ABSTRACT

Interesting structures of interdependence among various countries keep emerging due to

economy. Any change, such as policy, political regime, or collapse of leading companies

financial crisis in the USA & Europe, and its cascading effects on the global economy

The network representation of financial markets is gaining attention among research community for exploring and understanding the emergent interdependence structure as determined by the cross-correlation between the equity returns. As the structure and the evolution of networks are inter-

and the sensitivity of centrality and centralisation measures on the level of decentralisation in the network structure.

We have proposed network based comovement indices to [illegible] statistical methods to test for any significant variation in these indices during a period of eight years from January 2002 through December 2009. We used stock market data from ten major North American, European and Asian stock markets obtained from Bloomberg for this study. The study revealed the presence of regional influences on the network dynamics. It also unearthed the emergence of synchronised global pattern in the [illegible] of statistically significant drift in the mean of the comovement index and presence of non-random patterns in the evolution of the comovement indices of the stock [illegible]

[illegible] stock indices. A novel method to rank the stock indices [illegible] dominance of an index with respect to other indices. Temporal evolution of the minimum spanning tree (MST) derived from the correlation network of 93 global stock indices has been analysed with real data obtained from Bloomberg for [illegible] stock market. In the post event period, the relative dominance of the US and the European stock markets over global stock markets seems to decrease as some of the [illegible]

Subsequently, we develop methods to capture the macroscopic interdependence structure [illegible]

[illegible] considered as the emergent social structure of stocks in the stock market. Closing price data of the stocks for the thirteen year period from January 1998 through January 2011 [illegible] investigate whether geographical proximity of stock markets and economic sectors to [illegible]

[illegible] the global stock market.

[illegible] centralisation measures on the level of decentralisation in the network structure. A star topology is generally used as a benchmark for comparing the level of centralization of an empirical network. [illegible] this study closely resembles to. Therefore, analytic expressions for centrality and [illegible] are derived for [illegible] of decentralisation. All [illegible] centrality corresponding to the four centrality measures for all the types of networks have been analysed. Findings reveal that these centrality and centralisation measures are [illegible]

highly sensitive to the degree of decentralisation in the network. The analytical [illegible] would be useful in approximating the values of these centrality and [illegible] measures for similar decentralised structures.

[illegible]

[illegible] summarised as follows. We have extended the concepts of social network analysis to be [illegible]

[illegible]

[illegible] stocks from Europe and the US emerge as dominant stocks and [illegible] Industrials, Materials, and Consumer Discretionary emerge as dominant [illegible]. The study also reveals the dominant influence of geographical [illegible] over economic sectors of the stocks in determining the emergent [illegible]

[illegible]