ABSTRACT

Understanding the nature and level of interdependence among various financial markets is a critical issue for extensive spectrum of financial information users including policymakers, regulators and researchers on the one hand and firms’ managers as well as investors on the other.

In the literature, there is greater consensus on the definition of financial market interdependence. On the whole the concept of interdependence is defined as a broad term covering the whole range of ways in which the behavior of variables is influenced by other variables. This definition indicates that market interdependence exists when the movement in one market leads to movement in another. Moreover, this concept is employed to refer the situation in which markets show a high level of co-movement under all situations including crisis periods as well as more stable periods. From these definitions mainly two concepts can be inferred comprising the cross-market co-movement and market influences from one another. Investigation of financial markets’ co-movement can be statistically accomplished by employing the correlation and integration analysis, while, measuring the influences of one market on the others is done by using the causality and volatility spillover analysis.

This study empirically investigated the interdependence among the four major financial markets in India including the currency, commodity, bond and stock markets during the period 2000-2012. To obtain more detailed results and particularly the assessment of the effects of the global financial crisis of 2008, the period was divided to three sub-periods comprising 2000-2007, 2008, and 2009-2012. The time series data
ABSTRACT

including thirteen-year equals to 678 weekly observation and variables consist of CNX 500 index of National Stock Exchange (NSE), T-bond of government securities (Treasury bond, sub-maturity 8+years), RBI exchange rate of Indian Rupee to US Dollar (INR/USD), and MCX spot index of multi-commodity exchange for the whole period under study.

A significant part of the review of literature and conceptual framework of the study has been devoted to fundamental theories of financial market relationship in both internal and international aspects in which relationship between currency-commodity, currency-bond, currency-stock, commodity-bond, commodity-stock, and bond-stock markets have been reviewed.

The research methodology used in this study includes descriptive statistics, cross-market correlation, Johansen cointegration, Granger causality, and Variance Decomposition test as well as Volatility spillover index. In order to identify the stationary of data, the Augmented Dickey-Fuller test was used and optimal lags lengths have been also selected by using the VAR Lag Order Selection Criterion.

In the case of correlation analysis, time series data have been used at both original and first difference levels to calculate the correlation coefficient between variables under study then validity of obtained correlation coefficients have been evaluated through comparison of coefficient of determination and Durbin-Watson statistic. For the integration analysis firstly, the optimal lags length have been selected by using the VAR lag order criterion which have essential impact on the results of the Johansen’s co-integration test then the cointegration analysis include the Trace and Maximum Eigenvalue tests have been conducted. Granger causality tests depend on the existence or non-existence of
cointegration relationship between the variables under study has been conducted in two forms of Vector Auto Regressive (VAR) and Vector Error Correction (VEC) Model. In the case of sub-periods 2000-2007 and 2008 in which there was integration between the variables, the ECM model and in the case of sub-period 2009-2012 as well as the whole sample period 2000-2012 without integration relationship between variables, the VAR model has been used. Finally, For assessing volatility transmission Variance Decomposition (VD) in VAR and VEC models has been used. Moreover, Volatility spillover index as a technique to measure the transmission shocks among different variables within a specific period recently provided by Diebold and Yilmaz (2009) has also been employed.

In order to provide a comprehensive analysis, discussion and interpretation of the results comprising theoretical interpretation, financial crisis effects, and liberalization effects has been accompanied with the findings of the study.

In general, the results of data analyses for the whole sample period 2000-2012 revealed that: 1) the currency and stock markets were the only correlated markets. 2) Based on the cointegration test there was no integration relationship among the variables under study. 3) Granger causality effect was observed only from the commodity to bond markets. 4) There was considerable spillover volatility from the currency market to stock market equal to 39.13% in average value during the three sub-periods as well as the whole sample period under study. 5) Volatility spillover index for sub-periods 2000-2007, 2008, and 2009-2012 as well as for the whole period 2000-2012 were 8.41, 40.16, 12.34, and 9.06 respectively, conforming that, much volatility transmission among variables has occurred in 2008 coinciding the global financial crisis.