The Dynamic Response of Domestic Investment Levels to Financial Development Activity in Algeria during the Period 1990-2024

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Abstract:
This study examines the asymmetric effects of financial development on investment levels in Algeria from 1990 to 2024. Using the NARDL model.

we found that a decline in financial development activity, indicated by an expansion in loan size, increases investment levels by 0.85 units. Moreover, a one-unit increase in loan size leads to a 0.26-unit rise in investment. These findings show that the expansion of financial development in Algeria plays a significant role in boosting investment, especially when economic stability is achieved, including controlling unemployment and ensuring acceptable economic growth rates.
Keywords: Financial Development Activity; Investment Levels; Bank Loans; Unemployment; Economic Growth.
JelClassificationCodes: G21, E22, G28, E24.

1. INTRODUCTION

Investment constitutes a central driver of economic growth, as it contributes to the development of productive capacities, supports the diversification of economic activities, and enhances employment opportunities. Nevertheless, the scale and effectiveness of domestic investment are closely linked to the performance of the financial system, which plays a fundamental role in channeling savings toward productive economic activities. In this context, financial development represents a crucial mechanism for improving the collection of financial resources and allocating them efficiently to sectors with higher economic returns.

International economic experiences and the repercussions of financial crises have demonstrated that weaknesses or imbalances in financial development policies have direct effects on investment activity in both the short and long run. This connection is more pronounced in developing countries, where the financial system constitutes the main source of financing, as financial markets remain relatively underdeveloped. Consequently, domestic investment in these economies becomes highly sensitive to fluctuations and shocks affecting financial development.

In Algeria, the importance of the link between financial development and investment became particularly evident following the implementation of banking sector reforms, especially after the promulgation of the Currency and Credit Law No. 90-10 in 1990. This legislation marked a turning point in the organization of the banking system by enhancing regulatory frameworks, increasing the independence of the Bank of Algeria in conducting monetary policy, and allowing the entry of private and foreign banks to foster competition. These reforms aimed to strengthen the efficiency of the financial system and improve its capacity to mobilize savings and direct them toward productive investments capable of supporting economic growth. However, these reform efforts were accompanied by various economic challenges, notably volatility in oil prices and episodes of economic slowdown, which limited the financial sector's ability to effectively finance local investment projects.

Based on the foregoing, the central research question of this study can be formulated as follows:

-To what extent does financial development contribute to enhancing local investment levels in Algeria during the period 1990–2024?

In order to comprehensively address this main question, the study seeks to answer the following sub-questions:

-What is financial development, and what role does it play in the economy?

-How is investment defined, and what are its main dimensions?

-What characterizes the relationship between financial development and investment levels?

To empirically examine this relationship, the study proposes the following hypotheses:

-The expansion of financial development, particularly through increased credit provision, positively influences investment levels in Algeria.

-Changes in investment levels in Algeria are influenced by variations in unemployment rates.

-Economic growth, as measured by gross domestic product, contributes to an increase in investment volume in Algeria.

Significance of the Study:This research gains its significance from the pivotal contribution of financial sector advancement to stimulating investment in Algeria, especially through its influence on expanding the scale of investments under prevailing economic conditions.

Objective of the Study:The purpose of this study is to examine whether changes in financial sector development have influenced investment performance in Algeria over the period 1990–2024. More specifically, the research seeks to construct an econometric framework capable of clarifying how indicators of financial development explain variations in investment levels.

Methodology:Research of this kind generally adopts a dual methodology that combines analytical description with econometric techniques. The descriptive component serves to clarify the conceptual link between financial development indicators and investment volumes, whereas the econometric approach is employed to measure and quantify the interaction between the variables under investigation. This integrated framework makes it possible to formulate a model that explains the effect of financial development dynamics on investment levels in Algeria throughout the period 1990–2024.

2. The Theoretical Framework of Financial Development

Financial sector advancement represents a fundamental pillar in assessing the robustness and efficiency of an economy, as it enhances the capacity of financial institutions to facilitate and sustain economic operations. By channeling savings into value-creating investments and expanding access to financial services, the financial system contributes significantly to overall economic stability. Accordingly, this section focuses on presenting and discussing the main concepts associated with financial development.

2.1 Definition of financial development

Financial development is a multifaceted phenomenon that cannot be captured by a single, straightforward definition. As noted in the Financial Development Report (2011), it encompasses the growth of financial institutions, services, and capital within an economy, aiming to improve both the quality and efficiency of financial operations. This process focuses on upgrading the performance of financial institutions, enhancing the services they offer, and increasing their overall effectiveness. Moreover, it promotes stronger links between financial intermediaries, facilitating connections between investors and borrowers, while opening new financing channels that support long-term and sustainable economic growth(Faraj, 2021, p. 520), According to the 2012 Financial Development Report by the World Economic Forum, financial development encompasses the policies, institutions, and mechanisms that enable effective financial intermediation and well-functioning markets, while also ensuring widespread access to capital and financial services. Schmitz (2011) highlighted that financial development rests on two core dimensions: financial liberalization and financial deepening. Financial liberalization involves minimizing government interference to create a system driven more by market forces, whereas financial deepening pertains to the expansion of financial markets, reflected in growth in market capitalization and overall liquidity(Hussein, 2025, p. 59)(Giritli & Kalmaz, 2020, p. 8).

Furthermore, financial development can be viewed in terms of the roles performed by the financial system, such as supplying crucial investment and capital allocation information, funding and monitoring investments, enabling trade, providing diverse (kebir, 2021, p. 33)(Ibtisam & Bader Shehdeh, 2020, p. 30).

2.2 Elements of a Financial Development Strategy

Achieving financial development within a given period requires a well-structured strategy that integrates multiple, interrelated components. These components can be summarized as follows(Bengana & Boughazala, 215, p. 266)(Belghalem, 2024, p. 274):

-Expanding the presence of financial institutions within the sector.

-Broadening the range of financial services available and increasing the total funds flowing through the financial system.

- Gradually increasing the capital allocated by private financial institutions to private sector initiatives, reducing reliance on direct government lending through state banks.

- Improving the financial sector's effectiveness in regulation, supervision, stability, efficiency, and competitive practices.

- Increasing the share of the population that has access to credit and other financial services.

Furthermore, additional strategies are highlighted by, including (Azzam, 2017, pp. 19-20):

-Effectively overseeing financial markets to deliver a wide array of instruments and services, enhancing market depth and enabling efficient allocation of resources.

-Encouraging transparent and cooperative engagement between regulators and market participants to support a more open and integrated financial system.

-Easing constraints on banks to permit stock ownership and trading, underwriting activities, and lending based on shareholder equity, thereby increasing market liquidity, providing borrowers with greater flexibility.

2.3.Indicators of Financial Development

To effectively assess financial development and its influence on investment levels, the majority of researchers concur that it should be defined through a framework encompassing three principal dimensions(Nada Majid & Kalthoum, 2024, pp. 552-553):

-First Dimension: Size and Depth: This dimension evaluates the scale of the financial system relative to the economy as a whole. It is assessed using a set of indicators

- The proportion of credit extended to the private sector relative to the overall GDP.

-Market capitalization levels.

-Trading volume indices.

-Second Dimension: Efficiency and Effectiveness: This dimension assesses how well the financial system facilitates transactions by lowering information costs and improving the efficiency and effectiveness of services provided by financial institutions. Key indicators include:

-Banking sector profitability.

-Turnover rates.

-Third Dimension: Financial Activity: This dimension reflects the intensity of financial system activity compared with overall economic activity. It includes two main aspects: banking system activity and market system activity. It measures individuals' access to financial services and provides insight into the usage and distribution of these services across the national economy, particularly in the private sector. Main indicators include:

-Number of bank accounts per 1,000 people, indicating engagement with banking services.

-Number of bank branches per 100,000 people, reflecting the geographic spread of banking institutions.

-Financial system penetration index, showing the overall density and reach of banking services.

2.4 Literature Review

In economics, financial development refers to a set of concepts centered on the financial sector. It is generally characterized by four primary roles: enhancing the generation of information about prospective investments and guiding capital allocation; supervising firms and enforcing corporate governance; supporting trade, diversification, and risk management; and aggregating savings while facilitating the exchange of goods and services(Levine, 1997, pp. 688 – 726) .

The financial system influences investment choices and technological progress primarily by mobilizing savings, structuring markets, and serving as a central hub for economic activity. Hawkins (2006) describes the financial system as an interconnected set of components, including legal frameworks, markets, and institutions. Its importance stems from its role in promoting capital accumulation and technological advancement, both essential for economic growth.

Financial development is crucial for shaping domestic investment, as financial institutions direct private savings toward productive uses. Contemporary economic research indicates that enhancing financial development directly boosts capital investment and encourages innovation, which in turn generates sustained growth in local investment over time(Muyambiri & M. Odhiambo, 2018, pp. 167-192) (Ndikumana, 381-400).

According to neoclassical growth theories, the expansion of the financial system mainly influences investment by directing collected savings toward productive ventures. These models emphasize various determinants to account for economic growth within a country, including capital accumulation, workforce expansion, technological advancement, and population increases. Additionally, financial development, levels of savings, government expenditures, monetary policies, and other key elements are regarded as essential components needed to foster sustainable economic growth(Muyambiri & M. Odhiambo, 2018, pp. 167-192) .

3.Measuring the Impact of Financial Development on Investment in Algeria from 1990 to 2024

Financial development is regarded as a crucial driver for boosting investment in Algeria, especially given the economic and financial challenges the country has experienced since the early 1990s. This section focuses on examining how the growth of financial development activities has influenced the level of domestic investments between 1990 and 2024.

1.3. Study Variables and the Model Used

he table below offers a comprehensive breakdown of the variables employed in this research. These variables are categorized based on their respective roles within the analytical framework, providing clarity on the relationship between financial development and investment in Algeria throughout the specified period.

Table 1. Variables of the Study

Variable	Type	Variables
$\mathbf{y_t}$	Dependent	Investment expressed through fixed capital accumulation
$\mathbf{x_{1\,t}}$	Independent	Financial Development
$\mathbf{x_{2\,t}}$	Independent	Unemployment rate
$\mathbf{x_{3\,t}}$	Independent	GDP growth rate

Source: prepared by the researcher

2.3. Estimation of the Model

Many studies that employ the ordinary least squares (OLS) method encounter difficulties related to precise economic measurement, particularly when it comes to incorrectly estimating the parameters of the model. This issue arises from the presence of non-random elements within the time series data, which can distort its trajectory and, in turn, affect the dynamic interactions among various economic variables. Consequently, instead of relying solely on the original model, we reframe it using contemporary time series techniques to achieve more reliable outcomes.

3.2.1. Time Series Stationarity Testing

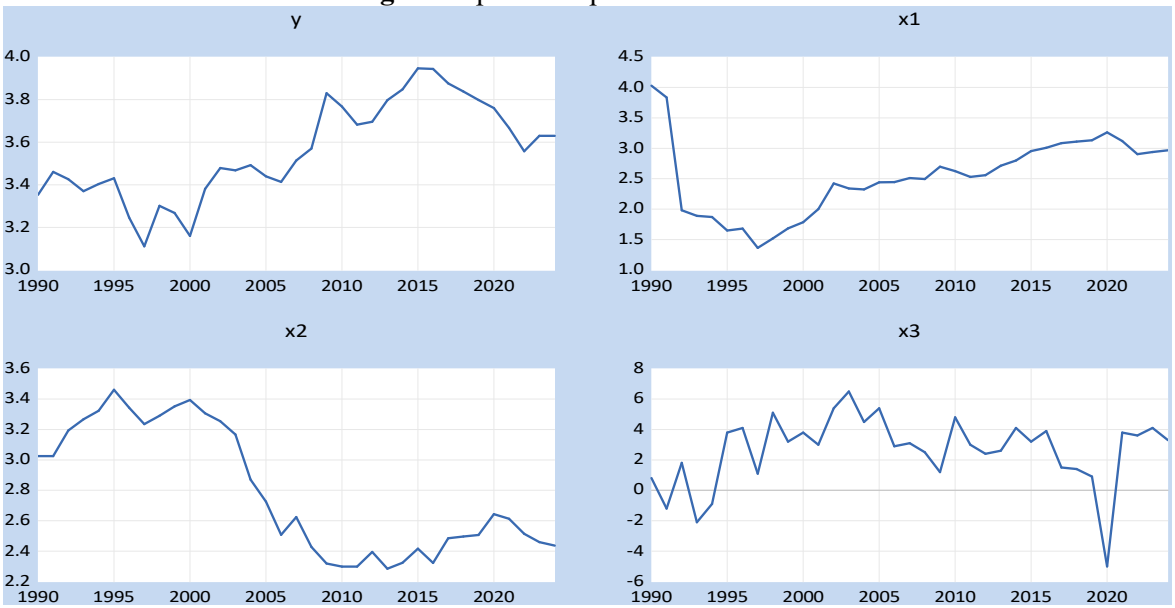
Assessing the stationarity of time series is essential to identify factors that may lead to inaccurate parameter estimations. Among the commonly used methods for this assessment are the ADF and PP tests. However, before applying these tests, the time series will first be graphically represented to provide an initial understanding of their patterns. The visual analysis suggests that the progression of the variables over time does not exhibit a consistent trend, implying that these time series are likely non-stationary.

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Fig.1. Graphical Representation of Time Series



Source: prepared by the researcher

Building on the insights gained from the previous chart, we will now apply the ADF and PP tests to verify the non-stationary nature of the time series. The results of these tests are presented in the table below:

Table 02. Unit root test results for time series

time series	ADF test					PP test				
	With Constant & Trend		With Constant		Without Constant & Trend	With Constant & Trend		With Constant		Without Constant & Trend
	b=0	λ=0	c=0	λ=0	λ=0	b=0	λ=0	c=0	λ=0	λ=0
At level										
y	0.299	0.719	0.157	0.560	0.79	0.299	0.697	0.157	0.538	0.787
x_1	0.000	0.002	0.022	0.100	0.2419	0.000	0.000	0.022	0.065	0.256
x_2	0.173	0.808	0.617	0.848	0.2846	0.173	0.646	0.617	0.788	0.342
x_3	0.861	0.018	0.003	0.003	0.183	0.861	0.019	0.003	0.003	0.187
At First Difference										
y	0.671	0.001	0.787	0.000	0.000	0.919	0.000	0.787	0.000	0.000
x_1	0.165	0.001	0.734	0.000	0.000	0.165	0.001	0.734	0.000	0.000
x_2	0.823	0.003	0.457	0.000	0.000	0.823	0.002	0.457	0.000	0.000
x_3	0.677	0.000	0.675	0.000	0.000	0.677	0.000	0.675	0.000	0.000

Source: Prepared by the researcher based on the output of Eviews 12.

According to the findings presented in the table above, and utilizing the Dickey-Fuller test to check for a unit root in the time series, it is observed that all the series become stationary after taking the first difference.

3.2.2.Cointegration Test: Since the time series are stationary at the same order, the Johansen test is not appropriate for detecting cointegration among them. Therefore, the Bound Testing Approach is used as a more suitable alternative. Prior to applying this test, we first determine the optimal ARDL model and subsequently implement the optimal nonlinear specification of the

NARDL model. In this regard, the linear form of the model can be represented by the following relationship, based on the study variables:

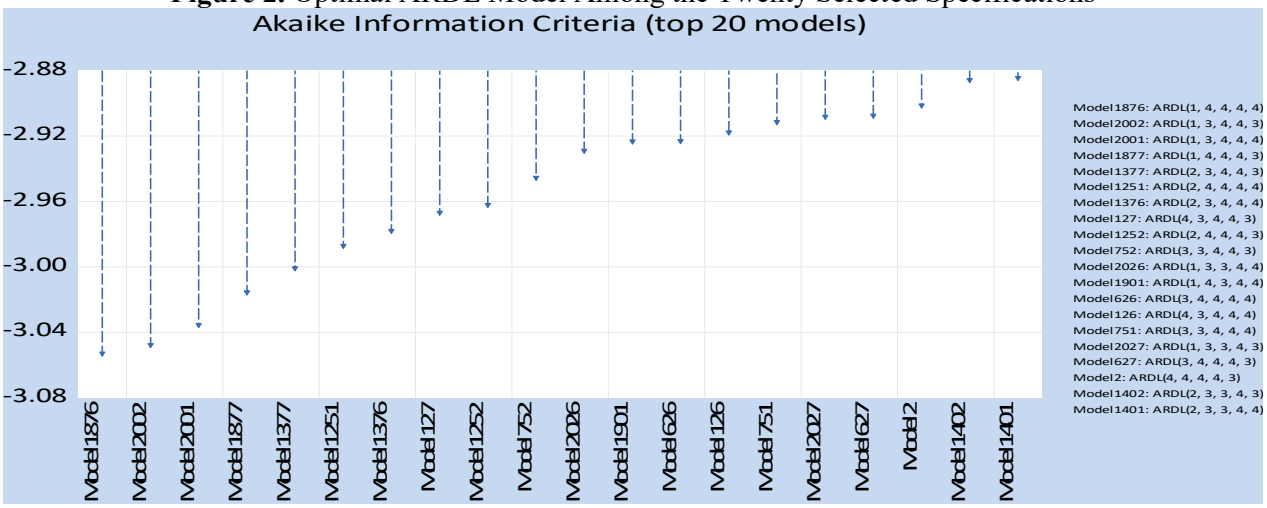
$$\Delta y_t = a_0 + \sum_{i=1}^{p-1} \beta_{1i} \Delta y_{t-i} + \sum_{i=0}^{q_1-1} \beta_{2i} \Delta x_{1\,t-i} + \sum_{i=0}^{q_2-1} \beta_{3i} \Delta x_{2\,t-i} + \sum_{i=0}^{q_2-1} \beta_{4i} \Delta x_{3\,t-i} + \emptyset_1 y_{t-1} + \emptyset_2 x_{1\,t-1} + \emptyset_3 x_{2\,t-1} + \emptyset_4 x_{3\,t-1} + u_t$$

Building on the ARDL(p, q_1, q_2) framework, the nonlinear version of the model assumes that each explanatory variable consists of two separate components. As a result, the model can be formulated as follows:

$$\Delta y_t = a_0 + \sum_{i=1}^{p-1} \beta_{1i} \Delta y_{t-i} + \sum_{i=0}^{q_1^+-1} \beta_{2i}^+ \Delta x_{1\,t-i}^+ + \sum_{i=0}^{q_1^--1} \beta_{2i}^- \Delta x_{1\,t-i}^- + \sum_{i=0}^{q_2-1} \beta_{3i} \Delta x_{2\,t-i} + \sum_{i=0}^{q_2-1} \beta_{4i} \Delta x_{3\,t-i} + \emptyset_1 y_{t-1} + \emptyset_2^+ x_{1\,t-1}^+ + \emptyset_2^- x_{1\,t-1}^- + \emptyset_3 x_{2\,t-1} + \emptyset_4 x_{3\,t-1} + u_t$$

The equation presented corresponds to the NARDL$(p, q_1^+, q_1^-, q_2^+, q_2^-)$specification. At this point, the estimation process aims to determine the optimal lag structure by utilizing the Akaike Information Criterion (AIC). The analysis is carried out using EViews 12, which systematically compares various model specifications and identifies the most efficient one based on the AIC values for different lag settings.

Figure 2. Optimal ARDL Model Among the Twenty Selected Specifications



Source: prepared by the researcher

As shown in the figure, the Akaike Information Criterion reaches its lowest value at the highest bar (since the values are negative). This point aligns with the NARDL(1, 4, 4, 4, 4) specification, which is identified as the optimal model. After estimating this model and applying the previously mentioned bounds testing procedure, the results are summarized as follows:

Table 03. Wald test results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	8.933298	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Prepared by the researcher based on the output of Eviews 12.

When the calculated F-statistic is measured against the critical value, the result indicates the observed F-statistic (F = 8.93) exceeds the upper bound at the 5% significance level. This outcome confirms the presence of long-term co-movement between the time series, which enables the next step of estimating the error correction model using the NARDL methodology.

3.2.3 Estimation of Model Parameters and Model Validation: After establishing the existence

A- Long-Run Parameter Estimation: The results of estimating the long-run parameters for the NARDL model are summarized in the following table:

Table 4. Results of Long-Run Parameter Estimation

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_POS	0.260610	0.070047	3.720526	0.0059
X1_NEG	0.852532	0.161860	5.267107	0.0008
X2	-0.609673	0.062029	-9.828770	0.0000
X3	0.000199	0.022693	0.008766	0.9932
C	7.192976	0.376201	19.12001	0.0000
EC = Y - (0.2606*X1_POS + 0.8525*X1_NEG -0.6097*X2 + 0.0002*X3 + 7.1930)				

Source: Prepared by the researcher based on the output of Eviews 12.

B - Estimation of Short-Term Parameters and the Error Correction Model: Error correction models are employed to determine the adjustment coefficient, which reflects how quickly the system returns to long-run equilibrium after short-term deviations. The estimated values of this coefficient are presented in the table below:

Table 5. Results of Short-Run Parameter Estimation

ARDL Error Correction Regression
Dependent Variable: D(Y)
Selected Model: ARDL(1, 4, 4, 4, 4)
Case 2: Restricted Constant and No Trend
Date: 09/24/25 Time: 20:32
Sample: 1990 2024
Included observations: 30

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(X1_POS)	0.662041	0.096221	6.880431	0.0001
D(X1_POS(-1))	0.635887	0.130007	4.891194	0.0012
D(X1_POS(-2))	0.762352	0.123890	6.153476	0.0003
D(X1_POS(-3))	0.127616	0.093018	1.371951	0.2073
D(X1_NEG)	0.867145	0.135324	6.407924	0.0002
D(X1_NEG(-1))	-0.786899	0.143401	-5.487413	0.0006
D(X1_NEG(-2))	-0.833815	0.178534	-4.670354	0.0016
D(X1_NEG(-3))	-0.066218	0.026621	-2.487476	0.0377
D(X2)	-0.266018	0.081131	-3.278888	0.0112
D(X2(-1))	0.355932	0.090999	3.911397	0.0045
D(X2(-2))	0.434408	0.095830	4.533129	0.0019
D(X2(-3))	0.293401	0.087651	3.347385	0.0101
D(X3)	0.000705	0.004255	0.165586	0.8726
D(X3(-1))	-0.006146	0.005511	-1.115173	0.2972
D(X3(-2))	-0.002674	0.005363	-0.498564	0.6315
D(X3(-3))	0.007710	0.003922	1.965892	0.0849
CointEq(-1)*	-1.201906	0.128784	-9.332720	0.0000

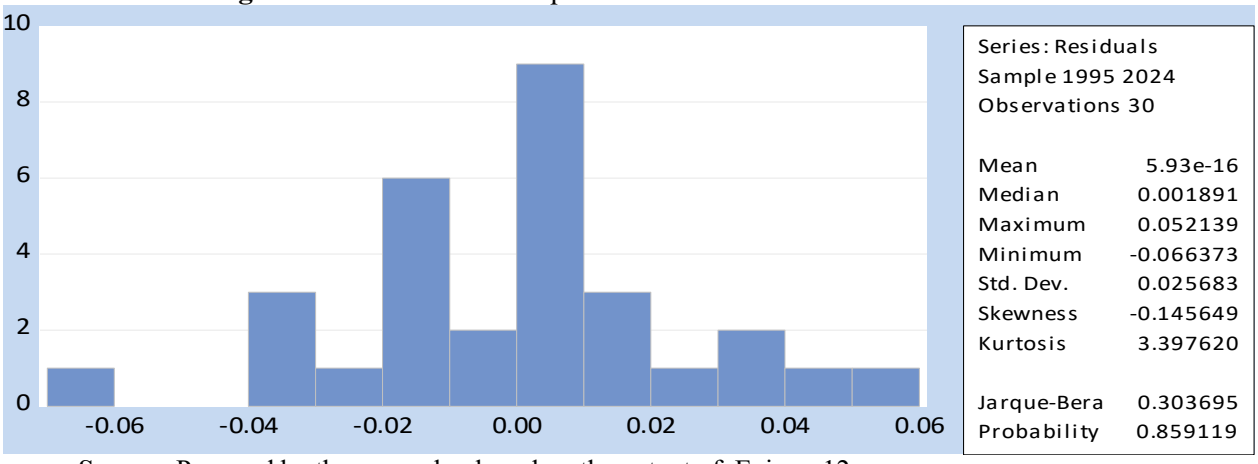
Source: Prepared by the researcher based on the output of Eviews 12

As shown in Table 5, the error correction coefficient is both economically meaningful, given its negative sign, and statistically significant, with a p-value less than 5%. Moreover, the value of 1.20 indicates that short-term discrepancies are fully corrected in the long run.

C - Diagnostic Evaluation of the Estimated Model:

-Residual Distribution: The normality of the residuals is tested using the Jarque-Bera test, with the null hypothesis suggesting that the residuals are normally distributed. The results of this test are illustrated in the figure below.

Figure 3. Results of the Jarque-Bera Test on the Estimated Residuals



Source: Prepared by the researcher based on the output of Eviews 12

As depicted in the figure, the histogram of the estimated residuals closely follows the bell-shaped curve typical of a normal distribution. Additionally, since the p-value of the Jarque-Bera test (0.85) exceeds the 5% significance level, we fail to reject the null hypothesis, suggesting that the residuals are normally distributed.

-Test for Autocorrelation of Errors: Autocorrelation in errors is a critical concern, as it can distort the accuracy of econometric models by indicating a correlation between successive errors. In the context of the bounds testing methodology, the Breusch-Godfrey test is commonly employed to identify this issue.

Table 6. Results of the Autocorrelation Problem Test for the Estimated Residuals

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.264868	Prob. F(2,6)	0.7758
Obs*R-squared	2.433798	Prob. Chi-Square(2)	0.2961

Source: Prepared by the researcher based on the output of Eviews 12.

According to the table's results, the computed F-statistic (0.26) is lower than the critical value at the 5% significance level, leading us to accept the null hypothesis. This suggests that there is no autocorrelation in the residuals.

-Test for Variance Stability: Standard econometric models assume that error variances are homogeneous. To test this assumption, the Breusch-Pagan-Godfrey test is applied to check for the presence of heteroscedasticity.

Table 7. Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

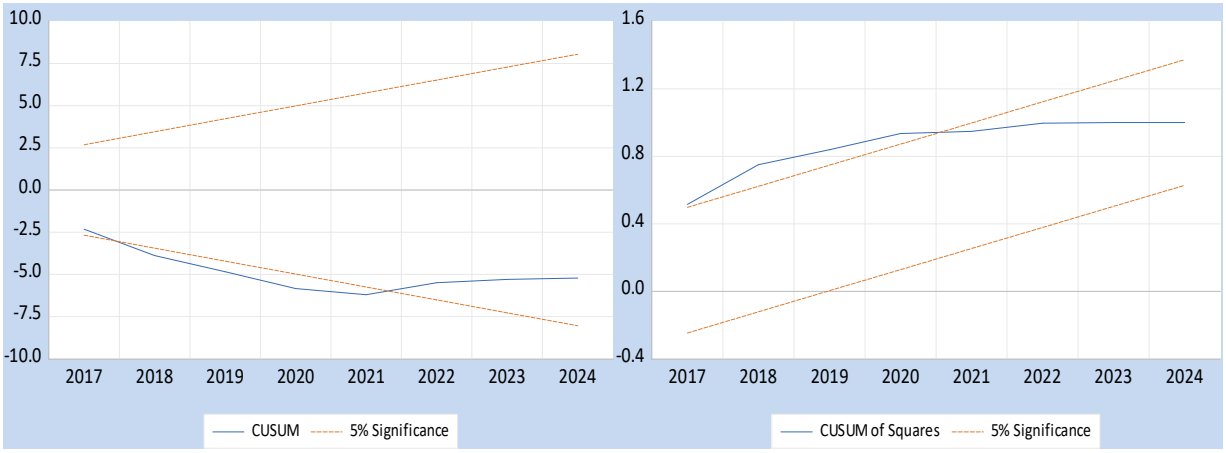
F-statistic	1.586583	Prob. F(21,8)	0.2565
Obs*R-squared	24.19143	Prob. Chi-Square(21)	0.2839
Scaled explained SS	2.062288	Prob. Chi-Square(21)	1.0000

Source: Prepared by the researcher based on the output of Eviews 12.

The F-statistic calculated is lower than the critical value at the 5% significance level, so the null hypothesis is maintained, implying that the model's residuals have uniform variance.

-Stability of the ARDL Model: To assess whether the estimated ARDL model maintains structural consistency, multiple diagnostic tests are performed.to ensure there are no structural breaks over time. Two specific tests are employed: the Cumulative Sum (Cusum) test and the Cumulative Sum of Squares (Cusum of Squares) test. As shown in Figure 4, the results reveal that the coefficients of the ARDL model remain consistent throughout the analysis period. This indicates that the interactions among the variables remain consistent, demonstrating the robustness of the model. Results from both tests lie within the critical thresholds at the 5% significance level, providing additional evidence of stability in both the short-run and long-run outcomes.

Figure 4: Cumulative Sum of Residuals and Cumulative Sum of Squared Residuals



Source: Prepared by the researcher based on the output of Eviews 12.

3.2.4Test for Parameter Symmetry in the Short and Long Run

The NARDL model employs the Wald test to assess the hypothesis of parameter symmetry between the short-term and long-term dynamics. Based on the estimated results from the NARDL(1,4,4,4,4) model, the hypotheses for this test are defined as follows:

For the independent variable (x1):

-Long Run: The long-term parameters are tested under the following hypothesis:

Table 8. Results of the Wald Test for Long-Run Symmetry Variable (x1)

Wald Test:
Equation: LRFORM

Test Statistic	Value	df	Probability
t-statistic	5.644723	8	0.0005
F-statistic	31.86290	(1, 8)	0.0005
Chi-square	31.86290	1	0.0000

Source: Prepared by the researcher based on the output of Eviews 12.

From the table's results, it is clear that the p-values for all three tests exceed the 5% significance level. Hence, we accept the null hypothesis, which suggests symmetry between the positive and negative shocks of the independent variable (x1) on the dependent variable in the long term.

-Short Run: The short-run hypothesis is stated as follows:

Table 9. Results of the Wald Test for Short-Run Symmetry (Variable (x1))

Wald Test:
Equation: LRFORM

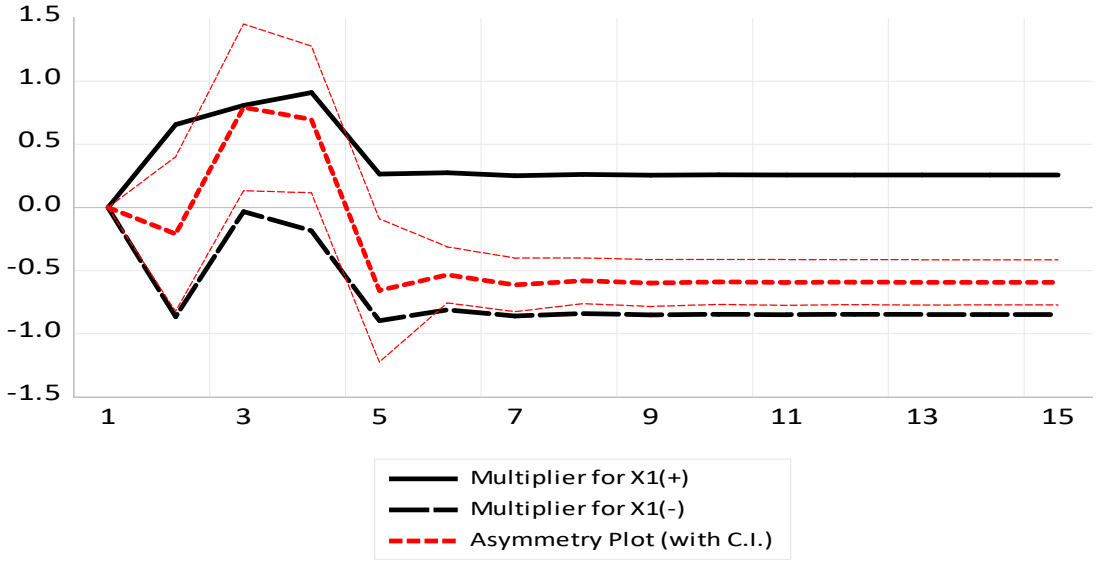
Test Statistic	Value	df	Probability
t-statistic	3.320374	8	0.0105
F-statistic	11.02488	(1, 8)	0.0105
Chi-square	11.02488	1	0.0009

Source: Prepared by the researcher based on the output of Eviews 12.

Upon reviewing the table, it is evident that the p-values for all three tests are above the 5% significance threshold. As a result, we reject the alternative hypothesis and accept the null hypothesis, which suggests that there is symmetry between the negative and positive shocks of the independent variable (x1) on the dependent variable in the short term

-Asymmetric Dynamic Impact Multiplier Test in the Short and Long Run

Figure 4. Asymmetric Dynamic Amplification Test



Source: Prepared by the researcher based on the output of Eviews 12.

increase in Financial Development activity (X1), reflected by the growth in bank financing, has a positive impact on investment levels (Y) in the short term. This effect is most significant in the initial periods (between periods 2 and 4), after which it stabilizes at a moderate positive level. In contrast, a reduction in Financial Development activity (X1) results in a more pronounced negative effect on investment. Additionally, the asymmetry curve demonstrates a notable discrepancy between the positive and negative responses, suggesting that the Algerian economy does not respond equally to changes in banking activity. The negative impact is more significant when activity decreases than when it increases, emphasizing the limited flexibility of the local investment system.

4. Analysis and Discussion of Results:

According to the results presented in Table (4), the equation for the estimated model can be expressed as follows:

$$y = 7.19 + 0.260610pos_{x_1} + 0.852532NEG_{x_1} - 0.609673_{x_2} + 0.000199_{x_3}$$

-The results from the regression analysis support the acceptance of the first hypothesis, which suggests that the growth of Financial Development, particularly through increased lending activities, enhances investment levels in Algeria. The findings show that a one-unit increase in Financial Development, represented by an increase in credit extended, leads to a 0.26-unit rise in investment. On the other hand, a reduction in loan amounts results in a 0.85-unit decline in investment. This indicates that investment is more sensitive to a reduction in credit than to an increase. This behavior can be explained by the heavy reliance of domestic investment on bank financing, due to the limited availability of alternative funding options and the lack of diversified financial intermediation instruments. As a result, bank loans remain a critical factor in influencing the pace and direction of investment activities.

-The regression results also validate the second hypothesis, which asserts that there is an inverse relationship between unemployment rates and investment levels in Algeria. The findings reveal that a decrease in unemployment positively affects domestic investment, with a one-unit drop in unemployment leading to a 0.60-unit increase in investment. This negative correlation

emphasizes the strong link between labor market conditions and investment behavior. Improved employment levels suggest greater economic stability, which boosts overall demand and encourages businesses to expand both their production and investment efforts. Additionally, lower unemployment strengthens investor confidence in the economic environment and reduces the social costs related to joblessness, thus fostering higher investment from both the public and private sectors.

-The regression analysis further supports the third hypothesis, which indicates that GDP growth in Algeria contributes to increasing investment levels. The results show that a one-unit rise in GDP growth leads to a 0.00019-unit increase in investment. Although this effect appears small, it illustrates a clear positive relationship between economic growth and investment activity. This finding is consistent with economic theory, which suggests that stronger economic performance creates a more favorable investment environment by boosting demand, improving project profitability, and increasing investor confidence. The relatively modest effect can be attributed to several factors, including the Algerian economy's limited adaptability, its heavy reliance on the hydrocarbon sector, and the structural and institutional barriers that prevent economic growth from translating directly into higher investment levels.

5. Conclusion:

The study titled Dynamic Response of Investment to Financial Development Levels in Algeria during the Period 1990–2024 has led to several key findings from both theoretical and empirical perspectives, which can be summarized as follows:

-The expansion of financial development in Algeria is crucial for driving the growth of investment levels.

-Algeria has effectively enhanced its economic management, particularly in fiscal policy, by maintaining control over unemployment levels. This ongoing oversight has created a conducive environment that greatly supports investment growth.

-Improved economic performance, fueled by higher GDP growth, has strengthened investor confidence and fostered a positive investment climate, channeling more financial resources into new projects.

Based on these findings, the following recommendations can be made to assist policymakers in achieving satisfactory investment levels:

-The Bank of Algeria should focus on reinforcing banking intermediation by encouraging commercial banks to adopt policies that make loans more accessible and promote innovative financing options for investors, thereby boosting investment levels.

-The Algerian government should prioritize creating a stable economic environment, particularly through managing unemployment rates and achieving sustainable growth. This will enhance investor confidence and facilitate the flow of capital into local projects.

-The Algerian government should simplify the legal and administrative processes associated with investment, particularly in streamlining the initiation of investment activities and ensuring transparency and good governance. This will contribute to a more favorable investment climate in Algeria.

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