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Volatility Spillover from Developed Stock Markets to the Indian Stock Market : A Time Series Analysis from 2012-2021

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Abstract

In recent years, because of liberalisation, privatisation, and globalisation, financial crisis in one economy swiftly spreads to other economies. Our study analyzes asymmetry and volatility implications from chosen major global stock markets and their influence on the Indian stock market. We analyse these dynamics by everyday adjusted closing prices of specific stock indices sourced from the Bloomberg database spanning between April 2012 and September 2021. Data series of the indices used in this study were verified for stationarity by running augmented Dickey Fuller and Philips-Perron tests. The residuals of the model exhibit the presence of conditional volatility. Asymmetric model selection method indicates EGARCH (1,1) as a suitable model. ARCH, generalised autoregressive conditional heteroscedasticity (GARCH), and EGARCH terms were established to be statistically significant. The outcome of the research reveals that volatility is increased more by negative than by positive shocks, representing the existence of the leverage effect.

JEL Code : C32, C51, G15, G32
Keywords : Spillover; Market; Integration; Crisis; Information Transmission; Asymmetry; Volatility; GARCH, EGARCH; Long Memory; India

I. Introduction

THE INDIAN STOCK market is attracting investments from developed countries because it provides superior returns and diversification opportunities for overseas investors. As there are steady foreign investment flows in Indian markets, events and shocks in those foreign markets may affect the return generated by stocks and market volatility in India. As

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