Comments

This paper has investigated the endogeniety of money supply for Pakistan, which is un-realistically claimed by the authors to be the first of its kind for Pakistan. Prior to this study Luintel (2002)[1] has investigated this issue for India, Pakistan, Nepal and Sri Lanka. However the authors should be congratulated for their effort and endeavor. Here I would like to share my observations regarding this paper.

Firstly, the authors have used the narrow money or M1 data as they have referred to line 34 of IFS which clearly defines:

"*Money (line 34) equals the sum of currency outside deposit money banks and demand deposits other than those of the central government plus, where applicable line 24.i and 24.r.*
The data in line 34 is frequently referred to as M1, while sum of the lines 34 and 35 gives a broader measure of money similar to that which is frequently called M2."

However, while explaining their findings they have used the terminology Base Money interchangeably with the narrow money, which is misguiding. Furthermore it is seed money or Reserve Money or base Money or money stock which every central bank controls (uses as a nominal anchor) to conduct its monetary policy and hence it is the relevant policy variable instead of the M1. As discussed by authors the Post Keynesians exogenous/endogenous nature of money supply deals with the debate if,

a) The Reserve Money defines the broad money or the vice verse,
b) Credit defines the broad money or vice verse, and
c) The money income defines the money supply.

As explained above the reserve money is solely controlled by the central bank while the commercial banks influence the broader money. The narrow money on the other hand includes the transferable deposits and the currency in circulation and excludes reserve and hence it becomes bank money. Therefore, any money multiplier, thus calculated from the ratio of broad money to the narrow money effectively gives the impact of demand deposit and RFCDs and cannot be termed as a multiplier at all. With such a derived variable (so called money multiplier) it

[1] Luintel K.B (2002): "Erogeneity of Money And its Policy Implication for Price Control: Evidence From South Asia", *Pacific Economic Review*, 7: 3, pp. 505-517.

is very difficult to draw any conclusions. Hence these relationships should be re-investigated using reserve money instead of base money.

Secondly, there are a few short comings of using Granger causality:

(1) Standard Granger causality detects the current changes in one variable due to the past changes of another variable but sometimes fail to detect the causality if the current changes of one variable causes the current changes of the other variable, i.e. the variables are co-integrated.

(2) The Standard Granger Causality test is only indicative if one variable *precedes* another, i.e. a change in a variable in the past could bring a change in the other variable. However, in case of a feedback effect, the granger causality remains no more effective.

This is why the different authors have used different techniques to strengthen their arguments. For example, Nell (2001) has used Co-integration and the Error Correction Mechanism method while Shanmugam et al. (2003) has used Co-integration besides using Standard Granger Causality test, in their similar studies. Both techniques are considered to be superior to the simple granger causality. Especially the Error Correction Mechanism, used by Nell (2001), can detect the *weak exogeneity*.

In many empirical studies, causality through the error correction term is used as a test for *weak exogeneity* between the two variables as it gives the adjustment of the short run coefficients of variables towards their long run equilibrium value. Furthermore weak exogeniety of a variable together with the joint significance of the lag terms make the variable strongly exogenous.

Thirdly, the selection of 12 points at an interval of 3 lag lengths have created some ambiguity if these lag lengths are being reported using some selection criteria or just to limit the space used. Furthermore since the test of Granger Causality is sensitive to the maximum number of the lags selected, the reason for the selection of 36 lags could be a value addition to this article.

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