development.

Financial intermediation, or variable M2, had a positive correlation with economic growth, measuring 0.15 over the long term and 0.316 over the short term (with a two-year lag). These findings demonstrate how financial intermediation, especially through banks and other organizations, can promote economic expansion. Banks help create projects by lending money to businesses, which has a favorable impact on the economy as a whole. Furthermore, because it facilitates more effective resource allocation toward the most lucrative and productive industries, banks' involvement in mobilizing and allocating savings is essential for raising productivity and attaining sustained economic growth.

the study found that the variable I, representing financial intermediation efficiency, had no significant impact on economic growth in either the short or long term. This result is attributed to inefficient credit allocation, where loans often target low-return sectors due to weak risk assessment. Institutional and regulatory weaknesses further hinder the financial system's effectiveness. Moreover, the lack of financial innovation limits support for dynamic economic sectors. The dominance of public banks and strong state control reduce competition and incentives for efficiency. Overall, financial intermediation efficiency depends more on the quality and targeting of funding than on its volume.

Recommendations:

- **Boost Financial Stability:** Increasing the stability of the financial system through sensible rules and careful monitoring can increase trust in the system and draw in more capital.
- **Encourage Financial Inclusion:** Making financial services, such as banking, finance, and insurance, more accessible to everyone can improve the capacity of both individuals and companies to engage in the economy.
- **Promote Financial Innovation:** Businesses' capacity to develop and grow can be improved by assisting in the creation and efficient application of cutting-edge financial instruments.
- **Boost Financial Literacy:** Financial development can be facilitated by raising people's understanding of financial issues and offering advice on how to handle their money more effectively.
- **Encourage Public-Private Partnerships:** Improving cooperation between the public and private sectors in carrying out financial development initiatives can boost economic expansion.

References

- [1] Benhaddou, A. (2023). Financial Development And Economic Growth In Algeria :an Empirical Study. *economic integration*, 11(05).
- [2] Duong, N. D. (2025). The Impact of Financial Development on Economic Growth in Emerging Economies. *Research Square*, 2-25.
- [3] Girma, A.G., Huseynov, F. . (2025). Multidimensional analysis of finance-growth nexus in Africa: evidence from a panel ARDL model. *Journal of Economics and Finance*, 1-21.
- [4] Gizaw, T., Getachew, Z., & Mancha, M. (2024). Financial development and economic growth: evidence from emerging African and Asian countries. *Cogent Economics & Finance*, 12(1).
- [5] Gull, S., Farid, T., & Maqsood, Z. . (2023). The impact of financial development and green financing on economic growth: An ARDL estimation. *Sustainable Trends and Business Research*, 1(2), 101-114.
- [6] Guru, & Yadav. (2019). Financial development and economic growth: panel evidence from BRICS. *Journal of Economics, Finance and Administrative Science*, 24(47).
- [7] Ikhsan, A. ., & Satrianto, A. . (2023). The effect of financial development on economic growth in high-income countries. *Asian Economic and Financial Review*, 13(3), 202–215.
- [8] Mabasa, T., Tipoy, C. K., Nyati, M. C., & Msomi, S. (2025). An Empirical Study of Financial Development and Economic Growth in Africa. *Preprints*, 1-19.
- [9] Mennad, B. I., Meskini, A., & BENHADDOU, A. (2025). Between Finance and Growth: The Role of Financial Development in Promoting Economic growth in Africa. *Finance, Accounting and Business Analysis*, 7(1).

- [10] Panizza, U. (2014). FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH. *Revue d'économie du développement*, 22.
- [11] TARIQ, R., & et al. (2020). How Does Financial Development Impact Economic Growth in Pakistan?: New Evidence from Threshold Model. *Journal of Asian Finance, Economics and Business*, 7(8).
- [12] Yıldırım, D.Ç., Yumusak, I.G., & Gürçek, D. (2024). The Relationship between Stock Market-Based Financial Development and Economic Growth: The Case of Turkey. *Proceeding of the World Conference on Management, Business, and Finance*, 1(1), 14-25.