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Deciphering Volatility Patterns: A Comparative Study of Nifty PSU Bank and Nifty Private Bank Indices

Parvesh Pruthi* **and Karam Pal Narwal**

Haryana School of Business
Guru Jambheshwar University of Science & Technology
Hisar, Haryana, India

Abstract: This study aims to empirically investigate and compare the symmetric and asymmetric effects of volatility shocks on the returns of Nifty PSU Bank and Nifty Private Bank indices. The study employs daily data of these indices from 01 April, 2015 to 31 March, 2025. The study's empirical findings reveal the presence of volatility clustering, persistence and significant leverage effects in the volatility behaviour of Nifty PSU Bank and Nifty Private Bank indices. GARCH (1,1) is the best-fitting model for analysing the volatility dynamics of the Nifty PSU Bank Index, and TGARCH (1,1) has outperformed other GARCH class models in capturing the volatility dynamics of the Nifty Private Bank Index. Past studies have mainly focused on analyzing the volatility behaviour of broad market indices. Few studies have been conducted focusing on sector-specific indices, and those too have employed either symmetric models or just the EGARCH model to capture sectoral indices' volatility. This study, along with the above-mentioned models, has also employed Threshold GARCH (TGARCH). Depending on the sign and size of previous shocks, different volatility responses are allowed by TGARCH models. This can account for better asymmetric volatility effects, such as increased volatility after negative shocks as opposed to favourable ones.

Keywords: Volatility, Leverage, GARCH, Volatility Clustering, Persistency

JEL Classification Number: C22, C32, C51, C58, G10

*Corresponding author. Email: parvesh.pruthi0001@gmail.com