

# Benefits of Commodity Derivatives Market – A Study

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## Abstract

In India government policy regarding the agricultural commodity futures market keeps fluctuating according to the needs of public (food) policy and the observed inflation trends at any point of time. This is understandably not unique to India but is true of global commodity markets particularly in developing countries. However, despite temporary reversals, the policy thrust in India now is on using the commodity derivatives market to integrate the vast numbers of poor agriculturists into the mainstream financial markets. The debate on how soon and how well the developments in the market for commodity futures in India would actually serve the cause of poor and marginal farmers/producers remains wide open.<sup>3</sup> But there is no doubt that efficient commodity derivatives markets have immense potential for contributing to price stability and economic development. The main purpose of the present study would be to look into some characteristics of the Indian commodity futures market in order to judge whether prices indicate efficient functioning of the market or otherwise. Two of India's national level electronics exchanges, the Multi Commodity Exchange of India Ltd. (MCX) and the National Commodity and Derivatives Exchange Ltd. (NCDEX), have been tracking multi-commodity indices for spot and futures prices, constituting prices of a basket of commodities from various sectors. We make use of these index values to comment on the efficiency in price formation in the electronically traded commodity derivatives market.

*Keywords: commodity, market, futures, derivatives, commodity derivatives*

## Introduction

The commodity futures market in India dates back to more than a century. The first organized futures market was established in 1875, under the name and style of 'Bombay Cotton Trade Association' to trade in cotton derivative contracts. This was followed by institutions for futures trading in oilseeds, foodgrains, etc. The futures market in India underwent rapid growth between the period of First and Second World Wars. As a result, before the outbreak of the Second World War, a large number of commodity exchanges trading futures contracts in several commodities like cotton, groundnut, groundnut oil, raw jute, jute goods, Castorseed, wheat, rice, sugar, precious metals like gold and silver were flourishing throughout the country. In view of the delicate supply situation of major commodities in the backdrop of war efforts mobilization, futures trading came to be prohibited during the Second World War under the Defence of India Act. After independence, especially in the second half of the 1950s and first half of 1960s, the commodity futures trading again picked up and there were thriving commodity markets. However, in mid-1960s, commodity futures trading in most of the commodities came to be banned and futures trading continued only in two minor commodities, viz, pepper and turmeric. In the 1980s, the futures trading in some commodities like potato, Castorseed, and gur (jaggery) was permitted. In 1992, futures trading in hessian were permitted; in April 1999 futures trading in various edible oilseed complexes were permitted

and in May 2001 futures trading in Sugar were permitted. The National Agricultural Policy announced in July 2000 recognised the positive role of forward and futures market in price discovery and price risk management. In pursuance thereof, Government of India, by a notification dated 1.4.2003, permitted additional 54 commodities for futures trading. With the issue of this notification, prohibition on futures trading has been completely withdrawn. The mechanism of forward trading has actually developed and advanced considerably in the major trading nations of the world, like USA, UK, France, Japan, etc. In these countries, forward trading has been permitted in many new items/services including financial futures, shipping freights and interest rates etc. In comparison, commodity futures markets in India are much simpler and are at present dealing in single futures contracts in commodities.

The two major economic functions of a commodity futures market are price risk management and price discovery. Forward contracting in commodities is an important activity for any economy to meet food and raw material requirements, to facilitate storage as a profitable economic activity and also to manage supply and demand risk. Forward contracts, however, give rise to price risk; so there arises the need of price risk management. Price risk in forward contracts can be managed through futures contracts.

A commodity futures contract is an agreement to buy (or sell) a specified quantity of a commodity at a future date, at a price agreed upon—the futures price—when entering into the contract. In determining the futures price, market participants compare the current futures price to the spot price that can be expected to prevail at the maturity of the futures contract.<sup>1</sup> Inventory decisions link current and future scarcity of the commodity and consequently provide a connection between the current spot price and the expected future spot price. As an investment product commodity futures are quite different from financial derivatives. They do not raise resources for firms to invest; rather, commodity futures allow producers (both agricultural and industrial) to obtain insurance for the future value of their outputs (or inputs).

Commodity futures do not necessarily represent direct exposures to actual commodities. Investors in commodity futures receive compensation for bearing the risk of short-term commodity price fluctuations. Standardised, organised and centralised futures exchanges guarantee that risks are borne by a vast number of investors (including speculators) in return for a premium. The diversity of requirements and opinions of the market participants leads to efficient price discovery in the market. The inherent difficulty with commodities, and hence commodity futures, is that within the asset class they display many differences. Some commodities are storable and some are perishable; some are input goods and some are intermediate goods, and within the same commodity group there may be vast differences in quality. These features make the development of commodity markets that much more difficult and command more resources for infrastructure as compared to financial markets.

It is well known that though India is considered a pioneer in some forms of derivatives in commodities, the history of formal commodity derivatives trading is rather chequered. In recent times there has been an enormous amount of interest generated in commodities trading in India along with the massive growth in stock market trading volumes. This is indeed a welcome sign as it is historically proven that inclusion of commodity exposures can reduce the overall volatility (risk) of a portfolio of investments, while significantly improving the return potential of the portfolio. Thus simultaneous growth of financial and physical derivatives trading could help to widen and deepen both markets as investors have more choice and they may benefit from a portfolio strategy involving both underlyings.

### **Objective:**

This paper seeks

1. To study the Commodity Derivatives Market in India.
2. To identify the road blocks in providing interface to execute the commodity derivatives.

### **Benefits of Commodity Derivatives Market:**

The primary benefit of futures markets is to allow for anticipatory hedging in a free-market price regime. Hedging is the practice of offsetting the price risk inherent in any cash market position by taking an equal but opposite position in the futures market. Hedging involves buying or selling of a standardised futures contract against the corresponding sale or purchase respectively of the equivalent physical commodity. By taking a position in the futures markets that is opposite to that held in the spot market, the producer can potentially offset losses in the latter with gains in the former. Futures markets thus offer a mechanism for dealing with price risk. Secondly, because futures markets offer a range of contracts for each commodity, there is a great deal of flexibility in pricing for the individual trader, as compared with a fixed policy rate regime.

Futures markets also play a role in inventory management. The basis or price spread, which is the price difference between futures contracts of different maturities, signals the availability of stocks to the market. In essence, the basis is a measure of storage and interest costs that must be borne by a spot market trader in holding stocks now, for sale at some point in the future. Clearly, as the basis gets larger, the incentive to store increases; as a result, the level of inventories held in the spot market will be determined by the basis. This ensures an efficient process of private storage and in turn leads to a smoother pattern of prices in the spot market and hence can, potentially, reduce price volatility. Futures markets can also provide price support for credit needs to small producers. In fact, better access to credit has been driving demand for commodity price hedging in the developed market economies. The

collateral value of inventory is substantially enhanced if it is hedged, enabling firms (/farmers) to borrow a larger proportion of inventory value on more attractive terms.

There are other wider benefits to the economy of a more efficient allocation of resources that could arise from establishing or using futures markets. Entities in commodity-dependent countries have little or no access to price risk management instruments, particularly for agricultural products, mostly due to policy barriers. Even though many of these countries are major producers of primary products, and some are also major consumers, their participation in commodity futures markets is minor. Uncertainty, especially long-term, has a negative impact on productivity and therefore reduces growth. When a commodity is produced and then sold on a spot market, there is considerable risk that in the time between a production decision being taken

and the output being sold, prices could have moved against the trader. This spot price risk creates problems for producers who do not know what their income levels will be and this hinders their planning process. An efficient futures market provides reasonably accurate indications of the future spot price and thus helps in production planning.

### **Commodity Future Trading:**

A commodity futures contract is a tradable standardised contract, the terms of which are set in advance by the commodity exchange. A futures market facilitates offsetting trades without exchanging physical goods until the expiry of a contract. As a result, the futures market attracts hedgers for risk management, and encourages participation

of traders (speculators and arbitrageurs) who possess market information and price judgement. While hedgers have long-term perspective of the market, the traders or arbitrageurs prefer an immediate view of the market and these diverging views lead to price discovery for the commodity concerned.

Hedging is the practice of offsetting the price risk inherent in any cash market position by taking an equal but opposite position in the futures market. This technique is very useful in the case of any long-term requirements for which the prices have to be firmed so as to quote a sale/purchase price, but the hedger wants to avoid buying the physical commodity immediately to prevent blocking of funds and incurring large holding costs.

For example:

A wheat miller enters into a contract to sell flour to a bread manufacturer four months from now. The price is agreed upon today though the flour would only be delivered after four months. A rise in the price of wheat during the course of the next four months would result in losses on the contract to the miller. To safeguard against the risk of increasing prices of wheat, the miller buys wheat futures contracts that call for the delivery of wheat in four months time. After the expiry of four months, as feared by the miller, the price of wheat may have risen. The miller then purchases the wheat in the spot market at a higher price. However, since he has hedged in the futures market, he can now sell his contract in the futures market at a gain since there is an increase in the futures price as well. Hedging thus offsets losses from purchase of wheat at a higher cost through sale of the futures contract thereby protecting the profit on the sale of the flour.

The tendency of the difference between spot and futures prices to decline continuously, so as to become zero on maturity, is referred to as Convergence. Convergence occurs at the expiration of the futures contract because any difference between the cash and futures prices would then quickly be negated by arbitrageurs.

There are two types of futures contracts, those that provide for physical delivery of a particular commodity or item and those which call for a cash settlement. Delivery on futures contracts is the exception rather than the rule; however, a delivery provision offers buyers and sellers the opportunity to take or make delivery of the physical commodity if they so choose. More importantly, however, the fact that buyers and sellers can take or make delivery helps to assure that futures prices will accurately reflect the cash market value of the commodity at the time the contract expires.

Futures prices evolve from the interaction of bids and offers emanating from all over the country. The bid and offer prices are based on the expectations of prices on the maturity date. Two methods generally used for predicting futures prices are fundamental analysis and technical analysis. The fundamental analysis is concerned with basic supply and demand information, such as, production and consumption, import and export patterns, weather conditions, and relevant policies of the government like taxation. Technical analysis includes analysis of movement of prices in the past. Many participants use fundamental analysis to determine the direction of the market, and technical analysis to time their entry and exit.

Settlement price is the price at which all the trades outstanding are settled, i.e., profits or losses, if any, are paid. The method of fixing settlement price is prescribed in the bye-laws of the exchanges; normally it is a weighted average of the prices of transactions both in the spot and futures market during the period specified.

An important part of understanding futures and cash price dynamics is being able to explain and anticipate cash/futures basis movement. Basis is normally calculated as cash price minus the futures price. A positive basis indicates a futures discount (Backwardation) and a negative number, a futures premium (Contango). When the prices of spot, or contracts maturing earlier, are higher than a particular futures contract, it is said to be trading at Backwardation. It is usual for a contract maturing in the peak season to be in backwardation during the lean period. Contango means a situation where futures contract prices are higher than the spot price and the futures contracts maturing earlier. It arises normally when the contract matures during the same crop season. In a well-integrated market, Contango is equal to the cost of carry, viz. interest rate on investment, loss on account of loss of weight or deterioration in quality, etc. As basis volatility (risk) increases the effectiveness of the hedge decreases.

### **SIGNIFICANCE OF COMMODITY DERIVATIVES:**

#### **i) PRICE DISCOVERY:**

- ~ Due to their highly competitive, the commodities derivative market has become an important tool to determine price.
- ~ Price of a commodity is determined by the market forces of demand and supply.
- ~ These forces in turn depend on various regional economic social and political factors and a continuous flow of information from around the world.
- ~ An impending change in these factors can have its impact on the demand / supply of a particular commodity and thus on the current and future prices of the underlying commodity on which the derivatives contract is based.
- ~ Thus, derivatives help in determining the current or future prices of an underlying commodity.
- ~ This helps in discovering the true price of the commodity.
- ~ The price in the derivatives market reflects the perceptions of the market participants about the future and this leads the prices of the underlying commodity to the perceived future level.

#### **ii) RISK MANAGEMENT:**

- ~ Commodity derivatives help to manage the risk and thus increase the willingness to hold the underlying asset.



~ Risk management is the process of identifying the desired level of risk, identifying the actual level of risk and changing the actual level to the desired level.

~ This involves hedging and speculation.

~ Hedging implies reducing the risk in holding a market position whereas speculation implies taking a position in the way the market will move.

~ Thus, hedging and speculation, along with commodity derivatives enable companies to manage risk more effectively.

### iii) INCREASE LIQUIDITY:

~Commodity derivatives increase the liquidity in the market for the underlying assets'

~ It provides a liquid market where traders readily trade commodities or financial instruments for a price that is close to its true value.

~ The trading volume increases in the underlying market due to participation by a large number of players.

### vi) RESOURCE ALLOCATION:

~ Commodity derivatives provide prices that guide current consumption and production decisions. They also help in planning for future consumption and production.

~ This facilitates optimum allocation of resources in the economy.

### Issues of Commodity Derivative Market:

Price volatility is perhaps the most pressing issue facing producers of primary commodities. The low prices for basic commodities limit the income farmers(/small producers) can receive for their products and the high volatility of these prices makes it very difficult for them to optimise the use of their income (Morgan, 2000).<sup>4</sup> While these producers are not exclusively located in LDCs, the impact of volatility on producers there is much greater than it is for those in developed market economies.<sup>5</sup> Policies designed to counter the effects of the inherent instability of commodity markets have taken various forms since the 1930s but in general it is possible to say that they all shared a common feature of being based on intervention. In essence, buffer stock schemes were heavily promoted especially through the establishment of the International Commodity Agreements (ICAs) (for a more detailed review of the earlier history of these and other policies, see Gordon- Ashworth, 1984). However, two main problems arose within this system. First, the difficulty in setting the price range and updating it over time in response to changes in either costs or consumer tastes. Second, finding sufficient funds to keep prices within the specified range, a problem that was especially acute if there was a run of years of high production with low prices and stocks needed to be held over a long period.

Concerns about commodity price fluctuations also led to pervasive commodity policy interventions by national governments. The goal has been either to replace the price discovery by markets with a planned and regulated system of prices or to insulate producers and consumers from market price fluctuations through price controls or subsidies. Many countries have unilaterally pursued price stabilisation, particularly in agriculture. These have typically taken the form of institutional arrangements for price stabilisation programmes, including physical buffer stock schemes, stabilisation funds, variable tariff schemes, and marketing boards. Commodity futures markets thus have a limited presence in developing countries where commodity markets fall short of the ideal. Historically, governments in many of these countries have discouraged futures markets; if they were not banned, their operations were constricted by regulation. The main concern being that speculative activity in futures markets could reinforce price instability and volatility in essential commodities and lead to further problems of food security.

Government interventions to artificially stabilise prices, on the other hand, pre-empted the development of a market-based price risk management system. In the recent past, however, countries have begun to liberalise commodity markets and in a reversal of earlier trends, the development of commodity futures markets is being pursued actively with support from governments. The World Bank initiative to devise market-based approaches for dealing with commodity price risk has provided a fresh impetus for research in the area of commodity futures markets as a policy option.<sup>6</sup> The World Bank (1999) notes: "...market based management instruments, despite several limitations, offer a promising alternative to traditional stabilisation schemes...". The argument is that the use of price risk management instruments allows governments to disengage from costly, distortionary, and counterproductive policies. At the national level, many countries have unilaterally abandoned marketing boards that were once common for coffee, cocoa, and other import crops—as well as long-standing food marketing agencies. Others have done so under budget pressure or as part of reforms supported by the World Bank and other institutions.

## **Conclusion**

Commodity derivatives have a crucial role to play in the price risk management process especially in any agriculture dominated economy. Derivatives like forwards, futures, options, swaps etc are extensively used in many developed as well as developing countries in the world. However, they have been utilized in a very limited scale in India. The production, supply and distribution of many agricultural commodities are controlled by the government and only forwards and futures trading are permitted in certain commodity items.



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