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Executive Summary

Trade in commodities date back to several centuries and has evolved from being based on barter trade to more systematic spot markets and thereafter the advent of futures markets. Derivatives trade in India originated in 19th century but has observed exponential growth in trade more recently after the liberation of Indian economy in 1990s. In 2004, a landmark decision by Indian Government leads to formation of national stock exchange. These exchanges were primarily operated to provide hedge against price risk to the agriculture producers and consumers. Over the period; the volumes and market participants on these exchanges grew exponentially. Therefore, product categories of derivatives that were offered for trade expanded to non-agriculture commodities as well. These commodities can be classified as “hard commodities” as against the agriculture commodities classified as “Soft commodities”. Today the major trade on Indian exchanges happens in hard commodities with major portion attributable to precious and industrial metals and energy. This raises an important question as to whether the derivative markets are operated as envisioned at the onset.

Agriculture sector is the lifeline of any economy and especially hold significant influence on developing economy like India where 60% of population still depends on it for the employment. The triple crises of 2006-2008 – “food, fuel and financial” -raised several issues regarding the effectiveness of the operations of derivative markets. The extreme volatility in agriculture prices world over were seen as threat leading to civil war and political unrest. This generated a heated debate and the issue was discussed amongst the G20 countries and other policy and regulatory forums suggesting certain reforms. Excessive speculation and manipulative practices were criticized as hampering the role that ought to be played by exchanges. However all these efforts are still away from stabilizing the price of agriculture commodities and if not corrected to the loss of faith in the system? There is a pressing need to identify the factors responsible for wide volatility in agriculture prices. Many factors and malfunctioning systems could have led to rise in the volatility in prices. To address this critical issue, the present study is a serious attempt to analyze the causes of the problems in agriculture sector, derivatives market and factors leading to rise in volatility. The analysis of major economic factors that could be the force behind this issue is worth a study and would
be of significant interest to agriculture community, traders, government machinery and to a large extent for socio-economic stability of the country.

The researcher has analyzed the functioning of derivative markets in India with reference to three of the most traded and highly important agriculture commodities- Soy bean, Chana and Turmeric. These commodities have global trade platform and significant demand from other countries making them worth the study. India is amongst the leading producer of Chana also referred to as major protein source for the poor man. Wide fluctuations in its price deprive the common man of the basic nutrition. The next commodity is Soy Bean. It is the most traded agriculture commodity after Corn globally. Soy Bean is a very important agriculture commodity from the angel of nutrition as well as biofuel. The third commodity chosen for the study is Turmeric well known as Haldi, the yellow spice. Turmeric is not only known for its edible property but also has significant medicinal and industrial uses. India is the largest producer and exporter of turmeric. For all of these commodities, India serves as a major trading partner to many of the developed, developing and less developed economies (LDE) like US, China, Middle East, Africa, Europe, etc. An endeavor is made to analyze the movement in the prices of these three commodities with reference to movement in BSE-Sensex; considered as a barometer of investment climate in India, USD-INR exchange rate (Forex); and Crude (considered as bloodline of the economy and key input cost for agriculture). The study finds structural breaks in the data and has analysed whether the causal behavior of the variables under the study change with occurrence of the breaks. The study further provides recommendations in general for the betterment of the trade and increase of participation in futures market as well as trading strategies for the three commodities for portfolio managers, retail investors and hedgers.

Organization of the Thesis

Thesis is organized into six chapters. It follows the following sequence-

Chapter 1 Introduction to Commodities Derivative Markets and Significance for Agriculture Commodities – This chapter introduces the necessary background of the study, concept of derivatives, widely used products in derivative markets, evolution of derivative markets in India, Structure of Indian Commodity market, Merger of the commodity market
regulator- Forward Market Commission with Securities and Exchange Board of India, Commodity exchanges in India, highlights the importance of commodity exchange in case of agriculture commodities, and specify objectives of the current research

Chapter 2 Literature Review – This covers review of national as well as international studies in the area of price discovery and efficiency of futures contract for agriculture commodities. Also highlights studies undertaken with reference to agriculture commodities and macro-economic factors. Major studies would be classified as per theme and discussed followed by key observations and research gap.

Chapter 3 Research Methodology – This chapter specifies different econometric tools and techniques applied. The reasons for the adoption or rejection of different research methods will be discussed in detail. Statistical Software’s used for the study are stated here. Further the chapter describes the macro-economic variables chosen for the study and highlights the importance of the selected agriculture commodity for Indian economy. The chapter also talks about the period of study and justification thereof.

Chapter 4 Data Analysis and Findings - This chapter covers data analysis and findings. It will present the empirical results by applying suitable tests to find answers for the research questions raised in the study. The hypotheses testing are carried out with different tests to confirm structural breaks, cointegration and causality between variables. A summary of findings has also been included in the chapter.

Chapter 5 Conclusion and Recommendations – This chapter highlights key findings of the study and policy implications therefrom. It also provides investment strategies that the retail as well as portfolio managers can benefit from. Further general recommendations for improvement of trade in futures market for agriculture commodities are included here. Also includes limitations of the study and discussion about the proposed future work.
Research Papers Published and Presented

Research Publications


Working Papers

1. “Causal dynamics in agriculture commodity prices and select macro-economic variables in presence of Structural break: Evidence from India” Coauthored with Dr. Harsh Purohit and Dr. Nidhi Choudhary.

2. “Volatility in World Agriculture Commodity Markets” scheduled for national conference on “Emerging issues in Finance” on 26 November at FLAME University, Pune.

3. “Modeling the link Between Oil and Agriculture Commodities”
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