Indian commodity futures market is defined by the functions like price discovery and risk hedging. Indian commodity futures market has evolved exponentially both in terms of trading volume and its reach across the country since its inception. In this backdrop, the present study aims at investigating some of the characteristics of the Indian commodity futures market in order to review whether the futures prices indicate efficient functioning of the commodity market and have succeeded in hedging the risk.

The broad objectives of this study include study of volatility dynamic in the light of volume and open interest; impact of time to maturity on price volatility; analysis of impact of commodity futures on price discovery and volatility spillover; hedging effectiveness of commodity futures, and understanding the brokers’ perception relating to volatility dynamics, price discovery and hedging efficiency of commodity futures. The review of the literature has helped in identifying the relevant issues pertaining to the Indian commodity futures market and developing the framework to address them. The methodology used to achieve these objectives comprises an extensive application of econometric and mathematical modeling. On the one hand, it includes a blend of simple techniques like mean, standard deviation, skewness, and kurtosis etc., while on the other hand, the time-varying volatility models have been used that include GARCH, EGARCH, VAR, VECM etc.

The findings of the study have been presented in five chapters according to the objectives namely; stylized facts of commodity futures volatility; volume, open interest, time to maturity and price volatility; long-term market efficiency, price discovery and volatility spillover; hedge ratio and hedging effectiveness of commodity futures; and survey results.

Empirical results provide evidence of the presence of stylized facts of volatility in Indian commodity market and make it clear that these general properties can be reproduced with a model. GARCH family models which model the stylized facts of volatility suggest that contemporaneous volume reduces the volatility persistence more than lagged volume. However, the GARCH effect does not vanish completely. Open interest as an exogenous variable does not reduce the volatility; however when integrated with volume significantly impact the persistence and asymmetricity. With regards to the impact of commodity futures on price discovery and hedging
effectiveness, the results are by and large in line with the international experiences. The informational efficiency of the futures market evidenced by the VECM model has proved that futures prices play the role of a leader and transmit the information to the spot market for almost all the commodities. A comparative analysis of static and dynamic hedge ratios reveal that VECM-MGARCH is providing better hedging effectiveness for castor seeds, copper, and precious metals than VECM. In the case of constant hedge ratio estimation, VECM provides greater variance reduction than OLS and VAR. Lastly, the survey findings have provided the useful inputs in relation to the perception of brokers about the commodity futures, their usage, and hedging efficiency. Finally, the conclusions are drawn with the limitation of work and scope for future study.