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The Analysis of Money Demand for Uganda (1986:1-2003:4)

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Abstract

This paper presents an empirical analysis of money demand in Uganda over the period 1986:1-2003:4. Two definitions of money were used and tests for co-integration between the monetary aggregates and real money balances were carried out. The empirical results show that income is positively related to money demand while exchange rate, inflation and interest rates have a negative impact on money demand and there is a degree of substitution from non-interest to interest bearing financial assets and holding of foreign currency. The money demand function remained stable for the entire period, as confirmed by the chow tests.

I Background

Uganda's financial sector is still relatively young and undeveloped. As is the case with most developing economies, the sector is both formal and informal. The formal sector consists of the central bank, 13 licensed commercial banks, 9 credit institutions, 14 insurance companies, 3 development banks, 3 building societies and the postal saving bank. The informal financial sector comprises a wide range of moneylenders, saving circles and similar financial mechanisms.

Uganda's formal financial sector is one of the least developed in Sub Saharan Africa (SSA), with only 70% of the economy monetized. The M2/GDP ratio is just about 24%, compared with 40% for Kenya and 35% for Tanzania[2]. The portfolio of available financial assets is very limited; with nearly all the assets held consisting of liabilities of government, Bank of Uganda and commercial banks. The only diversification worth mentioning is the treasury bill market, which has an active weekly auction, although the commercial banks still close to 60% of the bills (BOU, 2005).

However in recent times, there has been a considerable attempt to expand the formal financial sector, for example through, the expansion of rural bank branches and micro-credit lending as part of government policy. Post independence Uganda has also been characterized by political and social crisis from around 1966 up to the 1990s. The general result of this has been the disruption of production and destabilization of the wider economy. Inflation became a prominent feature of the

[2] See Kasekende and Ssemogerere, (1994) and BOU (2005).

Ugandan economy and the reinforced negative real rates of interest created an atmosphere of currency substitution – or more accurately, some movements from domestic to foreign denominated assets.

In effect the 1990s became the true period of reform in Uganda – designed as it were to remove market rigidities in the economy in general and the financial sector in particular. The Financial Sector Adjustment Program (FSAP) was introduced in 1992 whereby the sector became deregulated and the growth of financial institutions facilitated. In 1991/92, the Bank of Uganda in addition to open market operations was granted greater supervisory powers over commercial financial institutions.

The weakness of the financial sector in Uganda has however been evident by the numerous bank failures. Galbis (1986) argued that such bank failures should not be unexpected because the financial sector in Least Developed Countries (LDCs) are characterized by "bank holding companies" with interest in both financial and non financial markets. Financial liberalization would place excess supply of financial savings in the reach of these companies, which finance questionable ventures in their attempts to maintain market share. Clearly, liberalization and other changes to the banking system may well lead to instability in the demand for money: financial innovation is usually seen as leading to a change in the velocity of circulation (Arestis and Demetriades, 1993).

Two new financial Acts, namely Bank of Uganda Act and Financial Institutions Act, were passed in 1993. These confer on the central bank wide-ranging powers over the financial institutions and as the effective financial sector regulator. In July 1990, the parallel market in foreign currency was legalized, with the result that the premium on the official exchange rate narrowed and the precautionary motive for holding foreign exchange decreased though asset motive may have remained due to the prevalent inflation. Institutional reforms included allowing residents to hold foreign exchange accounts and to access foreign exchange bureaus without restriction, (Kasekende and Ssemogerere, 1994).

The objective of the paper is to analyze Uganda's money demand function for period 1986 to 2003. The rest of the paper is structured as follows: The next section is the

conceptual framework and review of the literature. Section III is the model specification. In Section IV we present and interpret the empirical findings. Section V concludes the paper.

II Conceptual Frame Work and Review of the Literature

A stable relationship for narrow money was found for the West African Economic and Monetary Union (WAEMU) even amidst financial liberalization (Rother, 1998). However, Rother (1998) contends that the stability of the demand for money would only continue in WAEMU as long as the economic agents have confidence in the stability of the financial system.

Naho (1985), estimated money demand functions for Kenya, Tanzania, Burundi, Rwanda and Uganda using the conventional approach to money demand. The sample period covered was 1967-1981. Real money balances was regressed on real income, the government deficit ratio to income, the rate of inflation and a credit restraint variable. While the government deficit ratio to income was a proxy for money supply changes, the credit restraint variable was used as proxy for the interest rate. He found out that the demand for money in those countries was unstable.

Domowitz and Elbadawi (1987) estimated an ECM type money demand function for Sudan, for the period of 1956–1982 using annual data. Nominal money balance was regressed on the price level, income, exchange rate and inflation rate variables. Results showed an income elasticity which was not only significant but also positive. Stability tests showed that there existed a stable money demand function for Sudan.

Kateregga (1993) estimated the demand function for Uganda over the period 1980 – 1992 using quarterly data. She estimated the demand function for Uganda while regressing the desired real money holdings on real GDP, real interest rate and expected rate of currency depreciation and expected inflation rate and found that the stability test showed that the demand for M0 and M2 had been stable and that for M1 was unstable over the period.

Henstridge (1999) investigated the macroeconomic history of Uganda using a time series model with three main monetary aggregates. He says that a collapse of income

and high inflation led to de-monetization. The flight from currency and demand deposits was limited by their use for transactions, but demand for time and saving deposits was largely a function of inflation. The role of the exchange rate and the price of coffee in determining an asset demand for money were mixed. Re-monetization since the late 1980s had been slower than de-monetization. The econometric results implied that alternatives to money, such as foreign currency and coffee; have had a mixed role. In the longer run, they are alternative assets; as their relative price goes up, the demand for money goes down. But in the short-run, an increase in their price led to an increase in the demand for money, especially currency, because money was a medium for transactions into and out of both foreign currency and coffee, especially coffee when it was part of a thriving smuggling trade.

Katarikawe and Sebudde (1999) estimated a money demand function for Uganda using monthly data for the period January 1990 to December 1996. They specified a money demand function as:

$$D(money) = f(income, interest\ rate, nominal\ exchange\ rate, price\ changes)$$

They used an income index computed as a weighted average of index of industrial production and coffee procurement as a proxy for income. Price changes were found to be stationary in levels and thus did not enter the co-integrating equation.

Save for the exchange rate, all coefficients had expected signs and were statistically significant in both cases. The nominal exchange rate was found to have a positive elasticity in the base money model, implying that the depreciation of the shilling has a positive impact on the demand for base money. In the M2 model, exchange rate elasticity was negative, meaning that as the Uganda shilling depreciates agents shift away from the domestic currency. In general, the long-run money demand function was found to exhibit a stable relationship.

Using the partial and weak exogeneity assumptions proposed by Johansen (1988), they found that while real M2 is strongly endogenous, real base money is not. Thus for base money, the short-run relationship was estimated using nominal balances. The short-run dynamics suggest that while interest rates and exchange rates affect base money with a lag of up-to four and three months, respectively, changes in income affect base money with a lag of one month. A one-period lag of base money and a

three-period lag of prices were also found to affect base money levels. The dynamic equation for M2 indicated that the Treasury bill rate, deposit rate and inflation affect base money with a lag. Thus, there is no contemporaneous policy variable that can induce movements in M2.

Kararach (2001)'s empirical analysis of the demand for money function in Uganda using the ECM showed that treasury bill rate was included as a co-integrating variable primarily because, for a large part of the 1980s and up to 1992, it was institutionally fixed. According to him there was no evidence of stability in the demand for money function in Uganda while estimating real money demand using GDP, inflation, real interest rates and real exchange rate as the explanatory variables.

Nachega (2001) using quarterly data for the period 1982- 1998, used co-integration analysis and error correction modeling to examine the behaviour of the broad money demand function in Uganda. His results were consistent with economic theory as all coefficients had the expected signs. The demand for broad money was found to be positively related to real income and the relative own rate of return. The income elasticity of M2 was close to unity and significantly different from zero, which is consistent with the quantity theory of money. The semi elasticity of the relative own rate of return was also positive and statistically different from zero. On the other hand, the LIBOR was found to exert a negative influence on the demand for money. Overall, there was sufficient evidence to support the stability of the money demand function.

Nell (1999) estimated for South Africa the money demand function against nominal interest rate, GDP, inflation, exchange rate and showed that there existed a stable long run demand for money function for M3 in South Africa, while the demand for M1 and M2 displayed parameter instability following financial reforms since 1980.

Randa (1999) investigated whether there existed a long-run equilibrium relationship between real money balances, real income, inflation and expected depreciation in Tanzania. The paper finds a stable money demand function. The findings imply that, even if tough economic liberalization and relaxation of controls could have induced instability in the money demand function as conjectured in the literature, such

instability was not significant enough to inhibit the estimation of short – and long-run demand for money.

Alejandro (2004), while analyzing the money demand and monetary disequilibrium in Argentina, used the "new" open macro-economic framework provided by the Redux model (a new open macro-economic framework that includes non-tradables)[3]. In a model with non-tradable goods, the fundamentals of money demand appear to be not only domestic product prices and interest rates, but also net foreign asset prices, productivity differential and terms of trade. He introduces the new fundamentals in the standard ECM of money demand in order to deal with Argentina's macro-economic instability. The models showed that past currency crisis could be explained by the disequilibrium in the money market and volatility of money demand to external shocks. Using the Johansen co-integration estimation methodology, there was a stable money demand function.

Adam (1992) estimated an ECM – type money demand function for Kenya's narrow money for the period 1973 –1990 using quarterly data. Real money balances was regressed on income, the domestic rate of interest, the rate of return on holdings of foreign exchange (the currency substitution effect) and rate of inflation. In his analysis of the model, he first assumed that the full sample coefficients remained stable for the entire period under investigation. Then he turned on to test the recursive stability of the model. He re–estimated the model using the Recursive Least Squares Estimator method to test whether there had been any significant change in the value of the coefficients throughout the period by estimating the model over the period from 1973 to 1977 and then recursively thereafter quarter by quarter. Except for the inflation term, which showed slight instability, all the other coefficients revealed a strong degree of stability, which showed that there existed a stable money demand function for Kenya.

Muhd et-al., (2004), while re examining the money demand in Malaysia covering a period from 1974 to 2001, their results showed evidence of instability in the short run money demand after using the ECM and co-integration technique using real GDP,

[3] See the extended version of the Obstfeld and Rogoff (1995)

rate of money measured by monthly fixed deposit rate, treasury bill rate, real effective exchange rate and consumer price index.

The objective of the paper is to analyze Uganda's money demand function for the sample period 1986 to 2003. Having read papers that have done similar work, the innovation of this particular paper is to incorporate the post liberalization period and financial innovation in the economy.

III Model specification

Our specification of the demand for money is similar to Kateregga (1993) but the only innovation that we introduce in this model is that we model for liberalization and financial innovation.

$(M/P)_t = f(Y_t, r_t, P_x, (CM)_t, (dum93), E_t,)$…… (1)

with $f_1>0$, $f_2<0$, $f_3<0$, $f_4<0$, $f_5<0$ $f_6<0$ where f_{ii} is the partial derivative of real balances with respect to Y, r,P, E, (CM), (dum93) respectively

$(M/P)_t$ is the demand for real balances in year t

Y_t is the real GDP in year t

r_t is the nominal interest rate in year t

P_x is the inflation rate in year t

E_t is the exchange rate in year t

$(CM)_t$ is the currency-money ratio

(dum93) is the dummy (0= pre liberalization and 1= post liberalization) and

U_t is the error term, which is normally and independently, distributed with zero mean and constant variance.

In semi-log linear form the equation (1) can be expressed as:

$\text{Log}\,(M/P)_t = \alpha_0 + \alpha_1 \log Y_t + \alpha_2 R_t + \alpha_3 P_x + \alpha_4 \log E_t + \alpha_5 \log (C/M)_t + a_6 dum93 + U_t$. ... (2)

Error Correction Models (ECM)

The ECM has proved to be a successful tool in applied money demand research (Sriram, 1999). It is a dynamic error correction representation where the long run equilibrium is embedded in an equation that captures short–run variation and dynamics. Granger (1981) showed that the concept of stable long–term equilibrium is the statistical equivalence of co-integration implying the existence of a dynamic error

correction form. Engel and Granger state that the co-integration implies the existence of dynamic error correction forms.

With respect to the estimation techniques, the two widely used approaches are Engle and Granger (1987); and Johansen (1988) and Johansen and Juselius (1991). The latter approach is more prominent as it provides an opportunity to evaluate the presence of multiple co-integration vectors and has shown that it is more efficient than the former (Sriram, 1999).

Data Type and Sources

Data sources are Bank of Uganda (Bank of Uganda Quarterly and Annual Economic Reports, Bank of Uganda staff estimates) and Statistical Department of Ministry of Finance and Economic Planning (background to the budget, key economic indicators). IMF and World Bank supplemented these with data from World Tables and International Financial Statistics, respectively.

GDP figures are the GDP at factor cost at constant (1991) prices for calendar years in billions of Uganda shillings from key economic indicators. Exchange rates are the official middle rate (Uganda shillings per US$) while the interest rate is the 91 days treasury bill rate recorded monthly. The inflation rates are computed from the composite CPI for Uganda and data of money supply on monthly basis is collected from the two definitions M1 and M2 which are the end of month figures in billions of Uganda shillings. M1 is currency in circulation plus demand deposit, M2 is M1 plus time and savings deposits. GDP quarterly data is derived from the annual figures through the interpolation method. The rest of the data are in quarterly form so they were not be interpolated.

IV Discussion of Empirical Results

Table 1: Unit Root Tests on Variables in Levels

Variable	SBDW	DF[1]	ADF[2]	Longest lag	Order of Integration
r	0.05872	-2.463	-2.2212	4	I(1)
LogCM1	0.1596	-2.717	-1.608	4	I(1)

LogCM2	0.1424	-2.619	-1.528	4	I(1)
Log(Y/P)	0.05651	-1.978	-1.604	4	I(1)
LogE	0.03615	-2.088	-2.317	6	I(1)
Px	0.04929	-2.389	-3.226	4	I(1)
Log(M1/P)	0.0529	-1.975	-1.398	4	I(1)
Log(M2/P)	0.04913	-1.902	-1.301	4	I(1)

DF: Significant at 5% = -2.902 Significant at 1% = -3.524 ADF: Significant at 5% = -2.905 Significant at 1% = -3.53 SBDW: Significant at 5% = 0.5 Significant at 1% = 0.39

1. DF with a constant and trend
2. ADF with a constant and trend

The Sargan Bhargava Durbin Watson (SBDW) test is against the null hypothesis that the series is I(0), in which case the values of the statistic that are less than the critical value indicate rejection of the null. The critical value of SBDW at 1% and 5% are 0.51 and 0.39 respectively. Unlike the SBDW test, the Dickey-Fuller tests are against the null hypothesis that the series is I(1) in which case when the value of the statistic is less than the critical value in absolute terms we may not reject the null, the critical values of the DF at 1% and 5% are -2.902 and -3.524 respectively while those of the ADF at 1% and 5% are -2.905 and -3.53 respectively. It is however, worthwhile to note that one of the strongest arguments for using the DF tests and SDBW statistics together is that in each case the null hypothesis is the same as the alternative hypothesis of the other, thus providing a cross-check for the test.

Table 1 shows the results of the Sargan Bhargava and Dickey-Fuller test statistics for the order of integration of each series. These results can be interpreted as indicating that all the variables are non-stationary for Table 1, this decision is based on the ADF at 1% since the ADF is more informative and less restricted and the implication is that any specification of the model in levels of the series from this data set is likely to be inappropriate and a problem of spurious regression is likely. However, since all the variables are integrated of order 1, they therefore become stationary after differencing them once.

After running the regression, adjustments were done in order to eliminate the insignificant variables, based on the insignificance in their *t-statistics.* Table 3 shows the final model.

Table 3: Dependent Variable is DLog (M1/P).

	Coefficient	Std.Error	t-value	t-prob
Constant	0.0321543	0.01546	2.08	0.042
Dr	-0.00419838	0.001863	-2.25	0.028
DPx_1	-0.00293352	0.0006663	-4.40	0.000
DPx_3	0.00213699	0.0005694	3.75	0.000
DLogCM1	-0.168000	0.04590	-3.66	0.001
DLogCM1_1	-0.109124	0.02662	-4.10	0.000
DLog(Y/P)	0.816009	0.04814	17.0	0.000
DLog(Y/P)_1	0.142358	0.02792	5.10	0.000
DLogE_1	-0.136694	0.02442	-5.60	0.000
DLogE_2	-0.236956	0.03100	-7.64	0.000
DLogE_3	-0.0982541	0.02365	-4.16	0.000
Dum93	-0.100254	0.01608	-6.235	0.000
ECM1_1	-0.0901640	0.03700	-2.44	0.018
σ = 0.0477909, AdjR^2 = 0.994453, F (12, 54) = 806.7 [0.000]**, DW = 1.9,				
Schwartz Criterion (SC) = -6.02463				
AR 1-5 test: F (5, 49) = 0.50108 [0.7739]				
ARCH 1-4 test: F (4, 46) = 1.4542 [0.2316]				
Normality test: Chi^2 (2) = 5.6733 [0.0586]				
Hetero test: F (23, 30) = 0.90808 [0.5893]				
RESET test: F (1, 53) = 0.047172 [0.8289]				

The Adjusted R^2 is 99.4%. The income elasticity of demand is not significantly different from unity (i.e. 0.82 + 0.14 = 0.96 which is close to unity). This seems to imply that for the sample period, increases in income led to an increase in real cash balances, which could be attributed to the low inflation experienced in the country for most of the years in the sample period.

The dummy is significant at 1% with a coefficient of -0.100254. Significance of the dummy may reflect subsequent doses of financial reforms over the period of study. The ECM has the correct sign and significant as shown by its *t-statistic*. This is in line with the earlier conclusion reached that there was co-integration between money and

some of the monetary aggregates. The third lag of inflation has an unexpected sign unlike for the first lag. Also interest rate bears the expected sign and therefore suggests that there is a degree of substitution from non-interest bearing Ugandan notes into interest bearing financial assets and into holdings of foreign currency. Notice that exchange rate has the expected sign and is significant.

We also estimated the demand for M2/P. Here we also employed the general to specific modeling by initially estimating the over parameterized ECM. The over-parameterized model is difficult to interpret in any meaningful way. Its main function is to allow us identify the main dynamics, patterns in the model and to ensure that the dynamics of the model have not been constrained by a short lag length. The over-parameterized model was later reduced to a more interpretable and parsimonious model.

From the regressions, it was noticed that some of the *t-statistics* were insignificant and so were eliminated and we re-estimated the final model as shown in Table 4.

Table 4: Dependent Variables is Dlog (M2/P)

	Coefficient	**Std.Error**	**t-value**	**t-prob**
Constant	0.0229095	0.01628	1.41	0.165
Dr	-0.00505985	0.001966	-2.57	0.013
DPx_1	-0.00231326	0.0007086	-3.26	0.002
DPx_3	0.00189626	0.0007055	2.69	0.010
DLogCM2	-0.248791	0.04618	-5.39	0.000
DLogCM2_1	-0.119831	0.02780	-4.31	0.000
DLogCM2_3	0.113025	0.03067	3.68	0.001
DLog(Y/P)	1.138847	0.04778	23.8	0.000
DLog(Y/P) _1	0.144077	0.02985	4.83	0.000
DLog(Y/P) _3	0.143535	0.03186	4.51	0.000
DLogE_1	-0.215898	0.03018	-7.15	0.000
DLogE_2	-0.201165	0.03197	-6.29	0.000
DLogE_3	-0.0739371	0.02481	-2.98	0.004
Dum93	-0.04303410	0.01695	-2.561	0.013
ECM2_1	-0.1433582	0.03847	-3.72	0.000
σ = 0.049806, AdjR^2 = 0.994174, F (14, 52) = 633.8 [0.000]**, DW = 2.13				
Schwartz Criterion (SC) = -8.44197				
AR 1-5 test: F (5, 47) = 1.4889 [0.2114]				
ARCH 1-4 test: F (4, 44) = 0.10079 [0.9816]				

Normality test: Chi^2 (2) = 4.4493 [0.1081]
Hetero test: F (27, 24) = 1.3707 [0.2191]
RESET test: F (1, 51) =0.0079809 [0.9292]

The first feature to notice is the well defined Error correction term, ECM2-1 which indicates a feed back of approximately 14% of the previous quarter's disequilibrium from the long-run income, inflation, interest rate, exchange rate and currency money ratio elasticities. The significance of the coefficient of ECM supports the conclusion that money, currency money ratio, income and interest rate are co-integrated.

All price effects have the expected signs although the third lag of inflation has an offsetting effect. This is consistent with the "buffer stock" models of money holdings popularized by Akerlof and Millbourne (1980) which are characterized by low and zero short- run elasticity of demand and inflation.

The two terms capturing the rate of return on committing assets are correctly signed. They are both suggesting that there is a degree of substitution from non-interest bearing Uganda shillings to interest bearing Uganda financial assets and into holdings of foreign currency.

The dummy is negatively signed suggesting that with liberalization, people demand less money because of financial innovations which include use of e-banking and automated teller machines (ATM). Also the other variable CM2 without a lag and lag one are significant and correctly signed except for the third lag of CM2 with an unexpected sign and significant. Thus increased financial innovation leads to decrease in demand for money with respect to CM2 without a lag and lag one.

The exchange rate has an elasticity of -0.22, 0.20 and 0.07, for lag one, two and three respectively, with the expected signs. The partial inflation elasticity is -0.0023 and 0.0019, with the expected sign. The currency money ratio has an elasticity of -0.25, -0.12 and 0.11, as for the dummy variable it is -0.043, lastly is the error correction term which is negatively signed.

Stability Tests for Money Demand Functions

Classical economic theory perceives money demand as a stable function of income, prices and interests rates. This stability is predicted on unchanging institutional environment. More recently however, changes in institutional environment are widely believed to be responsible for the observed long-run cycles in income velocity of money and ultimately unstable demand for money. However, the issue of whether the money demand function is stable is one of the most outstanding arguments in the practice of macroeconomic policy.

Stability tests were carried out on both M2/P and M1/P, attention was given to both model and parameter stability. Chow tests and recursive tests were used to check for model stability and parameter constancy. The models were re-estimated using recursive least squares estimator to test whether there has been any significant change in the value of the model throughout the sample period. The resulting series of the recursive estimators were then analyzed for their stability.

The recursive residuals of M1/P indicate that at no point was the one period equation error statistically insignificant. The one step Chow tests for the entire sample also indicate that over the period the model never failed to explain changes in M1/P. Therefore, M1/P in Uganda was stable over the sample period.

Similarly, for the demand of M2/P the values of all the other variables indicated that the coefficients remained fairly stable for the entire sample period. The one-step Chow tests for the entire sample also indicates that over the period the model never failed to explain changes in the demand for M2 in Uganda.

Overall Results Interpretation and Uganda's Money Demand Function

Narrow money has a positive feed back effect with respect to inflation (lag 3) which is also smaller than the coefficient of lag one of inflation. This is also true for broad money with respect to the two lags of inflation. The error correction term is statistically significant at 1% level with the feed-back of approximately 14% of the previous quarter's disequilibrium for broad money and 9% for narrow money.

The income elasticity is not only positive but within the expected range for most developing countries with respect to broad money. This indicates that real income is

an appropriate explanatory variable in the money demand function for Uganda. This is in contrast with Kateregga's (1993) result of negative income elasticity for Uganda which was attributed to high rates of inflation for the sample period.

The exchange rate variable was significant at 1% level with an elasticity of -0.21, -0.20 and -0.07 for broad money, while that of narrow money was significant at 1% level with an elasticity of -0.14, -0.23 and -0.1. The liberalization of the exchange rate eliminated the parallel market by unifying the official and parallel market rates. This indicates that financial sector reforms have enhanced the demand for foreign currency either to make direct purchases or to hedge against inflation or as a store of wealth which would be liquidated at some favorable exchange rate.

The inflation elasticity of the demand for money is significant and correctly signed for the first lag. This implies that inflation is a significant variable which affects portfolio decisions of wealth holders in Uganda. Wealth holders prefer to keep their wealth in real goods and services rather than deposit in a bank if they anticipate increase in inflation in the future.

Finally currency money ratio which is a proxy for the spread of banking services is significant at 1% level and has the expected sign. This indicates that the liberalization of the financial sector has resulted into new banks and/or expansion of branches to new areas, thus increasing the spread of banking services. This could imply creation of a competitive environment for the banking sector such that the financial institutions compete for the available potential market. We could thus infer from these results that financial liberalization has generated some significant financial innovation as proxied by the currency money ratio.

V Conclusions

This paper estimates the demand for money using narrow and broad money. A sound understanding of the determinants of money demand is indispensable if policies designed to influence economic growth and conducive price level are to be effective. Desirable monetary policy would be the one which ensures equilibrium in the money market.

Although financial liberalization is one of the major vehicles through which the institutional environment is changed, hence demand for money was found to be stable in Uganda. This indicates that the monetary authorities should emphasize control of money supply rather than switching to interest and exchange rate control since parameter stability tests revealed money demand as being stable. For a small open economy like Uganda, the impact of monetary policy by way of the external account will be greater in the short-run when using a monetary aggregate as a target.

In conclusion, this paper supports the view that "monetary aggregates" should be used as a supplementary intermediate target variable in a regime whose principal anchor is an inflation reduction as its main goal.

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