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Topic Name Price Discovery and Volatility Spillover between Equity Spot and Futures: Examining Co-movement with Crude Oil

Present study attempts to unravel the efficiency of capital market of both emerging and developed economies with respect to Price Discovery and Volatility Spillover aspect of futures contract. It also attempts to investigate the increasing role of emerging economies particularly through the decoupling evidence in terms of volatility transmission to the rest of the world. It also studies the movements of stock market of emerging and mature economies' with that of asymmetric fluctuations in oil prices.

The research mainly addressed the following research gaps. *The relationship between the equity spot and futures market both in the long term and transient term was examined and compared for the sample of emerging and mature economies. The study examined the pattern of price discovery over time and across the sample countries along with the role of futures in furthering volatility of spot market and its role as an effective hedge for minimizing spot price risk. The study examined the pattern of information or risk transmission between the emerging and mature futures markets. Finally, it examined the pattern of influence of oil on the equity markets.*

The study adopted a sample of six emerging and mature economies along with two energy commodities such as WTI and Brent Crude Oil. The time period of the study was from 16th May 2010 to 31st December 2019 with 2530 daily closing observations.

The study found the following evidences. The price discovery was time varying and the futures dominated the price discovery process for the whole sample. However, spot market dominated the price discovery for the Chinese market initially. With time price discovery was favoured in the spot market particularly in the mature economies such as US and UK. Mature economies observed bi-directional causal relation between the spot and futures while for emerging markets, causal relation from futures was stronger and caused the spot market prices except for China where information from spot market also got reflected in futures. Two mature markets i.e., UK and US have shown an improvement in the short run efficiency of spot markets and have caused either a unidirectional or bidirectional casual relation. While, emerging market like China has consistently showed a bidirectional causal relation between the two markets

throughout the sub periods. In case of commodity markets, a uniform pattern in the short run can be observed where a bidirectional relation between the two markets is prevalent for Brent and WTI Crude oil markets.

The propagation of volatility from futures to spot was positive in most cases however the feedback effect from spot to futures was negative indicating that the volatility transmission loop was not covered and a strong evidence of futures trading destabilization could not be found.

To find whether the futures trading shield the investors from the spot price risk, the hedge ratio estimates along with optimal portfolio weights statistics has been analysed. For all the markets, spot market improved its hedging role with time, particularly for the mature economies.

From the information and risk transmission pattern across the emerging and mature economies futures market, India was the net receiver of both returns and volatility with a unidirectional spillover from China and bidirectional spillover from Brazil. Japan, UK and US. China was the net receiver of information via returns but net transmitter of volatility. China has bidirectional returns and volatility spillover with Japan but unidirectional volatility spillover with UK and US. Brazil was the net transmitter of returns information but net receiver of volatility. Brazil has bidirectional returns and volatility transmission with US and UK, but unidirectional ties with India in terms of volatility transmission. Japan was the net receiver of both returns information and volatility spillover. The evidence in favour of partial decoupling can be supported as emerging countries like China caused the volatility in US and UK markets, while Brazil and India displayed a bidirectional spillover with all mature markets. Japan being the developed economy still is the net receiver of information.

Quantile Regression estimates was adopted for estimating the dependencies of crude oil prices with equity futures market. On comparing set of three emerging countries, the asymmetric effect of oil futures on equity futures was substantially supported. For the Indian and Chinese market, during the whole period the positive and negative oil returns had a positive influence on the equity futures. The positive returns however showed a significant influence at the upper quantile of equity returns distribution but the negative returns showed a significant influence at the extreme quantiles. For the Brazilian market, both the positive and negative returns displayed a positive influence on its equity market at the extreme ends of equity returns. This pattern is due to the fact that Brazil is an oil exporting nation. For the UK and US market, during the whole period the positive and negative oil returns had a positive influence on the equity futures. When UK and US market experienced a downturn, oil price fall helped the respective firms to improve their operations through reduced several input costs.