AGRICULTURAL COMMODITY FUTURES IN INDIA- A LITERATURE REVIEW

HARWINDER PAL KAUR*; DR. BIMAL ANJUM**

*ASSISTANT PROFESSOR, DEPARTMENT OF MANAGEMENT STUDIES
LALA LAJPAT INSTITUTE OF ENGINEERING & TECHNOLOGY,
MOGA (PUNJAB), INDIA

**ASSISTANT PROFESSOR, DEPARTMENT OF COMMERCE,
DAV, COLLEGE CHANDIGARH INDIA

ABSTRACT
The purpose of this paper is to provide an overview of Agricultural Commodity Futures in India by taking into account the variability of empirical results of some selected studies on agricultural commodity futures. This paper is based on review of empirical results of studies on agricultural commodity futures for the 2001-2013 periods. These studies have been classified in three sections: Growth and performance of the commodity futures market, relationship between agricultural commodity futures market and spot market and price risk management through agricultural commodity futures. The paper shows the growth in commodity futures market along with identification of problems that are affecting the performance of agricultural commodity futures in India.

KEYWORDS: Commodity Futures, Commodity Derivative Market, Spot Market, Price Discovery, Risk Management, Hedge

1 Introduction
Indian commodity future market was relatively popular till early 70s but its growth was fraught due to diverse restrictions and regulations introduced by Government of India. In 2003 these restrictions have been relaxed leading to the spontaneous growth of commodity market in the country. With the significance policy changes and liberalisation of world markets, Indian Commodity Derivative market has achieved phenomenal growth in terms of volume of trade, number of product on offer and transparency. Commodity means all kind of movable property other than actionable claims, money and securities. Commodity trading or futures trading is organised in such commodities as are permissible by the Government. The association, company or any other body corporate which organize the future trading in commodities through futures contract is known as commodity exchange. A futures contract is an agreement to buy or sell a particular commodity at a pre-determined price in the future. They are standardized contracts containing detail about the quality and quantity of the underlying asset. Commodity markets play vital role in the economies like India where agricultural production constitutes a major part of GDP. India being agricultural dominated economy is one of the top producers of agricultural products, where farmers have to face yield risk along with price risk. Farmers need protection against the price fluctuations of their crops. From the time of sown to the time of harvest they...
face price uncertainty. With the use of simple derivative product, farmers can partially or fully transfer price risk by locking in asset prices. There were simple contracts developed to reduce the risk and to meet the needs of farmers. Commodity futures market performs two significant economic functions of price discovery and price risk management. A futures trading in commodities is beneficial for all sectors of the economy including farmers and consumers. It provides advance price signals to sellers (farmers/producers) and assists buyers (consumers) of agricultural commodities for financing commodities from one season to another. The commodity derivative market in India has achieved substantial development in term of transparency, technology and trading activities. The total value of agricultural trading has reached to Rs. 345032 crore during the period of April 2012-13.

Commodity derivative trading in India is regulated through a three tier regulatory structure, viz, the Central Government, Forward Market Commission and the Recognised Commodity exchanges/Associations. Currently Bullion, Energy, Base Metal products and Agricultural commodities account for a large share of the commodities traded in the Indian Commodity Futures Market. There are 5 National and 16 regional commodity specific exchanges, which regulates forward trading in 113 commodities approves by the Forward Market Commission under the Forward Contracts (Regulation) Act, 1952. This paper presents a review of the limited literature and key findings on agricultural commodity futures in India. Hopefully this study will help both academicians and participants of commodity future market. The paper is divided in three different sections. In Section 2, growth and performance of commodity futures market in India has been discussed. Relationship between commodity futures and spot market has been pointed out in Section 3. While Section 4, describes the literature in terms of agricultural commodities futures and price risk management. Section 5, concludes the paper by identifying problems of agricultural commodity futures.

2 Growth and Performance of Commodity Market

Few studies are available on the performance and efficiency of Indian commodity futures market. In spite of a considerable empirical literature, there is no common consensus about the efficiency of commodity futures market. Gopal and Sudhir (2002) emphasised that agricultural commodity futures market has not fully developed as competent mechanism of price discovery and risk management. The study found some aspects to blame for deficient market such as poor management, infrastructure and logistics. Dominance of spectators also dejects hedgers to participate in the market. Narender (2006) concluded that Indian commodity market has made enormous progress since 2003 with increased number of modern commodity exchanges, transparency and trading activity. The volume and value of commodity trade has shown unpredicted mark. This had happened due to the role played by market forces and the active encouragement of Government by changing the policy concerning commodity derivative. He suggested the promotion of barrier free trading in the future market and freedom of market forces to determine the price. Himdari (2007) pointed out that significant risk returns features and diversification potential has made commodities popular as an asset class. Indian futures markets have improved pretty well in recent years and would result in fundamental changes in the existing isolated local markets particularly in case of agricultural commodities. Kamal (2007) concluded that in short span of time, the commodity futures market has achieved exponential growth in turnover. He found various factors that need to be consider for making commodity
market as an efficient instrument for risk management and price discovery and suggested that policy makers should consider specific affairs related with agricultural commodities marketing, export and processing and the interests involved in their actual production. K. Lakshmi (2007) discussed the implications on the grant of permission to Foreign Institutional Investors, Mutual Funds and banks in commodity derivative markets. She found that participation of these institutions may boost the liquidity and volume of trade in commodity market and they could get more opportunities for their portfolio diversification. Arup et al. (2008) to facilitate business development and to create market awareness, they conducted an index named MCX COMAX for different commodities viz. agricultural, metal and energy traded on Multi Commodity Exchange in India. By using weighted geometric mean of the price relatives as the index, weights were selected on the basis of percentage contribution of contracts and value of physical market. With weighted arithmetic mean of group indices the combined index had been calculated. It served the purpose of Multi Commodity Exchange to make association among between various MCX members and their associates along with creation of fair competitive environment. Commodity trading market had considered this index as an ideal investment tool for the protection of risk of both buyers and sellers. Swami and Bhawana (2009) discussed that with the elimination of ban from commodities, Indian futures market has achieved sizeable growth. Commodity futures market proves to be the efficient market at the world level in terms of price risk management and price discovery. Study found a high potential for future growth of Indian commodity futures market as India is one of the top producers of agricultural commodities. Gurbandani and D.N, (2010) they tested the market efficiency of agricultural commodities traded on National Commodity Derivative Exchange of India and pointed out that Indian commodity derivative market has witnessed phenomenal growth in few years by achieving almost 50 time expansion in market. By applying autocorrelation and run tests on four commodities namely-Guar seed, Pepper Malbar, refined Soya oil and Chana (Gram) the study observed the random walk hypothesis and tested the week form efficiency of these commodities. The study also indicated key evidence of liner dependence for selected agricultural commodities which has reflected by high coefficient values of autocorrelation. Indian agricultural commodity market is efficient in week form of efficient market hypothesis. Sheeb and kanwal (2010) tried to examine the need for commodity trading advisors and discussed the important functional and policy considerations in initiating the commodity futures market for commodity trading advisors in India. Study found an unstructured expansion in Indian commodity market, in spite of high demand for commodities in both derivative and spot markets. There had been limitations through policy restrictions and at the same time there had been an attempt for liberalisation of the derivative market to bring both markets at par with global commodity market. Study concludes that the participation of non professional people make commodity trading a risky venture and they add volatility factor to the market. So it has been argued that participation of commodity trading advisor will provide expertise in commodity futures trading and it will protect the traditional portfolios with better profit and less risk. Brajesh and Pandy (2013) investigated the short run and long run market efficiency of Indian commodity futures market. They had tested four agricultural and even non-agricultural commodities for market efficiency and unbiasedness. The result confirmed the long run efficiency of commodity futures prices and inefficiency of futures prices in short run.
3 Relationships between commodity futures market and Spot market

B.K. and Ashutosh (2002), attempted to find out the determination of equilibrium price of future contract of an agricultural commodity along with relationship of future contract with the expected spot market at maturity of the contract. They identified three determinations of the equilibrium price i.e. risk aversion of hedgers, demand and supply conditions expected by hedgers in the spot market and expectations and responsiveness of speculators about current spot market. In case of relationship between future contract and spot market, existence of excess demand was observed. Speculator’s expectation of increase in spot prices resulted in high demand for future and in opposite situation of low prices the speculators by doing reverse trade creates offsetting positions. Basab (2004) described the monopolistically competitive nature of the Indian Commodity Derivate market which stabilizes the spot price. Result showed the co-movement among future prices, production decision and inventory decisions. Gurpreet and Gaurav (2006) observed the dependence of commodity future market on spot market for price determination along with increasing inflation due to trade volume of commodity futures. They concluded that futures market is not performing the function of price discovery and futures market as a weak market in short run. Bharat and Jatinderbir (2007) stressed that growth of commodity spot market depends upon the growth of commodity futures market in developing countries and certified warehouses, centralised spot prices and effective margin system were found as the important institutional factors for successful commodity futures market. Golka and Tulsi (2008) emphasised that trading in commodity futures contributed to an increase in inflation as result showed that during the time period of future trading the spot price of selected commodities and their volatilities had posted remarkable increase. Kedarnath (2008) discussed the significance of price discovery and risk management by commodity futures for the development of commodity spot market in India. The result of interdependence between commodity future and spot market in agricultural commodities also supported the relevance of commodity future trading in Indian commodity market. Gurbandani and Rao (2009) The commodity spot and future prices had closely tracked each other in selected agri commodities and no significant volatility has been found in the prices of future and spot contracts of those agricultural commodities. Ranajit and Asima (2010) studied the efficiency of Indian commodity market in terms of price formation of agricultural commodities traded on commodity exchanges. By applying co-integration analysis and GARCH model on agricultural commodities they confirmed the co-integration between commodity futures and commodity spot market indices. They emphasised that with the information of any one index hedging can be done on other commodity indices. New information was found as an important factor to predict the future value of commodities. Gurbandani (2010) found that both spot and future prices for selected agricultural commodities are efficient in weak form. Future prices are independent and past prices have no role in the contribution of future price prediction.

4 Price Risk Management through Agriculture Futures

Gopal and Sudhir (2001) pointed some of the commodity markets are efficient among all the commodity markets in terms of price risk management. The reasons for inefficiency of other commodity markets were found as low volume of trading during maturity period, lack of hedger’s participation. K.G.(2002) indicated the inefficiency of commodity future market in terms of providing hedge against price risk by observing the difference between future and spot
prices. He found many factors like lack of participation of trading members, low market depth and thin volume with Government’s interference in Commodity markets etc., as major evils for inefficient price risk management. **Jatinder Bir, (2004)** observed the hedging performance of agricultural commodity futures market in terms of price discovery and risk management. Out of selected six agricultural commodities, caster seed and pepper futures markets were found as efficient and unbiased in terms of price risk management and hedging effectiveness. The factors responsible for inefficient hedging in other commodities were found as low volume, low participation, inadequate warehouse facility and deficient information system of commodity exchanges.

**Ashutosh (2006)** suggested the participation of banks in the commodity futures market for effective commodity price risk management as financing by banks could provide efficient hedge against price risk. **Kiran (2007)** concludes that commodity futures market performs the function of price discovery and proved beneficial to spot market by reducing the spot price volatility. **Jabir and Kriti (2007)** Analysed the effectiveness of commodity futures market through regression analysis by taking both spot and future prices of commodities. Result proved the high level of volatility in both spot and future prices of commodities. Positive coefficients for agricultural commodities in dissimilar equations supported the effectiveness of commodity market in hedging the price risk. **Ram and Ashis (2007)** emphasised that agricultural commodity derivatives provides an efficient protection against the price volatility risk in terms of commodity prices i.e. appropriate future spot mix trading. Commodity exchanges offer a broad based platform for trading of agricultural and non agricultural commodities over time and space so the commodity exchanges need to be developed at national level. **Singh (2007)** concludes that in spite of new developments in commodity trading, the efficient and modern infrastructural facilities has accounted for major bottlenecks in growth of Indian commodity exchanges. He suggested to discourage the unofficial commodity market. **S.M. (2007)** found co integration of commodity future and spot prices revealing the right direction of achieving the improved operational efficiency at a slow rate. Further Indian commodity market has lack of liquidity in some commodities like pepper, sugar and groundnuts. In other commodities hedging proves to be effective. For some commodities the volatility in future price has been considerably less than the spot price indicating an efficient utilization of information. According to **Brijesh, et.al. (2008)** Indian commodity derivative market provide useful risk management instrument for hedging and for portfolio diversification. The result found a reasonably high level of hedging effectiveness. **R. Salvadi and P. Ramasundaram (2008)**, found commodity futures market in India Failed to provide an efficient hedge against the price risk particularly in agricultural commodities. The results showed the inefficiency of agricultural commodity futures market in terms of price discovery due to the non integration of futures and the spot market. Exchange specific factors attributed to the market imperfection had found like non awareness of future market among farmers, infrequent trading, thin volume and low market depth, lack of effective participation of members, etc. Authors suggested implementation of Government driven policy measures to raise the commodity futures market a vibrant segment for price risk management in Indian Agriculture. **Brajesh and Ajay (2009)**, Observed that commodity futures market in India provide higher hedging effectiveness in agricultural commodities as compared to non agricultural commodities and price risk management role of Indian commodity futures market has also increased with increased activity in market. **Mahalik et al. (2009)** also supported the
commodity future market as efficient for price discovery in the case of agricultural commodities. Pravakar and Rajiv (2009) found no evidence supporting future market leads to higher inflation rather results suggested the efficiency of commodity futures market. Commodity derivative trading provides better risk management along with price discovery. Swami and Bhawana (2009). With the elimination of ban from commodities, Indian futures market has achieved sizeable growth. Commodity futures market proves to be the efficient market at the world level in terms of price risk management and price discovery. Study found a high potential for future growth of Indian commodity futures market as India is one of the top producers of agricultural commodities. Tata Rao (2009), observed that after the removal of government protection from various commodities Indian commodity futures market has made massive progress in trading activity and trading volume. Study supported the fact that commodity derivative market served significant function of price risk management. With reference to the study of soya oil trading at National Board of trade(India) he found rapid growth in trading volume along with change in supplies and open interest as NBOT enabled hedgers to earn riskless profit by actively participating in the market. The reason behind this growth was the positive impact of soya oil imports and domestic supply of the produce. The NBOT lagged behind the developed country exchanges because of offering contracts shorter periods of three months or less. Vishwanathan and Archana (2010), examined the role of futures markets in terms of price discovery process and rate of convergence of information from one market to another by taking six commodities- gold, silver, nickel, copper and Gram (Chana). They used a two-regime threshold vector auto-regression (TVAR) and a two-regime threshold auto-regression method. Result supported the existence of price discovery process in Indian commodity exchanges. Further, a high rate of convergence of information in case of metals and slow convergence of information in case of agricultural commodities has been found between the different markets.

5. Conclusion
Indian economy has witnessed mini resolution in commodity Future market since 2003 as a result of the revival of commodity futures in a big way. Commodity futures market serves the two vital functions of the economy i.e. price discover and price risk management. Advance price signals help the farmers and traders of the agricultural commodities to grab superior price to earn more profit. The mechanism of price risk management enables the farmers to avoid price fluctuations. It provides liquidity to the participants and trading can be done in multi-commodities at a single point of time. Despite the developments of commodity futures market in India there is lack of awareness regarding commodity futures market. Farmers in rural areas are not able to patronize the benefits of commodity futures market. There are various reasons responsible that are accountable for the ineffective growth of commodity futures market in India. The efficient and modern infrastructural facilities are the major bottleneck in growth of agricultural commodity futures market in India. There are less number of commodity exchanges and lack of commodity warehouses and clearing centres in rural area. There is no integration between the commodity futures markets and spot market. Regulators of the commodity futures markets should make provisions to regulate the unorganised commodity futures market in India. Appropriate awareness programmes and workshops should be conducted by the government and commodity exchanges to educate the potential participants of commodity futures marker.
Optimum use of this platform can only make possible the integration of Indian commodity market with global commodity market.

References


