COMMODITY MARKET

LEARNING OUTCOMES

After going through the chapter student shall be able to understand:

- What are Commodity Markets
- Role of Commodity Markets
- Commodity Market in India
- Application of Derivative in Commodities
- Global Commodities Exchanges

1. INTRODUCTION

Like financial markets which deals with money and shares, the commodity markets deal with trading of ‘commodities’ like metals, raw material commodities like cotton, pulses etc. In fact the commodity market is the foremost form of market which was structured more of a barter of commodity exchanges – usually dissimilar products – which later on got one leg as money as time progressed. The contemporary commodity market is as sophisticated as its stock market counterpart, with the only distinction being commodities, instead of stocks, traded.

The commodity market is absolutely essential to understand how the prices get influenced by many of factors ranging from monsoon predictions to political decisions. The commodity market acts as the barometer of how the markets perceive these factors, which in turn will impact the demand-supply dynamics, thereby influencing the futures prices. This leads to a market driven price discovery mechanism.

For example, a farmer, will be very much interested to ‘lock in’ prices for his harvest of pulses next crop season due in 3 months. Hence, he would ‘sell’ an estimated quantity, say 100 kilograms (kg.) of his future produce at future rate of Rs. 80 per kg, thereby assuring himself of a fixed price.
A wholesaler into pulses will similarly like to have a committed purchase price, and would enter into the ‘buy’ leg at Rs. 80 per kg. Assume after 3 months, the contract closes out at 81 per kg. That means the farmer has lost Rs 1 per kg whereas the wholesaler has gained by Re 1 per kg. Of course, the contracts are settled in cash – rarely there is actual physical delivery of the commodities involved.

2. ROLE OF COMMODITY MARKETS

Since the ancient times people used to trade in primary commodities like cotton, spices, and livestock. The traders used to engage in futures with the time frame normally that of the harvest duration. Later with the advent of the Industrial Revolution, people started trading in base metals. In the 2000s, the matured economies of US and UK also started to have exchange traded commodities (ETCs) and exchange traded funds (ETFs).

The major role of the early commodity markets was to:

a) Act as a platform for enabling farm produce growers and the end buyers to interact.

b) Enabling intermediaries to engage in representing both the demand and the supply side of the commodity chain.

c) Price discovery.

Even today the above characteristics hold good in commodity exchanges. The added feature is of course, a regulated market that is transparent, and real time.

2.1 Influence of commodity markets on prices

Commodity markets influence prices at two levels:

a. Enabling as a platform for both demand and supply factors to determine the prices for a particular commodity or grade of a particular commodity.

b. Acting as an indicator for produce growers to take informed decision on which product to grow to reap better prices.

Essentially both the above objectives culminate to price discovery.

However, it’s very important that the information that is getting used to determine the price is real time, and transmitted across markets. In structured markets, the market prices are close to the ‘fair value’ prices.

2.2 Negative Impact of Speculation

The bane of the commodity market is speculation driven trades and short selling done to gain short-term profits. Precious metals like gold and diamond attract speculative investors given the hedge value of these assets. In some cases, there are also instances of black money and money
laundering that mires the true features of an efficient commodity market. A report released by World Bank in 2012 has laid the blame that ‘food prices globally soared by 10 percent’ squarely on the want on speculative trades executed in parts of the globe.

Speculation cannot be ended in any market, however they can be regulated and offenders treated with high penalties. The European Securities and Markets Authority (ESMA), based in Paris and formed in 2011, is an "EU-wide financial markets watchdog", which aims at orderly pricing and settlement conditions. The individual exchanges also have brought their own checking mechanisms like position limits, trade cutoffs, etc. to discourage pure arbitrage traders.

3. COMMODITY MARKET IN INDIA

3.1 Indian Commodity Markets

MCX (Multi Commodity Exchange of India Limited) and the NCDEX (National Commodity & Derivatives Exchange Limited) are the primary commodity trading platforms in India. MCX is a commodity futures exchange started in 2003, and is listed on the BSE. NCDEX is another exchange that is promoted jointly by LIC, NABARD, etc and has a robust online trading system.

The NCDEX has its own index called the ‘Dhaanya’- Dhaanya is a value weighted index, computed in real time using the prices of the 10 most liquid commodity futures traded on the NCDEX platform.

The below is a screen shot of the same –

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<th>Constituents</th>
<th>Expiry</th>
<th>LTP</th>
<th>Open</th>
<th>High</th>
<th>Low</th>
<th>Prev. Close</th>
<th>Change</th>
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<td>4388</td>
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<td>5700</td>
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<td>Soy Bean</td>
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<td>2845</td>
<td>2853</td>
<td>2840</td>
<td>2841</td>
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<td>1597</td>
<td>1591</td>
<td>0.57</td>
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3.2 Problems with the Indian Commodity Markets

The Indian markets have been plagued by the ‘speculator’ and ‘fly-by-night’ operators. The Chairman of the now defunct NSEL (National Spot Exchange Limited) had to be arrested for having entered into futures markets without adequate documentation – many commodities that were traded didn’t have any underlying to them. SEBI has passed tough strictures on fresh forward contracts in the commodity markets in Feb 2016, and it has derecognized OTCEI (Over-the-counter exchange of India).

Another big problem is that the commodity markets have not been able to see the ‘exponential’ growth that is required for platforms to sustain it. The basic problem is of ‘inclusion’ – farmers that form the backbone of agri-based commodities are not able to connect to the market, even though both MCX and NCDEX have created several awareness programs towards the same.

Political ramifications have also added to the woes – price sensitive commodities like sugar have been on and off the futures platform.

3.3 Way Forward

Needless to say, the commodity markets in India have a long way to go to becoming globally competent. There is a persisting need to close the chain between farmers to markets, which is even more challenging given that the hold of intermediaries is too strong in Indian scenario. An impetus from the government is also required in order to both educate and popularize the adoption of commodity markets in India.

3.4 Regulatory scenario in India

In India, the FMC was the chief regulator of commodity futures markets in India, before it got merged with SEBI. The government, considering it wise to bring the commodity market under a common regulator, repealed the Forward Contracts Regulation Act (FCRA) 1952 and the regulation of commodity derivatives market shifted to Securities and Exchange Board of India (SEBI) under Securities Contracts Regulation Act (SCRA) 1956 with effect from 28th September, 2015.

4. APPLICATION OF DERIVATIVE IN COMMODITIES

4.1 Commodity Markets

It should be noted that following are some of the differences between commodity and financial derivatives:

(i) **Storage Cost**: Commodities especially agricultural commodities are perishable in nature and they require storage. Due to this reason, the buyer has to bear the cost of storage and transportation charges. In case if location of goods is not in the same state then, the buyer also has to borne taxes, octroi etc. However, storage cost is not there in financial derivatives.
(ii) Complexity: Compared to Financial Market, there are low volumes of transactions and transparency in commodity market, and, thus, often relationship between future and spot get distorted. Further, delivery in financial market is comparatively less cumbersome.

(iii) Higher Cost: While in financial market, only cost in the form of interest cost and exchange rate loss are involved, while in commodity market a lot of costs are involved such as transportation, delivery, storage etc.

(iv) Physical Delivery: Since the quality of goods commodities even in two different batches cannot be same, the delivery of commodities becomes a challenging task. Stating otherwise, this is the most distinguishing feature of commodity derivatives.

4.2 Pre-requisites for Futures trading on a Commodity Exchange

For a future to be traded on a Commodity Exchange, following are the prerequisites:

(i) Durability - Commodity should be storable and durable.

(ii) Homogeneity - The commodity should be homogeneous in nature.

(iii) Free from Control - The trading in commodity should be free from any type of price or regulatory control.

(iv) Frequent Trading - The demand and supply should be large leading to daily fluctuation in prices. Practically, it has been seen that despite the fact that same commodities possess above characteristics it still required to be traded successfully.

4.3 Trading and Settlement Process

Broadly, commodity trading involves following three mechanisms:

(i) Order Matching Mechanism - Firstly, a trader places his/her order with any registered broker who in turn enter the same into online terminal. In case order matches with opposite order (one party buys and other party sells) the trade is said to be complete.

(ii) Trade Clearing Mechanism - For matched order clearing takes place through a Registered Clearing House. The function of these clearing houses is as follows: -

   (a) Follow up with parties

   (b) Timely Settlement

   (c) Delivery versus payment (DVP) of commodity traded.

   (d) In case of non-delivery settlement through fund transfer.

(iii) Processing of Delivery - The main issues to be considered in the delivery processes are as follows:

   (a) Availability of warehouse
Further delivery process involves following steps:

(i) Buyer request Depository Participant (DP) to deliver the commodity.
(ii) DP forward this requests to the Registrar and then to Transfer Agent.
(iii) Transfer Agent after verifying authenticity of request passes the details of delivery to the warehouse.
(iv) After thorough identification checking, a warehouse arranges the delivery of the concerned goods to the designated buyer.

4.4 SEBI’s Approval for Option in Commodities

Recently, SEBI allowed for the option trading in Commodity Future market. On expiry date, if option ends in Out The Money (OTM) position it will be squared off at loss (premium) and the holder of In The Money (ITM) position will have a choice either to square it off at profit or get converted into a Future Contract. Once it is converted into future contract it will be subject to margin requirement as other future contracts.

4.5 Critical Terms to be understood (A Revisit)

a) **Short position in a contract:** The party who agrees to deliver (sell) the contracted commodity.

b) **Long position in a contract:** The party who agrees to receive (purchase) the contracted commodity.

c) **Futures Contract:** The formal agreement where one party agrees to take a short position and another party assumes the long position on contracted commodity. The contract will specify the quantity and quality of the commodity, the specific price per unit, and the date and method of delivery. Please remember that a future is a derivative contract.

d) **Settlement:** The close out day of the futures contract. The positions get wound and the resulting profit / loss of either party gets settled in cash.

e) **Margin:** This is perhaps the most important term in commodity futures – the parties entering into a contract must furnish a margin equal to a % (usually 5 to 15 percent) of the contract value. Traders are required to keep margin monies usually based on the traded volumes.

f) **Open:** This is the opening price of the trade

g) **High:** The highest price in the trading session / day
4.6 The Role of Derivatives

(i) **Forward Contract:** This is the simplest of all contracts, which states that there would be an exchange of an agreed quantity of given commodity at a particular price (the forward price).

(ii) **Futures Contract:** These are standardized forward contracts that are done through an exchange, for a particular quantity of commodity at a particular future date and location, the price is left undetermined.

(iii) **ETCs:** Exchange traded commodities are the commodities that are contracted at based on ETFs. They track the performance of an underlying commodity index including total return indices based on a single commodity.

5. GLOBAL COMMODITIES EXCHANGES

5.1 London Metal Exchange (LME)

The iconic London Metal Exchange, popularly referred to as ‘LME,’ is the world’s largest futures exchange market established in 1877, when Great Britain was at the peak of its glory. With half the world under the British Empire, London had become the epicenter of commodity trades of all kinds. Shortly the industrial revolution further spurred the growth of markets for metals like copper, tin, and aluminum. The ‘three month contract’ which is now considered as the standard period for a future, was actually borne out of the time frame that took copper to be shipped from Chile to UK. The opening of Suez Canal in 1869 similarly reduced the time for shipment of tin to arrive from Malaya to 3 months, which gave rise to the ‘3 month contract’ now in vogue.

LME was acquired in 2012 by Hong Kong Exchanges & Clearing Limited and a new custom clearing house was designed and introduced to bring technology into the global metal trade platform.

Today, LME sets the standards for operating in the commodity metals market within the framework of corporate governance – LME has an operational committee for each of the metal traded, like an ‘aluminium’ committee for aluminum, a ‘molybdenum’ committee for molybdenum, and so on. LME also has an elaborate ‘Ring Disciplinary’ committee and an appeal mechanism for both traders and members in place.
The LME price discovery mechanism works in all the three ways –

a) **Open out-cry** – the trading floor on the LME that is also called as the ‘Ring’, where the prices are determined on the traditional out-cry (verbal) method,

b) **LME Select** – the electronic trading platform, and,

c) Inter-office telephone market system.

Thus, the LME is active for trading 24 hours a day. There is a common misconception that precious metals like gold are traded on the LME, but they aren’t. The LME specializes in ferrous and non-ferrous metals, whereas gold and silver are traded on the OTC managed by London Bullion Market.

**5.2 Eurex Exchange**

Eurex is the largest European futures and options market, established in Germany. One of the foremost exchanges to usher in electronic trading, its trading platform T7 is considered to be the best in the world. Eurex is constantly pushing itself to explore new areas and product classes, for example, they have introduced a factor index based futures that allow investors to trade six individual risk factors in futures format. The six factors are - size, value, carry, momentum, low risk and quality, and is a dynamic attempt to allocate to alternative sources of beta in an attempt to deliver equity-like returns with low correlation.

**5.3 Chicago Mercantile Exchange (CME) Group**

Chicago Mercantile Exchange & Chicago Board of Trade (CME) is the US based largest futures and options platform for trading. Established in 1898, CME offers the entire bouquet of trades based on ferrous, non-ferrous metals, precious metals, and even on weather and real-estate. The acquisition of New York Mercantile Exchange (NYMEX) by the CME group in 2007 catapulted it to the number one status in US. The platform also allows for agri-based commodity contracts like Class IV milk, Class III milk, Feeder Cattle etc. CME has developed ‘SPAN’ (‘Standard Portfolio Analysis of Risk’) which is standardized software to calculate margin requirements for futures, which has been adopted by many agencies as benchmark software across the globe.

Students are advised to supplement this chapter with the topic of Commodity Derivative from the Study Material of Strategic Financial Management Paper.
TEST YOUR KNOWLEDGE

Theoretical Questions
1. Explain how Commodity Derivatives are different from Financial Derivatives.
2. Which is standardized software to calculate margin requirements for futures developed by CME adopted by many agencies as benchmark software across the globe.

Practical Questions
1. A company is long on 10 MT of copper @ ₹ 474 per kg (spot) and intends to remain so for the ensuing quarter. The standard deviation of changes of its spot and future prices are 4% and 6% respectively, having correlation coefficient of 0.75.

What is its hedge ratio? What is the amount of the copper future it should short to achieve a perfect hedge?

Answers to Theoretical Questions
1. Please refer paragraph 4.1
2. Please refer paragraph 5.3

Answers to the Practical Questions
1. The optional hedge ratio to minimize the variance of Hedger's position is given by:

\[ H = \rho \frac{\sigma_S}{\sigma_F} \]

Where
\( \sigma_S = \) Standard deviation of \( \Delta S \)
\( \sigma_F = \) Standard deviation of \( \Delta F \)
\( \rho = \) coefficient of correlation between \( \Delta S \) and \( \Delta F \)
\( H = \) Hedge Ratio
\( \Delta S = \) change in Spot price.
\( \Delta F = \) change in Future price.

Accordingly

\[ H = 0.75 \times \frac{0.04}{0.06} = 0.5 \]

No. of contract to be short = 10 x 0.5 = 5
Amount = 5000 x ₹ 474 = ₹ 23,70,000