PressAcademia
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JEFA
ISSN 2148-6697
Journal of Economics, Finance and Accounting YEAR 2025 VOLUME 12 ISSUE 2

AN EMPIRICAL ANALYSIS OF THE LINK BETWEEN FISCAL DEFICITS, MONETARY EXPANSION, AND INFLATION IN UGANDA (2007–2020)

DOI: 10.17261/Pressacademia.2025.2003
JEFA- V.12-ISS.2-2025(2)-p.92-102

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Date Received: September 5, 20025 **Date Accepted:** November 19, 2025

To cite this document
Ali, S.O.M., Abdullahi, A.K.M., (2025). An empirical analysis of the link between fiscal deficits, monetary expansion and inflation in Uganda (2007-2020). Journal of Economics, Finance and Accounting (JEFA), 12(2), 92-102.
Permanent link to this document: http://doi.org/10.17261/Pressacademia.2025.2003

ABSTRACT

Purpose – This study provides an empirical analysis of the relationship between fiscal deficits, monetary expansion, and inflation in Uganda using quarterly data from 2007 to 2020. It seeks to determine both the short- and long-run drivers of inflation and establish causal relationships among the variables.

Methodology – The Autoregressive Distributed Lag (ARDL) bounds testing approach was employed to estimate short- and long-run effects, while Granger causality tests were used to examine causal links. Diagnostic and stability tests were applied to validate the robustness of the model.

Findings – The results demonstrate that, in the long-run, money supply (0.33), fiscal deficit (0.28), and exchange rate (0.32) significantly increase inflation, while GDP (–0.27) and interest rate (–0.018) reduce it. Terms of trade were insignificant. In the short run, both fiscal deficit and money supply exert positive and significant effects on inflation. The error correction term indicates that 67% of disequilibrium is corrected within a quarter. Granger causality results confirm unidirectional causality running from fiscal deficit and money supply to inflation.

Conclusion – The study concludes that fiscal deficit and money supply are the primary sources of inflation in Uganda, while GDP growth helps stabilize prices. Effective coordination of fiscal and monetary policy is essential. Policymakers should reduce fiscal deficits, regulate money supply, and stabilize the exchange rate, while promoting growth-enhancing strategies to ensure long-term price stability.

Keywords: Inflation, fiscal deficit, money supply, ARDL, Uganda
JEL Codes: H62, E51, E31

1. INTRODUCTION

Stabilizing prices has long been a central mission for central banks, which underscores the importance of identifying the main forces behind inflation (Mishkin, 2004). Inflation—defined as a sustained rise in the overall cost of goods and services—is often linked to rapid monetary growth. Likewise, recurring fiscal deficits, where government expenditures consistently exceed revenues, are widely recognized as contributors to inflation, depending on the financing method. The interplay between deficits, money supply growth, and inflation has attracted considerable scholarly and policy debate, especially in developing economies such as Uganda.

The effect of fiscal deficits on inflation largely depends on how they are financed. Short-term deficits may only cause temporary price increases, while prolonged deficits funded by monetary expansion usually create persistent inflationary pressures. By contrast, deficits covered through non-monetary instruments, such as bonds absorbed by non-banking entities, tend to have a weaker effect on price levels (Khieu, 2014). Empirical evidence on the subject remains inconclusive: some studies point to a strong link between fiscal imbalances and hyperinflation, whereas others find negligible or weak connections, often due to structural features, labor market dynamics, or methodological differences (Catão & Terrones, 2003; Ekanayake, 2012).

Monetary expansion is another factor that influences inflation. Persistent fiscal shortfalls often lead to monetization, where deficits are financed through money creation, which in turn raises liquidity and fuels price pressures, undermining macroeconomic stability (Dornbusch & Fischer, 2007). In many developing economies, high inflation is closely tied to fiscal imbalances, with money-financed deficits serving as the primary driver (Lozano-Espitia, 2008). Rising inflation then compounds fiscal difficulties by increasing debt-servicing costs, thereby widening budgetary gaps (Dornbusch & Fischer, 2007).

Uganda has experienced similar challenges. The budget deficit rose from 7% of GDP to 9% in the 2020/21 fiscal year (World Bank, 2020), while the money supply expanded sharply from UGX 1,315.83 billion in 2002 to UGX 22,955.84 billion by 2020 (Bank of Uganda, 2020). Previous studies using the Vector Error Correction Model (VECM) produced mixed or inconclusive findings, largely due to restrictive assumptions regarding stationarity. For this reason, the present study adopts the Autoregressive Distributed Lag (ARDL) model, which accommodates a mix of stationary and non-stationary variables and captures both short-run and long-run dynamics. By re-examining the relationship between fiscal deficits, monetary growth, and inflation using ARDL, this research seeks to provide robust empirical evidence for Uganda and to contribute to wider debates on fiscal-monetary interactions in developing economies.

2. LITERATURE REVIEW

This study draws on three key theoretical frameworks: the Monetary Theory of Inflation, the Fiscal Theory of the Price Level (FTPL), and the Structural Theory of Inflation. From the monetarist perspective, inflation is essentially a result of excessive money supply growth. Friedman and his followers argue that inflation arises when money expands faster than real output, making monetary policy the most effective instrument for price stability (Friedman, 1968; Totonchi, 2011; Parguez, 2011). This view emphasizes that controlling money supply fluctuations is central to curbing inflation.

The Fiscal Theory of the Price Level (FTPL), however, assigns primacy to fiscal policy. According to this framework, government debt, taxation, and spending decisions determine the price level. Persistent fiscal deficits undermine the value of currency, driving inflation, while monetary policy plays a secondary role (Bassetto, 2008). Thus, maintaining sustainable fiscal policy is seen as essential for long-run price stability.

The Structural Theory of Inflation, developed by Myrdal and Straten, focuses on the structural weaknesses of developing economies, such as supply bottlenecks, sectoral imbalances, and limited production capacity. Structuralists argue that while monetary and fiscal policies can trigger inflation in the short run, the deeper causes lie in economic rigidities that restrict supply responses to rising demand (Totonchi, 2011).

Empirical evidence reflects these competing views Eita et al. (2021) in Namibia—also identified a long-term relationship between budget deficits and inflation. Khan et al. (2023) confirmed using ARDL that in Pakistan, fiscal deficits and exchange rate movements fuel inflation both in the short and long run, while money supply had only a long-run effect Similarly, Loate and Viegi (2025) observed in South Africa that prolonged deficit-financed fiscal expansion raised the risk premium and debt levels, eventually exerting contractionary and inflationary pressures .Nguyen (2015) found that fiscal deficits significantly contributed to inflation in Asian economies between 1985 and 2012, while Ekanayake (2012) showed that in Sri Lanka, a 1% rise in the deficit increased inflation by 11%. In Uganda, Bwire and Nampewo (2014) reported that fiscal deficits affected inflation only in the long run. Other African studies—including Solomon & De Wet (2004) in Tanzania, Makochekanwa (2008) in Zimbabwe, and Eita et al. (2021) in Namibia—also identified a long-term relationship between budget deficits and inflation.

Similar findings emerge in relation to money supply. Studies from Tanzania (Mbongo et al., 2014), Ghana (Ofori et al., 2017), China (He, 2017), and Turkey (Gungor & Berk, 2006) confirm that monetary expansion raises inflation in both the short and long run. Yet results remain inconsistent: Amassoma et al. (2018) found little evidence of money supply driving inflation in Nigeria, while Achary (2019) concluded that in Nepal, money supply affected inflation only in the long run.

Taking together, these studies suggest that while theory clearly links fiscal deficits and money growth to inflation, empirical findings vary considerably across contexts. This highlights the need to re-examine the Ugandan case using a flexible approach like ARDL, which can capture both short-term fluctuations and long-term relationships.

3. METHODOLOGY

3.1. Data Source and Type

This research is based exclusively on secondary data. Information on inflation, money supply, interest rates, exchange rates, GDP, and terms of trade (as a proxy for trade openness) was obtained from the *Bank of Uganda*, while fiscal deficit data came from the *Ministry of Finance, Planning, and Economic Development*. The dataset covers quarterly observations from 2007 to 2020, providing sufficient depth for a time series analysis of the fiscal–inflation relationship.

To assess the statistical properties of the series, the Augmented Dickey–Fuller (ADF) test was applied to determine whether the variables were stationary at levels (I (0)) or became stationary after first differencing (I (1)). A summary of variables, proxies, measurement units, and sources is presented in Table 3.1.

Table 1: Variables, Proxies, and Sources

Variable	Proxy	Measurement	Source
Inflation	INFR	general and persistent increase in the price level of goods and services of a country (%).	Bank of Uganda
Fiscal deficit	FD	Fiscal deficit in billions of Ugandan Shillings (UGX).	Ministry of Finance
Money supply	MS	Sum of currency and deposits in circulation (cheque, time, and savings deposits) in billion UGX	Bank of Uganda
Interest rate	IR	Interest rate charged on loans by financial institutions (%).	Bank of Uganda
Exchange Rate	EXR	Exchange rate of Ugandan Shilling to US Dollar (UGX/USD).	Bank of Uganda
Gross Domestic Product	GDP	Total value of goods and services produced (Billions UGX).	Bank of Uganda
Terms of Trade	ToT	(Export price index / Import price index) × 100. Measures trade efficiency (%).	Bank of Uganda

The empirical analysis was carried out using Stata 15 and EViews 9.0. Exploratory plots were used to examine patterns in the data, followed by cointegration tests to establish possible long-run linkages. The Autoregressive Distributed Lag (ARDL) model was then employed to estimate both short-run and long-run dynamics, while Granger causality tests were used to evaluate the direction of causality between fiscal deficits, money supply, and inflation.

3.2. Model Specification

The model was designed to capture the impact of fiscal and monetary variables on inflation in Uganda. Given the mixture of integration orders in the dataset, the ARDL cointegration technique was considered most appropriate. The baseline equation is specified as:

$$lnINFR_t = \beta_0 + \beta_1 lnFD_{t-1} + \beta_2 lnMS_{t-1} + \beta_3 lnIR_{t-1} + \beta_4 lnEXR_{t-1} + \beta_5 lnGDP_{t-1} + \beta_6 lnTOT_{t-1} + \varepsilon_{1t} \quad (1)$$

Where lnINFR denotes the natural logarithm of inflation rate, lnFD stands for the natural logarithm of the Fiscal Deficit, lnMS refers the natural logarithm of Money Supply, lnIR signifies the natural logarithm of Interest rate, lnEXR denotes the natural logarithm of the Exchange rate, lnGDP stands for natural logarithm of Gross Domestic Product and the natural logarithm of trade openness is denoted by lnToT.

Cointegration with ARDL - The ARDL bounds testing procedure proposed by Pesaran et al. (2001) was adopted for three main reasons. First, once the optimal lag length is selected, it enables testing for cointegration using the bounds test, which is more flexible than traditional techniques such as Johansen and Juselius (1990). Second, unlike the Engle–Granger approach (1987), ARDL allows regressors to be a mix of I(0) and I(1). Third, the method performs well with relatively small sample sizes, making it suitable for this dataset.

The ARDL framework also incorporates an Error Correction Mechanism (ECM), which accounts for both short-run adjustments and long-run equilibrium dynamics. By including lags, the method helps minimize endogeneity bias (Pesaran, 1997). These features make ARDL an appropriate and robust approach for exploring the fiscal deficit–inflation nexus in Uganda.

Long Run and Short Run Models - The unrestricted error-correction version of the ARDL model can be expressed as

$$\Delta lnINFR_t = \alpha_0 + \beta_0 + \beta_1 ln\mathrm{FD}_{t-1} + \beta_2 ln\mathrm{MS}_{t-1} + \beta_3 ln\mathrm{IR}_{t-1} + \beta_4 ln\mathrm{EXR}_{t-1} + \beta_5 ln\mathrm{GDP}_{t-1} + \beta_6 ln\mathrm{ToT}_{t-1} + \sum_{i=0}^{p} \delta_1 ln\mathrm{FD}_{t-1} + \sum_{i=0}^{p} \delta_2 ln\mathrm{MS}_{t-1} + \sum_{i=0}^{p} \delta_3 ln\mathrm{INTR}_{t-1} + \sum_{i=0}^{p} \delta_4 ln\mathrm{EXR}_{t-1} + \sum_{i=0}^{p} \delta_5 ln\mathrm{GDP}_{t-1} + \sum_{i=0}^{p} \delta_5 ln\mathrm{ToT}_{t-1} + \varepsilon_t \quad (2)$$

The long-run coefficients are captured by the β_i parameters, while the short-run dynamics are reflected in the δ_i terms. The null hypothesis $H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$: implies no cointegration, while the alternative assumes the existence of cointegration.

If cointegration is confirmed, the conditional long-run ARDL model is specified as:

$$\Delta INFR_t = \alpha_0 + \sum_{i=0}^{p} \beta_i X_{i-1} + \varepsilon_t \quad (3)$$

The final stage involves estimating the ECM:

$$\Delta INFR_t = \sum_{i=0}^{p} \delta_i \Delta X_{i-1} + \theta_1 ECT_{t-1} + \varepsilon_t \quad (4)$$

Here, δ_i denotes the short-run coefficients, ECT_{t-1} is the error-correction term, p represents the chosen optimal lag length, and θ measures the adjustment speed. A negative and statistically significant θ confirms cointegration and indicates the proportion of disequilibrium corrected in each period.

4. FINDINGS AND DISCUSSION

This section presents the results of the study, beginning with descriptive analysis of the variables through graphs and summary statistics. It then incorporates the outcomes of stationarity and cointegration tests to guide model estimation. Using these foundations, the ARDL framework was applied to capture both the short-run and long-run dynamics between fiscal deficits, money supply, and inflation. In addition, Granger causality tests were employed to examine the direction of influence among the variables. To ensure the robustness of the results, several diagnostic checks were also conducted on the estimated models.

4.1. Descriptive Analysis

Money Supply (Figure 1): Uganda's money supply displayed a steady upward trend throughout the study period, with a sharp acceleration in the third quarter of 2009. This reflects persistent monetary expansion and increasing liquidity levels in the economy. Fiscal Deficit (Figure 2): The fiscal balance consistently deteriorated from Q1 2007 to Q4 2020, reaching its widest gap of 0.088% of GDP in the last quarter of 2020. The narrowest deficit, 0.005% of GDP, was observed in Q1 2007. These results contribute to rising fiscal stress over the study period.

Exchange Rate (Figure 3): The Ugandan shilling experienced repeated fluctuations between 2007 and 2020. A sharp depreciation occurred from Q1 2014 to Q3 2015. The most favorable exchange rate was recorded in Q2 2020, while the weakest occurred in Q3 2008. The volatility largely reflected persistent current account imbalances and the country's import dependence. Interest Rates (Figure 4): Lending rates generally increased over time, though they fell briefly in 2007. The highest rate, 27.2%, was recorded in Q1 2012, largely due to elevated administrative costs, while the lowest, 18.6%, occurred in Q2 2020. Wide interest rate spreads were linked to bank capitalization levels, yields on government securities, and high operational costs in the financial sector.

Gross Domestic Product (Figure 5): GDP maintained an upward trajectory, averaging UGX 27,990.12 billion between Q1 2007 and Q4 2020. The maximum value of UGX 38,597.18 billion occurred in Q4 2020, while the minimum, UGX 11,084.95 billion, was in Q1 2007. This indicates sustained economic expansion despite periodic shocks. Terms of Trade (Figure 6): The terms of trade index exhibited significant instability, especially during 2012–2014 and again from 2017 onward. This volatility reflected Uganda's dependence on imported high-value consumer goods against relatively narrow export earnings dominated by agricultural commodities such as coffee.

Inflation (Figure 7): Inflation was highly variable during the study period. It reached a maximum of 24.2% in Q4 2011 due to food and fuel price spikes, before falling to 1.9% in Q4 2014. Another notable surge occurred in Q1 2009. As Kabundi (2012) observes, Uganda's inflation is strongly influenced by accommodative monetary policy, global commodity price shocks, and structural weaknesses such as low agricultural productivity.

Figure 1: Money Supply (Billions UGX)

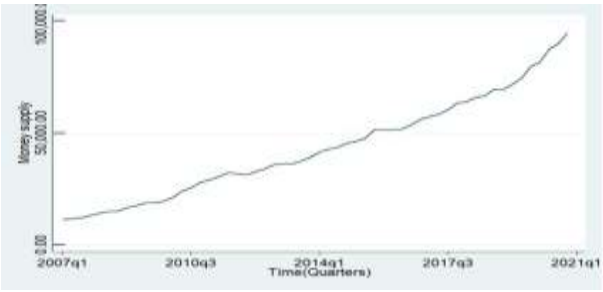


Figure 2: Fiscal Deficit (Percentage)

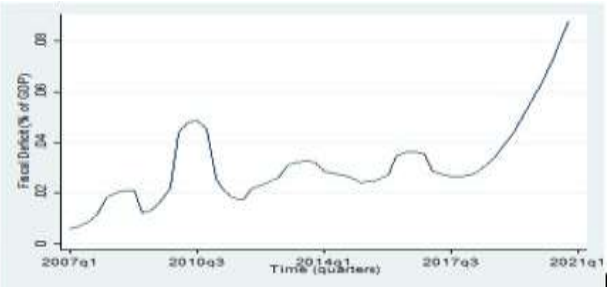


Figure 3: Exchange Rate (UGX/USD)

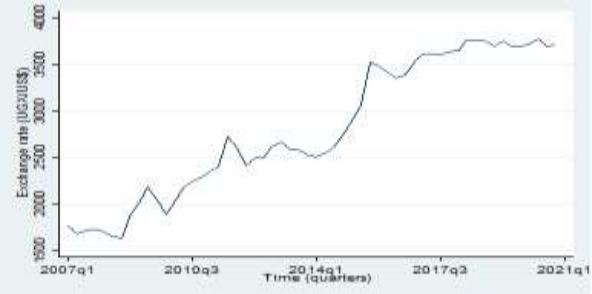


Figure 4: Interest Rate (Percentage)

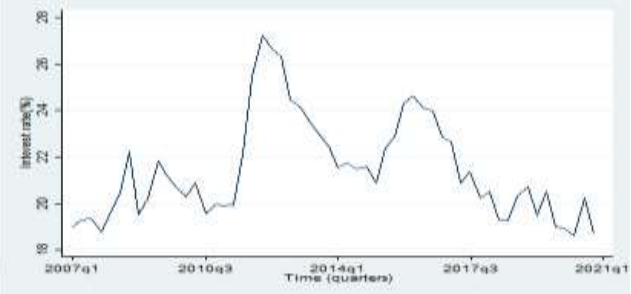


Figure 5: GDP (UGX/USD)

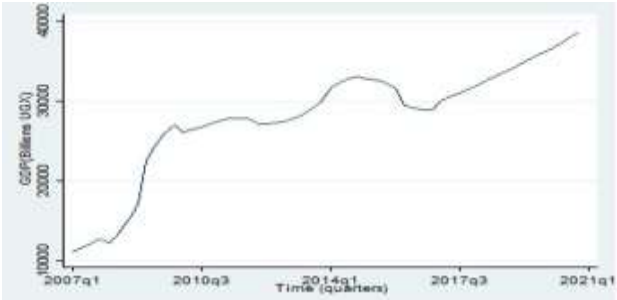


Figure 6: Trade Openness (Percentage)

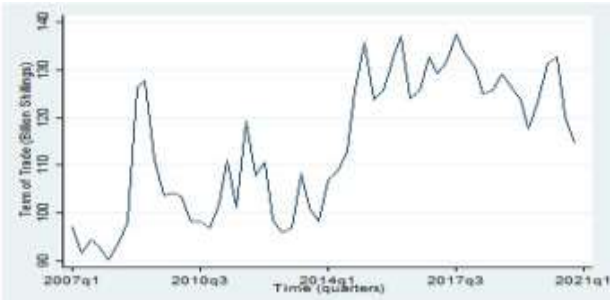
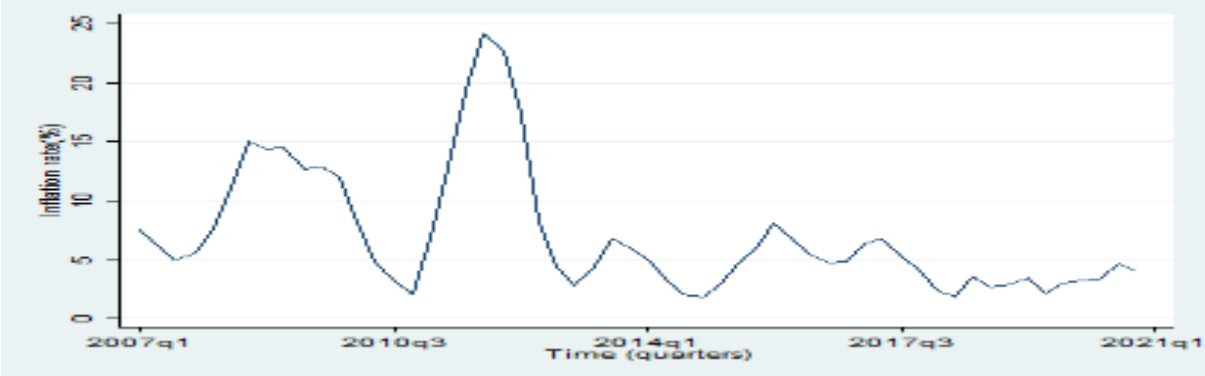


Figure 7: Inflation Rate (Percentage)



4.2 Unit Root Test

Before applying the ARDL bounds testing framework, it was essential to verify the order of integration of the series. The Augmented Dickey–Fuller (ADF) test was used to check whether each variable was stationary or contained a unit root. The hypotheses were specified as follows:

H0: $\delta = 0$ (the series has a unit root / non-stationary)

Ha: $\delta < 0$ (the series is stationary).

The test outcomes are reported in Table 4.1. Results show that the money supply was stationary at level, I(0). In contrast, inflation, exchange rate, interest rate, GDP, terms of trade, and fiscal deficit were non-stationary at levels but became stationary after first differencing, implying integration of order one, I (1). This mixture of I (0) and I (1) variables justify the use of the ARDL approach, which is well-suited for regressors with different integration properties, provided none are integrated beyond I (1).

Table 1: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variables	ADF test Statistic	5% Critical Value	Conclusion
INFR	-1.049	-2.923	Non-stationary
EXR	-0.508	-2.923	Non-stationary
IR	-1.936	-2.923	Non-stationary
GDP	-1.650	-2.923	Non-stationary
MS	3.145	-2.923	Stationary
ToT	-1.843	-2.923	Non-stationary
FD	1.167	-2.923	Non-stationary
After First Difference			
INFR	-3.939	-2.924	Stationary
EXR	-6.275	-2.924	Stationary
IR	-7.163	-2.924	Stationary
GDP	-3.938	-2.924	Stationary
ToT	-8.206	-2.924	Stationary
FD	-4.299	-2.924	Stationary

4.3. Cointegration Test

The presence of a long-run equilibrium relationship among the variables was assessed using the ARDL bounds testing approach. The results are reported in Table 2. The computed F-statistic for equation (2) was 9.18, which is greater than the upper bound critical value of 3.35 at the 5% significance level. This outcome leads to the rejection of the null hypothesis of *no level relationship*, confirming that the variables are cointegrated.

The implication is that inflation in Uganda is not merely a short-term phenomenon but is structurally linked to fiscal deficit, money supply, exchange rate, GDP, interest rates, and terms of trade in the long run. This provides strong justification for applying the ARDL model to capture both short-run fluctuations and long-run dynamics.

Table 2: ARDL Bound Test for Cointegration

F-Bound Test		Null Hypothesis: No levels relationship		
Test- statistic	Value	Sig. Level	I(0)	I(1)
F-statistic	9.18	5 %	2.26	3.35

4.4. Long-Run and Short-Run Effects

Long-Run Effects- Since the ARDL bounds test confirmed the existence of cointegration (see Table 2), the model was estimated to capture the long-run and short-run effects of fiscal and monetary variables on inflation. The long-run coefficients are summarized in Table 3.

Table 3: Long-run ARDL Estimates

Ind. Variables	Coefficients	Std. Errors	t-Statistics	Prob.
LNMS	0.333	0.088	0.38	0.0006 ***
LNFD	0.28	0.072	0.39	0.0005***
LNIR	-0.018	0.13	-0.014	0.0523*
LNEXR	0.324	0.103	0.31	0.0037***
LNGDP	-0.271	0.076	-0.35	0.0012***
LNTOT	-0.05	0.20	1.63	0.9475
Cons	0.242	0.051	0.473	0.00***
Note: The asterisk ***, ** and * denote significantly at the 1%, 5% and 10% levels respectively.				

The estimates confirm that money supply exerts a strong and positive long-run influence on inflation. A 1% increase in money supply is associated with a 0.33% rise in inflation ($p < 0.01$). This result supports the monetarist position that sustained monetary expansion fuels higher prices and is consistent with evidence from Evans Ovamba (2014), Nguyen (2015), and Ofori et al. (2019).

The fiscal deficit also has a significant positive impact, where a 1% increase leads to a 0.28% rise in inflation ($p < 0.01$). This finding highlights how persistent deficit financing intensifies aggregate demand and price pressures, echoing previous results from Abubakarim & Karim (2015), Ekanayake (2012), Nguyen (2015), and Eita et al. (2021a).

Regarding the control variables, exchange rate depreciation significantly increases inflation, reflecting the pass-through effect of higher import costs. By contrast, GDP growth has a negative and significant effect, suggesting that stronger economic activity and production capacity help reduce inflationary pressures. Interest rates are weakly significant ($p \approx 0.05$) with a negative coefficient, implying only a modest role as a policy tool against inflation in Uganda. Finally, terms of trade show a negative but statistically insignificant effect, indicating limited relevance for long-run inflation dynamics.

Taken together, the findings emphasize that Uganda's inflation is predominantly shaped by fiscal and monetary factors. However, promoting sustained GDP growth and exchange rate stability can act as counterbalancing forces that moderate long-run inflationary pressures.

Short-Run Effects- The short-run dynamics of the model were examined using the Error Correction Model (ECM), and the estimates are reported in Table 4.4. The coefficient of the error correction term (ECT) is negative and highly significant at the 5% level, which confirms that short-run deviations from equilibrium adjust back toward the long-run path over time.

Table 4: Short-Run ARDL Results

Variable	Coefficients	Std. Err.	t-statistics	P-value
C	29.67	3.74	7.94	0.0000
D(LNINIFR(-1))	0.30	0.09	3.21	0.00***
D(LNFD)	1.03	0.31	3.32	0.00***
D(LNFD(-1)).	1.19	0.27	-4.39	0.00***
D(LNFD(-2))	1.15	0.26	-4.43	0.00***
D(LNFD(-3))	1.65	0.28	5.88	0.00***
D(LMS)	3.03	1.10	-2.74	0.00****
D(LNMS(-1))	1.83	1.15	1.59	0.12
D(LNMS(-2))	4.61	1.21	3.82	0.00***
D(LNMS(-3))	2.02	1.17	1.73	0.09
D(LNGDP)	1.38	0.85	1.62	0.11
D(LNIR)	0.035	0.069	0.05	0.96
D(LNIR(-1)	1.32	0.66	2.01	0.05**
D(LNTOT)	0.08	0.03	2.51	0.01***
D(LNTOT(-1))	0.04	0.03	1.53	0.02**
D(LNTOT(-2))	0.03	0.02	1.30	0.01***
CointEq(-1)*	-0.67	0.08	-7.96	0.00***
R-squared 0.77		Adjusted R-squared 0.69		Sum squared resid 1.73
S.E of regression 0.21		F-statistic 9.62		
Prob.(F-statistic) 0.000000		Durbin-Watson stat 2.43		
Note: The asterisk ***, ** and * denotes significances respectively at the 1%, 5% and 10% levels.				

The short-run results indicate: Inflation persistence: The lagged inflation term is positive and significant, showing that current inflation is influenced by past levels. Fiscal deficit: Both the current and lagged values are positively significant, demonstrating that fiscal imbalances have immediate and ongoing inflationary effects. This is consistent with Ssebulime and Edward (2019).

Money supply: The contemporaneous and second-lag coefficients are strongly significant, confirming that monetary expansion rapidly translates into price increases, consistent with findings by Gungor & Berk (2006) and Mbongo et al. (2014). Other lags of money supply are weaker.

Control variables: GDP is positive but insignificant in the short run. Interest rates are mostly insignificant, though the first lag shows a weak positive effect ($p \approx 0.05$). Terms of trade variables are consistently positive and significant, suggesting that worsening trade conditions place upward pressure on domestic prices. Error correction term: The ECT is -0.67 and highly significant, showing that about 67% of short-run disequilibria are corrected within a quarter. This indicates a strong tendency for inflation to revert toward its long-run equilibrium following shocks.

4.5. Granger Causality Test Results

The study further applied the Granger causality test to explore the direction of influence among the main variables. The outcomes are reported in Table 5.

Table 5: Pairwise Granger Causality Test Results

Null Hypothesis	Obs	F- Statistics	Prob
Inflation rate does not Granger cause fiscal deficit	54	0.49145	0.614
Fiscal deficit does not Granger cause inflation rate		3.85254	0.027
Inflation rate does not Granger cause money supply	54	0.60948	0.547
Money supply does not Granger cause inflation rate		8.51134	0.000
* Represent 5% significant level			

At the 5% threshold, the findings indicate a one-way causality running from fiscal deficit to inflation. This means that past changes in government budget deficits help predict future inflation patterns, while inflation itself does not significantly affect fiscal balances. Similar conclusions were drawn by Solomon & De Wet (2004), Makochekanwa (2008), Bwire & Nampewo (2014), and Eita et al. (2021).

In addition, the results show a unidirectional causal link from money supply to inflation. This suggests that monetary expansion plays a crucial role in driving price changes, whereas inflation does not Granger-cause money supply. These findings are consistent with Achary (2019), Sola & Peter (2013), and Narayan et al. (2019), who all emphasized the central role of monetary growth in shaping inflationary dynamics.

4.6. Diagnostic Tests

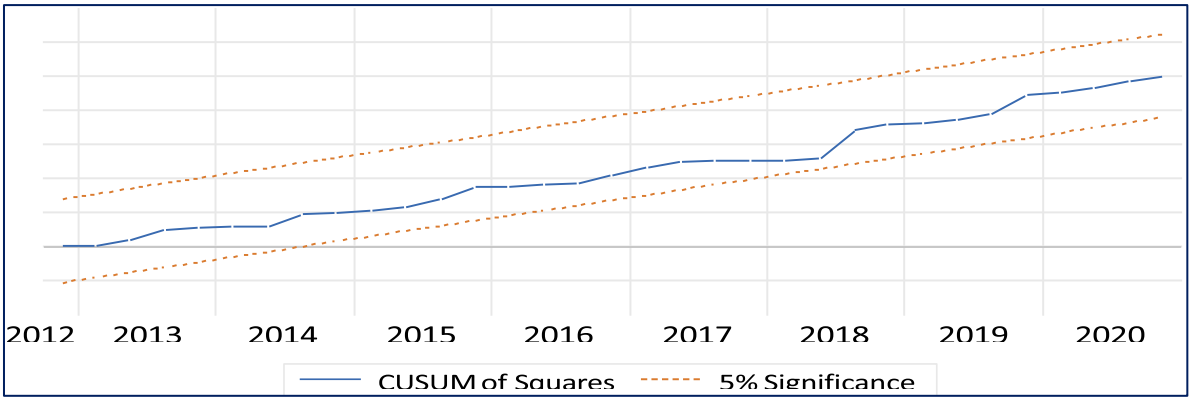
To verify the robustness of the ARDL estimations, a series of diagnostic checks were performed, including tests for normality, heteroskedasticity, autocorrelation, functional specification, and parameter stability. The results are displayed in Table 6.

Table 6: Diagnostic Test Results

Test for	Statistic	Significance
Normality	Jarque-Bera Test	Jarque-Bera=0.43; p = 0.8
Heteroscedasticity	Breusch-Pagan	Obs*R-squared=17.82; p=0.27
Autocorrelation	Lagrange-multiplier test	F-statistics =2.29; p=0.083
Variable Bias	Ramsey RESET test	F-statistics =0.028; p=0.87
Parameter Stability	Cumulative sum test	Recur = 0.81; 5% = 0.95

The results show that the residuals are normally distributed ($p = 0.80$) and there is no evidence of heteroskedasticity ($p = 0.27$) or autocorrelation ($p = 0.083$). The RESET test ($p = 0.87$) suggests the model is well specified. Furthermore, both the CUSUM and CUSUMSQ statistics lie within the 5% significance boundaries, confirming the stability of the estimated coefficients across the sample period. This provides strong support for the reliability of the ARDL model results.

Figure 8: CUSUM Plot of Recursive Residual



5. CONCLUSION AND POLICY IMPLICATIONS

This study investigated how Uganda's fiscal deficit and money supply influence inflation, drawing on quarterly data covering 2007–2020. The evidence consistently showed that both factors exert a positive and statistically significant impact on inflation in both the short and long run. Put simply, increases in fiscal deficits and monetary expansion fuel price growth, confirming their central role as drivers of Uganda's inflation. In addition, Granger causality results revealed a one-way causal relationship from fiscal deficit to inflation and from money supply to inflation, reinforcing their predictive importance for future inflationary movements.

The results suggest several policy directions. First, the Bank of Uganda should maintain a monetary framework that emphasizes careful control of broad money. Tools such as interest rate adjustments, reserve requirements, and prudent currency issuance need to be actively applied to ensure that monetary growth does not exceed the economy's productive capacity. Sustaining moderate inflation is essential not only for long-term growth but also for maintaining the stability of the Ugandan shilling. Second, fiscal discipline is equally critical. The government should minimize reliance on deficit monetization, which directly fuels inflationary pressures. Alternative financing mechanisms—such as domestic bond issuance or borrowing from non-bank sources—should be prioritized to reduce dependence on money creation. Aligning expenditure with available revenue streams will help contain persistent inflation and enhance macroeconomic stability.

In conclusion, the findings underscore the importance of policy coordination. Effective management of fiscal balances combined with prudent monetary policies can help stabilize prices, reduce inflationary volatility, and create a stronger foundation for sustainable economic growth in Uganda

REFERENCES

Abdurehman, A. A., & Hacilar, S. (2016). The relationship between exchange rate and inflation: An empirical study of Turkey. International Journal of Economics and Financial Issues, 6(4), 1454–1459.

Achary, R. C. (2019). Relationship between money supply, income and price level in Nepal. NRB Economic Review, 31(1), 1–20.

Ada, O. E., Oyeronke, A., Odunayo, A. J., Okoruwa, V. O., & Obi-Egbedi, O. (2014). Trade openness and inflation in Nigerian economy: A vector error correction model (VECM) approach. Research Journal of Finance and Accounting, 5(21), 74–85.

Ahmed, A. O. (2018). Re-examining the relationship between inflation, exchange rate and economic growth in Nigeria. International Journal of Economics and Business Management, 8(2), 1–12.

Ahmed, D. A., & Abdelsalam, M. A. M. (2017). Inflation instability impact on interest rate in Egypt: Augmented Fisher hypothesis test. Applied Economics and Finance, 5(1), 1–10. https://doi.org/10.11114/aef.v5i1.2709.

Ajaz, T., Nain, M. Z., & Kamaiah, B. (2016). Inflation and openness in India: An asymmetric approach. Macroeconomics and Finance in Emerging Market Economies, 9(2), 190–203.

Amaefula, C. G. (2016). Long-run relationship between interest rate and inflation: Evidence from Nigeria. Journal of Economics and Finance, 7(3), 24–28.

Amassoma, D., Sunday, K., & Onyedikachi, E.-E. (2018). The influence of money supply on inflation in Nigeria. Journal of Economics and Management, 31(1), 5–23.

Asad, I., Ahmad, N., & Hussain, Z. (2012). Impact of real effective exchange rate on inflation in Pakistan. Asian Economic and Financial Review, 2(8), 983–990.

Asgharpur, H., Kohnehshahri, L. A., & Karami, A. (2007). The relationships between interest rates and inflation changes: An analysis of long-term interest rate dynamics in developing countries. Economic Research Journal, 7(2), 1–17.

Ayub, G., Rehman, N., Iqbal, M., Zaman, Q., & Atif, M. (2014). Relationship between inflation and interest rate: Evidence from Pakistan. Research Journal of Recent Sciences, 3(4), 2277–2502.

Bwire, T., & Nampewo, D. (2014). Fiscal deficits financing: Implications for monetary policy formulation in Uganda. Journal of Applied Finance and Banking, 4(2), 125–138.

Catão, M. L., & Terrones, M. M. (2003). Fiscal deficits and inflation. International Monetary Fund Working Paper, 03/65, 1–43.

Danlami, I. A., Hidthiir, M. H. Bin, & Hassan, S. (2018). Inflation in Sierra Leone: An empirical analysis of the impact of interest rate on price level changes. Academic Journal of Economic Studies, 4(4), 42–49.

Dornbusch, R., & Fischer, S. (2007). The open economy: Implications for monetary and fiscal policy. In Macroeconomics (pp. 215–250). University of Chicago Press.

Eita, J. H., Manuel, V., Naimhwaka, E., & Nakusera, F. (2021). The impact of fiscal deficit on inflation in Namibia. Journal of Central Banking Theory and Practice, 10(1), 141–164. https://doi.org/10.2478/jcbtp-2021-0007

Ekanayake, H. K. (2012). The link between fiscal deficit and inflation: Do public sector wages matter? ASARC Working Paper, 2012/14, 1–34.

Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error correction: Representation, estimation, and testing. Econometrica, 55(2), 251–276.

Eita, J. H., Jordaan, A. C., & Mang'unyi, E. (2021). Budget deficits and inflation in Namibia: An ARDL bounds testing approach. Journal of Economic and Financial Sciences, 14(1), 1–11. https://doi.org/10.4102/jef.v14i1.597

Gul, E., & Ekinci, A. (2006). The causal relationship between exchange rates and inflation in Turkey: 1984–2003. Anadolu University Journal of Social Sciences, 6(1), 91–106.

He, Y. (2017). A study on the relationship between money supply and macroeconomic variables in China. Mediterranean Journal of Social Sciences, 8(6), 99–107.

Hossin, M. S. (2015). The relationship between inflation and economic growth of Bangladesh: An empirical analysis from 1961 to 2013. International Journal of Economics, Finance and Management Sciences, 3(5), 426–434.

Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration—with applications to the demand for money. Oxford Bulletin of Economics and Statistics, 52(2), 169–210.

Khieu, H. V. (2014). Budget deficit, money growth and inflation: Empirical evidence from Vietnam. SSRN Electronic Journal, 1–25. https://doi.org/10.2139/ssrn.2428039

Khumalo, L. C., Mutambara, E., & Assensoh-Kodua, A. (2017). Relationship between inflation and interest rates in Swaziland revisited. Banks & Bank Systems, 12(4), 218–226.

Khan, A., Siddiqi, M. M., & Khan, A. (2023). Fiscal deficit and inflation: An empirical measure in view of Pakistan. Russian Law Journal, 11(5), 2085–2095. https://doi.org/10.17589/2309-8678-2023-11-5-2085-2095

Lozano-Espitia, L. I., & Lozano-Espitia, I. (2008). Budget deficit, money growth and inflation: Evidence from the Colombian case. Borradores de Economía, 537, 1–30.

Loate, T., & Viegi, N. (2025). Can monetary and fiscal policy account for South Africa's stagnation? Applied Economics, 57(3), 250–266. https://doi.org/10.1080/00036846.2025.2473109

Majumder, S. C. (2016). Inflation and its impacts on economic growth of Bangladesh. American Journal of Marketing Research, 2(1), 17–26.

Makochekanwa, A. (2008). The impact of a budget deficit on inflation in Zimbabwe. MPRA Paper No. 13846, University of Munich.

Mbongo, J. E., Mutasa, F., & Msigwa, R. E. (2014). The effects of money supply on inflation in Tanzania. Economics, 3(2), 19–26.

Munir, S., Hasan, H., & Muhammad, M. (2015). The effect of trade openness on inflation: Panel data estimates from selected Asian economies (1976–2010). Southeast Asian Journal of Economics, 3(1), 23–42.

Narayan, P. K., Narayan, S., & Prasad, A. D. (2019). Modelling the relationship between budget deficits, money supply and inflation in Fiji. Applied Economics, 51(12), 1253–1265.

Nganga, J. N. (2015). The effects of exchange rate volatility on the inflation rate in Kenya (Unpublished master's thesis). University of Nairobi.

Nguyen, V. B. (2015). Effects of fiscal deficit and money M2 supply on inflation: Evidence from selected economies of Asia. Journal of Economics, Finance and Administrative Science, 20(38), 49–53. https://doi.org/10.1016/j.jefas.2015.01.002

Opolot, J., & Kyeyune, M. A. (2012). Inflation dynamics in Uganda: The role of disequilibria in both the money and traded goods market. Bank of Uganda Working Paper, 12/03, 1–30.

Ofori, C. F., Danquah, B. A., & Zhang, X. (2017). The impact of money supply on inflation: A case of Ghana. Imperial Journal of Interdisciplinary Research, 3(1), 2312–2318.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326.

Pesaran, M. H. (1997). The role of economic theory in the long run. The Economic Journal, 107(440), 178–191.

Raju, J. K., Manjunath, B. R., & Rehaman, M. (2018). An empirical study on the effect of gross domestic product on inflation: Evidence from Indian data. Academy of Accounting and Financial Studies Journal, 22(6), 1–11.

Romer, D. (1993). Openness and inflation: Theory and evidence. The Quarterly Journal of Economics, 108(4), 869–903.

Samimi, A. J., Ghaderi, S., Hosseinzadeh, R., & Nademi, Y. (2012). Openness and inflation: New empirical panel data evidence. Economics Letters, 117(3), 573–577.

Sepehrivand, A., & Azizi, J. (2016). The effect of trade openness on inflation in D-8 member countries with an emphasis on Romer theory. Asian Journal of Economic Modelling, 4(4), 162–167.

Sikdar, A., Kundu, N., & Khan, Z. S. (2013). Trade openness and inflation: A test of Romer hypothesis for Bangladesh. International Journal of Economics and Finance, 5(3), 101–109.

Sola, O., & Peter, A. (2013). Money supply and inflation in Nigeria: Implications for national development. Journal of Economics and Sustainable Development, 4(12), 75–85.

Solomon, M., & De Wet, W. A. (2004). The effect of a budget deficit on inflation: The case of Tanzania. South African Journal of Economic and Management Sciences, 7(1), 100–116.

Ssebulime, K., & Edward, B. (2019). Budget deficit and inflation nexus in Uganda (1980–2016): A cointegration and error correction modeling approach. Journal of Economic Structures, 8(1), 1–13. https://doi.org/10.1186/s40008-019-0136-4

Teker, D., Alp, E. A., & Kent, O. (2012). Long-run relation between interest rates and inflation: Evidence from Turkey. Journal of Applied Finance and Banking, 2(6), 41–53.

Zakaria, M. (2010). Openness and inflation: Evidence from time series data. Doğuş Üniversitesi Dergisi, 11(2), 313–322.