



Effect of Inflation Rate on Economic Growth in East African Countries: Aggregated Panel Approach

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ABSTRACT

Unraveling the linkage between inflation and economic growth has been a principal matter of debate among economists and policy makers worldwide for decades, particularly in emerging countries such as East African region. However, owing to the fact that there are limited studies on inflation rate and economic growth, various studies indicate inconclusive views on the effect of inflation rate on economic growth. For this reason, it is not clear whether or not inflation rate affect economic growth in East African countries. The main objective of the study was to examine the effect of inflation rate on economic growth in East African Countries. The null hypothesis test in the study stated that inflation rate does not affect gross domestic product in East African Countries. The study used World Bank data for a panel of 5 countries for the period from 2000 to 2024. Hausman specification test was employed so as to ascertain whether to use fixed or the random effect model in the estimation. Results of fixed effect regression model indicated that natural log of inflation rate has positive and significant effect on natural log of economic growth which was statistically significant at five percent level. The study results recommends that maintaining price stability should be treated as both an economic and social priority in East African countries. Besides, strengthening monetary policy credibility, improving coordination between fiscal and monetary authorities, and enhancing food market regulation particularly during climate-induced supply disruptions which are critical for anchoring inflation expectations and protecting household welfare.

Keywords: Economic growth, Inflation rate, East African Countries

1.0 INTRODUCTION

To attain sustainable economic growth couple with price stability continues to be the central objective of macroeconomic policies for most countries in the world today. Among others the emphasis given to price stability in conduct of monetary policy is with view to promoting sustainable economic growth as well as strengthening the purchasing power of the domestic currency, (Umaru and Zubairu, 2012). The question on whether or not inflation is harmful to economic growth has recently been a subject of intense debate to policy makers and macroeconomists. Several studies have estimated a negative relationship between inflation and economic growth. Specifically the bone of contention is that whether inflation is necessary for economic growth or it is detrimental to growth. Basically the rate of economic growth depends primarily on the rate of capital formation and the rate of capital formation depends on the rate of savings and investment, (Data and Kumar, 2011).

World economic growth and inflation rates have been fluctuating. Likewise, inflation rates have been dominating to compare with growth rates in virtually many years (Madhukar and Nagarjuna, 2011). And relationship between inflation and the rate of economic growth continued to be one of the most macroeconomic problems. Similarly, Ahmed (2010) maintains that this relationship has been argued in various economic literatures and this arguments shown differences in relation with condition of world economic order. In accordance with these policies, increases in the total demand caused increases in production and inflation too. However, inflation was not regarded as a problem in that period rather considered as a positive impact on economic growth which was widely accepted. Amid these views, Phillip's first introduced hypothesis that high inflation positively affects the economic growth by lowering unemployment rates.

Unraveling the linkage between inflation and economic growth has been a principal matter of debate among economists and policy makers worldwide for decades, particularly in emerging countries such as East African region. Inflation defined as a sustained increase in the aggregate price level of goods and services in a specific region, can generate multifaceted impacts on an economy, encompassing both detrimental and beneficial outcomes (Parkin, 2017). However, the impact of inflation on the economy varies from influencing consumer spending decisions to affecting a nations trade balance and overall economic stability (Negm, 2023). It should be noted that the rate of inflation is strongly associated with purchasing power parity (PPP) and the depreciation of currency (Papell & Prodan, 2020; Chen & Hu, 2018). An increase in inflation rates reduces the purchasing power parity, causing each unit of money to buy fewer goods and services. Inflation also decreases international competitiveness. Higher inflation rates cause a country's exports to be more expensive relative to commodities from countries with lower inflation rates (Rusu & Roman, 2018).

Furthermore, elevated inflation rates significantly shape investment behaviours, prompting investors to adjust their strategies to protect and grow their assets (Nwosu *et al.*, 2024). It can diminish the real value of the return from investments. A hike in input prices causes an increase in the cost of production, showing cost push inflation (Musarat *et al.*, 2021). Hence understanding how inflation interacts with economic growth is crucial for formulating effective monetary and fiscal policies (Afonso *et al.*, 2019). This research paper aims to contribute to this ongoing debate by examining the association between inflation rates and economic growth. It will analyze the theoretical underpinnings of this relationship, review existing empirical evidence in East African countries using a panel data methodology.

2.0 LITERATURE REVIEW

2.1 Introduction

2.2 Theoretical Literature

Different economic theories have reached different findings regarding how sensitive economic growth is to inflation. From the pre-world war I era to the post-world war II era, there are numerous hypotheses about inflation increase. Since persistent inflation was not a term during that time, the inflation-growth theories were based on cyclical observation.

2.2.1 The classical theory of inflation

The classical theory of inflation is derived directly from the classical quantity theory of money which is one of the oldest surviving economic doctrines. The theory is found in the famous equation of exchange developed in the nineteenth century by Irving Fisher (1876-1947). Fisher's equation of exchange states that $MV = PT$. If velocity (V) and output (Y) are constant, the increase in money (M) will cause a direct and proportionate increase in prices (P) (Musa *et al.* 2018). The theory assumes full employment in the economy while M is exogenously determined by the monetary authority. The greatest shortcoming of this theory is that it does not explain the channel (whether interest rate, wages, unemployment, demand) by which an increase in money supply causes the rise in the price level.

2.2.2 The Keynesian theory of inflation

John Maynard Keynes (1883-1946) and the Keynesian economists in their support for the demand –pull inflation theory, opined that inflation is majorly caused by an increase in aggregate demand, which is composed of investment, government expenditure and consumption. They explain this using the concept of inflationary gap- the excess of aggregate demand over aggregate supply. Keynes submitted that the larger the gap between aggregate demand and aggregate supply, the more the rapidity of inflation. Reducing inflationary tendencies in any economy entails initiating policies that reduce those components of total demand (Ndidi, 2013).

2.2.3 Cost-push theories of inflation

Cost-push inflation exists when wages or production costs start rising. The producers in turn pass these rising costs upon the consumers, leading to higher prices (Undji and Kaulihowa, 2015). Depreciation of the exchange rate can initiate an increase in the prices of goods as most firms import the bulk of raw materials required for their production at higher prices. Ogbokor & Sunde, (2011) noted that this kind of inflation occurs mainly because of a rise in the cost of imported raw materials and an increase in the cost of labour. Otto & Ukpere, (2016) noted that cost push inflation can also be called market power inflation because the increase in the prices of goods and services originates from the supply side of the economy. These increases may arise from increased wage rates or a fall in productivity which also increases the cost of labour output. It may also arise out of other factors of production or cost of inputs such as power supply, transport or raw materials.

2.2.4 Demand- pull or monetary theories of inflation

Demand- pull and monetary theories of inflation describe circumstances in which overall demand for goods and services surpasses the available supply, resulting in sustained increase in general price levels (Otto and Ukpere, 2016). According to this perspective, inflation is driven by factors such as expansionary fiscal policies, central bank actions that increase the money supply, rising consumption by households and the firms, and higher international prices relative to domestic ones (Ogbokor and Sunde, 2011). The demand pull view explains that inflation occurs when additional demand cannot be absorbed by using up stored goods, shifting supplies from foreign to domestic markets, increasing imports, or delaying purchases. Demand-pull inflation, often called surplus demand inflation, arises when too much money is available to purchase too few goods. Taanaay *et al.* (2026) and Anyanwu (1993) noted this situation during the Biafra-Nigeria war and after the 1974 Udoji salary awards, when sharp wage increases boosted household incomes and pushed up demand. With greater pressure on commodities, prices rose. This kind of inflation often shows up when the economy is at full employment. Because output cannot expand easily, the cost of inputs rises and prices follow. It can also happen in the short run if sudden changes in demand are not expected. When production is limited, any demand beyond capacity quickly pushes prices upwards.

2.3 Empirical literature

2.3.1 Inflation and economic growth

Anochiwa and Maduka(2015) investigated the relationship between inflation and economic growth in Nigeria for the period spanning from 1970 to 2012. The methodology that was employed was the Augmented Dickey Fuller techniques to examine the unit root property of the series after which cointegration test was also conducted through the application of Johannssen contegration technique to examine the long-run relationship between the two phenomenon also granger causality test was employed to determine causation between economic growth and inflation. The results of the test showed that there is a non-linear relationship between economic growth and inflation and the coefficient of inflation is negatively signed and statistically insignificant both in the current period and lag three and this result seems to suggest that inflation is averse to growth. Besides the granger causality test revealed that there is no causality between economic growth and inflation.

Faraji and Kenani (2013) investigated the impact of inflation and economic growth in Tanzania for the period from 1990 to 2011. Correlation coefficient and cointegration techniques established the relationship between inflation and gross domestic product and coefficient of elasticity were applied to measure the degree of responsiveness of change in GDP to the changes in general price levels. Results suggested that inflation has a negative impact on economic growth. The study also revealed that there was no cointegration between inflation and economic growth during the study period in Tanzania.

Sanmi *et al* (2026) examined the impact of exchange rate and inflation on agricultural output in Nigeria for the period spanning from 1981 to 2022. The study was analyzed using the fully modified ordinary least squares (FMOLS) estimation technique. The empirical results revealed that inflation rate had a direct and statistically significant effect on crop, livestock and fishery output. Results also showed that a ten percent increase in exchange rate reduced crop output by about five percent. Interest rates also inversely affected forestry output, though their impact on the other subsectors is weak and mostly insignificant. The findings showed the sensitivity of Nigeria's agricultural sector to macroeconomic instability, particularly exchange rate volatility.

Taanaay *et al* (2026) investigated the effect of inflation on economic growth in Somalia using annual time series data spanning 1990 to 2023. The analysis employed the autoregressive distributed lag model (ARDL) bounds testing approach to estimate both short-run and long-run dynamics, with government expenditure, foreign direct investment, gross capital formation, and external debt included as the control variables. Unit root tests confirm mixed orders of integration, justifying the use of the ARDL framework. To ensure robustness, the long-run results are validated using dynamic ordinary least squares (DOLS) and canonical cointegrating regression (CCR) estimators. The findings indicate a stable long-run cointegrating relationship among the study variables. Inflation exerts a negative and statistically significant effect on economic growth in both the short and long run. Also, government expenditure positively contributes to growth, while foreign direct investment exhibits a negative effect, reflecting structural and institutional constraints. Gross capital formation is statistically insignificant, suggesting inefficiencies in the investment utilization, whereas the effect of external debt varies depending on its allocation. Overall, the results underscore the importance of price stability, efficient public spending, and improved investment governance for sustaining long-term economic growth in Somalia.

Mohamad (2025) examined the relationship between inflation and economic growth in Indonesia. The study employed time series methodology for the period from 1985 to 2023. All the data estimated were obtained from the World Bank. Inflation is proxied by the consumer price index. The autoregressive distributed lag model (ARDL) bounds testing technique was utilized to examine the dynamic relationships, as well as the Toda-Yamamoto (TY) test for unravelling the direction of causal linkages. Results revealed that inflation is negatively associated with economic growth in Indonesia during the sample period, indicating the damaging impact of inflation. Higher inflation rates hamper business activities and purchasing power parities, and consequently, decline total output growth. Regarding the control variables, gross fixed capital formation and the working age population are positively associated with economic growth as expected. The results obtained from the Toda-Yamamoto test signify bidirectional causality between inflation rates and economic growth.

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The section presents the model specified for the study. The variables used in the study are defined. The data sources and the methods used in data analysis are explained.

3.2 Model Specification

The model is specified to examine the effect of inflation rate on economic growth in East African countries. It is a multiple regression model whereby inflation rate is the independent variable and dependent variable is the economic growth proxied by the gross domestic product per capita. The control variables comprise of exchange rate, money supply, exports, human capital and fixed telephone subscription. Thus we have the multiple regression model of the form derived and estimated as follows

$$LNGDP_{it} = \beta_0 + \beta_1 LNINFL_{it} + \beta_2 LNEXCH_{it} + \beta_3 LNBMI_{it} + \beta_4 LNEXP_{it} + \beta_5 LNHC_{it} + \beta_6 LNFTS_{it} + \varepsilon_{it} \dots\dots\dots(3.1)$$

Where:

$LN\text{GDP}_{it}$ is the natural log of gross domestic product

$LN\text{FL}_{it}$ is the natural log of inflation rate

$LN\text{EXCH}_{it}$ is the natural log of exchange rate

$LN\text{BM}_{it}$ is the natural log of money supply

$LN\text{EXP}_{it}$ is the natural log of exports

$LN\text{HC}_{it}$ is the natural log of human capital

$LN\text{FTS}_{it}$ is the natural log of fixed telephone subscription

$\mathcal{E}_i$ = the error term

$i = \dots, n$, where n is the number of firms. β_0 = constant/the intercept point of the regression line and the Y-axis. β = is the slope /gradient of the regression line. $\mathcal{E}$ = is the error term.

The expected signs $\beta_1 \geq 0, \beta_2 \geq 0, \beta_3 \geq 0$ Source derived Maingi (2010)

3.3 Data Collection

The research study used secondary data from World Development Indicators (WDI) for a panel of 5 selected countries namely, Kenya, Uganda, Tanzania, Congo Democratic Republic and Rwanda based on the data availability for the period from 2000 to 2024. Burundi was excluded from the study because data was not available for some study variables. The research used panel data to examine the effects of inflation rate on economic growth in East African countries. According to Cameroon and Trivendi (2005); the panel data approach has the advantage as it makes the sample size large, which provides a good basis for obtaining more precise estimates. It can also facilitate analysis of common dynamic trends help solve omitted variable and measure individual heterogeneity.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 4.1 Descriptive statistics between inflation rate and economic growth in East African countries

	GDP	INFL	BM	EXCH	FTS	SEP	EXP
Mean	746.1567	13.80240	7.75E+12	1215.635	0.333216	90.25196	18.93334
Maximum	2133.462	513.9068	4.40E+13	3757.263	1.648600	156.6143	45.69696
Minimum	142.6781	-0.391347	0.000000	0.000000	0.000000	0.000000	5.258706
Std. Dev.	450.0757	55.31982	1.07E+13	1037.802	0.344138	48.24089	7.930730
Skewness	1.204642	7.961445	1.734710	0.873450	1.640589	-0.953265	1.153295
Kurtosis	4.305094	66.75951	5.060736	2.976066	5.710334	2.752595	4.085426
Jarque-Bera	39.10372	22493.82	84.80992	15.89703	94.33356	19.25035	33.84639
Observations	125	125	125	125	125	125	125

Source: Research Data (2026)

The Table 4.1 below shows the results of the normality test and descriptive statistics of the variables under study. On one hand, skewness measures the direction and degree of asymmetry. A value of zero indicates symmetrical distribution. Positive value indicates skewness to the right while a negative indicates skewness to the left. Values between -3 and +3 indicates that they are typical values of samples from a normal distribution, (Gisore, 2014). Economic growth, inflation rate, exchange rate, money supply, exports and fixed telephone subscription had positive values of skewness which indicates skewness to the right. This implies that the positively skewed variables were high during the beginning years but have been progressively declining over the years. However, human capital had negative values of skewness indicating skewness to the left.

From the table 4.1 results are presented economic growth had a mean value of 746.1567, a maximum value of 2133.462, a minimum value of 142.6781 and standard deviation value of 450.0757. Besides, inflation had a mean value of 13.80240, a maximum value of 513.9068, a minimum of -0.391347, with

a standard deviation of 55.31982. Money supply had a mean value of $7.75E+12$, a maximum of $4.40E+13$, a minimum value of 0.00000 with a standard deviation value of $1.07E+13$. Exchange rate had a mean of 1215.635, a maximum value of 3757.263, a minimum of 0.00000 with a standard deviation of 1037.802.

Fixed telephone subscription had a mean value of 0.333216, a maximum of 1.648600, with a minimum value of 0.00000 and standard deviation value of 0.344138. Human capital on the other hand had a mean value of 90.25196, a maximum value of 156.6143, a minimum of 0.000000 with a standard deviation value of 48.24089. Exports had a mean value of 18.93334, a maximum of 45.69696, a minimum of 5.258706 with a standard deviation value of 7.930730.

4.2 Correlation analysis

Table 4.2 Correlation analysis between inflation rate and economic growth in East African countries

Sample: 2000 2024							
Included observations: 125							
Correlation							
Probability	GDP	INFL	BM	EXCH	FTS	SEP	EXP
GDP	1.000000						

INFL	-0.137781	1.000000					
	(0.1255)	-----					
BM	0.285197	-0.112951	1.000000				
	(0.0013)	(0.2098)	-----				
EXCH	-0.013559	-0.161753	0.780519	1.000000			
	(0.8807)	(0.0715)	(0.0000)	-----			
FTS	0.003066	-0.089508	-0.067108	-0.016657	1.000000		
	(0.9729)	(0.3209)	(0.4571)	(0.8537)	-----		
SEP	-0.076344	-0.228084	-0.275959	-0.168797	0.136297	1.000000	
	(0.3974)	(0.0105)	(0.0018)	(0.0599)	(0.1296)	-----	
EXP	-0.161238	-0.116321	-0.116922	-0.082645	-0.176565	-0.192834	1.000000
	(0.0724)	(0.1964)	(0.1941)	(0.3595)	(0.0489)	(0.0312)	-----

Source: Research Data (2026)

From the correlation analysis results above in table 4.2, the study results exhibited that there was a negative and statistically insignificant correlation between inflation rate and economic growth, with the coefficient value of -0.137781. This implies that inflation rate does not play any role in determining economic growth in East African countries. Besides, money supply had a positive and statistically significant nexus with economic growth. With a coefficient value of 0.285197. The coefficient was statistically significant at five percent level of significance. Exchange rate on the other hand had a negative but statistically insignificant correlation with economic growth. Had coefficient value of -0.013559. This indicates that exchange rate plays no role in determining economic growth in East African countries.

Fixed telephone subscription had a positive but statistically insignificant correlation with economic growth, with a coefficient value of 0.003. This implies that infrastructure development proxied by fixed telephone subscription has no role in determining economic growth in East African countries. Human capital and exports both had a negative but statistically insignificant correlation with economic growth. This implies that these two study variables play no role in determining economic growth in East African countries. Human capital had a coefficient value of -0.076344 whereas exports had a coefficient value of -0.161238.

4.3 Diagnostic test

4.3.1 Panel Unit root test

Table 4.3 Levin Lin & Chu test panel unit root test

VARIABLE		CONSTANT WITHOUT TREND	ORDER	CONSTANT +TREND	ORDER
Gross domestic product	LEVEL	Adjusted t* - 0.3807 (0.3517)	I(1)	Adjusted t* - 0.0160 (0.4936)	I(1)
		Adjusted t* - 4.2749 (0.0000)		Adjusted t* - 2.8788 (0.0020)	
inflation rate	LEVEL	Adjusted t* - 42.5637 (0.0000)	I(0)	Adjusted t* - 57.6441 (0.0000)	I(0)
exchange rate	LEVEL	Adjusted t* 3.2303 (0.9994)	I(1)	Adjusted t* 2.0681 (0.9807)	I(1)
	1 ST Diff	Adjusted t* - 3.2788 (0.0005)		Adjusted t* - 2.9805 (0.0014)	
money supply	LEVEL	Adjusted t* 9.0037 (1.0000)	I(1)	Adjusted t* 3.1543 (0.9992)	I(1)
	1ST Diff	Adjusted t* - 4.4597 (0.0000)		Adjusted t* - 2.8729 (0.0020)	
exports	LEVEL	Adjusted t* - 0.0842 (0.4664)	I(1)	Adjusted t* - 0.0971 (0.4613)	I(1)
		Adjusted t* - 4.8688 (0.0000)		Adjusted t* - 4.1057 (0.0000)	
human capital	LEVEL	Adjusted t* - 1.4587 (0.0723)	I(1)	Adjusted t* - 1.6457 (0.0499)	I(0)
		Adjusted t* - 4.4957 (0.0000)			
infrastructure development	LEVEL	Adjusted t* - 1.1501 (0.1250)	I(1)	Adjusted t* - 1.6364 (0.0509)	I(1)
	1 ST Diff	Adjusted t* - 5.5307 (0.0000)		Adjusted t* - 4.2052 (0.0000)	

Source: Research data (2026)

According to the Levin Lin & Chu test results presented in the table 4.3 shows that the test statistics constant without trends for variable inflation rate was statistically significant at one per cent level. This implies that this variable is stationary at levels. However, test statistics for the variables; economic growth, exchange rate, money supply, exports, human capital and fixed telephone subscription were not statistically significant. This suggests that these variables were not stationary at levels and had to be differenced at least once for them to become stationary.

According to the Levin Lin & Chu test results constant plus trend the test statistics for the variables; Inflation rate and human capital were stationary at level. However, test statistics for some variables economic growth, exchange rate, money supply, exports and fixed telephone subscription in LLC test constant plus trend were not stationary at levels and had to be differenced at least once for them to become stationary. Variables that could be considered not to be stationary at levels comprised of ;economic growth, exchange rate, money supply, exports and fixed telephone subscription in accordance with Levin Lin & Chu test were differenced once and then become stationary suggesting that they were integrated of order one I (1). Thus, panel unit root test results in table 4.1 shows that variables in the model have a mixed order of integration. Some variables were integrated of order one I (1) while others order I (0).

4.3.2 Multicollinearity

Table 4.4 Multicollinearity results of inflation rate and economic growth :Variance Inflation Factor

Variable	VIF	1/VIF
Log of money supply	1.98	0.504325
Log of exchange rate	1.80	0.555075
Log of exports	1.34	0.746230
Log of human capital	1.28	0.780148
Log of inflation	1.20	0.831250
Log of fixed telephone subscription	1.07	0.934330
Mean VIF	1.45	

Source: Research data (2026)

Multicollinearity test was conducted by accumulating the VIF for each variable and the results are presented in table 4.4. Clearly, multicollinearity was not a problem since the VIF for all the variables were less than 10, which indicates the absence of multicollinearity problem. Schofield (2015) & Kibet (2022) opines that presence of multicollinearity among the explanatory variables in a regression model is unacceptable since high correlation makes it difficult to determine the individual contribution of each of the independent variables to the dependent variable and potentially affect the estimate of regression coefficient and the statistical significance tests.

4.3.3 Heteroscedasticity test

Table 4.5 Heteroscedasticity test of inflation rate and economic growth

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of gdp
chi2(1) = 3.19
Prob > chi2 = 0.0743

Source: Research data(2026)

The main assumption in regression analysis is that the variance of the error term is homoscedastic across all observations. When heteroscedasticity is present, ordinary least squares estimators become biased and inconsistent, and inefficient and when the standard errors are inconsistent, invalidating statistical tests, (Breusch & Pagan, 1979). The null hypothesis for Breusch – Pagan/Cook – Weisberg test is that there is constant variance (variance is homoscedastic) and alternative hypothesis states that there is no constant variance indicating that the error variances are heteroscedastic. Results in table 4.5 indicates probability of chi (2) of 3.19 with a p-value of 0.0743. Besides, the probability value is statistically insignificant and is more five percent implying that the null hypothesis was accepted and therefore there is constant variance indicating the absence of heteroscedasticity in the model.

4.3.4 Panel Cointegration test

Table 4.6 panel cointegration test results of inflation rate and economic growth

Johansen Fisher Panel Cointegration Test				
Series: GDP INFL BM EXCH FTS SEP EXP01				
Date: 10/08/26 Time: 15:50				
Sample: 2000 2024				
Included observations: 125				
Trend assumption: Linear deterministic trend				
Lags interval (in first differences): 1 1				
Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)				
Hypothesized	Fisher Stat.*		Fisher Stat.*	
No. of CE(s)	(from trace test)	Prob.	(from max-eigen test)	Prob.
None	273.3	0.0000	290.6	0.0000
At most 1	218.7	0.0000	125.3	0.0000
At most 2	118.3	0.0000	85.20	0.0000
At most 3	49.75	0.0000	26.28	0.0034
At most 4	30.43	0.0007	22.62	0.0123
At most 5	16.05	0.0982	11.90	0.2915
At most 6	14.32	0.1587	14.32	0.1587
* Probabilities are computed using asymptotic Chi-square distribution.				

Source: Research data (2026)

The panel cointegration test conducted was aimed at exploring whether there was more than a single cointegrating relationship amidst inflation rate and economic growth variables in East African countries. As indicated by the insignificance of the probability, the test implies that there are only six cointegrating equations among the variables under the study. The maximum Eigen values are 0.2915. Since this p-value is greater than 5 per cent level of significance, the null hypothesis of presence of cointegrating equations was accepted, meaning that there are six cointegrating equations between them. According to Kibet (2022) the cointegrating equations are equations used to adjust partial deviations from equilibrium. When variables are cointegrated, they are in long run relation to each other.

4.3.5 Hausman test

Table 4.7 Hausman test results of inflation rate and economics growth

---- Coefficients ----				
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
lninfl	.059369	.0728399	-.0134709	.
lnexch	-.9882582	-.47638	-.5118782	.0916392
lnfts	.0172675	-.0963444	.1136119	.
lnbm	.7396648	.5037758	.235889	.0166178
lnexp	-.1820453	-.3365853	.1545399	.
lnsep	-.3759982	.9630909	-1.339089	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
$\chi^2(6) = (b-B)[(V_b-V_B)^{-1}](b-B)$
= 911.58
Prob>chi2 = 0.0000
(V _b -V _B is not positive definite)

Source: Research data (2026)

Table 4.7 above was the Hausman specification test which showed that fixed effect model was the preferred model. Thus, the fixed effect model was the selected model based on the Hausman specification test because it gives better results. The Hausman test indicated probability of 0.0000 which was statistically significant. The probability was significant implying that we shall reject the null hypothesis which states that random effect is the preferred model and accept the alternative hypothesis which states that fixed effect is the preferred model. Thus the fixed effect model was the preferred and selected model.

4.4 Regression Analysis

4.4.1 Fixed Effect Model

Table 4.8 Fixed effect model results of inflation rate and economic growth

Fixed-effects (within) regression			Number of obs = 89			
Group variable: id			Number of groups = 5			
R-sq:			Obs per group:			
within = 0.9688			min = 7			
between = 0.7102			avg = 17.8			
overall = 0.6593			max = 24			
			F(6,78) = 404.21			
corr(u_i, Xb) = -0.8763			Prob > F = 0.0000			
lngdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lninfl	.059369	.018919	3.14	0.002	.0217041	.0970339
lnexch	-.9882582	.0950264	-10.40	0.000	-1.177441	-.7990751
lnfts	.0172675	.0159051	1.09	0.281	-.0143973	.0489322
lnbm	.7396648	.0267468	27.65	0.000	.686416	.7929136
lnexp	-.1820453	.0421786	-4.32	0.000	-.2660166	-.0980741
lnsep	-.3759982	.1132807	-3.32	0.001	-.6015228	-.1504737
_cons	-6.113073	.5620544	-10.88	0.000	-7.232037	-4.994109
sigma_u	.73313502					
sigma_e	.09279169					
rho .98423303 (fraction of variance due to u_i)						
F test that all u_i=0: F(4, 78) = 90.69			Prob > F = 0.0000			

Source: Research data (2026)

4.4.1.1 Inflation rate and economic growth

The study main objective sought to examine the effect of inflation rate on economic growth in East African Countries. From the table 4.8 above, the results of the fixed effect model has been displayed. The study results indicates that natural log of inflation rate has a positive and statistically significant relationship with log of economic growth. Had a coefficient value of 0.059369. This implies that a one percentage change in inflation increases economic growth by 0.06 percent. Results are in tandem with Sanmi *et al* (2026) whose empirical results revealed that inflation had a direct and statistically significant effect on crop livestock and fishery output. Results are however inconsistent with Mohamad (2025) who found negative association between inflation and economic growth in Indonesia. Besides the natural log of exchange rate had a negative and statistically significant effect on economic growth. Had a coefficient value of -0.9882582. This implies that a one percentage change in exchange rate reduces economic growth by 0.988 percent. Results are consistent with Koroma *et al* (2023) who also found positive and statistically significant relationship between exchange rate and economic growth in Sierra Leon.

Natural log of fixed telephone subscription had a positive and statistically insignificant relationship with economic growth. This implies that fixed telephone subscription does not play any role in determining economic growth in the study period. Log of money supply also had a positive and statistically significant relationship with economic growth. Had a coefficient value of 0.7396648. This implies that a one percentage change in money supply increases economic growth by 0.739 percent rate of change. Results are in tandem with Igwemma *et al* (2026) whose results documented that broad money supply exerts a positive and statistically significant long-run effect on economic growth. Additionally, log of export had a negative and statistically significant effect on economic growth. Had a coefficient value of -0.1820453. This implies that a one percentage change in exports will reduce economic growth by rate of change of 0.1820 percent. Results are in tandem with Zhou and Nyandoro (2023) whose results revealed that export diversification impacts positively on GDP growth in Zimbabwe.

Moreover, the natural log of human capital had a negative and statistically significant relationship with economic growth. Had a coefficient value of -0.3759982. This results implies that a one percentage change in human capital reduces economic growth by a rate of change of 0.376 percent. Results are consistent with

Buyinza (2019) whose results revealed that improvement in the quality of education for both male and females is associated with an increase in gross domestic product. In a nutshell, the null hypothesis test under study stated that inflation rate does not affect economic growth in East African Countries. The study rejects the null hypothesis and accepts the alternative hypothesis which states that inflation rate affects economic growth in East African countries this is because the log of inflation rate is positive and statistically significant at five percent level of significance.

5.0 Conclusion

The main objective of the study was to examine the effect of inflation rate on economic growth in East African Countries. Results of fixed effect regression model indicated that natural log of inflation rate has positive and statistically significant relationship with natural logarithm of economic growth which was statistically significant at five percent level. The study concluded that inflation rate in the East African region plays a significant role in determining economic growth. The study used annual data for a panel of 5 countries; Kenya, Uganda, Tanzania, Congo Democratic Republic and Rwanda for the period from 2000 to 2024. The study variables constituted of the following; Economic growth, inflation rate, exchange rate, money supply, exports, human capital and fixed telephone subscription. Several inflation theories have been embedded in the study on inflation and economic growth.

5.1 Policy Recommendation

To begin with, maintaining price stability should be treated as both an economic and social priority in East African countries. Persistent inflation erodes real incomes, heightens food insecurity, and exacerbates vulnerability in an economy heavily exposed to import dependence, climate shocks, and humanitarian pressures. Strengthening monetary policy credibility, improving coordination between fiscal and monetary authorities, and enhancing food market regulation particularly during climate-induced supply disruptions which are critical for anchoring inflation expectations and protecting household welfare. The study based on the results of the analysis recommends that central banks in the East African region and the relevant policy makers should implement effective measures to control inflation, such as stabilizing the prices of essential goods and services and monitoring money supply.

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Appendix

4.4.2 Random Effect Model

Table 4.9 Random effect results of inflation rate and economic growth in East African countries

Random-effects GLS regression			Number of obs = 89			
Group variable: id			Number of groups = 5			
R-sq:			Obs per group:			
within = 0.8705			min = 7			
between = 0.9441			avg = 17.8			
overall = 0.8827			max = 24			
			Wald chi2(6) = 617.29			
corr(u_i, X) = 0 (assumed)			Prob > chi2 = 0.0000			
lngdp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lninfl	.0728399	.0416709	1.75	0.080	-.0088336	.1545134
lnexch	-.47638	.0251451	-18.95	0.000	-.5256634	-.4270966
lnfts	-.0963444	.0241544	-3.99	0.000	-.1436863	-.0490026
lnbm	.5037758	.020958	24.04	0.000	.4626988	.5448528
lnexp	-.3365853	.071606	-4.70	0.000	-.4769305	-.1962401
lnsep	.9630909	.1336016	7.21	0.000	.7012365	1.224945
_cons	-8.699596	.951483	-9.14	0.000	-10.56447	-6.834724
sigma_u	0					
sigma_e	.09279169					
rho	0 (fraction of variance due to u_i)					

Source: Research data (2026)