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Investigating the Stability of Money Demand in Ghana

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Abstract

The study examined the demand for broad money and its stability in Ghana. Johansen's cointegration approach reveals that the variables were non stationary and cointegrated, therefore, an error correction model, ECM was used to determine the factors that influence real money aggregate in Ghana from 1990 to 2014. The study estimated the results using two set of variables for real demand for money: M1 and M2+. This was done given the assumption that the demand for money was equal to the supply of money. The results show that, GDP affects the level of demand for money in the long run while the interest rate affects it in the short run. The error correction term in each of the cases shows that, 18% of deviations in the real demand for money is corrected annually. The CUSUM tests of parameter stability showed that, the money demand function was stable over the period and the Chow test indicated that there were no structural breaks.

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1. Introduction

Ghana's financial sector has changed substantially over the last few years which reflects determined efforts by Ghanaian authorities to move forward with financial market reforms and allow prices and resources to be determined through market forces. Interest rate and credit controls were eliminated during the 1980s. In Ghana, the money markets dominate the financial markets. Moreover, prices of goods and services, interest rates, inflation and foreign exchange rates are all not stable.

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New developments in payment instruments such as credit and debit cards have aided in the reduction of the demand for cash in daily transactions, while modern payment technology and electronic banking have also aided in the expansion of banking services to rural communities.

Money market instruments are used by the Bank of Ghana to manage liquidity in the financial system as a whole while ensuring stability in the banking system. Instability in the money market has often been caused by several factors which include excess money in circulation.

A thorough understanding of money, reasons for its demand and most importantly factors influencing their stability, will provide an insight into whether money demand is stable. In the analysis of Keynes (1930 & 1936), the demand for money focused on the motives that prompted people to hold cash balances. Three motives were identified: transactionary, precautionary and speculative motives. Keynes argued that cash balances are held in order to bridge the gap between receipts and payments as well as for precautionary purposes. He specified that both transactionary and precautionary demands for money are functions of income. Other researchers who agree with the assertion of Keynes analysis on the role of income in money demand include Adekunle (1968) and Sowa (1993).

Baumol (1952) and Tobin (1956) introduced interest rate as one of the explanatory variables in the transactions demand for money. Interest rate measures the opportunity cost of holding money (Gujarati, 1968; Adenkule, 1968). Intuitively, if interest rates rise the opportunity cost of holding money increases therefore money demand falls.

Several factors affect the stability of money demand in a given country. The income velocity of money changes in response to fluctuations in interest rates as well as to movements in other arguments of the money demand function which are not related to income. Velocity changes can also be observed because of lags in the adjustment of money demand to income. Such changes are however sometimes transitory and are sometimes interpreted as movements along an otherwise stable money demand function with constant lag structures.

The demand for money at a given period can be affected by the process of financial innovation and deregulation. These affect both the interest elasticity of different monetary aggregates and the balances held at each level of interest rates. Another source of instability may be shifts in the precautionary demand for money, related to changes in confidence, and institutional changes.

Kogar (1995) tried to test whether there exists a stable long run money demand function for Turkey and Israel. For the Turkish case, it was found that there exists a long run relationship between real money (M1 and M2) demand, real income, inflation and exchange rate with an elasticity of income slightly lower than unity and also an elasticity of exchange rate significantly low.

Similarly, Mutluer and Barlas (2002) analysed broad money demand in Turkey between 1987 and 2001 using various structural reforms and deregulations. Their results indicate the existence of long run relationship for real broad money in Turkey, with a unitary income elasticity estimated.

Amoako-Adu (1991) found that income and inflation were very important determinants of the money demand function in Ghana. In Kallon's (1992) empirical work, he studied the demand for money function in Ghana using both M1 and M2 as his regressands. He concluded that income, proxied by gross national product (GNP) and interest rate adjusted for inflation were statistically significant.

Finally, Halicioglu and Ugur (2005) analyse the stability of the narrow money demand function (M1) in Turkey for the period 1950–2002. They estimated and tested for the stability of Turkish M1 by procedure proposed by Pesaran et al, (2001) alongside CUSUM and CUSUMSQ stability tests. They demonstrate that there is a stable money demand function and it could be used as an intermediate target of monetary policy in Turkey.

This paper seeks to assess the stability of the demand for real money in Ghana. It achieves this through the use of an Error Correction Model. The main variables of the model include the real demand for money, the real interest rates and income.

2. Emperical methods

The data for this study is yearly and ranges from 1990–2014. Two definitions of money were examined in this paper, namely narrow money (M1) and broad money (M2+). The income variable was defined as real GDP at constant 2005 US$. The opportunity cost was represented by the 91-day Treasury bill rate and the GDP deflator was used to derive real money balances. The study assumed that in equilibrium the demand for real money balances is equal to