Pak. j. life soc. Sci. (2025), 23(1): 8065-8072 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences

www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2025-23.1.00628

RESEARCH ARTICLE

Inflation Dynamics In Sudan: Evidence From Symmetric Ardl Approach

Abdelrahman Mohamed[1], Mohamed Saeed[2]

[1]Department of Economics

[2]College of Business, Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia

ARTICLE INFO

Received: Jan 19, 2025

Accepted: Mar 24, 2025

Keywords

Ardl

Exchange Rate

Inflation

Money Supply

Sudan

***Corresponding Author:**

amsaeed@imamu.edu.sa

ABSTRACT

Sudan has experienced high and folatile rates of inflation in recent years. This paper analyzes the underlying determinants of dynamics of inflation in the Sudanover the period 1990-2022 using a single equation model. The findings of the study suggest that inflating in the Sudan is mainly a monetary phenomenon represented by money growth and exchange rate changes. Our empirical result confirms the prominent role of money supply and exchange rate in driving inflation in the Sudan in both short run and long run This underscores the need to manage money supply, exchange rate to control domestic prices. Further, we find that inertial factors have persistent effects on the dynamics of inflationThis indicates that past realization of inflation plays a considerable role of the variance of inflation in the Sudan.

INTRODUCTION

Inflation, defined as the continued increase in the price of goods and services, is a significant problem in most countries. Similar to many developing countries, Sudan has been affected by a series of inflationary shocks since 1980. Over the period 1980-2000, Sudan experienced several episodes of macroeconomic difficulties. Gross domestic product (GDP) fluctuated, becoming negative during some years. Furthermore, the economy slipped into a fiscal imbalance, leading to inflationary pressure. On the external side, there has been an increase in balance of payment deficiencies. During the 1990s, Sudan experienced hyperinflation mainly caused by weak economic and financial policies, including monetary expansion. However, with the discovery of oil in 1999, Sudan became one of fastest growing economies in Africa, and inflation declined from 130.4% in 1996 to 16.16% in 1999. The period (1999-2011) (oil boom period) was characterised by single-digit inflation figures, with the rates never exceeding 9%. Consequently, the performance of Sudan's macroeconomy was satisfactory. After the secession of South Sudan in 2011, the country experienced severe economic difficulties and lost three-quarters of its oil production. According to the World Bank (2011), Sudan lost 36.5% of its revenue owing to the secession of South Sudan. GDP growth declined from an average of 7.5% in the five years preceding secession to 0.3% in 2011. Therefore, the sudden loss of oil revenue led to rising inflation, external and enterprise deficits, and economic hardship. Austerity measures adopted by the government to control inflation were ineffective during 2012-2020, causing it to surge more rapidly and persistently than expected, increasing from 48% in 2012 to an unprecedented level of 163.24% in 2020. Such high inflation rates lead to economic pressure, particularly on the poor and vulnerable. The real per capita income of the majority of the Sudanese has been considerably affected by inflation and negative GDP growth.

The main objective of this study is to examine the fundamental sources of inflation in Sudan, for the period of 1990-2022, using a single-equation model.

LITERATURE REVIEW

In order to design appropriate policies to control inflation without hindering economic growth, it is of utmost importance to economists and decision-makers to understand its causes. Despite considerable experience and evidence, economists disagree on the sources of inflation in developing countries. Some support monetarist causes while others argue that inflation results from structural rigidities. According to monetarists, inflation is mainly caused by growth in money supply, i.e., "Too much money chasing too few goods". This implies that inflation is a purely monetary phenomenon. More specifically, inflation occurs if the money supply increases faster than national income growth. Friedman (1968) argues that inflation is caused by excessive growth in the money supply. However, not all economists agree with this perspective. Money may chase goods and services and increase production instead of prices. Monetary explanations of inflation tend to follow Cagan's (1956) classical study of inflation, which indicates that changes in money supply cause changes in prices. Harberger (1963), Ndung'u (1994), and Younus (2014) empirically tested the monetarist view to explain inflation in developing countries, Chile, Kenya, and Bangladesh, respectively.

According to the structuralist school, inflation is mainly caused by structural weaknesses in a country's ability to produce goods and services. Weak infrastructure and inefficient supply chains can cause under-productivity. According to Kirkpatrick and Nixon (1979), inflation in developing countries is primarily caused by structural factors. Structuralists believe that inflation is caused by four structural rigidities: foreign exchange bottlenecks, inelastic food supply, government budget constraints and sectional disequilibria. Other studies have augmented the monetarists' views with the structuralist model. For instance, Aghevli and Khan (1978) maintain that fiscal deficits could initiate money supply. They argue that an increase in money supply could both cause inflation and be the result thereof.

Several empirical studies demonstrate varied sources of inflation in developing countries. According to Montiel (1989), inflation in developing countries is primarily caused by fiscal imbalances. Such imbalances can cause inflation, either by forcing the government to increase money supply or by devaluing the exchange rate. Similarly, Swagel and Loungani (2001) examine inflation in 53 developing countries and find that money growth and exchange rate changes are more important in countries with floating exchange rate regimes than in those with fixed exchange rate regimes. They conclude that inertial inflation dominates in countries with fixed exchange rate regimes. Ha, et.al. (2019) studied inflation in 105 low-income countries over the period 1970-2016, using a heterogeneous panel vector-autoregressive model. Their empirical results indicate that most of the variation in inflation among low-income countries is caused by external price shocks. In their study of inflation in Kenya, Dureval and Ndunh'u (1999) found that exchange rates, foreign prices and terms of trade have long-run effects on inflation, while money supply and interest rates have short-run effects.

While many studies have been conducted to analyse inflation in Sudan, their conclusions are largely inconsistent. Despite variations in the model tests, most studies identify monetary expansion as among the most important factors explaining inflation. For example, Sharaf *et al.* (2023) examine inflation in Sudan and find that money supply has a statistically positive effect on inflation. Similarly, Suliman (2012) identifies a positive impact of money supply on inflation in Sudan. You (2010) examines the determinants of inflation in Sudan over the period 1970-2008. He finds that domestic inflation in Sudan was caused by foreign inflation in both, the short and long term. Mahran and Yagoubi (1996) analyse inflation in Sudan over the period 1970-1991, using the two-stage least squares approach. The results reveal that government borrowings from the banking system and imported inflation play key roles in inflation in Sudan. Furthermore, Nakumuryango and Darbo (2019) investigate inflation in post-secession Sudan. Their study indicates that in the long run, oil prices negatively affect inflation, while money supply, credit to the private sector and nominal effective exchange have positive effects.

METHODOLOGY AND EMPIRICAL RESULTS

This empirical study used annual data over the period 1990-2022. All inflation data were collected from the Central Bank of Sudan (different issues) and the IMF database. This study is based on economic theory and previous studies to determine the theoretical or structural relationships between the variables. The empirical analysis used data on the consumer price index, money supply, exchange rate, gross domestic product (GDP), and openness. All variables were expressed as logarithmic, except for the inflation rate. To examine the effects of the variables on inflation in Sudan, this study constructed the following econometric model:

$$INF_t = \beta_0 + \beta_1 \ln GDP_t + \beta_2 \ln MS_t + \beta_3 \ln EX_t + \beta_4 \ln open_t + \varepsilon_t \quad (1)$$

Dependent Variable: INF= Inflation

Explanatory Variables:

GDP = Gross Domestic product; MS = money supply; open= openness; EX= exchange rate

β0 is the constant or the intercept. β1, B2, β3, β4 are the parameters/coefficients of the explanatory variables.

Inflation is hypothesised to be explained by the gross domestic product (GDP), money supply exchange rate, and openness of the economy.

β1 is expected to be negative. An increase of GDP implies more goods for money to "chase", exerting a downward pressure on prices. Considerable empirical evidence supports the negative relationship between inflation and domestic products. For example,Laryea and Sumaila (2001)examine inflation in Tanzania over the period 1980-2012 and find a negative relationship between inflation and domestic growth. **β**2 is expected to be positive. Changes in money supply, M2 (broadly defined as currency with public+demand deposit and quasi money) is expected to affect inflation in the same way. Monetarists argue that inflation is a monetary phenomenon caused by an increase in money stock. The monetarist theory has considerable empirical evidence. For example, according to Harberger (1963) who studied Chile, **β3** is expected to be positive. Exchange rate is defined as units of domestic currency per dollar. Exchange rate depreciation will result in an increase in the prices of goods and services for consumption and investment, translating into higher prices. We use the nominal, rather than real exchange rate. Real exchange rate already considers inflation rates, which we want to explain. Many empirical studies support that exchange rate changes eventually lead to inflation. For example, Suliman (2012) states that depreciation of exchange rate directly affects inflation in Sudan. **β**4 is expected to be negative. The hypothesis is that the Sudanese imports consist of essential goods that cannot be replaced domestically. Any reduction in imports will cause a concomitant reduction in output, i.e., controlling will create shortages of goods and services. The relative prices of these goods will rise, causing a surge in inflation.

Many time-series contain unit roots dominated by stochastic trends. To apply this integration, the time series must be tested for stationarity. Non-stationary presents a significant hurdle to the model prediction and forecasting. Therefore, testing and allowing for non-stationary time series data has become one of the major issues in econometrics. This is because, if non-stationary data are not found and used in the model, it will invalidate empirical studies, leading to spurious regression. We used the augmented Dickey–Fuller (ADF) with the null hypothesis that the variables tested contained a unit root. Table I shows the results of the unit root stationarity assessment. The p – value of the real gross domestic product and openness of autonomy is less than 0.05, indicating that the null hypothesis that the series contains a unit root is rejected. Since other variables were not stationary at these levels, we re-performed the test on the first difference, and all the variables were stationary. Therefore, it is possible to perform a cointegration test as long as two variables in the model are integrated of order one (I).

Table I: Unit Root Test

Variable	**Intercept**	**Trend and Intercept**

	ADF	p-value	Stationary order	ADF	p-value	Stationary
INF	8.156-	0.0000	I(1)	8.789-	0.0000	I(1)
GDP	7.628-	0.0000	I(0)	7.828-	0.0000	I(0)
MS	4.089-	0.0035	I(1)	7.829-	0.0000	I(1)
EX	14.679-	0.0000	I(1)	13.920-	0.0000	I(1)
OPEN	3.783-	0.0072	I(0)	4.052	0.0168	I(0)

Prior to conduct the cointegration, we determine the lag length of the vector autoregression (VAR). The importance of lag length determination is demonstrated by Braun and Mittnik (1993). The AIC, SC, HQ, FPE and likelihood ratio (LR) criteria were applied to select the optimal lag length of VAR. Table II shows the optimal number of lagged periods. Based on these criteria, we considered an optimum lag length of 2.

Table II: Lag Length Selection Criteria

HQ	**SC**	**AIC**	**FPE**	**LR**	**LogL**	**Lag**
36.58444	36.74635	36.51061	4.94e+09	NA	-524.4038	0
24.23367	25.20513	23.79069	15238.87	332.2134	-314.9650	1
18.75035*	20.53135*	17.93821*	51.84494*	136.3791*	-205.1040	2

Source: Authors' Calculations (E-views 13)

Note. *Indicates Optimal lag length

Cointegration Tests

To empirically analyse long-run cointegration and dynamic interactions among the variables under consideration, we employed the most recently introduced autoregressive distributed lag (ARDL) approach. This approach is superior to other cointegration tests because it is suitable even in the presence of a mixed order of integration. In other words, the ARDL bound test does not require the variables to be of the same order, but rather a mixture of integration at level I(0), I(1), or a combination of both.

To form a linear ARDL model, the lags of both dependent and control variables (independent variables) must be included.

The ARDL was constructed as follows:

$$\boldsymbol{INF_t = a_0 + \sum_{i=1}^{p} a_1\, INF_{t-i} + \sum_{i=0}^{q1} a_2\, GDP_{t-i} + \sum_{i=1}^{q2} a_3\, MS_{t-i} + \sum_{i=0}^{q3} a_4\, EX_{t-i} + \sum_{i=0}^{q4} a_{5t}\, \Delta OPEN_{t-i} + +\varepsilon t} \ldots (1).$$

ARDL bound test is constructed as follows

$$\Delta \boldsymbol{INF_t = a_0 + \sum_{i=1}^{p} a_{1i}\, \Delta INF_{t-i} + \sum_{i=0}^{k} a_{2i}\, \Delta GDP_{t-i} + \sum_{i=0}^{k} a_{3i}\, \Delta MS_{t-i}}$$

$$+ \sum_{i=0}^{k} a_{4i}\, \Delta EX_{t-i} + \sum_{i=0}^{k} a_{5t}\, \Delta OPEN_{t-i} + \gamma_1\, ln\, INF_{t-1} + \gamma_2\, ln\, \mathbf{GDP_{t-1}} + \gamma_3\, ln\, \mathbf{MS}_{t-1} + \gamma_4\, ln\, EX_{t-1}$$
$$+ \gamma_5\, ln\, OPENX_{t-1} + \varepsilon t \ldots (2).$$

Where (Δ) is the first difference operator, and (a_0) the drift component and (εt) the white noise residuals. Equation (2) includes both, long and short run dynamics.

The coefficients ($\gamma_1, \gamma_{2,} \gamma_3, \gamma_{4,} \gamma_{5,}$) and ($a_{1i} a_{2i} a_{3i} a_{4i}, a_{5i}$) represent, respectively, the long- and short–run dynamics of the model.

After confirming the existence of co-integration, we need to correct any imbalance that may arise by estimating the error correction model according to the following equation:

$$\Delta \ln INFf_t = \delta_0 + \sum_{j=1}^{p} \delta_{1j} \Delta \ln inINF_{t-j} + \sum_{j=0}^{q} \delta_{2j} \Delta \ln GDP_{t-j} + \sum_{j=0}^{q} \delta_{3j} \Delta MS_{t-j} + \sum_{j=0}^{q} \delta_{4j} \Delta \ln EX_{t-j} + \sum_{j=0}^{q} \delta_{5j} \Delta OPEN_{t-j} + \lambda ECM_{t-1} + \upsilon_t \ldots (2).$$

Where λ measures the speed of adjustment to long-run equilibrium, given any shock to the system.

Bounds Test of Co-integration

After determining the optimal degree of lag for the study variables, the existence of long-run co-integration was tested, using the bounds test. The results of the co integration test are shown in Table III. The F-statistics are greater than the upper bound of their critical values at the 5% significance level. Accordingly, the null hypothesis was rejected and the alternative hypothesis was accepted, which states that there is joint integration and a long-term equilibrium relationship between the variables of the study model.

Table III: Bounds Test for Cointegration

F-statistic	**3.547**	
I(1) Bound	I(0) Bound	Significance
3.2	2.37	10%
3.058	2.79	5%
4.08	3.15	2.5%

Source: Authors' Calculations (E-views 13)

Tables IV and V depict the empirical results of short- and long run analysis. The results of the estimation indicate that money supply has a statistically positive impact on inflation at the 5% level in both, the short- and long-run, indicating a direct relationship between money supply and inflation. This result is consistent with economic theory; according to Friedman (1963), "inflation is a monetary phenomenon always and everywhere". This also aligns with empirical evidence in Sudan. For example, Safi-Eldin (1976) examines inflation in Sudan and finds that it is significantly explained by money supply and its lagged value. The coefficient of money supply in the short run is (1.67005), which is statistically significant at (1%). This suggests that a 1% increase money raises inflation by 1.6 %. Short-run money growth in Sudan is attributed to the monetisation of the fiscal deficit. The widening of the fiscal deficit in Sudan was increasingly financed by domestic borrowing from banking sources (monetisation of deficit-money printing). This is believed to aggravate inflation. Regarding the impact of the exchange rate, the estimation results indicate a statistically significant positive relationship between the exchange rate and inflation in both, the short and long run. This result aligns with economic theory; for example, Friedman (1953) argues that changes in the nominal exchange rate could, in principle and theoretically, be mimicked by changes in domestic prices under a fixed exchange rate system. The period 1900-2020 witnessed a series of devaluation of the Sudanese currency; the Sudanese pound devalued from the rate of US$ 1 = 0.05 in 1990 to US$ 1 = 2.57 in 2000. Furthermore, the loss of the main source of foreign exchange in 2012 due to the secession put significant pressure on the Sudanese currency. The Sudanese pound has depreciated by more than 100% between 2012 and 2020.

Gross domestic product has a statistically negative impact on inflation rate at 5% in both, the short run and long run. In the short run, a 1% increase in gross domestic product lowers inflation by 26.8%. This result is in accordance with the empirical findings of Madito (2018), who found a negative relationship between GDP and inflation in South Africa .The impact of openness of economy is statistically insignificant in both short and long run.

The value of error correction model has a negative sign and it is statistically significant at the 1% significant level, where 77% of the deviations occurring in the inflation variable during the previous period from its long-term equilibrium value were corrected in the current period.

Table IV: Long-run Dynamics

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOG(INF(-1))*	-0.778137	0.247219	-3.147556	0.0051
LOG(GDP(-1))	-4.864387	1.356601	-3.585717	0.0018
MS(-1)	3.04005	1.07E-05	2.836931	0.0102
EX(-1)	0.232593	0.094867	2.451784	0.0235
LOG(OPEN(-1))	-0.054070	0.202933	-0.266442	0.7926
C	1.190275	0.882657	1.348514	0.1926

Source: Authors' Calculations (E-views 13)

Table V: Short-run Dynamics

Variable	Coefficient	Std. Error	t-Statistic	b.*
COINTEQ*	-0.778137	0.150852	-5.158262	0.0000
DLOG(GDP)	-26.89365	6.065894	-4.433584	0.0002
D(MS)	1.67005	4.40E-06	3.801575	0.0008
D(EX)	0.085591	0.022129	3.867770	0.0007
DLOG(OPEN)	0.226576	0.127985	1.770338	0.0889

Source: Authors' Calculations (E-views 13)

R-squared= 0.614 Adjusted R-squared=0.55

Stability and Diagnostic Tests

The validity of the model was determined using a set of diagnostic tests to ensure that the ARDL model had the best goodness of fit and was valid for reliable interpretation. The results of the autocorrelation, heteroscedasticity, and normality tests are presented in Table VI. These tests reveal that the ARDL models are free from autocorrelation, heteroscedasticity, and non-normality of the residuals at the 5% level. The Cumulative Sum of Residuals is depicted in the figure below. The result indicates that the Cumulative Sum of Residuals (CUSUM) test falls within the critical limits at a significance level (5%) implying that the estimated coefficients in the model are structurally stable during 1990-2022.

Table VI: Diagnostic Tests Results

Statistics	F-statistics	P-value
Serial Correlation	0.2463	0.7842
Heteroskedasticity	0.8395	0.5896
Normality test	0.1792	0.9142

Source: Authors' Calculations (E-views 13).

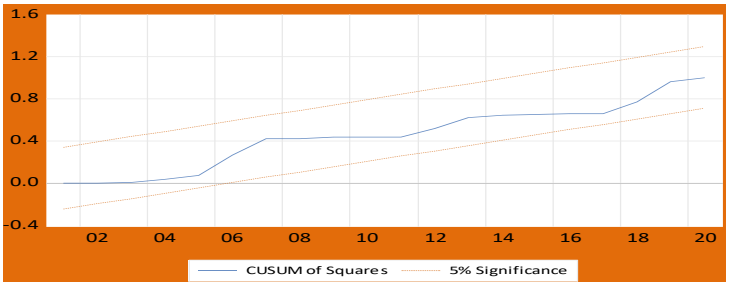

Figure 1. CUSUM Test

Source: Authors' Calculations (E-views 13).

Variance Decomposition Analysis

Further analysis of the relationship between inflation and other macroeconomic variables can be explained by the variance decomposition. Table VII reports the variance decomposition of 10 years forecast errors. While approximately 55.5% of forecast error variance in domestic inflation is explained by its own innovation, about 43.8%, 0.18%,0.40%, 0.02% of the remaining forecast error variance is explained by changes in money supply, exchange rate, openness, and gross domestic product, respectively, at the end of a ten-year horizon. The variance results indicate that much of the

fluctuations in inflation are explained by their own dynamics in both, the short- and long-term horizons. This indicates that the past realisation of inflation plays a considerable role in the variance in inflation in Sudan. Hence, the role of fiscal influences–money growth and exchange rate changes – is crucial in explaining inflation movements.

Table VII: Variance Decomposition of INF:

OPEN	EX	MS	GDP	INF	S.E.	Period
0.000000	0.000000	0.000000	0.000000	100.0000	24.66284	1
0.309382	7.054651	0.726985	0.027605	91.88138	29.33640	2
0.373810	6.636388	0.821564	0.024879	92.14336	35.03318	3
0.262031	10.48848	5.337670	0.375003	83.53681	44.97166	4
0.237151	10.40821	10.20334	0.560457	78.59085	59.51016	5
0.313897	5.704021	18.27635	0.350607	75.35512	82.63066	6
0.278256	2.968004	31.35828	0.282925	65.11253	141.7364	7
0.342276	1.421606	37.35089	0.154660	60.73057	249.7851	8
0.413968	0.436236	40.95676	0.049459	58.14357	451.0383	9
0.401887	0.176704	43.88008	0.021699	55.51963	866.0090	10

Source: Authors' Calculations (E-views 13)

CONCLUSION

Inflation in Sudan surged more rapidly and persistently than expected during the period 1990-2022. The objective of this study was to analyse the dynamics of inflation in Sudan across the above-mentioned period. This study applied a cointegration and error correction model. After performing a first-order difference, the results indicated joint integration and a long-term equilibrium relationship between the variables of the study model. The findings suggest that inflation in Sudan is mainly a fiscal phenomenon, represented by money growth and exchange rate movements. The result of the estimation shows that money supply has a statistically positive impact on inflation at 5% in both, the short and long run, indicating a direct relationship between money supply and inflation. This money supply expansion is mainly attributed to a fiscal imbalance, which is consistent with economic theory, and the results of the empirical evidence indicate a statistically significant positive relationship between the exchange rate and inflation in both, the short and long run. Furthermore, we find that inertial factors have persistent effects on the inflation dynamics. Inflation expectations (proxied by the lagged CPI) are positively correlated with current inflation. The result of variance decomposition indicates that 55.5% of forecast error variance in domestic inflation is explained by its own innovation. This finding suggests that price expectations play an important role.

The value of error correction model has a negative sign and is statistically significant at the 1% significant level, where 77% of the deviations occurring in the inflation variable during the previous period from its long-term equilibrium value were corrected in the current period.

A limitation of this study is that it employs annual data, which may not adequately capture the short-term fluctuations and dynamics of inflation. Hence, we recommend using monthly and quarterly data in future studies. Despite these limitations, this study provides valuable insight into the role of monetary expansion in accelerating inflation in Sudan.

Conflicts of Interest:

The author declares no conflicts of interest regarding the publication of this paper

REFERENCES

Aghevli, B. and Khan, M. (1978), "Government deficits and the inflationary process in developing countries", *Staff Papers*, Vol. 25, pp. 383–416. DOI: 10.5089/9781451972559.024.

Braun, P.A. and Mittnik, S. (1993), "Misspecifications in vector autoregressions and their effects on impulse responses and variance decompositions", *Journal of Econometrics*, Vol. 59, No. 3, pp. 319-341.

Cagan, P. (1956), "The monetary dynamics of hyperinflation", Friedman, M. (Ed.), *Studies in the Quantity Theory of Money*, The University of Chicago Press, Chicago.

Dureval, D. and Ndunh'u, N.(1999), "A dynamic model of inflation in Kenya, 1974–1996", IMF working paper, WP/99/97.

Friedman, M. (1953), "The case for flexible exchange rates", Friedman, M. (Ed.), *Essays in Positive Economics*, University of Chicago Press, Chicago, pp. 157–203.

Friedman, M. (1963), "Causes and consequences of inflation, New York, Asian Pblishing house".

Ha, J.Ivanova, A. Montiel, P.J. and Pedroni, P.(2019), "Inflation in Low Income Countries", *World Bank Policy Research Working Paper*, p. 8934.

Harberger, A.C. (1963), *The Dynamics of Inflation in Chile*, Department of Economics, Graduate School of Business, University of Chicago, Chicago, Ill.

Laryea, S.A. and Sumaila, U.R. (2001), *Determinants of inflation in Tanzania*, CMI Working Paper, Chr. Michelsen Institute, Tanzania.

Madito, O. and Odhiambo, N.M. (2018), "The Main determinants of inflation in South Africa: An empirical investigation", *Organizations and Markets in Emerging Economies*, Vol. 9, No. 2, pp. 212–232. DOI: 10.15388/omee.2018.10.00011.

Mahran, H. and Yagoubi, G. (1996), "Causes of inflation in the Sudan 1970–1991", *Eastern Africa Social Science Research Review*, Vol. 12 No. 2, p. 13.

Ndung'u, N.(1994), "A monetarist model of inflation: Kenya case", *African Development Review*, Vol. 6 No. 2, pp. 109–136. DOI: 10.1111/j.1467-8268.1994.tb00062.x.

Sharaf, M.F. and Shahen, A.M.(2023), "Does external debt drive inflation in Sudan: Evidence from symmetric and asymmetric ARDL approaches", *Journal of Business and Socio-Economic Development*, Vol. 3 No. 4, pp.293–307.

Loungani, P. and Swagel, P. (2001), Sources of inflation in developing countries, IMF Working Paper No 01/198.

World Bank. (2011), Sudan Country Economic Brief, Poverty Reduction and Economic Management (PREM) Unit, Africa Region.

Yol, A.M. (2010), Determinants of Inflation in Sudan: An Empirical Analysis, the Central Bank of Sudan.

Friedman, M. (1968), "The role of monetary policy", The American Economic Review, Vol. 58 No. 1.

Younus, S.(2014), Some facts and determinants of CPI inflation in Bangladesh: Evidence from post-floating exchange rate regime, Dhaka: Bangladesh Bank.

Kirkpatrick, C.H. and Nixon F.I. (1977), "Inflation and Openness in Less Developed Economies: A Cross-Country Analysis: Comment" Economic Development and Cultural Change, 26 (1), October, 1977, pp 147-52.

Montiel.P., (1989),"Empirical Analysis of High inflation Episodes in Argentina,Brazil,and Israil." IMF staff papers, Volume 36No.3 ,527-549.

Suliman,Kabashi(2012),The Determinants of Inflation in Sudan, African Economic Research Consortium , Paper 243, Nairobi .

Nakumuryango, Amandine and Darbo, Suwareh (2019),Inflation Dynamics In Post-Secession Sudan, Working Paper Series, African Development Bank Group.

Safi-Eldin, A. ,1976). "The impact of inflation on socio-economic development of Sudan". ERC 1976 paper series. Economic and Research Council, Khartoum.