Commodity Derivatives and Risk Management
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Lecture 30
Commodity Derivatives Market: Value Proposition (Contd.)

Welcome to the 30th lecture on Commodity Derivatives and Risk Management. And today we are going to continue with what we discussed in the previous session, Commodity Derivatives Market and Value Proposition. So, what are the different value propositions commodity markets bring to the table that is going to be discussed in today's session. And please recall that in the previous session what we had discussed that commodity market's prime objective is to provide a platform for price risk hedging. And these exchanges are offering very innovative products in addition to the plain vanilla futures and option contracts. And they are doing so to attract various types of traders to their platform. And when various types of traders are coming to their platform and entering into different kinds of a derivative contracts this leads to a process of price discovery. And price discovery is the second most important requirement commodity exchanges fulfill. Now please note that for attracting traders, exchanges are also sharing many details on a daily basis such as trading volume, open interest, the future price, intraday movement of the future price, daily inventory detail. So, all these details, exchanges are shared through their common platform and this in turn is aiding the price discovery process. And these different types of hedgers, speculators and arbitragers are able to utilize this information to formulate their trading decisions. Now coming to the Indian context commodity exchanges in India is also bringing something very different very positive to the ecosystem. So, what are these benefits we will be discussing in the coming 3 to 4 minutes. So, in India commodity derivative exchanges have given impetus to a creation of the new warehouses. Please recall that in the earlier sessions with respect to commodity futures contract, we had discussed that every contract futures contract has a basis delivery center and exchanges also are informing or mentioning about the additional delivery centers. Please note that when somebody would be tracking the growth of a single commodity derivative contract, initially when a commodity derivative contract is introduced the contract specification normally has one delivery center which is the basis delivery center. Now once the time progresses as the contract becomes much more mature, more hedgers, traders and arbitragers start trading in that particular contract specification commodity exchanges also add many other deliveries center as additional delivery centers. And for every addition to the delivery center exchanges also empanel warehouses. As you can see from the right-hand side panel which I have taken from the multi commodity exchange for a commodity Mentha oil you can see there are different delivery centers and for each delivery center which is the warehouse, what location of the

warehouse, which is the owner of the warehouse, who is the contact persons detail and also the daily warehouse charges are also informed by the commodity exchanges. So, for every additional delivery center exchanges empanel different warehouses and please note that whenever a warehouse is getting empaneled as a exchanged approved warehouse that particular warehouse has to create a necessary quality assessment and certification infrastructure because if a hedger wants to give delivery or take delivery of the underlying asset those commodity have to abide by the exchange contract specification. So, unless and until a warehouse has those quality assessments capability that particular warehouse will not be able to accept the underlying good or deliver the underlying good. So, the process of empanelment of the exchange ensures that the warehouse has the necessary skill set or necessary capability to for quality assessment and certification. Now, one may ask this question why warehouses are an integral part of any commodity derivative exchange and the answer to this particular question lies with the spot and future price convergence on the contract maturity. Please note that the spot and future price convergence on a contract maturity is an important requirement for the success of the futures contract. A hedger will be able to mitigate the price risk only when the spot and future price converge on the contract maturity date and this convergence can happen only when the commodity buyers and sellers are required to or commodity long and short futures position holders are required to give delivery during the contract maturity period. As I mentioned before that spot future price converges smoothly when the future traders are required to take or give delivery. Now, one may also then pose a question should all future traders are required to give or take delivery or should futures market facilitate a significant amount of commodity delivery. Please note that delivering the underlying commodity is a very important and integral part of a commodity derivative ecosystem, but should all future traders are required to give and take delivery or should futures market success would be measured by the extent of commodities which are getting delivered through its platform. The answer to this question is no futures market is for mitigating the price risk. It is not supposed to function like a spot market where delivery is an integral part. Hedgers normally use the exchange platform only to mitigate the price risk and not for the delivery. Now, in this context some time ago had written a small article in which the link is available here and the QR code related to that particular article is here. In case you are interested to read more about this particular article you can either use this particular link or the QR code to have access to that link that why the success of a futures market should not be measured through the extent of underlying commodity which is getting delivered through the exchange platform. Now, coming back to our discussion, hedgers normally use exchange platforms only to mitigate the price risk and not for delivery. Let us take an example. Let us say a commodity buyer which is fearing a price increase, benefits from the futures market if the price really increases. The buyer is fearing the price increase enters into a long futures contract and if his or her fear really materializes, and price really increases this particular commodity buyer benefits from the

futures position. Now, the question is should the buyer buy the physical commodity as part of the futures contract? The answer is no, why? The buyer's quality and quantity delivery location, delivery date choice will be significantly different from the exchange trader contract specification. And the buyer may also find it very difficult to take delivery from the exchanged approved warehouses. Please note that let us take an example of a case let us say cotton. Cotton delivery centers are let us say at Rajkot and let us say a farmer who is operating at let us say Andhra Pradesh and wants to mitigate the price risk using your multi commodity exchange platform. And if commodity delivery would be a mandatory requirement, thus particular farmer cotton farmer may sigh away from entering into the derivative contract because carrying the cotton from the Andhra Pradesh farm gate, its own farm gate to the Rajkot could be a very logistically challenging proposition for the farmer. Farmer may be preferring to sell the cotton at the local market and going to the exchange platform for mitigating the price risk only. Since exchange delivery is not a measure of success for the futures market, exchanges do facilitate the delivery of the commodity if long or short futures holder desires. If a trader is wanting to take delivery or give delivery, exchanges do facilitate that, but it is not a mandatory requirement, or the success of a commodity derivative exchange should not be measure through the extent of commodity which is getting delivered in its platform. In fact, all over the world only 2 to 3 percent of the total futures trading volume result in actual delivery. Now, another thing which is not discussed quite often that is commodity exchanges make the commodity derivative product a public good. So, what do we mean by that we will be discussing a little later. Let us understand this panel which I have taken again from the multi commodity exchange. As you can see the right-hand panel shows the snapshot of commodities delivered at the MCX approved warehouses for the month of 2023. Please note that this is just a snapshot. This is not the full list of commodities which are getting delivered to the MCX approved warehouses for the month of May 2023. Now, exchanges not only inform the price, the trading volume, the spot price, the intraday price movement, the open interest exchanges also inform this kind of an information that which exchange approved warehouses on which date to what extent underlying commodity have been delivered. So, such transparent information dissemination process makes the commodity derivative products a public good. Now what do we mean by public good? So, public goods are a commodity or a service that is available to all members of society for their benefit. And a public good is non rival in nature and non-excludable in nature. Let me repeat, a public good is a non-rival in nature or a non-excludable in nature. So, what do you mean by a non-rivalry? So, a commodity service is a rival in nature if the availability of the same reduces for one member if another member consumes the same. So, for example, water in a river is a rival good and commodity. Please note that if in the upstream some company or some sort of people start diverting huge amounts of water the same water will not be available to the people of the downstream. So, water is an example of a rival good or a rival commodity. Water in a

river is an example of a rival good or a rival commodity. So, a public good has to be non-rival. Now, coming back to what do we mean by a non-excludable commodity or service is excludable if it is possible to prevent individuals from consuming it. For example, streetlights are an example of a non-excludable good. So, if the streets have lights on then anyone travelling on a that road will enjoy that benefit. So, in the context of commodity derivative exchange when commodity derivative exchanges are informing the future price, trading volume, open interest, intraday price movement, how much of commodities getting delivered at different exchange up to warehouses, what are the pulled spot prices all this information they are sharing to the world at large by doing so, they are making this information a public good which are non-rival in nature and non-excludable in nature. So, anybody who has access to internet they will be able to get this information or be private to this particular information and will be able to use this information to make an informed choice and accordingly buy or sell the underlying commodity or enter into a futures contract. Now, in addition to making commodity future prices and other related information public good commodity exchanges also facilitate competition. So, what do you mean by commodity exchanges facilitating competition? Now let us this particular aspect is very clearly highlighted by a research study which was conducted in the year 2018 and it was conducted by Mr. Martin of Bocconi University, Milan and what he did an empirical analysis. In this paper, he analyzed the impact of introduction of futures contract for hot rolled coils in the year 2008 and busheling scrap (BUS) futures contract in the year 2012 by NYMEX USA. So, in 2008 and 2012, NYMEX US introduced these two futures contracts and as usual the NYMEX US started informing about the future price, volume traded and all other related information in its a platform to the world at large. And when this information was made public something very nice happened. So, what benefit does that accrued to the underlying commodity market have? Please note that the physical commodity buyers started using the futures price as a reference price and started negotiating with the steel producers. Earlier buyers did not have any clue about the price underlying commodity prices. The moment for futures prices were informed corresponding spot prices were also informed collated and informed by the commodity exchanges. Now the commodity buyers all of a sudden have started receiving certain important information which earlier they did not have access to it. Now when they had access to this information, they started becoming difficult bargainers and started negotiating better deals for themselves. In this process what happens steel industry became more competitive with the reduction in price dispersion amongst steel producers. So, the price what steel producers were offering to different clients started reducing and also another interesting dimension is that that not only the price offered by steel producers to different clients reduced also the average level of prices charged by the steel producers declined. So, this particular diagram explains this concept let us say before the introduction of this particular derivative contract when the buyers did not have any access to the underlying commodity price

information average price was about 20 rupees and let and different commodity producers were charging different very high price and very low price to buyers depending upon the buyer's negotiation power. If the buyer had more negotiation power, they were paying probably a price which is much lesser than the 20 and the buyers who had a less bargaining power they were paying a very high price, and the price dispersion was from A to B. Now, with the introduction of this commodity derivative contract please note that the average price reduced is again just a hypothetical example I have taken to explain this concept. So, the average price reduced from 20 rupees to 12 rupees and also the price dispersion reduced from A to B to it became narrow from A prime to B prime. Of course, buyer who has a better negotiating power will always be getting a price which is lesser than a buyer who does not have a that much of a negotiation power, but the price difference between both set of buyers decreased significantly when these futures contracts were introduced. So, another very important benefit of commodity derivatives market which is not normally discussed is that this introduction of derivative contract facilitates competition in the underlying commodity market. And again, another benefit of commodity derivative exchange is that commodity exchanges facilitate a country to become a price setter. Now please note that the commodity exchanges disseminate prices very regularly over a period of time commodity exchanges disseminate prices regularly and over a period of time that the same price starts getting traction or visibility. Lot of media houses starts reporting, lot of hedgers, lot of commodity analyst that is referring to those prices. So, the continuous dissemination of the prices starts giving visibility to that particular price and over a period of time that price becomes a benchmark price and that commodity exchanges start setting the price for that particular commodity. Now for example, the crude palm oil futures contract traded at BMD Malaysia that is the commodity derivative exchange of or derivative exchange of Malaysia which is known as Bursa Malaysia derivative. So, BMD Malaysia has become the de facto benchmark for the crude palm oil all over the world. Please note that this crude palm oil futures contract was initiated probably started about 40-45 years ago by the BMD and that particular contract has got so much of traction now that all over the world, any commodity buyer seller of the crude palm oil, any buyer or seller of the crude palm oil, any trader of the crude palm oil refers to the price of arrived at the BMD Malaysia. In this contract it is very important to understand that even though Malaysia is setting the price or BMD futures trading at the BMD has contributing towards Malaysia being the price setter for the crude palm oil, but Indonesia is the largest producer of the palm oil, but Malaysia has become the price setter. Please see the production statistics of crude palm oil, this particular detail which I have taken from a website which is www. indexmundi.com. This particular website as per the latest available figure Malaysia probably produces about 40-45 percent of the Indonesia total crude palm oil, but Malaysia is the price setter for the crude palm oil globally and not Indonesia. In this context I would like to share a very interesting article, this detail of this particular article are available in this particular web

link mentioned here. This article titled BMD on defensive note highlights the price discovery and price setting role of the BMD. So, this particular article I am just given quote out unquote from a paragraph from this particular article. So, this paragraph mentions that BMD's global benchmark CPO futures contract achieved a record-breaking trading volume of 16.2 million contracts which is equivalent to 400 million tons surpassing its performance in 2021 of 390 million tons. This is more than 5 times the global production. So, as you can see the BMD Malaysia is attracting significant amount of trading volume in the crude palm oil futures contract and by doing so, it is able to set the price for or it has become the CPO futures price has become the global benchmark price for the crude palm oil traded anywhere in the world. In this context it is also interesting to note that the Indonesia is planning to have its own CPO benchmark price they are supposed to have their benchmark price by June 2023. So, let us wait at to see that whether and how Indonesia will be able to set its own benchmark price. In this context it is very important to also know that India is a major producer, consumer, exporter, importer in many commodities such as rice, wheat, sugar and cotton, but India is yet to become a price setter for any commodity. In fact, many conferences, many public discourse, many discussions lot of discussion happens that why India has not been able to be a price setter for any of the agri commodity though India is the largest producer or consumer of ah largest producer of many Agri commodities and India is also largest consumer of the gold, but India still remains a price taker and India has not been able to set the price for any of the commodities. What is the benefit associated with being a price setter? And the benefit is that the country's government or industry association policy sets the price. So, when a country becomes the price setter, the country's government or industry association policy has a strong influence on the price which is going to prevail and obviously, the country is going to do so, to their advantage. In this context I would also see that only setting of commodity exchange will not propel a country to become a price setter. There are many other aspects such as allowing foreign participants to trade with the currency convertibility. A country should also be an integral part of the commodity value chain and robust quality assessment infrastructure. So, these are also some other key parameters. If a country wants to be the price setter, it must be attracting ah any ah you know value chain partner operating anywhere in the world to be able to come to its exchange platform to mitigate the price risk and enter into different kind of a derivative contracts. They will be able to deliver or buy the underlying, sell the underlying. So, a lot of freedom is required in both the spot market activity as well as the futures market activity and also to do that a robust quality assessment infrastructure for that particular underlying commodity should also be available in that country. Hence, a liquid futures market which provides a price risk hedging opportunity to global commodity value chain partners will go a long way for a country to become a price setter. Now, these are many of the benefits which we have discussed with respect to the commodity exchanges value proposition. Now, can there be any negative side to

commodity derivatives trading? The answer is yes. Commodity derivative trading can contribute towards significant volatility in the commodity spot price. There are many examples where commodity market derivative or excess speculation in derivative market has significantly affected the spot price, but today I will only be analyzing or discussing about one commodity in Indian context. Please note that during October 2011 to March 2022, guar seed and guar gum futures prices rose significantly at ah NCDEX platform. Please note that the guar seed price rose from 4200 rupees a quintal to it increased up to 32,000 and guar gum price increased to 900 percent from 11000 per a per 100 kg or quintal to 98000 rupees over that same period. And this significant runaway price in the futures market had the underlying spot price also increased significantly. And there is also a significant amount of volatility prices were also fluctuating very significantly. And this led to a significant repercussion the commodity market regulator banned the commodity derivative trading for guar seed and guar gum for some period of time. And also, in a bigger scheme of things it is it has to be understood that excessive speculation can kill a market completely. So, in this context I would want to share some facts. Please note that the India was the largest exporter of guar gum which is used in shale oil extraction and India was exporting around 90 percent of the global requirement. And this period was coinciding with the shale oil boom and for extracting cell oil guar gum is used for you know for pumping shale oil from the earth surface. And the speculation in the futures market spilled over to the spot market and spot market price also increased significantly. And initially the foreign importers, mostly shale oil extracting companies from USA were buying ah buying ah cell oil buying guar gum at a higher price. And this runaway price gave temporary benefit to the Indian farmers they were paying a very they were paying receiving a very high price for their guar gum for selling guar gum. And of course, speculator made a significant amount of killing in the futures market as you can see that if the price increase from 11000 to 98000 you can somebody who has taken a long future position you can see the extent of benefit somebody will be entry benefiting over a for a contract having a 100 kg. So, spot producers of the guar gum benefited because price increase speculators made a significant amount of profit from the futures market. But what resulted is something very significant to note here that this high price for the search of an alternative in the global market. So, the importers from USA started searching for the alternative to guar gum because guar gum was becoming so prohibitively expensive, they started reaching out to other commodity started exploring whether other commodities will have which can be used to ah replace the guar gum. This is one side of the negative side also many other countries started producing guar seed and guar gum when this particular news item that India's ah is producing and exporting 90 percent of the guar gum and the guar gum is prices have gone up so highly so much high ah in a high amount. Many other countries also started producing guar seed and guar gum and India's advantage of producing this guar gum got reduced significantly. So, this is the image of the guar beans from this guar bean, guar seed is extracted from the guar seed,

guar gum is extracted. So, with this we will come to an end to this particular session which deals with the positive and negatives of commodity derivative trading. In my view there are significant amount of positive from the commodity derivatives trading than the negative side. Yes, excessive speculation can have a significant impact on the underlying commodity underlying commodity spot market. Of course, regulators all over the world have taken very very stringent and strict measures to keep the speculation under control such that the ah the commodity derivative markets are used by hedgers to mitigate the risk. With this we will come to an end on today's session, and we will be discussing various risk mitigation strategies related to agricultural commodity derivatives in the next session. So, thank you all of you. I eagerly look forward to interacting with all of you in the next session.