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# Intraday return dynamics and volatility spillovers between NSE S&P CNX Nifty stock index and stock index futures

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## Abstract

Using 5-min intraday transaction prices, this study investigates the relationship between the National Stock Exchange (NSE) S&P CNX Nifty futures and its underlying spot index in terms of both return and volatility. By applying Johansen–Juselius (J–J) cointegration analysis, we find evidence of single common stochastic trend, to which spot and futures prices move together in a long-run equilibrium path. The vector error correction model (VECM) and Granger causality test find that there is unidirectional causality running from futures to spot market. To examine the volatility spillovers between the markets, this study has used bivariate Generalized Autoregressive Conditional Heteroscedastic (GARCH) (1, 1) model with Baba, Engle, Kraft and Kroner (BEKK) parameterization and finds evidence of bidirectional volatility spillovers between spot and futures markets. However, there is pronounced spillover effect of a previous

shock and volatility from the futures market to spot market. Hence, we conclude that Nifty futures prices lead spot prices and futures market largely contributes to price discovery. These findings have significant implications for traders in implementing hedging and arbitrage trading strategies, for portfolio managers in managing risk and also for policymakers in assessing market stability.

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