Assessing the Long-Run Effects of Algeria's National Investment and Development Planning on External Debt

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Abstract:

This study examines the long-run impact of investment and development planning on external debt in Algeria over the period (1993–2024) using the ARDL model. The results indicate that external debt is a double-edged tool; on the one hand, it contributes to financing large-scale projects, promoting investment, and supporting development programs, especially in the context of limited domestic savings. However, although investment shows a positive long-run effect on external debt, development planning has a negative impact on external debt. This suggests a continued reliance on the role of the state in improving the business environment, ensuring efficient resource allocation, and strengthening governance, in order to direct external borrowing toward sustainable development rather than allowing it to become a future burden.

Keywords: *External debt; development planning; Savings; Investment; Algeria.*

1. INTRODUCTION

Since the early 1990s, external debt has represented a critical challenge for Algeria's economic development, shaped by the country's dependence on hydrocarbons and the volatility of global oil and gas markets. Like many developing economies, Algeria has frequently relied on external borrowing to finance infrastructure projects, support large-scale investment initiatives, and implement national development plans in the face of limited domestic savings. While external debt has enabled the government to pursue ambitious development objectives, its accumulation over time has constrained fiscal flexibility, limited the allocation of resources to productive sectors, and created potential vulnerabilities in

macroeconomic management. Despite efforts in the early 2000s to reduce the debt burden following the oil price boom, structural challenges persist, and recent fiscal and financial pressures underscore the continuing importance of understanding the long-term relationship between investment, development planning, and external debt in Algeria.

1.1 Research Problem: The challenge associated with external debt stems from its potential to obstruct development initiatives and produce unfavorable socio-economic repercussions. In numerous developing economies, mounting debt obligations have constrained investment capacity due to limited liquidity and shortages of external financial resources, which in turn has reinforced different forms of economic dependency. In light of these considerations, the central research question of this study can be formulated as follows:

What is the nature of the long-term relationship between investment and development planning on external debt in Algeria (1993–2024)?

From this main question, the following sub-questions emerge:

- To what extent does dynamics investment shape external debt in Algeria?
- What is the impact of development plans on external debt in Algeria?

1.2 Research Hypotheses: To answer the above questions, the following hypotheses can be formulated:

- Dynamic investment in Algeria has a positive long-term effect on external debt, as it contributes to increased borrowing to finance large-scale projects.
- Effective development plans help reduce reliance on external debt by improving resource allocation and enhancing investment efficiency.

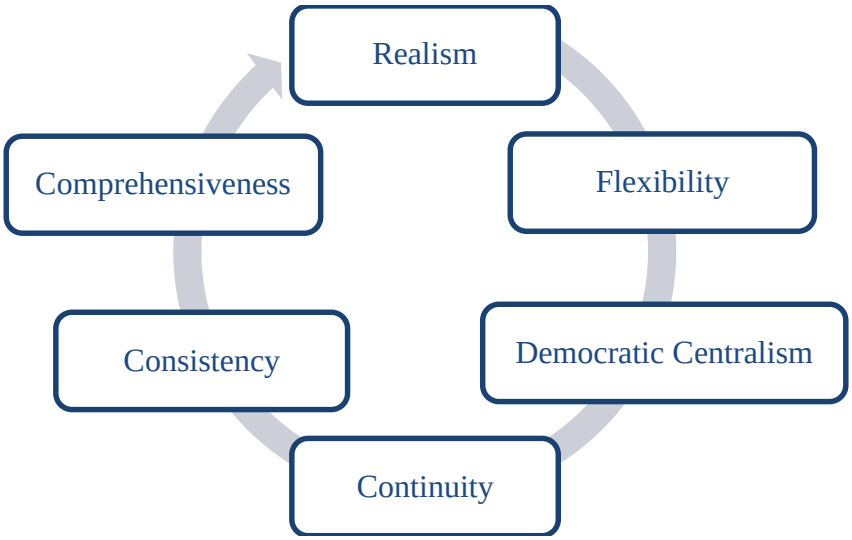
1.3 Objective of the Study: Although many studies have addressed the complex issue of investment and development plans, it still does not receive the adequate attention necessary to find effective solutions. Most initiatives proposed by indebted countries have been isolated and local in nature. Arab

countries, including Algeria, have not yet managed to reach a unified position to defend their collective interests.

1.4 Methodology: Given the nature of the topic, this study employs multiple methodologies. The inductive method was used, relying on descriptive, analytical, and interpretive approaches to examine information and data collected from the Central Bank's database. In addition, the quantitative method was also adopted through the use of the ARDL model to study the long-term relationship between the variables.

2. Concept of Development Planning:

Development planning is defined as an economic, political, and social approach based on an authority that directs all resources, capacities, and requirements in order to utilize them to the maximum possible extent, with the aim of achieving the highest standard of living for all members of society in the shortest possible time and at the lowest possible cost (Naili, 2017, p. 473). The main criteria of sound development planning are illustrated in the figure below:



Source: Author's compilation based on various references.

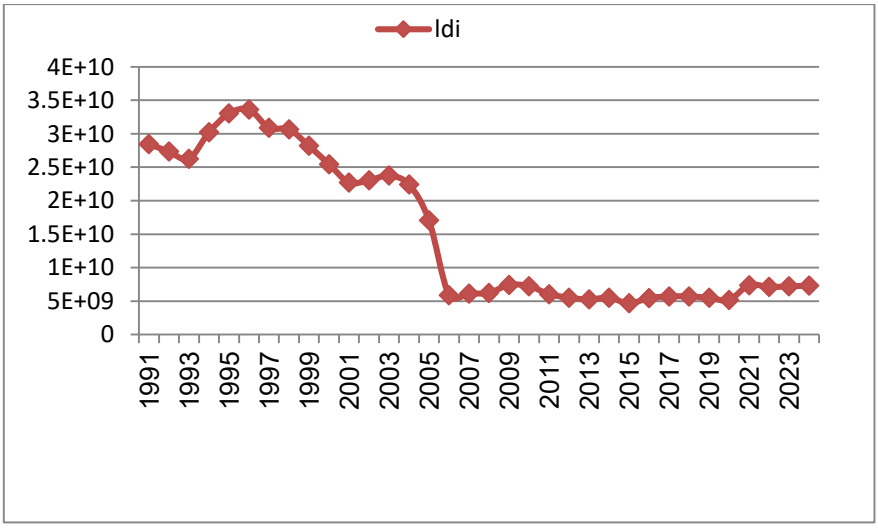
3. External Indebtedness and its Role in shaping Investment in Algeria (1991–2024)

Since the early 1990s, Algeria has undergone profound economic transformations, primarily linked to efforts aimed at overcoming the severe financial crises that plagued the country. These circumstances compelled Algeria to resort to external financing by borrowing from international financial institutions. External debt is considered one of the influential factors in shaping a country's economic policies due to its direct and indirect implications on the investment climate.

3.1 The Evolution of External Debt in Algeria

External debt is considered an additional source of financing that can stimulate the economy and help achieve higher growth rates. It refers to loans obtained by the state from abroad and is characterized by providing supplementary resources without the immediate need to reduce the use of other domestic economic resources (Ali Elnuwairan & Hamidi, 2017, pp. 50-51). The figure below illustrates the development of Algeria's external debt stock during the period from 1991 to 2024, as follows.

Fig N^0(01)The Evolution of External Debt Stock in Algeria (1991–2024)



Source: World Bank data.

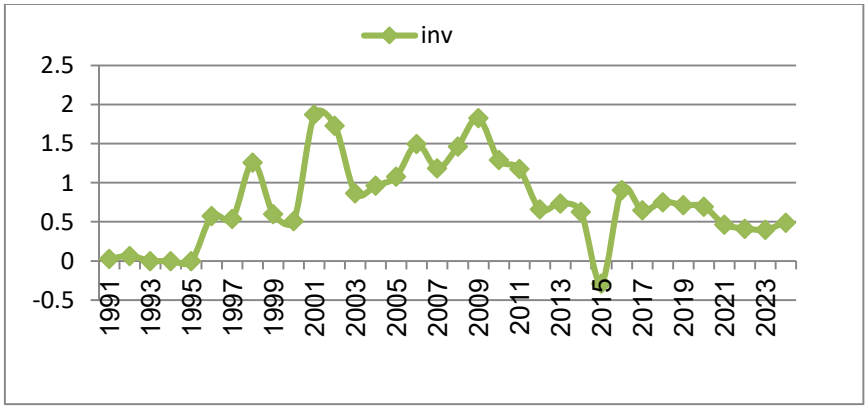
External debt in Algeria fluctuated significantly between 1991 and 2024, reflecting major economic and political shifts. It remained high in the early 1990s due to economic crisis and instability, then gradually declined

from the late 1990s following debt rescheduling, rising oil revenues, and fiscal consolidation. The period 2006–2015 recorded a substantial reduction in debt, reaching its lowest level due to strong external balances and limited borrowing. However, after 2015, external debt increased again as oil prices fell and fiscal pressures intensified, leading to renewed borrowing to finance budget deficits. Overall, the evolution of external debt highlights a shift from heavy indebtedness to financial consolidation, followed by renewed vulnerability linked to structural economic dependence on hydrocarbons.

3.2 The Evolution of Investment in Algeria

" Investment, as used here, involves a home-country investor obtaining an asset within the host nation, with the explicit aim of exercising managerial control over it. This implies a capital outflow for productive purposes, which differs from capital flows for financing or lending, such as portfolio investments" (Boudlaa, 2017, p. 135). The figure below illustrates the evolution of Foreign Direct Investment (FDI) inflows in Algeria during the period 1991–2024, expressed as a percentage of GDP.

Fig N⁰(02)Evolution of Foreign Direct Investment Inflows in Algeria 1991–2024 (% of GDP)



Source: World Bank data.

As illustrated, the trajectory of net FDI inflows in Algeria between 1991 and 2024 reflects the country's economic and political conditions as well as changes in its investment climate. FDI remained very low in the 1990s due to political instability, then improved gradually in the early

2000s with increased stability and higher oil prices, reaching temporary peaks driven mainly by the energy sector. However, inflows remained volatile and highly concentrated in hydrocarbons, with limited diversification into other sectors due to regulatory and institutional constraints. From 2015 onward, FDI declined and showed weak recovery, remaining insufficient to support structural transformation. The COVID-19 shock further reduced inflows, which stayed low through 2024, highlighting persistent challenges related to investment climate, policy stability, and economic diversification.

3.3 The Relationship Between External Debt and Investment in Algeria

External debt is one of the most important sources of foreign financing. However, it is a double-edged sword, and its effects largely depend on how the debt is utilized. If loans are channeled into productive and investment-based projects, they can increase the national economy's production capacity, raise national income, and generate a surplus in the trade balance (Safi & Makhlouf, 2021, p. 169). Consequently, when external borrowing is directed toward investment and development, it can have a positive return on the economy and contribute to improved budget outcomes (Mohamed Atiya, 2022, p. 452). However, rising external debt often reflects a reliance on foreign funding to finance deficits. This can reduce the attractiveness of foreign investment, especially if the debt is used for consumption or unproductive subsidies. During the 1990s, when Algeria’s external debt was at high levels, FDI was extremely low due to economic and political instability. In the following two decades, with relative stability, FDI levels improved. Yet, after 2015, when external debt began rising again, a decline in foreign investment was observed, due to investor concerns about economic and political stability and weakened confidence in the investment climate.

4. Analysis the External Debt and Development Plans in Algeria (1991–2024)

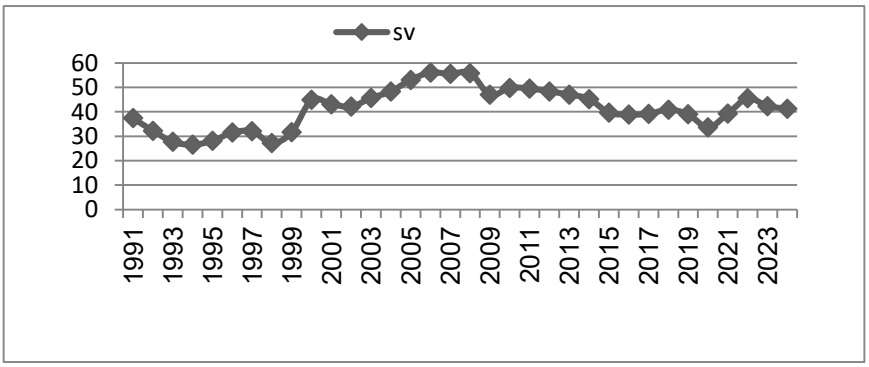
External debt is a major issue for developing countries, affecting their development financing and economic stability. In Algeria, it has fluctuated since the 1990s, alternating between high debt periods and phases of

improvement that allowed debt reduction and development programs. This section analyzes Algeria's external debt from 1991 to 2024 and its link to development planning.

4.1 The Evolution of Domestic Savings in Algeria

Savings play a critical and decisive role in providing the capital necessary for financing comprehensive and sustained economic development, away from the burden of external debt (Salami, Ben Tefat, & Moulay Lakhdar, 2017, p. 284). Savings can be understood as a temporal trade-off, reflecting a preference for future over present consumption (ahmed, 2012, p. 36). Algeria, domestic savings levels have been marked by noticeable fluctuations, as illustrated by the graph below.

Fig N⁰(03)The Evolution of Domestic Savings in Algeria 1991–2024 (% of GDP)



Source: World Bank data.

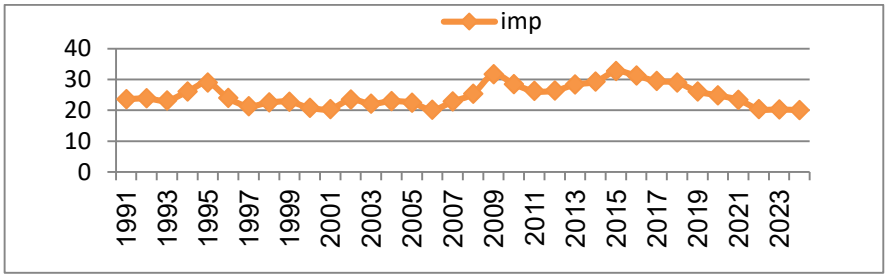
As illustrated in the figure, Algeria's domestic savings rate experienced substantial fluctuations between 1991 and 2024, largely reflecting changes in hydrocarbon revenues and overall macroeconomic conditions. Savings remained moderate during the 1990s due to economic instability, external debt pressures, and weak growth. With the rise in oil prices during the 2000s, the savings rate increased significantly, exceeding 55% of GDP during the oil boom years, driven mainly by hydrocarbon export revenues and large financial surpluses. However, following the decline in oil prices and the impact of global economic shocks, savings

gradually decreased, reaching one of its lowest levels in 2020. Although a partial recovery was observed between 2021 and 2024, domestic savings continue to depend heavily on the hydrocarbon sector, highlighting the vulnerability of the Algerian economy and the limited contribution of household and private-sector savings to long-term economic development.

4.2 The Evolution of Imports in Algeria

Imports play a significant role in the economy, as their increase can contribute to creating internal economic dynamism and improving social living conditions. However, rising import levels may also indicate that the economy is struggling with production and failing to achieve self-sufficiency in key sectors (Ennemri, 2017, p. 27).

Fig N^0(04) Evolution of Goods and Services Imports in Algeria 1991–2024 (% of GDP)



Source: World Bank data.

As shown in the figure, Algeria's imports of goods and services exhibited considerable fluctuations between 1991 and 2024, reflecting the structural characteristics of a rentier economy heavily dependent on external markets and lacking a diversified productive base. Import levels remained high during the 1990s due to economic crises, structural adjustment reforms, and the decline in domestic production. Although the import-to-GDP ratio declined in the early 2000s, this was largely driven by rising hydrocarbon revenues rather than improvements in local production. During the oil boom period (2006–2014), imports increased significantly, supported by large public investment programs and continued reliance on imported goods and equipment. Following the decline in oil prices after 2014, import dependence exposed underlying structural imbalances, prompting the government to implement import-restriction measures. Consequently, the import ratio gradually fell to around 20% of GDP by

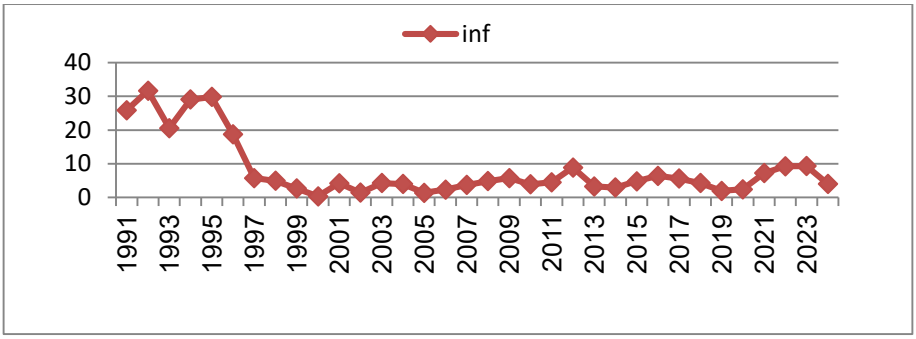
2024. However, this decline primarily reflected financial constraints, reduced foreign exchange reserves, and currency depreciation rather than a substantial strengthening of domestic productive capacity.

4.3 Evolution of Inflation Rates in Algeria (1991–2024)

Inflation is commonly defined as a sustained and continuous increase in the general price level. It refers to various economic situations, including excessive price rises, increases in nominal incomes or any income component, rising production costs, or the overexpansion of monetary aggregates (Houari, Bouriche, & Kebir, 2020, p. 3). The following figure illustrates the evolution of inflation rates in Algeria between 1991 and 2024, as measured by annual changes in consumer prices (% per year).

Fig N^0(05) Evolution of Inflation Rates in Algeria (1991–2024)

(Consumer price inflation, % annually)



Source: World Bank data.

As illustrated in the figure above, Algeria's inflation rate experienced significant fluctuations between 1991 and 2024, reflecting major economic and political transformations. Inflation peaked in the early 1990s due to price liberalization and structural adjustment reforms, then declined markedly in the early 2000s as a result of improved macroeconomic stability, favorable oil revenues, and tighter monetary policies. However, inflationary pressures re-emerged during the 2010s and early 2020s, driven by oil price volatility, fiscal imbalances, import dependence, currency depreciation, and structural economic weaknesses. The COVID-19 pandemic and global supply chain disruptions further intensified these pressures, pushing inflation above 9% in 2022–2023. Although inflation

moderated to around 4% in 2024, this decline appears to reflect weakened domestic demand rather than fundamental structural improvements, highlighting the continued vulnerability of the Algerian economy.

5. ARDL Modeling of the Impact of Algeria's External Debt on Investment and Development Plans (1993–2024)

The ARDL model proposed by Pesaran et al. (1997–2001) was employed to examine the long-run relationship between external debt and macroeconomic variables in Algeria over the period 1993–2024. The ARDL framework is particularly appropriate when explanatory variables exert lagged effects on the dependent variable and may be integrated of different orders, I(0) and I(1), making it suitable for the dataset used in this study. The dependent variable is external debt stock (DI), while the independent variables include foreign direct investment (INV), gross domestic savings (SV), inflation (INF), and imports of goods and services (IMP).

The model was selected for both methodological and economic reasons. It allows the estimation of long-run and short-run dynamics within a unified framework while accommodating variables with mixed integration orders. Lag length selection was based on standard information criteria, including the Akaike Information Criterion (AIC) and the Schwarz Bayesian Criterion (SC/BIC). The optimal lag structure was chosen by minimizing these criteria, ensuring a balance between model fit and parsimony and avoiding overfitting. Diagnostic tests further confirmed that the model is stable and free from serial correlation in the residuals. The inclusion of variables is grounded in economic theory and empirical literature, which highlight the relationship between external debt and key macroeconomic indicators such as investment, inflation, domestic savings, and imports. These variables capture the main transmission channels influencing external debt in the Algerian economy, particularly given its rentier structure and reliance on hydrocarbon revenues and external financing **(See Appendices)**.

5.1 Key Empirical Results:

- Phillips-Perron (PP) stationarity tests showed that all series are integrated of order I(1), validating the use of the ARDL approach.
- The optimal lag structure selected from 20 estimated models was ARDL (4,4,3,2,4), ensuring no autocorrelation in the residuals.
- Bounds test results indicated that the F-statistic = 6.810433 exceeded the critical upper bound at all significance levels. Hence, the null hypothesis of no cointegration was rejected, confirming a long-run equilibrium relationship between the variables.
- The coefficient of determination (R^2) was 0.99, indicating that the independent variables explained 99% of the variation in external debt. The F-statistic = 91.75930 with a p-value of 0.000007 confirmed the overall significance of the model.
- Model diagnostics showed no violations, confirming model validity and robustness.
- The Error Correction Term (ECT) was negative and statistically significant (–0.347682), implying that 34.76% of short-term deviations from long-run equilibrium are corrected annually, indicating a stable adjustment process.

5.2 Long-Run Relationship Interpretations:

- Positive relationship between investment and external debt (+2.01E+10): This result indicates that higher levels of investment are associated with increased external debt in Algeria, reflecting the country's reliance on external financing to support large-scale development projects. This dependence is particularly evident in the context of limited domestic financial resources and underdeveloped financial intermediation. It also reflects the existence of a savings–investment gap, where domestic savings are insufficient to fully finance investment demand, thereby necessitating external borrowing.
- Positive relationship between inflation and external debt (8.44E+08): Although this relationship may initially appear counterintuitive, it

can be explained through several macroeconomic channels. Higher inflation erodes the real value of domestic financial resources and increases economic uncertainty, thereby raising the cost and limiting the availability of domestic financing. Inflation is also often associated with expansionary fiscal conditions and budgetary imbalances, which increase the need for external borrowing to finance deficits. Furthermore, inflation may raise nominal public expenditures, including investment costs and debt servicing, reinforcing reliance on external debt.

- Negative relationship between imports and external debt (–6.04E+08): This finding may be interpreted within the context of Algeria's rentier economic structure. During periods of high hydrocarbon export revenues, foreign exchange inflows increase, enabling the financing of imports without resorting to external borrowing. Consequently, stronger external earnings reduce the need for debt-financed imports. This relationship may also reflect import compression policies implemented during periods of financial constraint, where reduced Import demand occurs alongside lower external borrowing requirements.
- Negative relationship between domestic savings and external debt (–2.35E+09): This result is consistent with standard economic theory, which posits that higher domestic savings reduce reliance on external borrowing by providing internal sources of financing for investment and public expenditure. In the Algerian context, this relationship is also influenced by periods of hydrocarbon-driven savings surpluses, which are often accumulated in the form of foreign reserves or stabilization funds, thereby reducing the need for external debt accumulation.

The empirical results indicate that Algeria's external debt is closely influenced by several macroeconomic variables in a logically consistent manner, reflecting the structure of an economy dependent on public expenditure and natural resource revenues. While external debt supports investment, particularly during periods of low domestic savings, variables

such as inflation, imports, and savings play a mitigating role in the demand for foreign borrowing. These findings highlight the critical importance of developing internal financing mechanisms and pursuing balanced, sustainable economic strategies to reduce dependency on external debt.

6. CONCLUSION

This study aimed to analyze the long-run relationship between investment dynamics, development planning, and external debt in Algeria over the period 1991–2024, in line with the proposed research hypotheses. The findings indicate that external debt in Algeria is shaped by a dual mechanism. On the one hand, dynamic investment increases the demand for external borrowing, particularly when domestic financial resources are insufficient to finance large-scale development projects. On the other hand, effective development planning contributes to reducing reliance on external debt by improving resource allocation efficiency and directing investment toward more productive uses. However, the results also highlight that this relationship is highly dependent on broader structural and policy conditions. In particular, the sustainability of external debt in Algeria remains a critical issue in light of persistent dependence on hydrocarbon revenues and limited economic diversification. Rising debt levels may expose the economy to future fiscal risks, especially in periods of external shocks such as oil price volatility.

This underscores the importance of strengthening fiscal discipline and improving public debt management frameworks, ensuring that borrowing is directed toward productive and growth-enhancing investments rather than recurrent expenditure. It also highlights the need to diversify the Algerian economy away from hydrocarbons by promoting non-oil sectors, supporting private sector development, and enhancing the efficiency of public investment. Furthermore, improving domestic resource mobilization through higher savings rates and more effective financial intermediation is essential to reduce reliance on external financing. In addition, enhancing

public spending efficiency within long-term development strategies is crucial to ensure sustainable growth and macroeconomic stability. Under these conditions, external debt can serve as a development-supporting instrument rather than a structural burden, provided it is managed within a coherent, diversified, and well-governed economic framework. Recommendations derived from this study are as follows:

- ✓ Improve external debt management through transparent and efficient policies, ensuring borrowing is directed toward productive investment rather than current spending.
- ✓ Strengthen development planning by aligning it with macroeconomic goals and selecting projects based on feasibility and sustainability criteria.
- ✓ Increase domestic savings by developing the financial system, encouraging savings, and improving financial intermediation.
- ✓ Enhance the investment climate through legal and institutional reforms to attract productive FDI and promote technology transfer.
- ✓ Ensure inflation control and exchange rate stability to improve competitiveness and reduce reliance on external financing.

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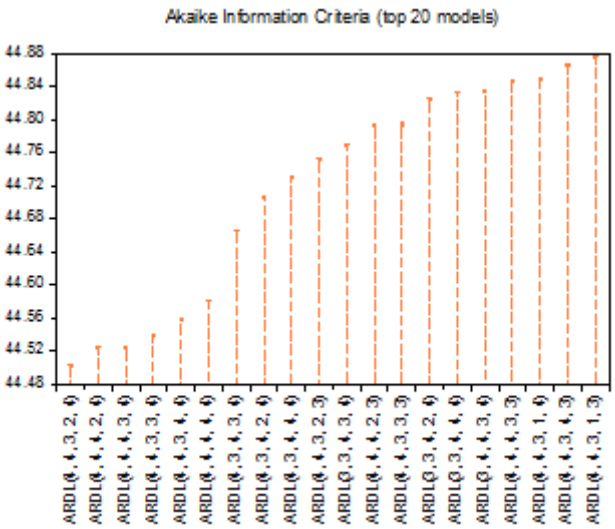
8. Appendices

Dependent Variable: DI
Method: ARDL
Date: 03/28/26 Time: 20:21
Sample (adjusted): 1997 2024
Included observations: 28 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): INV INF SV IMP
Fixed regressors: C
Number of models evaluated: 2500
Selected Model: ARDL(4, 4, 3, 2, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
DI(-1)	0.421351	0.189491	2.223593	0.0679
DI(-2)	-0.030898	0.181586	-0.170159	0.8705
DI(-3)	0.912504	0.301028	3.031290	0.0231
DI(-4)	-0.650638	0.303797	-2.141689	0.0760
INV	1.50E+09	9.67E+08	1.554004	0.1712
INV(-1)	2.07E+09	7.24E+08	2.855700	0.0290
INV(-2)	3.01E+09	7.60E+08	3.960715	0.0074
INV(-3)	2.07E+09	7.30E+08	2.837889	0.0296
INV(-4)	-1.65E+09	8.79E+08	-1.874039	0.1101
INF	1.94E+08	1.53E+08	1.268029	0.2518
INF(-1)	1.53E+08	1.50E+08	1.020684	0.3468
INF(-2)	4.54E+08	1.39E+08	3.267647	0.0171
INF(-3)	-5.07E+08	1.20E+08	-4.218550	0.0056
SV	-1.91E+08	1.54E+08	-1.245622	0.2593
SV(-1)	-3.76E+08	1.55E+08	-2.425496	0.0515
SV(-2)	-2.52E+08	1.42E+08	-1.769216	0.1273
IMP	1.31E+09	3.82E+08	3.431615	0.0139
IMP(-1)	-9.56E+08	3.87E+08	-2.470891	0.0484
IMP(-2)	-2.93E+08	2.21E+08	-1.327023	0.2328
IMP(-3)	-18423276	2.03E+08	-0.090831	0.9306
IMP(-4)	-2.52E+08	1.67E+08	-1.509758	0.1818
C	3.74E+10	9.27E+09	4.036605	0.0068

R-squared	0.996896	Mean dependent var	1.22E+10
Adjusted R-squared	0.986032	S.D. dependent var	9.28E+09
S.E. of regression	1.10E+09	Akaike info criterion	44.50103
Sum squared resid	7.22E+18	Schwarz criterion	45.54776
Log likelihood	-601.0144	Hannan-Quinn criter.	44.82103
F-statistic	91.75930	Durbin-Watson stat	2.575449
Prob(F-statistic)	0.000007		

*Note: p-values and any subsequent tests do not account for model selection.



Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INV	2.01E+10	4.79E+09	4.203354	0.0057
INF	8.44E+08	4.84E+08	1.743583	0.1319
SV	-2.35E+09	4.48E+08	-5.252846	0.0019
IMP	-6.04E+08	4.01E+08	-1.505723	0.1828
C	1.08E+11	1.72E+10	6.266234	0.0008

EC = DI - (20148891569.9172*INV + 844306669.6082*INF -2354887560.4229*SV -604284922.6747*IMP + 107681408939.1416)

ARDL Error Correction Regression
Dependent Variable: D(DI)
Selected Model: ARDL(4, 4, 3, 2, 4)
Case 2: Restricted Constant and No Trend
Date: 03/28/26 Time: 20:24
Sample: 1993 2024
Included observations: 28

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DI(-1))	-0.230967	0.094633	-2.440675	0.0504
D(DI(-2))	-0.261886	0.087782	-2.983134	0.0245
D(DI(-3))	0.650638	0.116480	5.585849	0.0014
D(INV)	1.50E+09	4.34E+08	0.000000	0.0000
D(INV(-1))	-3.43E+09	7.23E+08	0.000000	0.0000
D(INV(-2))	-4.23E+08	5.83E+08	0.000000	0.0000
D(INV(-3))	1.65E+09	4.53E+08	0.000000	0.0000
D(INF)	1.94E+08	56022611	0.000000	0.0000
D(INF(-1))	53090186	54392243	0.000000	0.0000
D(INF(-2))	5.07E+08	60388646	0.000000	0.0000
D(SV)	-1.91E+08	64270181	0.000000	0.0000
D(SV(-1))	2.52E+08	97383883	0.000000	0.0000
D(IMP)	1.31E+09	1.58E+08	0.000000	0.0000
D(IMP(-1))	5.64E+08	1.51E+08	0.000000	0.0000
D(IMP(-2))	2.71E+08	86428339	0.000000	0.0000
D(IMP(-3))	2.52E+08	81135714	0.000000	0.0000
CointEq(-1)*	-0.347682	0.040170	-8.655331	0.0001

R-squared	0.957428	Mean dependent var	-9.41E+08
Adjusted R-squared	0.895506	S.D. dependent var	2.51E+09
S.E. of regression	8.10E+08	Akaike info criterion	44.14389
Sum squared resid	7.22E+18	Schwarz criterion	44.95273
Log likelihood	-601.0144	Hannan-Quinn criter.	44.39116
Durbin-Watson stat	2.575449		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

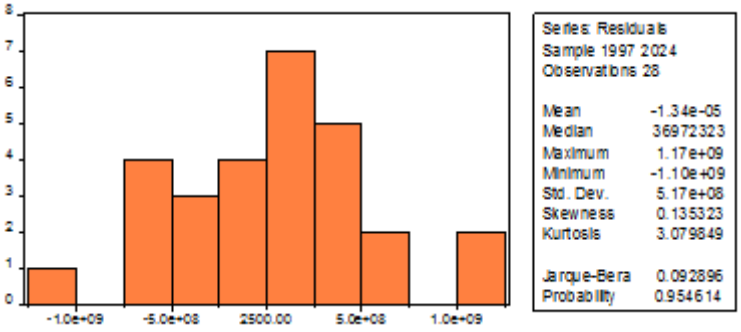
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.810433	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

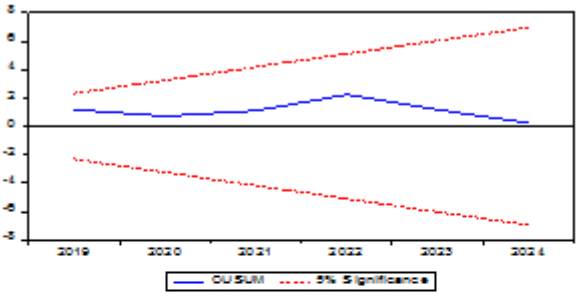
Heteroskedasticity Test: ARCH

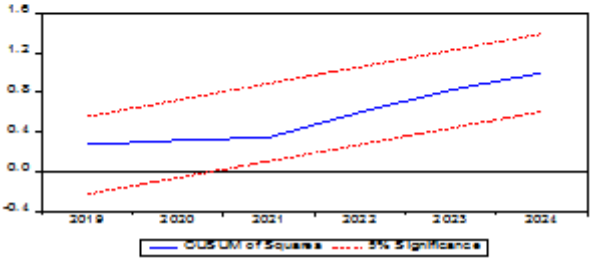
F-statistic	0.003583	Prob. F(1,25)	0.9527
Obs*R-squared	0.003870	Prob. Chi-Square(1)	0.9504

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.963568	Prob. F(21,6)	0.5708
Obs*R-squared	21.59632	Prob. Chi-Square(21)	0.4231
Scaled explained SS	1.031260	Prob. Chi-Square(21)	1.0000


Series: Residuals
Sample 1997 2024
Observations 28
Mean -1.34e-05
Median 36972323
Maximum 1.17e+09
Minimum -1.10e+09
Std. Dev. 5.17e+08
Skewness 0.135323
Kurtosis 3.079849
Jarque-Bera 0.092896
Probability 0.954614


CUSUM
5% Significance


CUSUM of Squares
5% Significance