

competitiveness. Fighting inflation also depends on the ability of policy to reduce the effects of supply shocks emanating from droughts and foreign price movements.

Bandara (2011)¹ investigated the determinants of inflation in Sri Lanka during (1993-2008). It used the Vector auto-regressive (VAR) models to find out appropriate explanations for inflation with accompanied application of Granger Causality Tests. The overall findings of estimated VAR models imply that the money supply, exchange rate and the GDP have information which helps in exploring the behaviour of the inflation in Sri Lanka.

Yol (2010)² identified the fundamental determinants of inflation and examine the direction of causality among the variables in Sudan (1970-2008). The study showed that the coefficient of second lag of nominal exchange rate, first lag of real output and first lag of foreign inflation carry the correct signs. The coefficient of the error-correction term is significant at the 1% level and correctly signed, which suggests that about 21% of total disequilibrium in inflation was being corrected in study period. Furthermore, the results of the Granger causality test indicate a bi-directional causal effect between nominal exchange rate and money supply in addition to unidirectional causal effects running from domestic inflation to nominal exchange rate and real money supply, from real output to domestic inflation and nominal exchange rate, and from foreign inflation to domestic inflation, nominal exchange rate, real money supply and real output. Finally, although about 25.72% of forecast error variance in domestic inflation is explained by its own innovation, foreign inflation alone explains approximately half (49%) of total forecast error variance in domestic inflation.

Andersson, et al (2009)³ analyses the determinants of inflation differentials and price levels across the euro area countries. Dynamic panel estimations for the period 1999-2006 show that inflation differentials are primarily determined by cyclical positions and inflation persistence. The persistence in inflation differentials appears to be partly explained by administered prices and to some extent by product market regulations. In a cointegrating framework we find that the price level of each euro area country is governed by the levels of GDP per capita.

The study differs from previous studies in the factors affecting inflation, the time period, and its main results. But there is an agreement between the current study and previous studies on the factors that affect inflation, the most important of which is the money supply GDP, exchange rate and economic growth.

Methodology and Data

Inflation INF, Exchange Rate EX, cost of finance FC, and money supply MS data are provided by the Central Bank of Sudan, while the general price level P, and consumer price index CPI, are supplied by Central Bureau of Statistics. Annual data is used and the start date is 1978 when the country shifted from fixed peg to monitored floating exchange rate. Tests of unit roots and Cointegration were carried in addition to the use of EGARCH models to estimate the volatility of the inflation indicators. The phenomenon is quite common (Greene 1990). The ARCH model has become a popular one because its variance specification can capture commonly observed features of the time series of financial variables; in particular, it is useful for modeling volatility and especially changes in volatility over time (Hill, et al 2008) The basic idea of ARCH models is that (a) the mean a_t is serially uncorrelated, but dependent and (b) the dependence of a_t can be described by a simple quadratic function of its lagged values Ruey (2002). Specifically, an ARCH (m) model assumes that

¹Ranjith Bandara (2011) Determinants of inflation in Sri Lanka during (1993-2008) South Asia Economic Journal, October; pp. 271–286.

²Marial Awou Yol (2010) Determinants of Inflation in Sudan: An Empirical Analysis Policies, Research and Statistics Department.

³Malin Andersson, Klaus Masuch, Marc Schiffbauer (2009) determinants of inflation differentials and price levels across the euro area countries, European Central Bank, EUROSYSTEM Working Paper Series No 1129 December.

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Sample(adjusted): 1992 2018				
Included observations: 27 after adjusting endpoints				
Convergence achieved after 128 iterations				
Bollerslev-Wooldrige robust standard errors & covariance				
Variables	Coefficient	Std. Error	z-Statistic	Prop.
EX	27.75399	2.3879	11.62283	0.0000
MP	17.59499	0.9906	17.76195	0.0000
CPI	49.25563	1.6702	29.47048	0.0042
CF	0.186533	0.0173	10.77808	0.0000
Variance Equation				
C	6.126689	0.483589	7.2627	0.0000
RES/SQR[GARCH](1)	-2.00442	0.723563	-2.7702	0.0056
RES/SQR[GARCH](1)	1.159994	0.404702	2.8663	0.0000
EGARCH(1)	0.261379	0.007941	32.9018	0.0000
R-squared	0.699086	Mean dependent var		41.915
Adjusted R-squared	0.523553	S.D. dependent var		47.7238
S.E. of regression	32.94132	Akaike info criterion		9.08185
Sum squared resid	13021.64	Schwarz criterion		9.48014
Log likelihood	-82.9185	Durbin-Watson stat		1.62863

Annex (5) ARCH Test

ARCH Test			
F-Statistic	0.781310	Probability	0.018566
Obs*R-squared	0.772024	Probability	0.018566

Annex (6) Study Data

Obs	INF	EX	MP	CPI	FC
1992	120.4	15.1	2422.1	117.6	177774.54
1993	119.3	132	2718.1	101.4	185296.62
1994	101.1	216	9337.5	115.4	87606.509
1995	116.8	315	24462.9	68.4	87606.509
1996	69.5	832	47064.6	132.8	5378.7326
1997	129.2	1460	226608.8	46.7	6044.1118
1998	47.19	1989	356061.7	17.1	5543.3049
1999	17.0	2520	426639.3	16	5911.5002
2000	16.16	2572.3	384565.12	8	4952.6800
2001	8.6	2574	486426.09	4.9	5406.9878
2002	4.8	2584	602546.11	8.3	6226.7053
2003	8.4	2637	326440.93	7.7	8273.5314
2004	7.4	2602	533150.63	8.4	10596.593
2005	78.	2586	607810.13	8.5	9980.2928
2006	8.4	2456	462857.84	7.2	11397.453
2007	7.2	2171	629864.95	8	14633.729
2008	8.1	2016	772645.22	14.3	14415.709
2009	14.3	2091	915425.49	11.2	22384.502
2010	11.2	2325	1058205.8	13.2	22846.052
2011	13	2305	1200986.0	22.1	19849.546
2012	18.1	2660	2893262.4	37.4	16010.656
2013	35.6	3573	29082332	30	22859.886
2014	25.6	4754	32132111	36.9	42577.573
2015	25.7	5200	33343322	16.9	30551.605
2016	12.6	5727	37632222	30.5	32566667
2017	17.6	6025.8	38987667	32.2	35677823
2018	32.4	6391.4	38999991	34.4	43232222