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Notice for the PhD Viva Voce Examination

Mr Manjunatha G, Registration Number: 2270010, PhD Scholar at the Department of Commerce, School of Commerce, Finance and Accountancy, CHRIST (Deemed to be University), will defend his PhD thesis at the public viva-voce examination on Tuesday, 27 October 2026, at 11.00 am in Room No. 628, 6th Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis	:	**An Empirical Investigation of Dynamic Connectedness and Volatility Spillover Effects of Black Swan Events on Developed, Emerging, and Frontier Stock Markets**
Discipline	:	**Commerce**
External Examiner - I	:	**Dr Nakkeeran Senthil Kumar** Professor Department of Management Studies Anna University Chennai - 600025 Tamil Nadu
External Examiner - II	:	**Dr K S Chandrasekar Nair** Vice Chancellor Cluster University of Jammu Canal Road, Nawabad Jammu and Kashmir - 180001
Supervisor	:	**Dr Umasankar M** Associate Professor Department of Professional Studies School of Commerce, Finance and Accountancy CHRIST (Deemed to be University) Bengaluru - 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts, and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar (Academics)

Place: Bengaluru
Date: 12 October 2026

ABSTRACT

The integration of global financial markets has multiplied investment opportunities, but has increased the likelihood of serious disruptions. The Global Financial Crisis, the European Sovereign Debt Crisis, COVID-19, and now the geopolitical disruptions, have shown how fast volatility can move across the developed, emerging, and frontier markets, breaking the benefits of diversification and increasing systemic risk. Although there has been a lot of research on this phenomenon, the evidence is still limited and research has been mainly focused on individual events, particular segments of the markets, or isolated approaches to analyzing these events. This research intends to fill this space, and to investigate the behavior of volatility, market integration, and spillover in the developed, emerging, and frontier equity markets. The analysis examines ten significant global black swan events, covering the period March 2008 to August 2022, using daily MSCI indices of developed, emerging, and frontier markets. Volatility persistence and asymmetry are examined using GARCH family specifications. The Johansen cointegration test together with the Vector Error Correction Model (VECM), Granger causality, and instantaneous causality, are used to analyze long-run and short-run relationships and adjustments. The DCC-GARCH model is used to capture the varying correlations over time and the volatility spillover effect. The Diebold–Yilmaz connectedness model is used to analyze directional spillovers and connectedness across markets. The results reveal significant clustering of volatility and persistent volatility in all market classifications. In some market-event combinations, there are asymmetric responses to negative shocks. The results indicate long-run integration of markets and short-run asymmetric adjustments in the three market classifications. During black swan events, dynamic correlations and volatility spillovers intensified. The connectedness analysis categorized developed markets as the main transmitters of shocks, emerging markets as the intermediary transmitters, and frontier markets as the main net receivers. The study improves the existing literature by combining volatility modelling with market connectedness, volatility spillover and directional connectedness within an empirical framework to study the effects of black swan events on the developed, emerging, and frontier equity markets.

Keywords: Volatility dynamics, Black swan events, Market integration, Volatility spillovers, GARCH, DCC- GARCH, Diebold–Yilmaz connectedness

Publications:

1. **Manjunatha, G.**, & Umasankar M. (2026). A computer-implemented system and method for real-time detection and quantification of volatility spillover across financial data streams during crisis events (Indian Patent Application No. 202641029401). Published on 27 March 2026, Intellectual Property India.
2. **Manjunatha, G.**, & Murugesan, U., Girish, S., Jayanth, H., & Sowmya, G. Financial Turbulence and Market Linkages: Volatility Spillovers Across Global Equity Segments. In Sustainable Big Data Pipelines: Architectures, Energy Optimization, and Ethical Governance (Studies in Big Data Series, Vol. 191). Springer Nature, scheduled for publication in July 2026.