

# Commodity Derivatives Market in India: Development, Regulation and Future Prospects

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## Abstract

Organized commodity derivatives in India started as early as 1875, barely about a decade after they started in Chicago. However, many feared that derivatives fuelled unnecessary speculation and were detrimental to the healthy functioning of the markets for the underlying commodities. As a result, after independence, commodity options trading and cash settlement of commodity futures were banned in 1952. A further blow came in 1960s when, following several years of severe draughts that forced many farmers to default on forward contracts (and even caused some suicides), forward trading was banned in many commodities considered primary or essential. Consequently, the commodities derivative markets dismantled and remained dormant for about four decades until the new millennium when the Government, in a complete change in policy, started actively encouraging the commodity derivatives market. Since 2002, the commodities futures market in India has experienced an unprecedented boom in terms of the number of modern exchanges, number of commodities allowed for derivatives trading as well as the value of futures trading in commodities, which might cross the \$ 1 Trillion mark in 2006. However, there are several impediments to be overcome and issues to be decided for sustainable development of the market. This paper attempts to answer questions such as: how did India pull it off in such a short time since 2002? Is this progress sustainable and what are the obstacles that need urgent attention if the market is to realize its full potential? Why are commodity derivatives important and what could other emerging economies learn from the Indian mistakes and experience?

**Key words:** Commodity derivatives, financial markets, India

**JEL classification:** G14, C23

## I. Introduction

The Indian economy is witnessing a mini revolution in commodity derivatives and risk management. Commodity options trading and cash settlement of commodity futures had been banned since 1952 and until 2002 commodity derivatives market was virtually non-existent, except some negligible activity on an OTC basis. Now in September 2005, the country has 3 national level electronic exchanges and 21 regional exchanges for trading commodity derivatives. As many as eighty (80) commodities have been allowed for derivatives trading. The value of trading has been booming and is likely to cross the \$ 1 Trillion mark in 2006 and, if all goes well, seems to be set to touch \$5 Trillion in a few years. This paper analyses questions such as: how did India pull it off in such a short time since 2002? Is this

progress sustainable and what are the obstacles that need urgent attention if the market is to realize its full potential? Why are commodity derivatives important and what could other emerging economies learn from the Indian mistakes and experience?

## **II. Chequered History**

The history of organized commodity derivatives in India goes back to the nineteenth century when the Cotton Trade Association started futures trading in 1875, barely about a decade after the commodity derivatives started in Chicago. Over time the derivatives market developed in several other commodities in India. Following cotton, derivatives trading started in oilseeds in Bombay (1900), raw jute and jute goods in Calcutta (1912), wheat in Hapur (1913) and in Bullion in Bombay (1920).

However, many feared that derivatives fuelled unnecessary speculation in essential commodities, and were detrimental to the healthy functioning of the markets for the underlying commodities, and hence to the farmers. With a view to restricting speculative activity in cotton market, the Government of Bombay prohibited options business in cotton in 1939. Later in 1943, forward trading was prohibited in oilseeds and some other commodities including food-grains, spices, vegetable oils, sugar and cloth.

After Independence, the Parliament passed Forward Contracts (Regulation) Act, 1952 which regulated forward contracts in commodities all over India. The Act applies to goods, which are defined as any movable property other than security, currency and actionable claims. The Act prohibited options trading in goods along with cash settlements of forward trades, rendering a crushing blow to the commodity derivatives market. Under the Act, only those associations/exchanges, which are granted recognition by the Government, are allowed to organize forward trading in regulated commodities. The Act envisages three-tier regulation: (i) The Exchange which organizes forward trading in commodities can regulate trading on a day-to-day basis; (ii) the Forward Markets Commission provides regulatory oversight under the powers delegated to it by the central Government, and (iii) the Central Government - Department of Consumer Affairs, Ministry of Consumer Affairs, Food and Public Distribution - is the ultimate regulatory authority.

The already shaken commodity derivatives market got a crushing blow when in 1960s, following several years of severe draughts that forced many farmers to default on forward contracts (and even caused some suicides), forward trading was banned in many commodities considered primary or essential. As a result, commodities derivative markets dismantled and went underground where to some extent they continued as OTC contracts at negligible volumes. Much later, in 1970s and 1980s the Government relaxed forward trading rules for some commodities, but the market could never regain the lost volumes.

## **III. Change in Government Policy**

After the Indian economy embarked upon the process of liberalization and globalisation in 1990, the Government set up a Committee in 1993 to examine the role of futures trading. The Committee (headed by Prof. K.N. Kabra) recommended allowing futures trading in 17 commodity groups. It also recommended strengthening of the Forward Markets Commission, and certain amendments to Forward Contracts (Regulation) Act 1952, particularly allowing options trading in goods and registration of brokers with Forward Markets Commission. The Government accepted most of these recommendations and futures trading was permitted in all recommended commodities.

Commodity futures trading in India remained in a state of hibernation for nearly four decades, mainly due to doubts about the benefits of derivatives. Finally a realization that derivatives do perform a role in risk management led the government to change its stance. The policy changes favouring commodity derivatives were also facilitated by the enhanced role assigned to free market forces under the new liberalization policy of the Government. Indeed, it was a timely decision too, since internationally the commodity cycle is on the upswing and the next decade is being touted as the decade of commodities.

#### IV. Why are Commodity Derivatives Required?

India is among the top-5 producers of most of the commodities, in addition to being a major consumer of bullion and energy products. Agriculture contributes about 22% to the GDP of the Indian economy. It employs around 57% of the labor force on a total of 163 million hectares of land. Agriculture sector is an important factor in achieving a GDP growth of 8-10%. All this indicates that India can be promoted as a major center for trading of commodity derivatives.

It is unfortunate that the policies of FMC during the most of 1950s to 1980s suppressed the very markets it was supposed to encourage and nurture to grow with times. It was a mistake other emerging economies of the world would want to avoid. However, it is not in India alone that derivatives were suspected of creating too much speculation that would be to the detriment of the healthy growth of the markets and the farmers. Such suspicions might normally arise due to a misunderstanding of the characteristics and role of derivative product.

It is important to understand why commodity derivatives are required and the role they can play in risk management. It is common knowledge that prices of commodities, metals, shares and currencies fluctuate over time. The possibility of adverse price changes in future creates risk for businesses. Derivatives are used to reduce or eliminate price risk arising from unforeseen price changes. A derivative is a financial contract whose price depends on, or is derived from, the price of another asset. Two important derivatives are futures and options.

- (i) **Commodity Futures Contracts:** A futures contract is an agreement for buying or selling a commodity for a predetermined delivery price at a specific future time. Futures are standardized contracts that are traded on organized futures exchanges that ensure performance of the contracts and thus remove the default risk. The commodity futures have existed since the Chicago Board of Trade (CBOT, [www.cbot.com](http://www.cbot.com)) was established in 1848 to bring farmers and merchants together. The major function of futures markets is to transfer price risk from hedgers to speculators. For example, suppose a farmer is expecting his crop of wheat to be ready in two months time, but is worried that the price of wheat may decline in this period. In order to minimize his risk, he can enter into a futures contract to sell his crop in two months' time at a price determined now. This way he is able to hedge his risk arising from a possible adverse change in the price of his commodity.
- (ii) **Commodity Options contracts:** Like futures, options are also financial instruments used for hedging and speculation. The commodity option holder has the right, but not the obligation, to buy (or sell) a specific quantity of a commodity at a specified price on or before a specified date. Option contracts involve two parties – the seller of the option writes the option in favour of the buyer (holder) who pays a certain premium to the seller as a price for the option. There are two types of commodity options: a 'call' option gives the holder a right to buy a commodity at an agreed price, while a 'put' option gives the holder a right to sell a commodity at an agreed price on or before a specified date (called expiry date).

The option holder will exercise the option only if it is beneficial to him; otherwise he will let the option lapse. For example, suppose a farmer buys a put option to sell 100 Quintals of wheat at a price of \$25 per quintal and pays a 'premium' of \$0.5 per quintal (or a total of \$50). If the price of wheat declines to say \$20 before expiry, the farmer will exercise his option and sell his wheat at the agreed price of \$25 per quintal. However, if the market price of wheat increases to say \$30 per quintal, it would be advantageous for the farmer to sell it directly in the open market at the spot price, rather than exercise his option to sell at \$25 per quintal.

Futures and options trading therefore helps in hedging the price risk and also provide investment opportunity to speculators who are willing to assume risk for a possible return. Further, futures trading and the ensuing discovery of price can help farmers in deciding which crops to grow. They can also help in building a competitive edge and enable businesses to smoothen their earnings because non-hedging of the risk would increase the volatility of their quarterly earnings. Thus futures and options markets perform important functions that can not be ignored in modern business environment. At the same time, it is true that too much speculative activity in essential commodities would destabilize the markets and therefore, these markets are normally regulated as per the laws of the country.

## **V. Modern Commodity Exchanges**

To make up for the loss of growth and development during the four decades of restrictive government policies, FMC and the Government encouraged setting up of the commodity exchanges using the most modern systems and practices in the world. Some of the main regulatory measures imposed by the FMC include daily mark to market system of margins, creation of trade guarantee fund, back-office computerization for the existing single commodity Exchanges, online trading for the new Exchanges, demutualization for the new Exchanges, and one-third representation of independent Directors on the Boards of existing Exchanges etc.

Responding positively to the favourable policy changes, several Nation-wide Multi-Commodity Exchanges (NMCE) have been set up since 2002, using modern practices such as electronic trading and clearing. Selected Information about the two most important commodity exchanges in India [Multi-Commodity Exchange of India Limited (MCX), and National Multi-Commodity & Derivatives Exchange of India Limited (NCDEX)] is given in Exhibit-1 and Exhibit-2.

**Exhibit-1: Multi-Commodity Exchange of India Limited (MCX)**

*MCX an independent and de-mutualised multi commodity exchange has permanent recognition from Government of India for facilitating online trading, clearing and settlement operations for commodity futures markets across the country. Key shareholders of MCX are Financial Technologies (India) Ltd., State Bank of India, NABARD, NSE, HDFC Bank, State Bank of Indore, State Bank of Hyderabad, State Bank of Saurashtra, SBI Life Insurance Co. Ltd., Union Bank of India, Bank Of India, Bank Of Baroda, Canara Bank, Corporation Bank.*

*Headquartered in Mumbai, MCX is led by an expert management team with deep domain knowledge of the commodity futures markets. Through the integration of dedicated resources, robust technology and scalable infrastructure, since inception MCX has recorded many first to its credit.*

*Inaugurated in November 2003 by Shri Mukesh Ambani, Chairman & Managing Director, Reliance Industries Ltd, MCX offers futures trading in the following commodity categories: Agri Commodities, Bullion, Metals- Ferrous & Non-ferrous, Pulses, Oils & Oilseeds, Energy, Plantations, Spices and other soft commodities.*

*MCX has built strategic alliances with some of the largest players in commodities eco-system, namely, Bombay Bullion Association, Bombay Metal Exchange, Solvent Extractors' Association of India, Pulses Importers Association, Shetkari Sanghatana, United Planters Association of India and India Pepper and Spice Trade Association.*

*Today MCX is offering spectacular growth opportunities and advantages to a large cross section of the participants including Producers / Processors, Traders, Corporate, Regional Trading Centers, Importers, Exporters, Cooperatives, Industry Associations, amongst others MCX being nation-wide commodity exchange, offering multiple commodities for trading with wide reach and penetration and robust infrastructure, is well placed to tap this vast potential.*

Source: <http://www.mcxindia.com>

**Exhibit-2: National Commodity & Derivatives Exchange Limited (NCDEX)**

*National Commodity & Derivatives Exchange Limited (NCDEX) is a professionally managed online multi commodity exchange promoted by ICICI Bank Limited (ICICI Bank), Life Insurance Corporation of India (LIC), National Bank for Agriculture and Rural Development (NABARD) and National Stock Exchange of India Limited (NSE). Punjab National Bank (PNB), CRISIL Limited (formerly the Credit Rating Information Services of India Limited), Indian Farmers Fertiliser Cooperative Limited (IFFCO) and Canara Bank by subscribing to the equity shares have joined the initial promoters as shareholders of the Exchange. NCDEX is the only commodity exchange in the country promoted by national level institutions. This unique parentage enables it to offer a bouquet of benefits, which are currently in short supply in the commodity markets. The institutional promoters of NCDEX are prominent players in their respective fields and bring with them institutional building experience, trust, nationwide reach, technology and risk management skills.*

*NCDEX is a public limited company incorporated on April 23, 2003 under the Companies Act, 1956. It obtained its Certificate for Commencement of Business on May 9, 2003. It has commenced its operations on December 15, 2003.*

*NCDEX is a nation-level, technology driven de-mutualized on-line commodity exchange with an independent Board of Directors and professionals not having any vested interest in commodity markets. It is committed to provide a world-class commodity exchange platform for market participants to trade in a wide spectrum of commodity derivatives driven by best global practices, professionalism and transparency.*

*NCDEX is regulated by Forward Market Commission in respect of futures trading in commodities. Besides, NCDEX is subjected to various laws of the land like the Companies Act, Stamp Act, Contracts Act, Forward Commission (Regulation) Act and various other legislations, which impinge on its working.*

*NCDEX is located in Mumbai and offers facilities to its members in more than 390 centres throughout India. The reach will gradually be expanded to more centres.*

*NCDEX currently facilitates trading of thirty six commodities - Cashew, Castor Seed, Chana, Chilli, Coffee, Cotton, Cotton Seed Oilcake, Crude Palm Oil, Expeller Mustard Oil, Gold, Guar gum, Guar Seeds, Gur, Jeera, Jute sacking bags, Mild Steel Ingot, Mulberry Green Cocoons, Pepper, Rapeseed - Mustard Seed, Raw Jute, RBD Palmolein, Refined Soy Oil, Rice, Rubber, Sesame Seeds, Silk, Silver, Soy Bean, Sugar, Tur, Turmeric, Urad (Black Matpe), Wheat, Yellow Peas, Yellow Red Maize & Yellow Soybean Meal. At subsequent phases trading in more commodities would be facilitated.*

Source: <http://www.ncdex.com>

## VI. Booming Business: US\$ 1 Trillion and Beyond

Since 2002 when the first national level commodity derivatives exchange started, the exchanges have conducted brisk business in commodities futures trading. In the last three years, there has been a great revival of the commodities futures trading in India, both in terms of the number of commodities allowed for futures trading as well as the value of trading. While in year 2000, futures trading was allowed in only 8 commodities, the number jumped to 80 commodities in June 2004. The value of trading in local currency saw a quantum jump from about INR 350 billion in 2001-02 to INR 1.3 Trillion in 2003-04. The data in Exhibit-3 indicates that the value of commodity derivatives in India could cross the US\$ 1 Trillion mark in 2006.

The market regulator Forward Markets Commission (FMC) disseminates fortnightly trading data for each of the 3 national & 21 regional exchanges that have been set up in recent years to carry on the futures trading in commodities in the country. Exhibit-3 presents comparative trading data for three fortnightly periods in March, June and September 2005 and brings up some interesting facts.

**Exhibit-3:** Commodity Futures Trading at National Multi-Commodity Exchanges In India: Comparative Data For Three Periods: Fortnightly Value of Turnover in USD Millions

Sr. No.	Name of the Exchange	16 Mar 05 to 31 Mar 05	16 Jun 05 to 30 Jun 05	16 Sep 05 to 30 Sep 05
1	Multi-Commodity Exchange of India Limited, Mumbai	\$m 3,503.69 (100)	\$m 4,974.76 (142)	\$m 11,042.25 (315)
2	National Multi-Commodity Exchange of India Limited, Ahmedabad	\$m 135.64 (100)	\$m 113.13 (83)	\$m 106.85 (79)
3	National Commodity & Derivatives Exchange Limited, Mumbai	\$m 5,360.45 (100)	\$m 7,950.49 (148)	\$m 10,694.29 (200)
4	Total of three exchanges	\$m 8,999.78 (100)	\$m 13038.38 (145)	\$m 21,843.39 (243)

Note: The original data in local currency Indian Rupee (INR) was obtained from the website of Forward Markets Commission ([www.fmc.gov.in](http://www.fmc.gov.in)). The INR figures were translated into USD using the monthly average exchange rates prevailing in the respective months, as obtained from [www.x-rates.com](http://www.x-rates.com). These exchange rates were: March 2005: INR 43.5861 per USD, June 2005: INR 43.5245 per USD, and Sept 2005: INR 43.8445 per USD.

A comparison of the trading data for the three two-weekly periods above shows that the market for commodity derivatives more than doubled over a six-month period between second half of March 2005 and the second half of September 2005. It also shows that the total commodity futures turnover for the three national level exchanges added up to \$21.84 billion for a fortnight in September 2005 or \$546 billion for a year (assuming 25 working fortnights a year). This rising trend gives a strong indication that, if the commodity futures market continues to expand at the present rate, it is likely to cross the \$ 1 Trillion mark in 2006 and possibly jump to \$4-6 Trillion in another 2-3 years.

## VII. Top 10 Commodities

Taking together the turnover in commodities futures seen at the above three multi-commodity exchanges during the two-week period 15-09-2005 to 30-09-2005, the following emerge as the top-10 commodities in terms of value of futures trading done.

Commodity	Turnover in \$ Millions*
Guar seed	4,432.71
Gold	4,082.15
Silver	3,869.36
Crude oil	3,380.13
Chana (chick peas)	2,100.15
Urad (Black Legume)	624.71
Soy oil	478.28
Gur (Jaggery: cane sugar)	369.72
Guar Gum	345.08
Tur (Lentils)	329.35

\* Note: The local currency values were translated into USD using the monthly average exchange rate INR43.8445 per USD prevailing in September 2005.

The above does indicate that the commodity derivatives market has a bright future in India. The volume and value of trade in commodity derivatives could in fact take a quantum jump as bullion, crude oil and other high value commodities being added with each passing day get more actively traded in the coming months. It is also being speculated by market operators that finally the commodity derivatives market would out-pace and overtake the market for stock derivatives.

### VIII. Unresolved Issues and Future Prospects

Even though the commodity derivatives market has made good progress in the last few years, the real issues facing the future of the market have not been resolved. Agreed, the number of commodities allowed for derivative trading have increased, the volume and the value of business has zoomed, but the objectives of setting up commodity derivative exchanges may not be achieved and the growth rates witnessed may not be sustainable unless these real issues are sorted out as soon as possible. Some of the main unresolved issues are discussed below.

- a. **Commodity Options:** Trading in commodity options contracts has been banned since 1952. The market for commodity derivatives cannot be called complete without the presence of this important derivative. Both futures and options are necessary for the healthy growth of the market. While futures contracts help a participant (say a farmer) to hedge against downside price movements, it does not allow him to reap the benefits of an increase in prices. No doubt there is an immediate need to bring about the necessary legal and regulatory changes to introduce commodity options trading in the country. The matter is said to be under the active consideration of the Government and the options trading may be introduced in the near future.
- b. **The Warehousing and Standardization:** For commodity derivatives market to work efficiently, it is necessary to have a sophisticated, cost-effective, reliable and convenient warehousing system in the country. The Habibullah (2003) task force admitted, "A sophisticated warehousing industry has yet to come about". Further, independent labs or quality testing centers should be set up in each region to certify the quality, grade and quantity of commodities so that they are appropriately standardized and there are no shocks waiting for the ultimate buyer who takes the physical delivery. Warehouses also need to be conveniently located. Central Warehousing Corporation of India (CWC: [www.fieo.com](http://www.fieo.com)) is operating 500 Warehouses across the country with a storage capacity of 10.4 million tonnes. This is obviously not adequate for a vast country. To resolve the problem, a Gramin Bhandaran Yojana (Rural Warehousing Plan) has been introduced to construct new and expand the existing rural godowns. Large scale privatization of state warehouses is also being examined.
- c. **Cash Versus Physical Settlement:** It is probably due to the inefficiencies in the present warehousing system that only about 1% to 5% of the total commodity derivatives trade in the country are settled in physical delivery. Therefore the warehousing problem obviously has to be handled on a war footing, as a good delivery system is the backbone of any commodity trade. A

- particularly difficult problem in cash settlement of commodity derivative contracts is that at present, under the Forward Contracts (Regulation) Act 1952, cash settlement of outstanding contracts at maturity is not allowed. In other words, all outstanding contracts at maturity should be settled in physical delivery. To avoid this, participants square off their positions before maturity. So, in practice, most contracts are settled in cash but before maturity. There is a need to modify the law to bring it closer to the widespread practice and save the participants from unnecessary hassles.
- d. **The Regulator:** As the market activity pick-up and the volumes rise, the market will definitely need a strong and independent regular, similar to the Securities and Exchange Board of India (SEBI) that regulates the securities markets. Unlike SEBI which is an independent body, the Forwards Markets Commission (FMC) is under the Department of Consumer Affairs (Ministry of Consumer Affairs, Food and Public Distribution) and depends on it for funds. It is imperative that the Government should grant more powers to the FMC to ensure an orderly development of the commodity markets. The SEBI and FMC also need to work closely with each other due to the inter-relationship between the two markets.
  - e. **Lack of Economy of Scale:** There are too many (3 national level and 21 regional) commodity exchanges. Though over 80 commodities are allowed for derivatives trading, in practice derivatives are popular for only a few commodities. Again, most of the trade takes place only on a few exchanges. All this splits volumes and makes some exchanges unviable. This problem can possibly be addressed by consolidating some exchanges. Also, the question of convergence of securities and commodities derivatives markets has been debated for a long time now. The Government of India has announced its intention to integrate the two markets. It is felt that convergence of these derivative markets would bring in economies of scale and scope without having to duplicate the efforts, thereby giving a boost to the growth of commodity derivatives market. It would also help in resolving some of the issues concerning regulation of the derivative markets. However, this would necessitate complete coordination among various regulating authorities such as Reserve Bank of India, Forward Markets commission, the Securities and Exchange Board of India, and the Department of Company affairs etc.
  - f. **Tax and Legal bottlenecks:** There are at present restrictions on the movement of certain goods from one state to another. These need to be removed so that a truly national market could develop for commodities and derivatives. Also, regulatory changes are required to bring about uniformity in octroi and sales taxes etc. VAT has been introduced in the country in 2005, but has not yet been uniformly implemented by all states.

## IX. Conclusion

India is one of the top producers of a large number of commodities, and also has a long history of trading in commodities and related derivatives. The commodities derivatives market has seen ups and downs, but seem to have finally arrived now. The market has made enormous progress in terms of technology, transparency and the trading activity. Interestingly, this has happened only after the Government protection was removed from a number of commodities, and market forces were allowed to play their role. This should act as a major lesson for the policy makers in developing countries, that pricing and price risk management should be left to the market forces rather than trying to achieve these through administered price mechanisms. The management of price risk is going to assume even greater importance in future with the promotion of free trade and removal of trade barriers in the world. All this augurs well for the commodity derivatives markets.

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