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Hedging Dynamics and Intraday Volatility in Equity Market : An Analysis of Covid-19 Pandemic and Global Financial Crisis[1]

NACHIKETA MISRA *
P. LAKSHMI **
M. THENMOZHI ***

Abstract

We examine intraday volatility spillover and interdependence between spot and futuresin different market conditions over two major events - covid-19 and 2008-09 global financial crisisand assess the evolution of hedging dynamics. Our findings indicate distinct differences and similarities in both the crises. During covid-19, we find evidence of increased symmetry in own-market volatility, decreased duration of bear phase and swift recovery to pre-crisis levels. In both 2008-09 crisis and covid-19 period, we findi) strong interconnectedness between spot and futures volatility spillover effect and the intensity varies widely across up and down trends ii)cross-marketvolatility spillover and correlation from futures to spot is relatively higherand provides stronger hedging opportunities during downtrends. The GARCH-BEKK findings demonstrate the importance of market condition-based time varying covariance estimations.

JEL Code : C3, G15
Keywords : Intraday Volatility, Stock Market, Market Condition, Hedging, GARCH BEK

I. Introduction

THE COVID-19 PANDEMIC that began in December 2019 has affected millions of people worldwide and continues to remain a threat to not just public health but to global economic activity and growth. Since the wake of the pandemic, there have been extreme price movements across asset classes in global financial markets with intensified volatility, reminding us of earlier episodes of financial crises where similar largescale fluctuations were witnessed. For instance, the US S&P 500 index recorded a decline of 20% in the first quarter of 2020 which is the second highest decline after a 38.5%

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* Doctoral (Ph.D.) Research Scholar, Indian Institute of Technology Madras, The Department of Management Studies, Chennai, Tamil Nadu 600036, INDIA
** Post-Doctoral Research Scholar, Indian Institute of Technology Madras, The Department of Management Studies, Chennai, Tamil Nadu 600036, INDIA
*** Professor of Finance, Indian Institute of Technology Madras, The Department of Management Studies, Chennai, Tamil Nadu 600036, INDIA

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Regarding economic implications, there are several inferences from both the crises. In GFC, the endogenous or systemic financial shocks affected the demand side initially that transformed into an economic recession with a lagged effect. On the other hand, the economic impact of covid-19 pandemic spread quickly across the globe due to highly integrated supply chains. This exogenous supply-shock created a turbulence in the financial sector and the demand side. Further, during covid-19, the demand side is impacted by stagnated economic activity due to voluntary interventions through lock downs.

In both the crises, there have been extensive fiscal and policy support to mitigate the impact. However, the economic hit of covid-19 pandemic is varied and tougher than the 2008 financial crisis, and sectors like travel and tourism will take a longer path to recovery. Further, there is a radical shift in consumer behaviour due to fear that might have a sustained impact. Future research might explore the underlying behavioural shifts and draw suitable lessons to revisit our development models and better handle future crises.

Notes

1 SPG Global (www.spglobal.com), National Stock Exchange (www.nseindia.com)

2 NIFTY index of the National Stock Exchange (NSE) comprises fifty most actively transacted stocks in the secondary market. Asynchronous trading is negligible since NIFTY is the underlying index for NIFTY futures.

3 As per existing literature, bull market refers to situations where the returns exceed a threshold value in a period (Fabozzi and Francis, 1977; Chen, 1982). Some prior studies (Pagan and Sossounov, 2003) offer a generalised description that is in practice now, referring to an ascending trend for 'bull' and a descending trend for 'bear' in stock prices. Lunde and Timmermann (2005) have suggested an explanation that accentuates changes in stock prices flanked by local ups and downs. In recent times, academic researchers have made the assertion that previous explanations of bull and bear markets do not mirror long-run movements and pay no attention to facts about tendencies in stock price changes

4 The results are available with the authors and can be provided on request.

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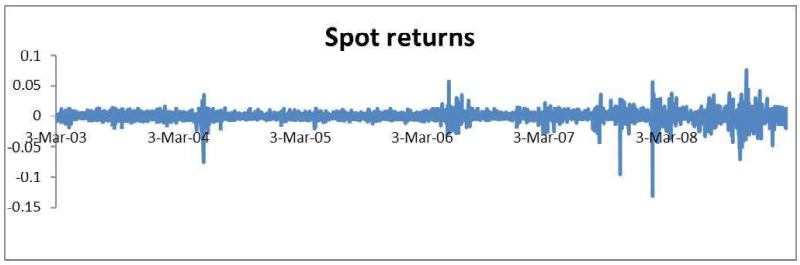
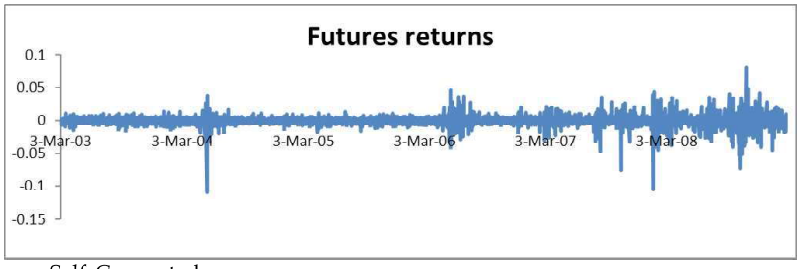
Annexure
NIFTY Intraday Spot Returns 2003-09



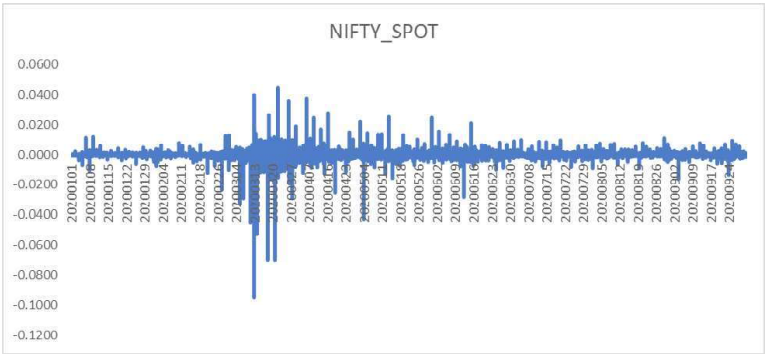
Source : Self Computed

NIFTY Intraday Futures Returns 2003-09



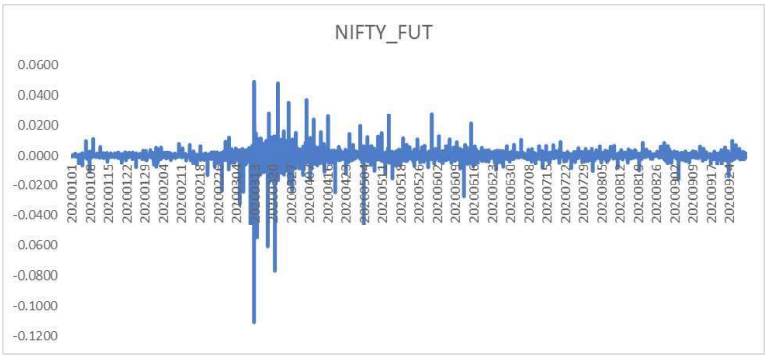
Source : Self Computed

NIFTY Intraday Spot Returns Jan - Sep 2020



Source : Self Computed

NIFTY Intraday Futures Returns Jan - Sep 2020



Source : Self Computed