Investigating Memory in Liquidity Measures of Bombay Stock Exchange

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Abstract
The aim of this study is to investigate the long memory properties in the liquidity measures in the Indian Stock Market. Long range dependence structure indicates that these measures can be predicted and it raises concern regarding linear modelling, forecasting, statistical testing of liquidity models based on standard statistical methods, and theoretical and econometric modelling of asset pricing involving liquidity. In time domain, long memory is characterized as exhibition of persistent autocorrelations with very slow decay at a hyperbolic rate. Using data from Bombay Stock Exchange, we test long range dependence in breadth, depth, resiliency, tightness, and immediacy characteristics of the market using Hurst Estimate and Lo’s Rescaled Range Statistics. These were supplemented with semi parametric GPH statistic as well as modified GPH statistic of Robinson (1995). Findings did not support existence of long memory in all the liquidity parameters suggesting liquidity may not be predictable in Bombay Stock Exchange.

Key Words: Long Memory, Liquidity, Hurst Estimate, Rescaled Range, Semi parametric GPH statistic, Fractional integration, Spectral regression.

JEL Classification: C12, C13, C14, C22