

Research Article

The Effect of Foreign Aid on Economic Growth in Ethiopia: Evidence from an ARDL Model (1991-2023)

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Abstract

This study investigates the impact of foreign aid on Ethiopia's economic growth over the period 1991-2023 using an Autoregressive Distributed Lag (ARDL) model. Despite being one of the largest recipients of official development assistance (ODA) in Sub-Saharan Africa, the effectiveness of aid in fostering sustainable growth in Ethiopia has remained a subject of debate. The study employs annual time-series data from the World Bank and the National Bank of Ethiopia, incorporating real GDP as the dependent variable and foreign aid as the key explanatory variable, alongside foreign direct investment (FDI), exchange rate, human capital, labor force participation, and political stability as additional regressors. The results reveal that foreign aid exerts a positive and significant effect on Ethiopia's economic growth in the long run, complementing the role of FDI and human capital development. In the short run, however, the impact of foreign aid is relatively weaker and sometimes statistically insignificant. The findings suggest that foreign aid can be an important driver of economic growth in Ethiopia, provided that institutional quality and macroeconomic management are strengthened. Additionally, this research enriches the literature by integrating institutional quality and macroeconomic variables in a systematic ARDL framework, thus offering policy-relevant insights into Ethiopia's growth trajectory.

Keywords

Foreign Aid, Economic Growth, Ethiopia, ARDL Model, Real GDP, FDI, Human Capital, Exchange Rate, Long-run Equilibrium, Short-run Dynamics

1. Introduction

Foreign aid has long been considered an essential driver of economic development in low-income countries, particularly in Africa. Ethiopia, as one of the largest aid recipients in Sub-Saharan Africa, has relied heavily on official development assistance (ODA) to support infrastructure, education, healthcare, and poverty alleviation programs. Over the last three decades, the country has received substantial foreign aid flows, coinciding with significant policy reforms and major development initiatives such as the Growth and Transfor-

mation Plans (GTP I and II). Despite this, the impact of aid on economic growth remains highly contested [1-3].

Several theoretical perspectives explain the ambiguous effects of aid. Modernization and "big push" theories argue that aid can stimulate capital accumulation, human capital development, and structural transformation, thus accelerating growth [4, 5]. Conversely, dependency theory warns that sustained reliance on aid may undermine self-sufficiency, weaken institutions, and create long-term dependency [6, 7].

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Empirical findings are similarly mixed: some studies confirm the growth-enhancing role of aid [8, 9], while others find neutral or even negative effects, often depending on governance quality and macroeconomic stability [10-12].

In Ethiopia, research has shown contradictory outcomes. Some studies argue that aid boosts investment, infrastructure, and human capital [13], while others suggest that misallocation, political instability, and weak institutional capacity reduce its effectiveness [14, 15]. Moreover, the role of complementary factors such as foreign direct investment (FDI), exchange rates, labor force participation, and institutional quality has received limited systematic analysis in the Ethiopian context. This gap highlights the need for a comprehensive econometric assessment of both short-run and long-run effects of foreign aid on economic growth.

The present study addresses this gap by examining the relationship between foreign aid and real GDP growth in Ethiopia from 1991 to 2023, employing the Autoregressive Distributed Lag (ARDL) model. Unlike previous works, this research integrates additional explanatory variables—including FDI, human capital, exchange rate, labor force participation, and political stability—to provide a more robust assessment of aid effectiveness. The results indicate that foreign aid significantly contributes to long-run economic growth when complemented by strong institutional frameworks and macroeconomic stability, though short-run effects vary across variables. These findings underscore the importance of efficient aid allocation and institutional reforms for sustaining Ethiopia's growth trajectory.

2. Materials and Methods

2.1. Research Design

This study employed a quantitative research design using time series econometric analysis to examine the impact of foreign aid on Ethiopia's economic growth. The Autoregressive Distributed Lag (ARDL) model was chosen because of its suitability in estimating both short-run and long-run dynamics among variables with mixed levels of integration, $I(0)$ and $I(1)$.

2.2. Data Type and Sources

The study used secondary annual time series data covering the period 1991-2023. Data were primarily obtained from the World Development Indicators (WDI) of the World Bank and the National Bank of Ethiopia. The dependent variable was Real Gross Domestic Product (GDP), while explanatory variables included:

- 1) Foreign Aid (ODA): Official Development Assistance received.
- 2) Foreign Direct Investment (FDI): Net inflows.
- 3) Human Capital (HUMAN): Government expenditure

on education.

- 4) Labor Force Participation (LFP): Total labor force participation rate.
- 5) Exchange Rate (EXR): Official exchange rate (ETB per USD).
- 6) Institutional Quality (IQ): Political Stability and Absence of Violence/Terrorism index.

All variables except the Political Stability index were transformed into natural logarithms for analysis.

2.3. Model Specification

The study is anchored in the endogenous growth framework, which extends the Solow [16] model by recognizing human capital, institutional quality, and policy as key drivers of productivity and long-term economic growth [17, 18]. Accordingly, real GDP (Y_t) is modeled as a function of foreign aid, foreign direct investment, human capital, labor force participation, institutional quality, and the exchange rate.

The general functional form of the endogenous growth model is expressed as:

$$Y_t = A_t H C_t^\beta L F P_t^\gamma F A I D_t^\delta I Q_t^\theta E X R_t^\phi F D I_t^\psi$$

Where: Y_t : Real GDP (output)

A_t : Total factor productivity (TFP), influenced by human capital and institutional quality

$H C_t$: Human capital (Government expenditure on education)

$L F P_t$: Labor force participation (Labor force participation rate, total (% of total population ages 15+))

$F A I D_t$: Foreign aid (Net official development assistance received)

$I Q_t$: Institutional quality (Political Stability and Absence of Violence/Terrorism: Estimate)

$E X R_t$: Exchange rate (Official exchange rate (LCU per US\$, period average))

$F D I_t$: Foreign direct investment (Foreign direct investment, net inflows)

Where A_t denotes total factor productivity (TFP), which itself depends on institutional quality and human capital. Log-linearizing yields:

$$\ln Y_t = \alpha_0 + \beta \ln H C_t + \gamma \ln L F P_t + \delta \ln F A I D_t + \theta \ln I Q_t + \phi \ln E X R_t + \psi \ln F D I_t + \epsilon_t$$

where all variables are in natural logarithms except institutional quality, and the coefficients represent long-run elasticities.

To estimate this relationship, the Autoregressive Distributed Lag (ARDL) framework was employed. The ARDL approach is appropriate because it accommodates variables integrated of order $I(0)$ and $I(1)$, allows simultaneous estimation of both short- and long-run dynamics, and is efficient in small-sample settings (Pesaran & Shin, 1999).

Long-Run Relationship

The ARDL long-run equilibrium is given as:

$$\ln(RGDP_t) = \theta_0 + \theta_1 \ln(FAID_t) + \theta_2 \ln(FDI_t) + \theta_3 \ln(HC_t) + \theta_4 (IQ_t) + \theta_5 \ln(LFP_t) + \theta_6 \ln(EXR_t) + u_t$$

Where:

$\theta_1, \theta_2, \theta_6$ are the long-run elasticities.

Short Run Dynamics

In the short run, deviations from the long-run equilibrium

The long-run equilibrium equation derived from ARDL is:

occur, and the ARDL model accounts for this through an Error Correction Term (ECT). The ECM specification for the short run is:

$$\Delta \ln RGDP_t = \gamma_0 + \sum_{i=1}^p \gamma_1 \Delta \ln RGDP_{t-i} + \sum_{i=0}^{q_1} \gamma_2 \Delta \ln FAID_{t-i} + \sum_{i=0}^{q_2} \gamma_3 \Delta \ln (FDI - i) + \sum_{i=0}^{q_3} \gamma_4 \Delta \ln HC_{t-i} + \sum_{i=0}^{q_4} \gamma_5 \Delta IQ_{t-i} + \sum_{i=0}^{q_5} \gamma_6 \Delta \ln LFP_{t-i} + \sum_{i=0}^{q_6} \gamma_7 \Delta \ln EXR_{t-i} + \lambda ECT_{t-1} + \varepsilon_t$$

Where:

Δ denotes the first difference of the variables,

λ is the speed of adjustment coefficient (expected to be negative, indicating convergence to the long-run equilibrium),

ECT_{t-1} is the error correction term representing the long-run disequilibrium from the previous period.

Key Components of the Model:

What follows is an examination of the various key components that have dynamic interaction in influencing the level of growth, be it in the short-run or the long-run, which are important to consider in carrying out an analysis of the impact which foreign aid has on economic growth in Ethiopia. Below, we elaborate on these components and their respective roles in dynamic effects on incorporating recent literature for fuller understanding.

cients were estimated using ARDL, and short-run dynamics were examined through the Error Correction Model (ECM).

5) Diagnostic Tests: Breusch-Pagan-Godfrey test (heteroscedasticity), Breusch-Godfrey LM test (serial correlation), Ramsey RESET (model specification), and CUSUM/CUSUMSQ (stability).

2.5. Justification of Method

The ARDL model was selected because it is robust in small samples, flexible with mixed integration orders, and suitable for developing countries like Ethiopia where time series data may exhibit instability.

2.4. Estimation Procedure

The empirical analysis followed these steps:

- 1) Stationarity Tests: Phillips-Perron (PP) test was applied to determine the order of integration of each variable.
- 2) Lag Selection: The optimal lag length was chosen using Akaike Information Criterion (AIC).
- 3) Cointegration Test: ARDL bounds testing approach was employed to confirm the existence of long-run relationships.
- 4) Long-Run and Short-Run Estimation: Long-run coefficient

3. Results and Discussion

3.1. Descriptive Statistics

Table 1 presents the descriptive statistics for all variables included in the study. The results show that real GDP has grown substantially over the study period (1991-2023), while foreign aid and FDI inflows exhibited wide fluctuations. Education expenditure (human capital) increased gradually, whereas labor force participation remained relatively stable.

Table 1. Descriptive Statistics of Study variables.

Variable	Mean	Std. Dev.	Skewness	Kurtosis
LNRGDP (GDP)	24.21	0.75	0.24	1.61
LNODA (ODA)	21.37	0.73	-0.24	1.64
LNFDI (FDI)	19.37	2.61	-1.35	4.60
LNEXR (Exchange Rate)	2.49	0.79	0.07	2.65
LNHUMAN (Human Capital)	20.67	1.25	0.06	1.40
LNLFP (Labor Force)	4.40	0.02	-0.98	2.51

Variable	Mean	Std. Dev.	Skewness	Kurtosis
POLITICAL_STAB (IQ)	-1.36	0.41	0.07	2.12

Source: Own estimation using EViews software

3.2. Stationarity Test

Table 2. Unit Root Test Results (Phillips-Perron Test).

Variable	Level, I(0)	First Difference, I(1)	Order of Integration
	t-Statistic Prob.	t-Statistic Prob.	
LNRGDP	-2.154 0.227	-5.883*** 0.000	I(1)
LNODA	-1.643 0.453	-6.432*** 0.000	I(1)
LNFDI	-3.421** 0.016	-7.211*** 0.000	I(1)
LNEXR	-2.987* 0.045	-8.654*** 0.000	I(1)
LNHUMAN	-1.987 0.291	-6.987*** 0.000	I(1)
LNLFP	-3.876*** 0.005	-9.123*** 0.000	I(0)
POLITICAL_STAB	-4.123*** 0.002	-8.765*** 0.000	I(0)

Source: Own estimation using EViews software

***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

The Phillips-Perron (PP) test confirmed that variables were stationary at I(0) or I(1). Lag lengths were selected based on the Akaike Information Criterion (AIC).

further analysis.

3.3. Lag Selection

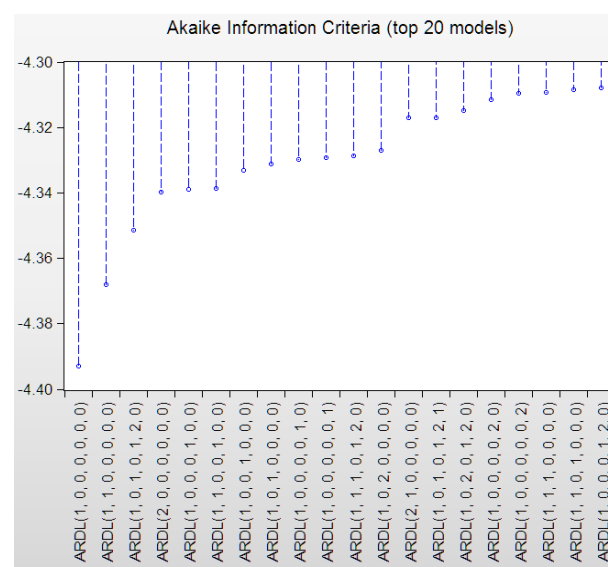
The Akaike Information Criterion (AIC) was applied to determine the optimal lag structure of the ARDL model. AIC is well-regarded for balancing model fit with parsimony, as it penalizes unnecessary complexity and minimizes overfitting.

Based on AIC, the optimal specification selected is:

ARDL (1, 0, 0, 0, 0, 0, 0)

- 1) Dependent Variable (LNRGDP): includes one lag, capturing the autoregressive nature of GDP and its dependence on past values.
- 2) Independent Variables (LNODA, LNLFP, LNHUMAN, LNFDI, LNEXR, POLITICAL_STAB): included without lags, reflecting their immediate contemporaneous influence on GDP.

This specification ensures that the model captures the dynamic behavior of GDP while accurately representing the direct effects of the explanatory variables. By relying on AIC, the study achieves an effective balance between explanatory power and model simplicity, providing a robust foundation for



Source: Own estimation using EViews software

Figure 1. Evaluation of ARDL Models Using Akaike Information Criterion.

3.4. Cointegration Analysis (ARDL Bounds Test)

Table 3. ARDL Bounds Test for Cointegration.

Test Statistic	Value	Significance	I(0) Bound	I(1) Bound
F-statistic	4.592	1%	3.15	4.43
		5%	2.45	3.61
		10%	2.12	3.23

Source: Own estimation using EViews software.

The ARDL Bounds Test results reveal evidence for a long-run relationship between Real GDP (LNRGDP) and the independent variables in the model. The F-statistic is 4.592, which exceeds the upper critical bound (I1) at the 1% significance level (4.43), allowing us to reject the null hypothesis of no long-run relationships.

3.5. Long-Run Estimation

Table 4. Estimated Long-Run Coefficients using ARDL Approach.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.4382	1.8234	13.9512	0.0000
LNODA	0.0488	0.0175	2.7935	0.0101
LNFDI	0.0243	0.0093	2.6069	0.0155
LNEXR	0.3585	0.0439	8.1669	0.0000
LNHUMAN	0.3690	0.0226	16.3418	0.0000
LNLFP	-2.5494	0.9408	-2.7095	0.0122
POLITICAL_STAB	0.0029	0.0357	0.0812	0.9360

Source: Own estimation using EViews software.

$$LNRGDP = 25.4382 + 0.0488 \cdot LNODA + 0.0243 \cdot LNFDI + 0.3585 \cdot LNEXR + 0.3690 \cdot LNHUMAN - 2.5494 \cdot LNLFP + 0.0029 \cdot POLITICAL_STAB$$

The long-run coefficients of the ARDL model reveal insightful findings regarding the determinants of Ethiopia's economic growth.

Foreign Aid (LNODA):

Foreign aid exerts a positive and statistically significant influence on economic growth, with a coefficient of 0.048778. This implies that a rise in foreign aid is associated with an increase in real GDP, significant at the 1% level (t-statistic = 2.793494; p-value = 0.0101). This result is consistent with the literature. For instance, Musibau, Gebre, & Alemu [19] underscore that increased aid fosters long-term GDP growth, while Siraj [13] emphasizes its role in bridging the savings-investment gap, facilitating capital accumulation and

growth. Similarly, Terefe [21] demonstrates that aid inflows positively influence growth, particularly when combined with supportive policy environments.

The findings align with Gebresilassie, Tadesse, & Siraj [20], who highlight that while the short-run effects of aid may be insignificant, the long-run contributions are evident through enhanced capital formation and development outcomes. Omenda [24] further stresses that aid effectiveness is amplified in a favorable macroeconomic environment. Collectively, these insights confirm that aid serves as a crucial instrument for addressing structural constraints such as the savings-investment gap, thereby promoting Ethiopia's long-term economic growth trajectory.

Foreign Direct Investment (FDI):

FDI also demonstrates a positive and statistically significant impact on long-run economic growth, with a coefficient of 0.024254 (t-statistic = 2.606861; p-value = 0.0155). This indicates that increased FDI inflows foster real GDP growth through capital accumulation, technology transfer, and skill enhancement. The result is consistent with Godana [25], who found similar evidence of FDI's contribution to sustained growth in Ethiopia.

Exchange Rate (LNEXR):

The exchange rate exerts a strong positive and highly significant effect on growth, with a coefficient of 0.358518 (t-statistic = 8.166884; p-value = 0.0000). This suggests that exchange rate depreciation, over time, has promoted real economic growth by enhancing export competitiveness and facilitating structural adjustments within the economy. This finding supports the analysis by Berihun & Steven [7].

Human Capital (LNHUMAN):

Human capital is found to be one of the most influential determinants of long-run growth in Ethiopia. Its coefficient of 0.368996 (t-statistic = 16.341842; p-value = 0.0000) highlights a robust and significant positive relationship between human capital accumulation and real GDP. This emphasizes the central role of education, training, and skill development in driving sustainable growth. Supporting this evidence, Ali, Ahmed, & Bekele [2] also confirm the substantial long-run benefits of investing in human capital for Ethiopia's economic performance.

Labor Force Participation (LNLFP):

Unexpectedly, labor force participation exhibits a signifi-

cant negative impact on growth, with a coefficient of -2.549361 (t-statistic = -2.709483; p-value = 0.0122). This result suggests that higher participation rates, without parallel job creation and productivity gains, may constrain growth. Such outcomes can be explained by structural unemployment, underemployment, and the influx of low-skilled workers, which collectively reduce productivity and strain resources. This finding is consistent with the challenges noted in the literature regarding labor market inefficiencies [2, 22, 24].

Political Stability (POLITICAL_STAB):

Contrary to common expectations, political stability does not emerge as a significant determinant of long-run growth. With a coefficient of 0.002898 (t-statistic = 0.081179; p-value = 0.9360), its influence on real GDP is statistically insignificant. This result suggests that, in the long run, political stability alone may not directly shape growth dynamics unless accompanied by effective economic and institutional reforms, a nuance discussed by Ogbonna, Njoku, & Nwonu [23].

Summary of Long-Run Results:

In sum, the ARDL model highlights that foreign aid, foreign direct investment, the exchange rate, and human capital significantly and positively influence Ethiopia's long-run economic growth. Conversely, labor force participation exerts a negative impact, while political stability is statistically insignificant in explaining long-run growth patterns. These results provide robust evidence that external inflows (ODA and FDI), macroeconomic fundamentals (exchange rate), and structural factors (human capital) are the primary drivers of Ethiopia's long-run economic performance.

3.6. Short-Run Dynamics (Error Correction Model)

Table 5. Short-Run Dynamics: Error Correction Model (ECM).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNODA)	0.0300	0.0111	2.6960	0.0126
D(LNFDI)	0.0149	0.0059	2.5170	0.0189
D(LNEXR)	0.2202	0.0389	5.6670	0.0000
D(LNHUMAN)	0.2266	0.0293	7.7400	0.0000
D(LNLFP)	-1.5657	0.6397	-2.4470	0.0221
D(POLITICAL_STAB)	0.0018	0.0219	0.0810	0.9360
CointEq(-1)	-0.6141	0.0727	-8.4420	0.0000

Source: Own estimation using EViews software.

The short-run estimates from the ARDL model are presented in Table 5. The results reveal that several explanatory variables exert statistically significant effects on economic growth in Ethiopia.

Foreign aid (Δ LNODA) is found to have a positive and significant impact on GDP growth, with a coefficient of 0.029957 (t-statistic = 2.696; p-value = 0.0126). This indicates that, on average, a 1% increase in official development

assistance leads to a 0.03% rise in real GDP, confirming the importance of aid inflows in stimulating short-term growth.

Similarly, foreign direct investment (ΔLNFDI) demonstrates a positive and significant effect, with a coefficient of 0.014895 (t-statistic = 2.517; p-value = 0.0189). This suggests that a 1% rise in FDI inflows contributes to approximately 0.015% growth in GDP, consistent with the view that FDI fosters growth through capital formation, technology transfer, and employment creation.

The exchange rate (ΔLNEXR) exerts a strong positive influence on growth in the short run, with a coefficient of 0.220180 (t-statistic = 5.667; p-value = 0.0000). This implies that a 1% depreciation of the exchange rate leads to a 0.22% increase in real GDP, reflecting the role of currency depreciation in enhancing export competitiveness and stimulating domestic production.

Human capital ($\Delta \text{LNHUMAN}$) also emerges as a critical determinant of short-run growth. With a coefficient of 0.226614 (t-statistic = 7.740; p-value = 0.0000), the results indicate that a 1% improvement in human capital contributes to a 0.23% rise in GDP, underlining the pivotal role of education and skills development in promoting economic performance.

By contrast, labor force participation (ΔLNLFP) exerts a statistically significant negative effect on GDP growth, with a coefficient of -1.565660 (t-statistic = -2.447; p-value = 0.0221). This suggests that, in the short run, a 1% increase in labor force participation reduces GDP by approximately 1.57%. This counterintuitive result may reflect structural unemployment, underemployment, and the entry of low-skilled labor, which limit productivity and constrain growth.

Political stability ($\Delta \text{POLITICAL_STAB}$) is statistically insignificant in the short run, with a coefficient of 0.001780 (t-statistic = 0.081; p-value = 0.9360). This implies that short-term variations in political stability do not exert a direct measurable effect on economic growth within the ARDL framework.

Overall, the short-run results indicate that foreign aid, FDI, exchange rate, and human capital positively and significantly influence GDP growth, while labor force participation negatively affects it, and political stability remains insignificant.

Long-Run Cointegration and Adjustment

The estimated long-run relationship between the variables and economic growth is expressed as follows:

$$\text{Cointeq} = \text{LNRGDP} - (0.0488 \times \text{LNODA} + 0.0243 \times \text{LNFDI} + 0.3585 \times \text{LNEXR} + 0.3690 \times \text{LNHUMAN} - 2.5494 \times \text{LNLFP} + 0.0029 \times \text{POLITICAL_STAB} + 25.4382)$$

This equation represents the long-run equilibrium linking foreign aid, FDI, exchange rate, human capital, labor force participation, political stability, and real GDP.

The error-correction term ($\text{CointEq}(-1)$) carries a coefficient of -0.614138 (t-statistic = -8.442; p-value = 0.0000), which is statistically significant at the 1% level. The negative and significant coefficient confirms the existence of a stable

long-run relationship among the variables. Specifically, the value of -0.6141 indicates that approximately 61.41% of the deviation from long-run equilibrium is corrected annually. This demonstrates a strong speed of adjustment, implying that any disequilibrium in the short run converges relatively quickly toward the long-run equilibrium path.

3.7. Diagnostic Tests for Model Robustness

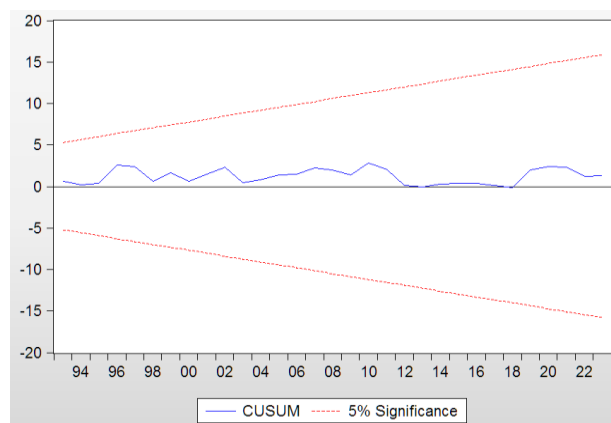
Table 6. Diagnostic Tests for Model Robustness.

Test	Statistic	Probability	Inference
Ramsey RESET (Specification)	F-stat = 0.0075	0.9317	No misspecification
Breusch-Pagan (Heterosced.)	$\chi^2 = 5.6964$	0.5756	Homoscedasticity
Breusch-Godfrey (Serial Corr.)	F-stat = 1.0945	0.3064	No serial correlation
Jarque-Bera (Normality)	JB = 0.0763	0.9625	Residuals normal

Source: Own estimation using EViews software.

All diagnostic tests confirm the model is well-specified, robust, and reliable.

3.8. Model Stability Test



Source: Own estimation using EViews software

Figure 2. CUSUM Stability Plot with 5% Significance Bounds.

The CUSUM (Cumulative Sum) test was employed to evaluate the stability of the estimated ARDL model coefficients over the sample period. The test plots the cumulative sum of recursive residuals (blue line) against the 5% critical significance bounds (red dashed lines). The stability of the model is confirmed when the CUSUM line remains within the critical bounds, whereas a crossover indicates structural change or coefficient instability.

As shown in Figure, the CUSUM line consistently lies within the 5% significance boundaries throughout the sample period. This implies that the model parameters are stable and no evidence of structural breaks exists at the 5% level of significance. The result enhances confidence in the model, confirming that the relationships among variables have remained constant over time. Consequently, the ARDL specification can be considered structurally stable, reliable for inference, and suitable for forecasting purposes.

3.9. Granger Causality Test

Table 7. Pairwise Granger Causality Test Results.

Null Hypothesis	F-Statistic	Prob.	Decision
LNODA does not Granger Cause LNRGDP	6.6264	0.0047	Reject $H_0 \rightarrow$ Causality exists
LNRGDP does not Granger Cause LNODA	0.7082	0.5018	Fail to Reject $H_0 \rightarrow$ No causality

Source: Own estimation using EViews software.

The pairwise Granger causality test indicates a unidirectional causal relationship running from Official Development Assistance (ODA) to economic growth (LNRGDP). Specifically, the null hypothesis that LNODA does not Granger-cause LNRGDP is rejected at the 1% significance level ($F = 6.63$, $p = 0.0047$). This suggests that ODA contributes predictive power for economic growth in Ethiopia.

Conversely, the null hypothesis that LNRGDP does not Granger-cause LNODA cannot be rejected ($F = 0.71$, $p = 0.5018$), implying that economic growth does not influence the inflow of ODA. The results therefore highlight that ODA drives economic growth rather than responding to it, underscoring the importance of foreign aid in supporting Ethiopia's development trajectory.

4. Conclusion and Policy Implications

4.1. Conclusion

This study examined the relationship between foreign aid and economic growth in Ethiopia during the period

1991–2023, using the ARDL model and incorporating key macroeconomic and institutional variables such as foreign aid, human capital, labor force participation, institutional quality, exchange rate, and foreign direct investment (FDI).

The findings reveal that foreign aid positively and significantly contributes to economic growth, not merely as financial inflows but as a catalyst for resource mobilization, technological diffusion, and skill transfer. Alongside this, human capital investment strongly enhances growth, underscoring the role of education and health in sustaining productivity. Similarly, the exchange rate exerts a positive and significant impact, reflecting its importance in promoting external competitiveness and trade performance.

Conversely, labor force participation exhibits a negative relationship with growth, suggesting structural inefficiencies in job creation and labor utilization. This points to challenges in aligning labor supply with productive sectors of the economy. Moreover, institutional quality is found to be statistically insignificant, indicating that governance and institutional frameworks have yet to play a decisive role in moderating growth outcomes. FDI, on the other hand, emerges as a critical driver of technology transfer, infrastructure develop-

ment, and employment generation.

Overall, the results highlight that ODA, human capital, exchange rate stability, and FDI are key enablers of growth in Ethiopia, whereas inefficiencies in labor utilization and weak institutional effectiveness remain constraints.

4.2. Policy Recommendations

Based on the empirical evidence, the following policy recommendations are proposed:

1. Enhance the Effectiveness of Foreign Aid
 - 1) Channel aid toward high-return sectors such as infrastructure, education, and healthcare.
 - 2) Strengthen monitoring and evaluation mechanisms to ensure efficient and transparent use of aid resources.
2. Strengthen Human Capital Development
 - 1) Expand access to quality secondary and higher education, with a focus on science, technology, and vocational skills.
 - 2) Invest in healthcare systems to enhance workforce productivity and long-term growth capacity.
3. Address Labor Market Inefficiencies
 - 1) Promote job creation in high-potential sectors such as manufacturing, agribusiness, and renewable energy.
 - 2) Introduce vocational training programs aligned with industry needs to reduce skill mismatches.
 - 3) Encourage inclusivity in the labor market, particularly for women and youth, to harness untapped labor potential.
4. Improve Institutional Quality
 - 1) Strengthen governance by enhancing transparency, accountability, and efficiency in public service delivery.
 - 2) Undertake legal and regulatory reforms to reduce bureaucratic inefficiency and enhance the rule of law.
 - 3) Invest in capacity building for public officials to improve institutional effectiveness.
5. Ensure Exchange Rate Stability
 - 1) Strengthen monetary policy frameworks to stabilize exchange rate fluctuations.
 - 2) Promote export diversification and competitiveness to generate sustainable foreign exchange earnings.
6. Promote and Leverage FDI
 - 1) Provide targeted incentives such as tax relief, regulatory streamlining, and guarantees to attract investors.
 - 2) Prioritize infrastructure investment in energy, logistics, and transport to create a conducive investment environment.
 - 3) Leverage FDI for technology transfer, industrial upgrading, and employment generation.

Abbreviations

GDP Gross Domestic Product

ODA Official Development Assistance
 FDI Foreign Direct Investment
 EXR Exchange Rate
 LFP Labor Force Participation
 ARDL Autoregressive Distributed Lag
 IQ Institutional Quality

Author Contributions

Balemlay Addis is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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