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RBI releases DRG Study on "The Divisia Monetary Indices as Leading Indicators of Inflation"

The Reserve Bank of India today has released a DRG Study entitled, "The Divisia Monetary Indices as Leading Indicators of Inflation". The study is co-authored by Prof. M. Ramachandran, Professor in the Department of Economics at the Pondicherry University, Shri Rajib Das, Director and Shri Binod B. Bhoi, Assistant Adviser, in the Department of Economic Analysis and Policy of the Reserve Bank.

The study suggests that the Reserve Bank could closely observe the growth rates of Divisia monetary aggregates to have a better understanding of future inflationary pressure. The Reserve Bank could also consider publishing a monthly time series data on various measures of Divisia money for further exploration of its merits in applications, apart from its usefulness as an indicator of future inflation.

Monetary aggregates play a significant role under the multiple indicator approach followed by the Reserve Bank. The aggregates are measured as a simple sum of monetary components, which presumes that the component assets are perfect substitutes. However, monetary assets that figure in measures of money stock are distant substitutes. Hence, simple sum aggregates suffer from aggregation bias, which tends to be larger at higher level of aggregation. Against this backdrop, the study investigates whether weighted monetary aggregates constructed from Divisia quantity index number formula has an edge over their simple sum counterparts as a predictor of inflation, in the monetary policy settings in India.

The study uses two official measures of monetary aggregates, M2 and M3, and one liquidity measure, L1, for empirical comparison of their role as a leading indicator of inflation in the Indian context. The major findings of the study support the superiority of Divisia indices over simple sum monetary aggregates as predictor of inflation over the sample period from April 1993 to June 2008. The period coincides with the liberalised financial regime in India.

First, the correlation coefficients indicates that there is a relatively strong association between annual headline inflation and the growth rates of Divisia monetary aggregates as against a weak correlation between inflation and growth rates of simple sum monetary aggregates. Also, the potential gain of Divisia monetary measures is found to have increased in terms of their correlation with two conventional measures of core inflation.

Second, the plots of inflation against alternative measures of growth rates of simple sum monetary aggregates does not provide clear evidence of any relationship

between the two. This is further supported by the fit of the nearest neighborhood regression of inflation on growth rates of money, which is flat. In contrast, there is a clear evidence of a positive association between growth rates of Divisia monetary aggregates and inflation. The striking feature being that the regression fit sharply rises when Divisia monetary growth exceeds 16 per cent, suggesting that its growth beyond certain level would tend to be inflationary.

Third, the econometric evidence derived from a vector error correction model indicates that the growth rates of Divisia monetary aggregates serve as a better predictor of both headline and core inflation measures.

Fourth, the impulse responses of inflation to shocks in growth rates of Divisia monetary aggregates are found to be stronger as compared to shocks in growth rates of corresponding simple sum aggregates.

Fifth, the evidence from forecast error variance decomposition indicates that the growth rates of Divisia monetary aggregates are an exogenous sequence whereas the forecast error variance of growth rates of simple sum aggregates is increasingly explained by shocks in inflation.

The overall empirical evidence of this study unambiguously establishes the superiority of Divisia monetary aggregates over their corresponding simple sum counterparts as a predictor of the headline and/or the conventional measures of core inflation.

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