

## The Impact of Inflation Level Shocks on the Dynamic Response of Insurance Inclusion in Algeria during the Period 1990–2024

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Received:29/08/2025

Accepted:21/12/2025

Published:28/12/2025

### Abstract:

Insurance inclusion is a key driver of financial protection and sustainable growth. In Algeria, inflation shocks constrain participation in insurance programs. Using the NARDL model (1990–2024).

results show indicate that a positive inflation shock (inflation increase) reduces insurance inclusion by 0.84 units, while a negative inflation shock (inflation decrease) increases insurance inclusion by 0.93 units. Additionally, investment in higher education and lower unemployment levels contribute to enhanced insurance participation, supporting financial and social stability

**Keywords:** Insurance Inclusion; Inflation Shocks; Human Capital Investment; Unemployment; NARDL Model.

**Jel Classification Codes:** G22, C32, E24, E31

## 1. INTRODUCTION

Insurance inclusion constitutes a critical instrument for enhancing financial and social stability through effective risk management mechanisms that mitigate inflation shocks while ensuring equitable protection for vulnerable populations. Its strategic importance in advancing sustainable development objectives particularly by facilitating affordable access to insurance services for low-income segments has attracted considerable attention from policymakers and international organisations.

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Consequently, both developed and developing nations have prioritized institutional capacity building to expand insurance coverage across their economies insurance uptake, while volatility constrains market penetration.

In this context, Algeria, like other countries around the world, has sought to strengthen insurance inclusion policies through a set of structural reforms, including the modernization of legislative and regulatory frameworks to align with international standards, the expansion of insurance products, and the promotion of innovation in distribution channels to meet the needs of diverse social and economic groups. However, the effectiveness of these efforts remains contingent upon the provision of a favorable economic environment, including inflation, which is driven by factors such as high aggregate demand (overall spending), low domestic production levels, increased production costs, currency depreciation, and inflation expectations structural causes that lead to inflationary shocks, From this perspective, the central research question can be formulated as follows:

**What is the nature of the dynamic response of insurance inclusion in Algeria to inflation level shocks during the period 1990–2024?**

**Hypotheses:** Based on the research problem presented above, the central hypothesis of this study can be formulated as follows:

H<sub>1</sub>: The structural nature of the Algerian economy leads to structural inflation shocks that impact the levels of insurance inclusion

H<sub>2</sub>: The high unemployment rates in Algeria increase the demand for insurance services that cover individuals' needs.

H<sub>3</sub>: The increase in the allocation of spending for investment in human capital enhances the ability of different social groups to integrate into various insurance services.

**Sub-questions:** To simplify and analyze the content of the central question posed above, we can pose the following sub-questions:

- What is meant by insurance inclusion, and what is its importance in the economy?
- What is meant by inflation and what are its types?
- How do insurance inclusion levels in Algeria interact with inflation levels?

-Is there an interactive relationship between the stability of the economic environment and social factors, such as unemployment and higher education, in strengthening the content of Insurance Inclusion?

**Importance of the study:** It examines how economic stability, in the face of fluctuating inflation and high unemployment, impacted Insurance Inclusion in Algeria over the period 1990-2024.

**-Study objectives:** This study seeks to achieve three main objectives: first, to establish the theoretical foundation of insurance inclusion and inflation; second, to analyze empirical evidence on how declining inflation enhances insurance inclusion; and third, to develop an econometric model that captures the relationship between these variables in Algeria.

## **2. An Empirical Analysis of the Dynamics of the Relationship between Inflation and Insurance Inclusion**

Defining insurance inclusion and inflation, and clarifying their potential link, provides the necessary framework to assess how inflation shocks affect individuals' and households' participation in insurance programs.

### **2.1 Insurance inclusion**

Insurance inclusion strengthens financial and social stability by protecting individuals from economic risks and promoting broader participation in insurance programs:

#### **2.1.1 Definition of Insurance Inclusion**

Financial inclusion represents the general framework for policies that make finance and financial services available to all individuals in a fair, transparent, equitable and affordable manner (Veluchamy, Valiplackal, Kasilingam, & Elangovan, 2020, p. 6891), (Mayilvaganan & Pavalaarasan, p. 806), It is seen as a process aimed at ensuring access to financial services and adequate credit promptly when needed by vulnerable groups, especially the most vulnerable and low-income groups (Soumyendra & Krishna, 2019, p. 337), Financial inclusion is described as the availability of a diverse range of affordable financial services, including savings, credit, and insurance, as well as access to payment and remittance services through

formal systems for financially excluded groups. Thus, financial inclusion refers to the possibility of accessing integrated financial products that go beyond traditional banking products, but also extend to include loans, stocks, and insurance (Sonu & Parul, 2014, p. 54). However, the specificity of insurance, as a tool for risk management and protecting individuals and institutions from unexpected financial shocks and impacts, has highlighted the need to address it as an independent dimension within the framework of financial inclusion, known as insurance inclusion. This refers to making insurance services and products available to vulnerable groups, such as rural households, low- and middle-income urban households, and small and medium-sized enterprises. This aims to expand the umbrella of insurance inclusion and provide a safety net for vulnerable individuals and communities, helping them cope with risks and recover from unexpected events that may lead to financial difficulties (Mohamed Refaat, 2024, pp. 233-234). The failure to achieve effective financial and insurance inclusion generally does not depend on simply providing services; it requires financial awareness and the ability to use them effectively and wisely. This is why financial education and initiatives focus on enhancing the outcomes of both financial and insurance inclusion (Pandey, Kiran, & Rakesh, 2025, pp. 1-9). The insurance inclusion index can be measured using several indicators, including (Mohamed Refaat, 2024, p. 244): Total annual Insurance Premiums / GDP

### **2.1.2 Dimensions of insurance inclusion**

Insurance inclusion is one of the cornerstones of financial inclusion, focusing on ensuring that various segments of society benefit from insurance products that contribute to risk management and enhanced financial protection. To determine its effectiveness, a set of dimensions is relied upon that reflects the level of access, use, and quality of insurance services (Abdul Majeed & Hosni, 2022, pp. 70-73) (Cheraga, 2024, pp. 9-10) (Muhammad, Hamouda, & Dzairy, 2022, pp. 148-149) (Mohamed Refaat, 2024, pp. 244-245).

-Accessibility: reflects the availability of diverse and convenient channels for accessing insurance services, especially for financially excluded groups.

- Availability & Diversity: Refers to the presence of multiple insurance products designed to meet the needs of different segments of society.
- Affordability: Measures the extent to which the cost of insurance is appropriate to individuals' income, such that premiums are affordable and payable.
- Usage & Quality: This relates to the level of benefit insureds receive from insurance services and the quality of these services, such as ease of claims and speed of compensation.
- Insurance awareness and education: reflects the extent to which individuals are aware of the importance of insurance and their ability to make sound financial decisions in this area.
- Social and development dimension: This dimension is related to the role of insurance inclusion in supporting social protection, reducing vulnerability, and promoting sustainable economic growth.

## **2.2 inflation**

Inflation is one of the most prominent challenges hindering the sustainability of economic stability in various contemporary economies. The sustained, significant rise in the prices of goods and services directly impacts savings and spending rates, as inflation impacts sources of income (Glawe & Wagner, 2024, p. 299). Therefore, in this section, we will discuss the following:

### **2.2.1 Definition of inflation**

Inflation is a monetary phenomenon, and we mean the unjustified expansion or increase in the supply of a country's currency in an unjustified manner (Kristoffer J & Jonathan R, 2022, p. 152). It is also known as a process of continuous rise in prices, or equivalently, a constant fall in the value of money (Stephan & Auer, 2015, p. 189) (Frisch, 1984, pp. 9-11) (Sergio, 2000, pp. 20-21).

Inflation is defined as a sustained increase in the general price level over a long period, covering most goods and services rather than a temporary surge. This persistent rise erodes individuals' purchasing power and affects their budgets, making it a key indicator of economic imbalance.

Its presence can be detected through several observable economic symptoms (Aloush, 2015, p. 38):

- General price increases coupled with a decline in purchasing power;
- Rising gold prices (weakening confidence in the currency, given that gold is a store of value);
- Rising foreign exchange rates against the local currency.

### **2.2.2 Types of inflation**

Economists distinguish several types of inflation, including the following (Mashaal, 2017, p. 845):

-Real inflation: This type of inflation occurs when an increase in aggregate demand is not matched by an equal increase in aggregate production, resulting in a rise in the general price level.

-Creeping inflation, also known as moderate inflation, refers to a gradual and steady rise in prices. It typically occurs when demand grows while supply remains unchanged, resulting in a persistent increase in the general price level.

-Suppressed inflation, or hidden inflation, arises when government policies prevent prices from rising, often leading to shortages, queues, and black-market activity, unlike open inflation where prices rise freely with market forces.

-Hyperinflation is an extreme form of inflation marked by rapid price increases, accelerated money circulation, and severe goods shortages, often culminating in the collapse of the national currency.

### **2.3 Literature Reviews**

Most economic literature agrees that inflation negatively affects the ability of financial institutions to provide insurance products, i.e., the demand for insurance (Insurance Inclusion) (Odunayo & Thabiso, 2021, pp. 1-15), (Ebi-Tobin & Owei, 2025, pp. 128-143) ,(Obinna, 2023, pp. 297-304), (Das & Shome, 2016, pp. 85–94) .

Inflation also has a dual impact on the path to insurance inclusion, both through the demand and supply channels. On the demand side, high inflation erodes the real incomes of households and individuals, reducing their ability to allocate a portion of their spending toward purchasing insurance products (boudella, lamdjad, & Yahyaoui, 2022, pp. 315-

331)(Wael, 2022, pp. 460-492). Because individuals often view insurance as an unnecessary or long-term expense, premiums are the first to be foregone when prices are under pressure, especially for vulnerable groups and those with limited income. Inflation also undermines consumer confidence in the future value of insurance contracts, given the possibility that compensation may not be sufficient to cover actual losses years after premium payments.

Other studies have shown that moderate inflation can boost demand for insurance as a hedge against economic risks. In contrast, excessive inflation can reduce demand for insurance (Srivastava & Verma, 2025, pp. 1704-1707), thus expanding the insurance activity.

On the supply side, inflation increases insurance companies' costs due to rising prices of goods and services used as a basis for compensation, such as healthcare costs, vehicle repairs, and property damage. Insurance companies are forced to raise premiums frequently to maintain financial balance, making insurance products less attractive and more difficult to access for low-income households.

While inflation significantly affects insurance inclusion, it is not the sole determinant. Investment in education also plays a vital role, as higher educational spending fosters greater demand for insurance and strengthens inclusion levels (Rambel, Norasibah, & Emilda, 2024, pp. 112-130). Education enhances financial awareness and risk management skills, increasing individuals' willingness to adopt insurance products, which in turn strengthens insurance inclusion and expands the supply of insurance services

Unemployment is one of the main factors that limit Insurance Inclusion levels. The absence of a stable income leads to a decline in individuals' ability to purchase insurance products. This is because high unemployment rates result in a decrease in demand for insurance. Therefore, reducing unemployment rates is a necessary condition for enhancing insurance inclusion and expanding the beneficiary base.

### 3. Dynamic Analysis of the Relationship between Inflation Shocks and Insurance Inclusion Levels in Algeria

Analyzing the relationship between inflation shocks and insurance inclusion in Algeria (1990–2024) requires econometric methods that capture the dynamic interactions among variables.

#### 3.1 Study Variables and Model Specification

The analysis requires a clear definition of the study variables and the selection of an appropriate econometric model to rigorously assess their relationships.

**Table 1.** study variabls

symbol	index	variables	Explanation
<b>dependent variable</b>			
<b>y</b>	Insurance premiums as a percentage of GDP	Insurance inclusion	Insurance premiums relative to GDP serve as a core indicator of insurance inclusion, where higher ratios reflect wider access to insurance services, stronger financial protection, and greater support for economic and social stability, Among the studies that relied on the measurement of this indicator, we find (Boudella & lamdjad., 2022, pp. 1-18), (Chikhaouia, bouabdelli, & abdallah, 2016, pp. 353-373)
<b>independent variables</b>			
<b>x<sub>1</sub></b>	The annual change in the consumer price index	inflation	Inflation, as a persistent rise in prices, reduces purchasing power and restricts participation in insurance, while lower inflation enhances financial access and promotes broader insurance inclusion.
<b>x<sub>2</sub></b>	unemployment		A rise in unemployment diminishes people’s ability to engage in insurance schemes, which in turn restricts the overall extent of insurance participation within the economy

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$x_3$	Government expenditure allocated to higher education and scientific research.	Investment in human capital	Government spending on higher education and research enhances human resource efficiency, reducing unemployment and increasing income, which in turn boosts insurance participation and expands coverage in the economy.
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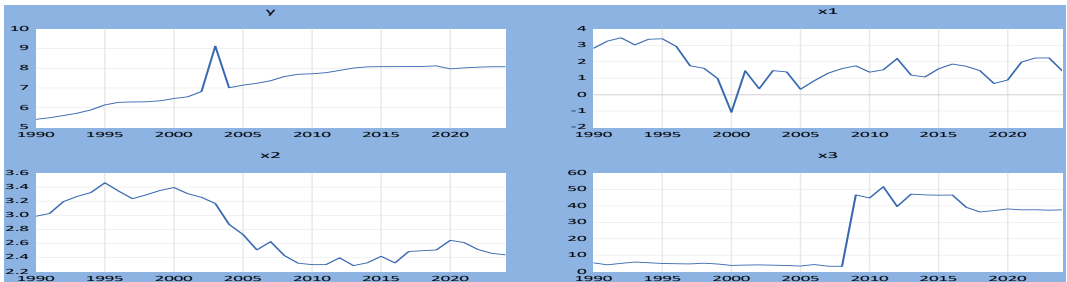
**Source:** Prepared by researchers

**3.2 Model estimation**

OLS-based studies often face spurious estimation issues due to non-random components in time series, which may distort dynamic relationships among variables. This necessitates model reformulation using time series techniques to ensure accurate estimation and reliable results

**3.2.1 Unit Root Test:**Examining the stationarity of time series is crucial to avoid misleading estimations. Initial graphical analysis often shows instability in the data, suggesting non-stationarity. This observation is later confirmed through formal tests such as the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

**Fig.1.** Time series Graph



**Source:** Prepared by researchers based on Eviews 12 outputs

Based on the observations drawn from the figure above, at this stage, the ADF and PP tests will be employed to verify the non-stationarity property of the time series, as shown in the table below.

**Table 2.**unit root test results for time series

At level						
time series	ADF test			PP test		
	With Constant & Trend	With Constant	Without Constant & Trend	With Constant & Trend	With Constant	Without Constant & Trend

	b=0	$\lambda=0$	c=0	$\lambda=0$	$\lambda=0$	b=0	$\lambda=0$	c=0	$\lambda=0$	$\lambda=0$
$y$	0.002	0.018	0.002	0.228	0.919	0.002	0.019	0.031	0.305	0.97
$x_1$	0.505	0.219	0.034	0.08	0.112	0.505	0.247	0.034	0.100	0.11
$x_2$	0.139	0.777	0.629	0.854	0.311	0.139	0.606	0.629	0.790	0.36
$x_3$	0.108	0.541	0.182	0.655	0.568	0.108	0.545	0.182	0.672	0.59
At First Difference										
$y$	0.404	0.000	0.207	0.000	0.000	0.404	0.000	0.207	0.000	0.00
$x_1$	0.457	0.000	0.652	0.000	0.000	0.457	0.000	0.652	0.000	0.00
$x_2$	0.839	0.004	0.457	0.000	0.000	0.839	0.003	0.457	0.000	0.00
$x_3$	0.935	0.000	0.439	0.000	0.000	0.935	0.000	0.439	0.000	0.00

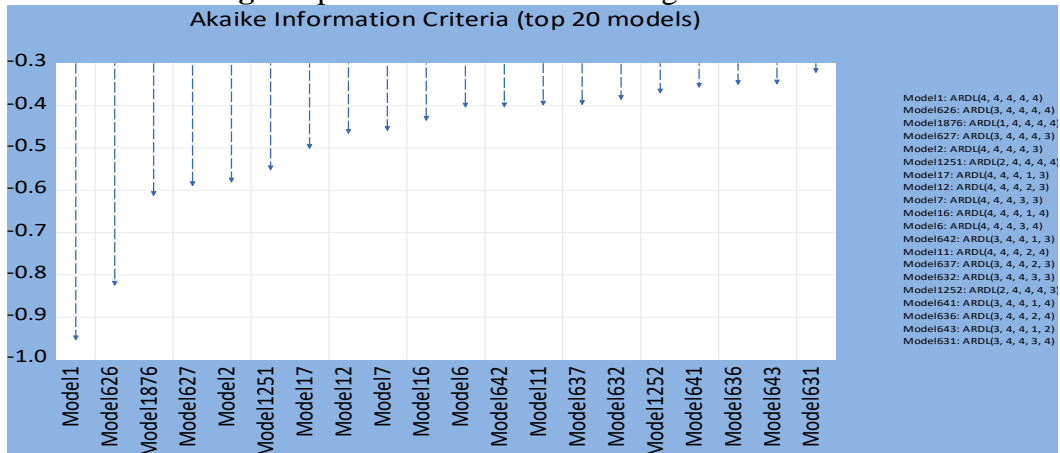
**Source:** Prepared by researchers based on Eviews 12 outputs

The results of unit root tests indicate that all time series are non-stationary in level, while they become stationary when taking the first difference; that is, they are integrated of order I(1).

### 3.2.2. Cointegration Test

Because the series are integrated at different orders, the Johansen test is unsuitable. Instead, the ARDL bounds testing approach was applied, from which the nonlinear NARDL model was derived by separating the explanatory variables into positive and negative components, The NARDL model, expressed as  $NARDL(p, q_1^+, q_1^-, q_2^+, q_2^-)$ , was estimated with optimal lags selected using the Akaike Information Criterion (AIC).

**Fig.2.** Optimal ARDL model among 20 selected models



**Source:** Prepared by researchers based on Eviews 12 outputs

The figure shows that the lowest Akaike criterion value was achieved with the optimal model  $NARDL(4,4,4,4,4)$ .

**Table 3.** Wald test results

F-Bounds Test	Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	7.250413	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 researchers based on Eviews 12 outputs

Since the estimated statistical value ( $F = 7.25$ ) exceeds the upper limit at the 5% significance level, this indicates a long-run relationship, which justifies moving to estimating the error correction model using the NARDL methodology.

### 3.2.3 Estimating Model Coefficients and Checking Their Fit

After verifying the existence of an equilibrium relationship between the time series, we proceed to estimate the model coefficients. This procedure aims to provide an economic interpretation of the estimation results, while conducting the necessary diagnostic tests to ensure the model's validity and suitability for analysis.

#### A-Long-term parameter estimation

**Table 4.** Results of long-term parameter estimation

Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_POS	-0.845076	0.248262	-3.403964	0.0114
X1_NEG	-0.936449	0.227638	-4.113762	0.0045
X2	1.093294	0.497661	2.196864	0.0640
X3	0.034961	0.009114	3.835853	0.0064
C	2.804191	1.494132	1.876802	0.1026

EC = Y - (-0.8451\*X1\_POS -0.9364\*X1\_NEG + 1.0933\*X2 + 0.0350\*X3 + 2.8042)

**Source:** Prepared by researchers based on Eviews 12 outputs.

**B- short-term parameters**

**Table 5.** Results of short-term parameter estimation

ARDL Error Correction Regression  
 Dependent Variable: D(Y)  
 Selected Model: ARDL(4, 4, 4, 4, 4)  
 Case 2: Restricted Constant and No Trend  
 Date: 12/24/25 Time: 08:33  
 Sample: 1990 2024  
 Included observations: 30

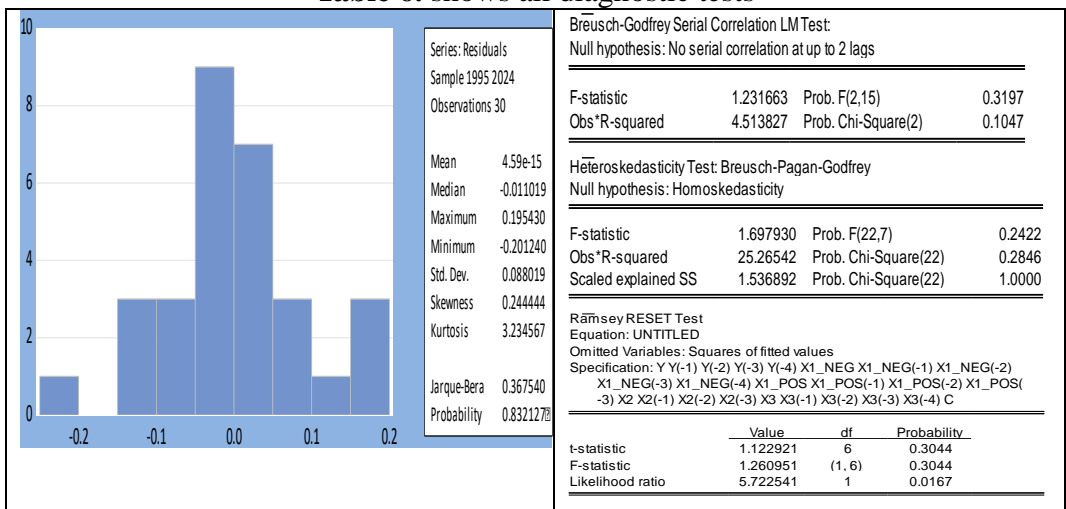
ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Y(-1))	-0.457990	0.106377	-4.305340	0.0077
D(Y(-2))	-0.324168	0.072813	-4.452077	0.0067
D(Y(-3))	-0.145489	0.075636	-1.923551	0.1124
D(X1_POS)	0.771872	0.096614	7.989280	0.0005
D(X1_POS(-1))	1.109630	0.163294	6.795274	0.0011
D(X1_POS(-2))	1.499368	0.114720	13.06975	0.0000
D(X1_POS(-3))	0.945984	0.188291	5.024045	0.0040
D(X1_NEG)	-0.205428	0.069637	-2.949990	0.0319
D(X1_NEG(-1))	-0.963008	0.152850	-6.300359	0.0015
D(X1_NEG(-2))	-0.546903	0.095082	-5.751924	0.0022
D(X1_NEG(-3))	-0.835172	0.120829	-6.912040	0.0010
D(X2)	-0.325840	0.391462	-0.832366	0.4431
D(X2(-1))	-1.700623	0.356211	-4.774203	0.0050
D(X2(-2))	-2.367856	0.379490	-6.239577	0.0015
D(X2(-3))	-1.670152	0.374077	-4.464724	0.0066
D(X3)	-5.427925	1.342462	-4.043261	0.0099
D(X3(-1))	-16.97675	2.051262	-8.276242	0.0004
D(X3(-2))	-10.87435	1.494987	-7.273879	0.0008
D(X3(-3))	-5.505832	1.607564	-3.424954	0.0187
CoIntEq(-1)*	-0.364308	0.039520	-9.218295	0.0003
R-squared	0.987114	Mean dependent var		0.073110
Adjusted R-squared	0.962629	S.D. dependent var		0.586372
S.E. of regression	0.113354	Akaike info criterion		-1.281876
Sum squared resid	0.128492	Schwarz criterion		-0.347744
Log likelihood	39.22814	Hannan-Quinn criter.		-0.983039
Durbin-Watson stat	2.441293			

**Source:** Prepared by researchers based on Eviews 12 outputs.

The negative and significant error correction coefficient confirms the model’s validity. Its value (-0.364308) shows that short-term disturbances are corrected, allowing the system to return to equilibrium in roughly six months.

**C- Diagnostic tests for the estimated model**

**Table 6.** shows all diagnostic tests



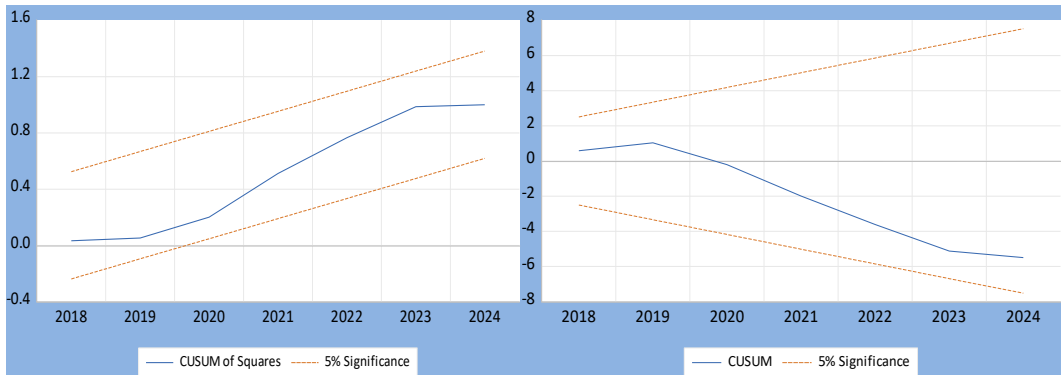
**Source:** Prepared by researchers based on Eviews 12 outputs.

It is clear from diagnostic tests that the Noah does not suffer from standard problems.

**D-Structural stability test of the estimated NARDL model**

Structural stability tests are an essential tool for verifying the stability of the model coefficients over the study period. Both the CUSUM test and the CUSUM of Squares test were adopted for this purpose. The results of Figure 09 indicate that the statistical values of both tests remained within the critical limits at a 5% significance level, which reflects the structural stability of the coefficients of the adopted NARDL model and confirms its compatibility with the dynamic relationship between variables in the short and long term.

**Fig.3.** Cumulative sum of residuals and cumulative square sum of residuals



**Source:** Prepared by researchers based on Eviews 12 outputs.

**3.3 Testing the symmetry of parameters in the short and long term**

-For the independent variable inflation x1:

**Table 7.** Results of Wald's short-range symmetry test (variable x1)

Wald Test:  
Equation: LRFORM

Test Statistic	Value	df	Probability
t-statistic	-2.652931	7	0.0328
F-statistic	7.038043	(1, 7)	0.0328
Chi-square	7.038043	1	0.0080

**Source:** Prepared by researchers based on Eviews 12 outputs.

Through analysis, it is clear that the calculated F-statistic falls below the critical value at the 5% significance threshold, indicating an asymmetric response of the inflation variable to positive and negative shocks.

-For the short-run dynamics

**Table 8.** Results of Wald's long-run symmetry test (variable x1)

Wald Test:

Equation: LRFORM

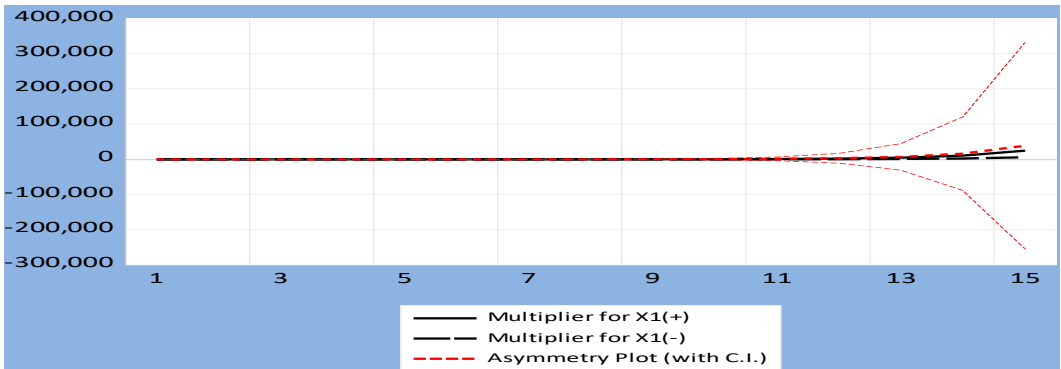
Test Statistic	Value	df	Probability
t-statistic	-3.948052	7	0.0055
F-statistic	15.58712	(1, 7)	0.0055
Chi-square	15.58712	1	0.0001

**Source:** Prepared by researchers based on Eviews 12 outputs.

It is clear from the table that the probability values for all three tests are less than the 5% significance level, which indicates the presence of asymmetry in the impact of positive and negative shocks to the variable "inflation" on the variable "insurance inclusion in the short run.

### 3.5 Asymmetric dynamic impact multiplier test.

**Fig.3.** Results of the asymmetric dynamic effect multiplier selection.



Source: Prepared by researchers based on Eviews 12 outputs.

The findings show minimal short-run effects up to period 11, after which a widening gap emerges between positive and negative shocks. The asymmetry curve surpasses confidence bounds in certain periods, confirming a significant nonlinear and asymmetric relationship between the variables

## 4. Results and Discussion

Based on the long-term parameter estimates obtained from the analysis, we are able to address the hypotheses formulated in the study as follows:

$$y = 2.8041 - 0.84507x_1POS - 0.9364x_1NEG + 1.0932x_2 + 0.03496x_3$$

-The estimation results lend support to the acceptance of the first hypothesis, which posits that the structural characteristics of the Algerian economy strongly contribute to the emergence of structural inflation shocks that

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affect insurance inclusion levels in Algeria. More specifically, a positive inflation shock of one unit is associated with a reduction in insurance inclusion of approximately 0.84 units, whereas a negative shock represented by a one-unit decline in inflation leads to an increase in insurance inclusion of about 0.93 units. This asymmetric response indicates that inflationary pressures erode households' purchasing power. In the Algerian context, such structural shocks stem from deep-rooted economic factors, including energy crises that structurally raise production costs, recurrent economic reforms and political transitions, market rigidities, rising aggregate expenditure alongside weak domestic production capacity, heavy reliance on imports, and population growth. Collectively, these factors constrain the effectiveness of monetary policy in achieving its primary objective of price stability. As a result, households and individuals tend to form expectations of persistent future price increases, which further undermines purchasing power particularly in the presence of currency depreciation thereby limiting their ability to allocate resources toward insurance products. Conversely, declining inflation rates enhance the affordability of insurance services and encourage broader participation in insurance schemes, a finding that is consistent with previous empirical studies (Chikhaouia, bouabdelli, & abdallah, 2016, pp. 353-373) .

- The empirical findings support the acceptance of the second hypothesis at the 10% significance level, which posits that higher unemployment rates in Algeria contribute to an expansion in insurance inclusion. The results indicate that a one-unit increase in the unemployment rate is associated with an approximate rise of 1.09 units in insurance inclusion. This outcome can be attributed to structural rigidities on the supply side of the Algerian economy, particularly the limited capacity of productive sectors to absorb the labor force, leading to increased job layoffs. In response to heightened employment insecurity and income loss, individuals tend to seek protective mechanisms by subscribing to various insurance products, especially those designed to compensate for unemployment risks, such as the programs and services provided by the National Unemployment Insurance Fund.

-The study findings indicate that investment in human capital has a positive impact on insurance inclusion levels in Algeria, Specifically, increased expenditure allocated to higher education and scientific research enhances the capacity of individuals and households to participate in insurance programs. The findings indicate that a one-unit increase in spending on higher education and research contributes to a 0.03-unit increase in insurance inclusion levels. This positive effect is attributed to the fact that investment in human capital improves insurance knowledge and awareness among individuals and enhances financial empowerment for households, thereby increasing their ability to engage in insurance programs and sustainably expanding the beneficiary base.

## **5. CONCLUSION**

Insurance inclusion is essential for broadening access to insurance products, supporting vulnerable populations, and promoting investment and sustainable development. However, inflationary shocks significantly undermine purchasing power and reduce participation in insurance programs. This study examines the impact of inflationary shocks on insurance inclusion in Algeria from 1990 to 2024, shedding light on how the insurance sector adjusts to economic fluctuations, The findings of this study can be summarized as follows:

-Inflation shocks play a key role in shaping insurance inclusion in Algeria. Positive shocks decrease participation by reducing purchasing power, while negative shocks improve inclusion by stabilizing prices and increasing access to insurance services.

-Price stability, driven by lower inflation, is crucial for enhancing insurance inclusion. It boosts household purchasing power, reduces economic risks, and creates a favorable environment for both individuals and businesses to engage in insurance services.

-Algeria prioritizes investment in higher education, enhancing insurance awareness and risk management skills, which in turn supports increased insurance inclusion.

Based on the findings, recommendations are made to strengthen the insurance sector's resilience to inflation shocks, ensuring its continued role in promoting financial and social stability, as follows:

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- The Bank of Algeria should implement proactive monetary policies, including inflation targeting and liquidity management, to mitigate inflation fluctuations and improve household access to insurance.
- The Algerian government should adopt a flexible fiscal policy, reducing taxes on insurance firms during inflation to ensure affordable services and expand coverage. Additionally, increasing investment in higher education to enhance insurance awareness will support long-term inclusion.
- Algerian authorities should strengthen the insurance sector by modernizing regulations, fostering product innovation, and supporting digital transformation to improve efficiency, boost confidence, and promote sector growth.

### **6. Bibliography List :**

1. Aloush, W. (2015). The phenomena of unemployment and inflation in Algeria: an econometric study for the period (1980-2011), A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Science in Economics Department of Economic Sciences, Univer. Algeria.
2. Das, S., & Shome, M. K. (2016). A Study On Determinants Of Insurance Penetration In The Context Of India. *International Journal of Marketing and Human Resource Management* , Vol 7 (N 3), 85–94.
3. Ebi-Tobin, T. G., & Owei, P. O. (2025). Inflation and Insurance Companies Performance in Nigeria. *International Journal of Economics and Financial Management* , Vol 10 (No. 3), 128-143.
4. Frisch, H. (1984). *Theories of inflation, Inflation: definition and measurement.* United States of America: Cambridge University Press.
5. Glawe, L., & Wagner, H. (2024). Infation and inequality: new evidence from a dynamic panel threshold analysis. *International Economics and Economic Policy* , Vol 21, 297-309.
6. Kristoffer J, M. H., & Jonathan R, N. (2022). What Is Inflation? Clarifying and Justifying Rothbard’s Definition. *The Quarterly Journal of Austrian Economics* , Vol 25 (N 4), 147-170.
7. Mashaal, A. A. (2017). Economic Study to Estimate the Impact of Inflation on Performance of the Egyptian Agricultural Sector. *Egyptian Journal of Agricultural Economics* , Vol 27 (N 2), 843-866.
8. Mayilvaganan, S., & Pavalaarasan, P. Financial Inclusion In Rural India Through Post Office – An Analytical Study. *Journal of Namibian Studies* , Vol 35, 806-811.

9. Mohamed Refaat, H. I. (2024). Promoting financial inclusion in the insurance sector and its impact on the financial performance of Egyptian insurance companies. *Al-Shorouk Journal of Business Sciences* , Vol 16.
10. Muhammad, I. a.-D., Hamouda, S., & Dzairy, S. (2022). The role of financial culture in achieving financial inclusion This reference has been used freely. *Journal of Management and Entrepreneurship* , Vol 2 (N 1), 141-155.
11. Pandey, A., Kiran, R., & Rakesh, K. S. (2025). Examining financial inclusion success in north India via financial inclusion drivers, financial literacy and financial initiatives: A variance based-SEM approach. *Journal of Open Innovation: Technology, Market, and Complexity* , Vol 11 (N 2).
12. Rambel, N., Norasibah, A. J., & Emilda, H. (2024). Impact of Government Health and Education Expenditures on Insurance Demand: ARDL Model. *Jurnal Ekonomi Malaysia* , Vol 57 (N 3), 112-130.
13. Sonu, G., & Parul, A. (2014). Financial Inclusion in India – a Review of Initiatives and Achievements. *Journal of Business and Management* , Vol 16 (N 6), 52-61.
14. Soumyendra, K. D., & Krishna, S. (2019). Variation and determinants of financial inclusion and their association with human development: A cross-country analysis. *IIMB Management Review* , Vol 31 (N 4), 36-349.
15. Srivastava, S., & Verma, P. (2025). Assessing the Impact of Inflation on Insurance Sector Performance in India: An Empirical Analysis. *International Journal of Advanced Multidisciplinary Research and Studies* , vol 5 (N 2), 1704-1707.
16. Stephan, A., & Auer, B. R. (2015). What do scientists know about inflation hedging? *North American Journal of Economics and Finance* , Vol 34, 187-214.
17. Veluchamy, R., Valiplackal, R. D., Kasilingam, L., & Elangovan, A. (2020). Personality Traits and Their Impact on Financial Inclusion: A Study Among Scheduled Tribes. *International Journal of Psychosocial Rehabilitation*, Vol. 24 (N 8), 6890-6910.
18. Wael, H. (2022). Does insurance demand react to economic policy uncertainty and geopolitical risk? Evidence from Saudi Arabia. *The Geneva Papers on Risk and Insurance* , Vol 47 (N 2), 460-492.