Behaviour of Income Velocity in Tanzania

Implications For Monetary Policy

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Abstract

The main objective of this study was to empirically examine the behaviour and determinants of income velocity of money in Tanzania during the period from 1967 to 1991. The basic question of this study was to try to examine whether the understanding of the behaviour of income velocity would be useful in the formulation of an appropriate monetary policy for Tanzanian economy.

As a background, the study assessed the performance of Tanzania economy by examining major indicators including the growth of Gross Domestic Product (GDP), per capita income, growth of money supply, and the rate of inflation. These were among the variables which had been employed in carrying out the empirical analysis of the income velocity of money.

In this study, both qualitative and quantitative approaches were use[d] as methods of analysis. In qualitative analysis, a review of the main economic variables to the velocity was carried out. In quantitative analysis, both statistical and econometric methods were employed to establish the behaviour of the velocity and its main determinants. In particular, the descriptive statistics and econometric techniques were used. The econometric analysis employed the OLS (simple OLS).

Four hypotheses had been formulated to test the validity of this question. Specifically, the study sought to test whether or not:

i) velocity was a decreasing sought to function of real or per capita income;
ii) velocity was positively related to the real interest rate;
iii) velocity was positively related to the rate of inflation;
iv) velocity was positively related to monetization.

The findings indicated that, regardless of any definition of velocity, the econometric analysis revealed a strong and negative relationship between income velocity (V) and per capita real income. The descriptive analysis of this study indicated that the income velocity of currency in circulation (i.e. VI) was higher than v2 and v3 for the entire period under study. In general, velocity had been falling from 1967-1974 and later rose in 1975-1978 period. The decline trend was more pronounced for VI which displayed a U-shaped pattern while the curves for v2 and v3 were flatter.

The relationship between real interest rate and velocity was found to be negative and insignificant, while C/M ratios were positively related to VI , V2 and V3 but were statistically significant only to VI. The study revealed also that there was a negative relation between the three definitions of velocity and the rate of change of prices (rate of inflation), but the variable was still statistically significant in explaining the behaviour of velocity.

Although some of the variables, employed in the analysis, were statistically significant and others insignificant in determining the behaviour of income velocity, the study revealed that velocity could be used in the formulation of monetary policy only when one could predict its behaviour and the stability. Failure to meet this condition, policy formulation might lead into undesired results.

With regard to implications for monetary policy, the results of the study demonstrated that using income velocity, without enough information on the causes of its changes, in formulating a target rate of money growth could lead to undesired changes in the growth of nominal income. However, changes in money supply had a tendency of producing a very unpredictable response of the change in nominal income to a change in the rate of change in money.

Another policy implication was that a more stable growth of money supply would produce a growth in income velocity. This was a marked contrast to the views of some analysts that in seeking to control movements in nominal income, growth of money would have to be highly volatile in order to offset movements in velocity.

By and large, in order for the velocity concept to be useful in the formulation of monetary policy, velocity had to be stable in the short-run and predictable with certain accuracy in terms of a few explanatory variables Also, it was imperative that stability of the velocity function be defined and measured with some precision in order to be useful for policy formulation purposes.

All the above notwithstanding, this study had some limitations. One of them resulted from inadequacy, inconsistency and inaccuracy of data. For example, proxy variables were employed because of lack of appropriate variables. Moreover, other variables which might exert significant effect in the velocity were not taken into consideration in the econometric analysis. For instance, a variable like 'credit restraint' which could be used as an opportunity cost variable was not incorporated in the model. Similarly, other non-quantifiable factors such as social and political stability, which could affect velocity significantly, had not been considered.

Consequently, the study observed that the introduction of such factors in the specification could improve the explanatory and predictive power of the model used in this analysis. The study further suggested that more research should be done on the effect of 'black money' on the behaviour of income velocity of money in Tanzania.