Commodity Derivatives and Risk Management

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Week-03
Lecture 11
Hedgers Vs. Speculators

Welcome to lecture 11 on Commodity Derivatives and Risk Management. And today we are going to discuss at length what is the difference between hedgers and speculators. And this understanding is very fundamental and very important to commodity derivatives and risk management as a subject. Now, let us go to first understand who a hedger is? In the previous couple of sessions, we have discussed about turmeric farmer many a times and the turmeric farmer is a farmer which is producing turmeric and fearing that price is going to go down by the time the farmer harvest the turmeric. So, in this case turmeric farmer is a hedger.

So, who is a hedger? A hedger is a party who has exposure to the underlying commodity. And they could be commodity producer, could be commodity consumers, value chain partners, processors or refiners. And it is very important to understand that hedgers will always have a present in the underlying spot market or the cash market. And hedgers mitigate price risk through derivative contracts.

And this particular table shows who hedgers are and what kind of exposure to the underlying asset or commodity they have and how do they hedge using the derivative contracts. Commodity producers will always be long on the asset they will be producing or owning the asset and they will mitigate the risk by taking a short forward or a futures contract. Similarly, traders, stockholders, wholesalers, processors, refiners can either be net long or net short on an underlying commodity or underlying asset. Now, how a trader will be net long? Let us say a trader has already bought the underlying commodity, but yet to find out counter party to whom it will sell the commodity. So, it is fearing the price decline.

If in future price goes down, the trader will end up selling the underlying commodity at a much cheaper rate. So, in this case the trader is net long on the underlying asset and would mitigate the risk by taking short forward or a futures position. Similarly, this trader, stockholder, wholesaler, processor, refiners' etcetera can be net short. So, when they will be net short suppose let us say the trader has already committed to selling the underlying at a fixed price to somebody, but it is yet to buy the underlying asset or the underlying commodity. So, it is net short on the underlying and fears that price is going to go up and it will be able to mitigate that risk by entering into a long futures contract or

a long forward contract. Similarly, bulk consumers, consumers will always be short on the underlying commodity, and they will be entering into a long forward contract or a long futures contract. So, hedgers will always have an exposure to the underlying asset, and they will be fearing that price will be moving in a direction which will be detrimental to their financial well-being or financial wealth. Now, let us now let us understand who a speculator is? Please note that the speculators are those traders who trade with the sole objective of making profit from trading. Based on their expectation regarding the future price movement, they will buy or sell the commodity derivative contracts.

They have nothing to do with the underlying commodity in any manner. They are not producers, they are not consumers, they are not traders, wholesalers, or any value chain partner. And please note that unlike hedgers who are risk averse, who would like to mitigate the risks, speculators are risk takers. They take risks and they try to get benefit by taking the risk. We will take a numerical example to understand what we mean by risk-averse nature and risk-taking nature. And who are the speculators? It could be individual traders, it could be proprietary trading firms, it could be mutual funds, it could be hedging funds, it could be banks etcetera. And the link which I have given here of Chicago Mercantile Exchange CME group shows very clearly. This video shows or explains the concept of speculator in a in a beautiful manner. You may go through; you may spend some time understanding different aspects of speculators. And also, another very important aspect of speculators is that they never deliver the underlying or take delivery of the underlying asset through the futures contract. So, that means they square up the contract before the contract enters the tender period. So, this is also a very important ah you know understanding with respect to the speculator. In this context, I would like to share anecdotal evidence of how a speculator ah took a delivery of ah underlying ah contract and which situation led to this which situation led to this ah case. This particular slide which ah details which I have taken from a textbook called option futures and other derivatives (tenth edition). The author is Hull and Basu, and this is as part of the business snapshot 2.1. More detail is given in the textbook, but I have summarized what is given in this particular case. And the title of the case is unanticipated delivery of the futures contract. Now, how does the anecdote go like this? An employee of a financial institution was managing the portfolio of a client. The client had one long position in cattle futures, cattle the underlying is live cattle. And the client gave instructions to square up the contract.

So, the client had taken long position in cattle futures. Now, to square up the contract by mistake the employee instead of taking one short futures contract took one long futures contract. So, by the contract expiry the employee had two long futures on the ah for the client. And as usual the CME delivered cattle at an exchange approved ranch which was 2000 miles up to away from the financial institution. And the financial institution had to send the same employee to the ranch to look after the cattle.

Please note that the cattle need to be auctioned off at a later point in time because you know the financial institutions have no need for the underlying asset which in this case is the cattle. So, after about a week the cattle were auctioned off in the local market and the financial institution recovered whatever ah it could get from the auction proceed. And in entering the employee ensured that these cattle were fed and paid the rent for the ranch. So, this shows, this anecdote clearly indicates that speculators will never give delivery or never take delivery of any underlying commodity. Now, let us go to understand how speculators are risk takers.

Again, I would like ah you to recollect the discussion which we had in the previous session. Please recollect that the turmeric farmer was long on asset, it fears the price decline, takes short futures position at a price of 7484 rupees per quintile. And irrespective of what happens to the turmeric price during the contract start period to the contract maturity period the turmeric farmer will receive 7480 rupees per quintile on contract expiry. Now let us say the counter party to Mr. T is Mr. X and he is the counter party to counter party could be anybody let us say it could we assume that it could be an MBA student from VGSOM IIT Kharagpur. So, as part of this speculative activity what the student would do is that that student would take long futures position and why he would take the long futures position because he is expecting the futures price to go up.

And as you can see from this particular table, but the first table if the actual future price goes down by the contract maturity 6758, Mr. X who is the speculator will pay 726 rupees. Please recall this table is from the short futures that is the turmeric ah farmers point of view, and we know whatever the benefit of turmeric farmer will be the loss of the counter party in this case Mr. X. So, during this period, if Mr. T gains 726 rupees, means Mr. X will be incurring loss of 726 rupees. And in the vice versa if the price increases as expected by Mr. X, Mr. X will be benefiting 516 rupees the negative 516 is from the Mr. T point of view and it will be positive 516 from Mr. X point of view. So, we can see from this two table that Mr. T is benefit could be 560 rupees quintile to the loss could range to 726 rupees a quintile.

So, this goes on to prove that speculators are risk takers though they can gain a significant amount of money or they can lose a significant amount of money. But the turmeric farmer will deliver the turmeric and will be assured of getting 7484 and there is no risk for it. But while the speculator will have a substantial amount of risk because its return could be significant positive to significant negative. Now, the next question is do we need speculators in a derivative market? Hedgers are the prime constituent or prime members futures market exist for providing a risk mitigation platform to the hedgers, but do we need speculators the answer is yes. Hedging needs of the two hedgers will be very difficult to match one hedger two hedgers cannot be counter party to each other.

Now, why this would happen let us again go back to our turmeric farmer. Let us say a turmeric farmer is fearing a price decline, it wants to take short futures for October you know for August 2023 delivery it wants to deliver let us say 5 metric ton turmeric of some specific quality at Nizamabad warehouse. So, that means, if another hedger wants to take long futures position who is a going to be counter party to Mr. T that party has to have a completely contrasting view point in terms of a movement of the price that particular you know maybe a bulk consumer of turmeric must have a need for 5 metric ton of turmeric must is willing to take delivery from the Nizamabad warehouse of the same quality as the farmer is going to provide. So, very rarely this matching of interest between two hedgers happens.

So, that is why normally in the majority of cases you will have a hedger trading position will be counter party to a hedger trading position will be taken by a speculator. And there could be a situation where speculator presence is must for hedgers. So, when is that situation let us take two examples. Let us say the commodity price has fallen significantly let us take the situation of covid when we saw that commodity prices were going down significantly and at that point in time maybe large number of consumers want to take long futures position. And then they want to do it because the price has bottomed out, they know everybody in fact knows that prices cannot go down more if at all prices can go up in future.

So, what this consumer wants to do is to take a long futures position to lock in the lesser price. And in that case, there may not be any hedger who is willing to take a counter party position. So, in that moment if somebody is taking a counter party position that party has to be a speculator. Similarly, the other situation let us say commodity price has increased significantly, like for now you know at this point in time in the month of May 2023, the gold price has gone up significantly and most of us are anticipating that the gold price may not go higher. So, at this point in time maybe many gold producing companies would like to enter into a short futures position to lock in higher prices because they fear that in future the price may start falling.

So, if they enter into a short futures position today, they will be able to get a better price. And who is going to take a long futures position when everybody in the world probably is expecting that gold price is going to go down. That means, there are some set of people some set of traders who are having a contrasting viewpoint, and they are thinking that gold price is going to go up and these are the people who will be taking a counterparty position to the gold mining companies. So, these are the two situations when you have an absolute net short hedge position or net long hedge interest in the market. The presence of speculator is mandatory for the trade to happen.

Also, another interesting aspect or another important aspect of speculators is that speculators provide much-needed liquidity to the hedgers. Speculators enter into the

market, exit the market and then you know they do a lot of trading activity and through this trading activity they provide liquidity to the hedgers. However, excess presence of speculators can have a negative impact on the underlying spot market. So, what do regulators and exchanges do to curve the excess presence of speculators? They set an open interest limit. Now, let us discuss in Indian context what is the rule prescribed by SEBI with respect to the open interest limit for different kind of a trader.

So, as per the SEBI regulation, the open interest limit is based on the average deliverable supply for an underlying commodity. And how the average deliverable supply is calculated? This is the last 5-year rolling average of the production of that particular commodity plus the import of that commodity. And SEBI is or as a market regulator or exchanges are also very careful about that there should not be excess speculation in the Agri commodity market. So, if there is excess speculation and prices go very high up, consumers will be paying a very high price to buy food commodity. Similarly, if you know because of speculation price goes down farmers are going to you know incur significant amount of loss.

So, that is the precise reason why SEBI categorizes agricultural commodity into broad narrow and sensitive. Sensitive commodities are those commodities which are prone to frequent governmental or external interventions such as stock limits and import export restrictions. In fact, all those commodities which are part of the essential commodities act of government of India falls within the sensitive commodities. Broad commodities are those commodities which are not sensitive commodities, but the average deliverable supply for that commodity over the last 5 years is at least 10 lakh metric tons in quantitative terms. So, if average deliverable supply is more than 10 lakh metric ton and it is not part of the sensitive commodity it will be part of the broad commodity.

And any commodity which is neither sensitive nor broad is going to be a narrow commodity. And this particular you know table which I have taken from the SEBI guideline, the link to the SEBI guideline is also mentioned on the in the heading of this particular slide. And as you can see the SEBI has mentioned that if the category of the commodity Agri commodity is broad then the position limit for a client label means an individual trader label, it is going to be 1 per cent of the deliverable supply. Similarly, for narrow and sensitive commodity that deliverable supply percentage of deliverable supply as an open interest limit has been prescribed by the SEBI. This particular table as you can see again, I have taken from the open interest limit as prescribed by NCDEX.

As you can see in the left column, there are 4 Agri commodities, turmeric is one such commodity the average deliverable supply is mentioned, the category of the commodity whether they are broad narrow or sensitive is mentioned. And please note that this is the client limit and the member limit and the overall exchange wide open interest limit in metric tons has been mentioned by the exchange. So, exchanges have to inform this open

interest limit to the SEBI on a periodic basis. And as you recall that initially I think on the say lecture 4th or 5th lecture we were discussing about contract specification related to the turmeric. And we did mention different kinds of an open interest limit or position limit and this particular second table is a snapshot taken from there.

And as you can see the near month limit and near month limit for member wise client wise and exchange wide limit all this information is also mentioned in the contract specification. So, the first table shows what the exchange informs the market regulators SEBI in this case and the same information gets incorporated into the contract specification which is available to all traders to abide by. Now, why setting of this open interest limit is so important? This relates to the manipulation of a futures market by some traders. So, if an open interest limit is not adhered to, then somebody can manipulate the futures market and manipulation of the futures market has a strong repercussion on the spot market. Please note that the derivative market derives its value from the spot market and spot and derivative markets are very very closely intertwined or integrated.

So, if there is an excess amount of open interest is available to a given trader that particular trader or client can corner the market. And what do we mean by cornering the market? Cornering means gaining content control over the supply of commodity thereby creating an artificial shortage leading to an increase in price and profit. So, the person who is cornering the market artificially controls the supply of that commodity and it leads to increase in prices and that particular party makes that particular party benefits from the cornering of the market. And to corner the market the corner must own a large fraction of the available commodity and create basically creates a monopoly market. It is very important to understand that by default this market is not a monopoly market, but the corner can corner takes undertake certain activities and makes it a monopoly market.

And how does a corner do that? The corner buys both physical commodity as well as takes the long futures contract to buy the underlying at a later date. Let me repeat to corner the market the party has to buy the physical commodity, if the party has lot of money, he or she can buy the physical commodity and store it. Otherwise even without having a significant amount of money if the corner has less amount of money to pay the open interest or in paying the initial margin and the daily mark-to-market margin the corner will be able to take the long futures position. In this context it is very important to understand how the silver futures market silver market was cornered by two hunt brothers. It is set up in the USA context and the set-up is during 1970.

There are lots of YouTube material and there are lots of websites discussing silver price manipulation by hunt brothers. And due to the paucity of time I will just you know discuss a very essential aspect of the cornering of the market and how setting a

reasonable open interest limit reduces the chance of somebody to corner the physical market. So, during the 1970s, Hunt brothers two brothers their name was Nelson Hunt and William Hunt felt that investing in real assets is better option than holding paper money due to the inflation. And their father Mr. Harrelson Hunt was an oil tycoon and was considered to be one of the richest men in the US during 1960s and 70s.

Because both brothers felt that they should not be in keeping bank money or paper money and they should invest in a real asset they zeroed upon the silver. Normally people invest in gold, but both the brothers felt that gold is an asset gold as a commodity is the price is highly controlled by the central banks. So, they did not feel like investing in gold they started investing in silver. And started buying and holding physical silver and simultaneously they also started taking long futures with the aim of taking delivery of silver. It was not a speculative kind of a trade in the sense they were not wanting to square of the position they were wanting to take the physical delivery of the silver.

It is believed by 1979, the Hunt brothers owned one-third of the world's total supply of silver. And when only one party is having so much of silver and that silver is not going to the market. So, the price of the silver spot price of the silver started increasing and correspondingly the future price also started increasing. And please note that during 1979 beginning of 1979 to end of 79 the silver price increased from 6 dollar per ounce to 48.

70 dollar per ounce. And not only the price increase there was also a major supply crunch of silver. And the supply crunch was so severe that one of the famous jewelry houses of USA Tiffany and Co. They brought out a newspaper advertisement in New York Times as you can see this right side block during on Wednesday, March 26, 1980, Tiffany and Co. went to the brought out the advertisement, without mentioning the Hunt brother they you know this advertisement shows the how the you know there is a significant amount of supply crunch as well as you know very silver prices have gone up significantly high. And not only Hunt brothers were holding a lot of physical positions by 1979, Hunt brother had 69 per cent of the all-long futures position of the entire COMEX silver futures.

And CFTC feared that the short futures holder whoever is the counterparty to the you know Hunt brothers, they will default because they will not be able to deliver the silver because there is no silver in the market. Now CFTC as a regulator also knows that the exchange has to fulfill the obligation as part of the novation, we discussed the concept of novation also earlier. Now CFTC also knew that COMEX as a exchange may not be able to fulfill the massive obligation. So, what CFTC did that it announced that the position limit for individual traders and also stopped any new contracts to be created with this silver futures prices fell and so also the spot prices. And in this context silver Thursday,

which was March 2017, 1980, is a very important date the price of silver futures dropped 50 percent in a single day from 21.62 dollar per ounce to 10.80 dollar per ounce. And as you know when the price goes down the long futures position holder has to give a mark-to-market margin. And the Hunt brothers failed to meet several margin calls and then subsequently they filed for bankruptcy, but as a outcome of this particular you know this particular chain of event all commodity exchanges all over the world now set the open interest limit for the client wide as a member wise as well as an overall exchange wide. And they do so, so that the speculation will be under control again as I said speculators are required for market speculation is not a dirty word is not a bad word. We need speculators for derivative markets to function, but excess speculation is bad for the market and how exchanges or regulators can minimize the impact of excess speculation. They will be able to do so by setting an open interest limit. With this, we will end today's session and to in the next session we will be discussing few majors of speculation is there any quantitative majors associated with to major or quantify the extent of speculation in a market. With this we will I will come to the end of this session, and I look forward to interacting with all of you in the next session. Thank you all of you.