Commodity Derivatives and Risk Management

Prof. Prabina Rajib
Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur

Week-07
Lecture 32

Agricultural Commodity Price Risk Management (Contd.)

Welcome to the 32nd lecture on Commodity Derivatives and Price Risk Management. And today we will be continuing with our discussion related to Agricultural Commodity Price Risk Management which we have discussed or which we have started in the previous session. And as part of this agricultural commodity price risk management in the previous session we have discussed about the role of minimum support price in mitigating price risk faced by the Indian farmer and based on the CACP that is Commission of Agricultural Cost and Prices, Government of India announces minimum support price for certain Agri commodities which are part of the Essential Commodities Act. And CSCP considers four of these factors which are mentioned here, and once Government of India announces the MSP these four organizations which are Food Corporation of India, Cotton Corporation of India, Jute Corporation of India and Nafed stand guaranteed to buy the underlying Agri commodity.

So, if a farmer does not get a better price realization from anywhere else this particular farmer will be able to bring the underlying commodity to the respective sourcing organization or buying organization and this organization will be buying the commodity from the farmer at the preannounced minimum support price. And let us see how Government of India goes about announcing the minimum support price. So, this is a typical table which I have taken from the Government of India website detailed link is given here and as you can see this particular table shows a snapshot of few of the Agri commodities part of the MSP and this wheat in the year 2022-23 the MSP was 2015 rupees for 2023-24 wheat MSP is 2125 rupees a quintile. And please note that CACP has calculated the cost of production for wheat which is coming to 1065 rupees.

So, what factors takes in what factors the CACP takes into consideration this is listed here as you can see these are the 8 points which commission of or CACP takes into consideration for calculation of this cost of production. So, this 8 points I have verbatim taken from this particular website. So, this 8 points consist of the cost of input cost as well as very interestingly it also takes into consideration imputed value of family labor. See for other cost there is very direct explicitly cost available if a particular the farmer is being employed to produce wheat what is the cost of the labor, the cost associated with bullock cart and machine hour and different kind of other explicit cost is goes into the calculation of cost of production. In addition, the people who are family people who are actually involved in the in producing the underlying commodity, but do not get any direct payment or do not receive any direct payment that cost is also imputed into the calculation to arrive at the cost of production.

So, for wheat the CACP has calculated the cost of production to be 1065 rupees and as you can see the MSP is 2125 rupees, that is exactly 100 percent. So, if the farmer is on average the farmer is spending about 1065 rupees for producing 1 quintal of wheat the MSP is pegged at a 100 percent of it and this also shows the increase in MSP in an absolute term. So, that is 110 rupees as compared to the previous year, previous year it was offered at 2015 rupees and this year it should it is at 2125. In addition to these points also CACP keeps in mind a concept called an inter-crop parity. So, what exactly is this inter-crop parity? Inter-crop parity maintains a price ratio parity relation among Agri commodities. So, let us take an example to understand what do you mean by inter-crop parity relationship. So, let us say as you can see 2022-23, 2023-24 the wheat MSP and barley MSP is given. This is the actual data which I have taken from this website and what is the barley to wheat ratio? The barley to wheat ratio is 0.811. So, for every 1 rupee of wheat the barley price is 81 rupees. In the next year the barley to wheat ratio is also almost similar range which is 0.816. So, when we compare these 2 numbers one can say that yes inter-crop parity price relationship has been maintained by the government of India. Let us say we take another hypothetical situation. Let us say government of India is announcing this particular price or has announced this particular price for wheat and barley and next year it is offering different MSP. Of course, these are your hypothetical figures, this is just what I have taken just to show how the inter-crop parity relationship changes. Please note that the price has increased compared to previous year both wheat price has increased, and barley price has increased, but when we are finding out barley to wheat ratio it is 0.81 in 2022-23, but it has increased to 0.85 in the year 2023. In that case we can say that the inter-crop parity has changed and government of India many a times tweaks this particular inter-crop parity relationship to encourage farmers to go ahead and start farming a specific commodity. In fact, recently government of India has been very very active in offering a better price to farmers for producing more millets as well as edible oil related Agri commodities like mustard seeds, sesame seeds and other sunflower seeds etcetera. So, if government of India would be interested that farmers would produce some kind of a Agri commodity more than the other commodity government will be changing this particular price relationship so as to encourage farmers for start farming a specific Agri commodity. Of course, the government does not do a significant amount of change because if government increases the price of Agri commodity significantly as compared to the other commodity maybe the farmers will stop producing the other commodity altogether. So, it is a fine balance maintained by the government of India when a government of India formulates the minimum support price. Now, coming to can this minimum support price have a downside. Of course, a minimum support price has many downsides. So, one of the you know important aspect is related to you know huge stocks, poor quality of assessment infrastructure, poor quality assessment infrastructure, distorted production etcetera are some of the downsides of the MSP. But before going into these details it is also important to understand that the government of India only offers the minimum support price for few Agri commodities. Hence farmers who are producing commodities which are not part of the minimum support price do not have any price risk mitigation opportunity. So, they cannot get the benefit of the MSP. Now coming back to the MSPs negative side, one of the very striking negative sides of the MSP in India has been the huge stocks. Please note that as government of India stands guaranteed to buy the underlying commodity as part of the MSP, this open-ended procurement has led to significant stockpiling of commodities specifically for rice and wheat which is much beyond than the government requirement for the buffer stock and also for the requirement of the government for public distribution system. So, this open-ended procurement policy means that the government stands guaranteed to buy the underlying commodity if a farmer decides to do so. In that process the government has acquired, or government has bought a significant amount of wheat and rice and for which the government does not know what to do. In addition to that the godown storage facility has not commensurately gone up with the procurement quantity. And I am sure all of you those who have any interest related to Food Corporation of India or any public procurement policy related aspect must have paid or must have listened or known about how food grains rot in Food Corporation of India godowns because there is not enough covered space to store this huge amount of food grain which gets sourced or which gets bought by the Food Corporation of India. In fact, as per RTI query in 2020, in the last 6 years over 40000 tons of food grains have been damaged in FCI godowns. So, the downside of minimum support price has been a huge wastage of the food grain. Now in addition to that the MSP also has because of the MSP India's quality assessment infrastructure Agri commodity quality assessment infrastructure has not developed significantly. Again, due to the open-ended procurement policy, procurement agency do not do any kind of a quality assessment. They do some kind of a quality assessment, but it is not that a stringent quality assessment. So, thus the quality assessment grading packing infrastructure did not develop in India the way it should have developed. In fact, even though India is the largest producer of wheat, but very little export happens because Indian wheat is perceived to be a poor quality. In fact, Food Corporation of India buys significant amount of wheat and Food Corporation of India is not able to export the wheat to other countries because Indian wheat is considered as a poor quality of the wheat. And of course, we have not been as a country we have not been able to export wheat much because of government policy of limiting or banning wheat export that is one of the factor or one of the reason, but in addition to the you know limiting or banning the export of wheat government of India has not been able to export the wheat because Indian wheat is considered to be a poor quality. And another very important negative aspect of minimum support price is the distorted production, like farmers are increasingly focusing on producing commodities which are part of the MSP. So, only produce Agri commodities which are part of the MSP, farmer will produce those bring those commodities to the you know government of India procurement agencies for procurement agency which we just discussed and deliver those commodities to this procurement agency and collect the money and and the farmers are doing so, because they do not have any other alternative mechanism to sell their farm produce at a price which is better than the minimum support price. As we were discussing about the minimum support price where the government of India stands guaranteed let us try to understand what the other avenues are where Indian farmers will be able to sell the underlying goods or what do you mean by the spot market agricultural spot market in India. In this context it is very important to understand that government of India brought in a model agricultural produce market committee or APMC act in the year 1963 which was subsequently revised in 2003 which governs the way farmer could sell their produce in the spot market. So, one way of selling the product is contract farming provided there is a contract farming arrangement another way of selling the underlying good is going to be the selling to government of India as part of the MSP. So, if a commodity is not part of a MSP or not part of a contract farming arrangement then the farmers will be going to an APMC or a Mandi to sell the underlying commodity in a spot market. So, the APMC act 1963 was enacted with the sole objective that the farmers must get a fair price for their produce and not be exploited. So, that was the reason why government of India brought in a APMC act. Please note that the word model here this model is government of India has given this particular act and considering the fact that the agriculture is under the state jurisdiction the state various state governments are free to change some of the parameters of this APMC act and enact the same act in their state. And under this APMC act all state governments designate specific market acts or Mandis as a marketplace where farmers can sell their produce. So, a farmer will not be able to sell the underlying goods to anybody else unless the specific market ad or Mandis. And this state government here marks specific geographical location to a specific Mandi. So, all farmers belonging to that location will be selling their produce a Agri produce in that designated APMC or designated Mandi. And licenses are given to traders to operate as a buyer in that market and these Mandis regularly conduct auctions to arrive at the best price for the farmer and farmers do not have to do the distress sale. So, this is the objective for which APMC act came in state governments different state governments changed or tweaked the parameter of the APMCs and created many APMCs or Mandis. And the Mandis are supposed to be a location where a fair auction should have been conducted to arrive at the best price for the farmers and farmers do not have to do a distress sale. And each of these Mandi appoints an auctioneer which is known as a Dami or Neelamkarta and the market committee levies and collects market freeze from every buyer which is about 1 to 2 percent of the total purchase price. So, whenever a farmer is going and you know wanting to sell the underlying commodity at APMC the Dami or Neelamkarta is supposed to do a thorough and fair auction and so as to arrive a better price for the farmer and whoever is the buyer who is buying from the buying at the APMCs is supposed to pay some 1 or 2 percent of the total purchase price which will be considered as a market price market fee for conducting the business at the APMCs. And here it is very important to also understand or note APMC act did not permit any bulk buyer to directly buy from the farmers unless of course, it is part of the contract farming agreement. So, unless a particular bulk buyer has entered into a contract farming agreement that particular buyer will not be able to buy directly from the farmer they have to buy from the farmer, but only through the APMC they have to, or their commission agents will be going to the APMC market to buy the underlying goods from the farmers. And though APMCs were initiated with the very objective of providing a remunerative price through auction mechanism, traders or the buyers at APMCs started forming cartels and push down the price at which they would buy the Agri products. Also, APMC did not invest in poor a proper quality assessment infrastructure and the auctioneer with hand in globe with the buyer the auctioneer mostly lowers the Agri commodity quality so, that the traders benefit at the cost of the farmers. In fact, to summarize what most of the APMCs undertook in India is that the APMC structure exploited the farmer most. APMC was supposed to provide a platform where farmers are supposed to get a better price, but APMC structure exploited the farmer the most. Also, there is a counter side to the APMCs, in 2005 Bihar government scrapped the APMC act and after the scrapping of the APMC act the farmers bargaining power even deteriorated significantly. And in this particular article which shows very very clearly what is the downside of removing or removal of the APMC act in Bihar. In one hand we are saying that APMC structure exploited the farmer in another hand even the cancellation of the APMCs in Bihar led to significant amount of stress for the farmers in Bihar. So, again it is a very very interesting article titled how Bihar peasantry was pushed to the brink after the APMCs were scrapped. So, again I would urge each of you to go through this particular article to understand more how APMC scrapping of APMC led to even a greater price risk for farmers in Bihar. To summarize whatever policy formulation have been done till date have failed Indian farmer with APMC or without APMC farmers were exploited massively. And as we have discussed in the previous session the agrarian stress receiving very low price for farm produce have led to us many farmers committing suicide almost every year it is a very very regular though very sad state of affair, but it is a very regular affair happens in Indian context. Now, in this context it is very important to understand a new initiative which is done by the government of India which is known as your E national agricultural market. So, APMCs as a spot market has not been able to provide much of a benefit to farmers in terms of better price realization realizing that some changes have to be made with respect to the way farmers sell their Agri commodity. This E national agricultural market is basically a pan India electronic trading portal, and this particular portal connects the existing APMCs and Mandis on various states to create a unified national market for various commodities. So, as of 2022, 1000 Mandis and 1.72 crore farmers have registered on the e NAM platform and about 1.82 lakh crore rupees worth of agri commodities have been transacted through the e NAM platform. So, how exactly does the eNAM work? Because a particular APMC belong belonging to any part of India that particular APMC will be creating the necessary IT infrastructure to be part of the e NAM portal. Once that particular APMC becomes part of the eNAM portal the farmers will be able to access the portal and farmers belonging to any other state will be able sorry traders belonging to any other state will be able to be part of the auction process. Let us say without this e NAM portal a farmer let us say from Maharashtra if the farmer is selling some agri commodity the buyer will be the local traders who will be physically present to be part of the auction process. But if the APMC gets unbounded into the enam portal the auction will not be done through a physical auction it will be done on a you know online auction and as part of this particular auction process not only the traders from the Maharashtra region or the local region they will be able to participate any trader belonging to any part of India will be able to be part of the auction process. And through that the farmers will have access to a wider buyer base and leading to a better price realization. And please note that this enam portal does not replace APMCs, the existing local traders will also be able to participate in the bidding process. In addition, any trader belonging to any part of India will be able to also be part of this particular auction process. And when a buyer when a seller will be having access to more buyers of course, as a seller the farmer will be getting a better price realization. And this APMCs continue to get the market free irrespective of who buys the agri produce. Please note that APMCs total revenue of the APMCs the APMC structure is managed through the market fee which the buyers pay. So, in this case also the buyers will continue to pay whatever they were supposed to pay. And any Agri product which is being auctioned from a specific APMC that particular APMC is going to receive the market free. And farmers and traders can trade using a specialized mobile app which has been developed for this particular purpose. In fact, in my view this a national agricultural market portal is bringing significant change to the way farmers are trading. Again, this is also a snapshot of the table which I have taken on 7th June 2023. This shows different kinds of commodities traded in different states. So, you have let us say Maharashtra there is APMCs at Aatpadi, what is the underlying pomegranate and how many kgs on that day 34460 kgs of pomegranate was you know arrived at that particular Mandi. And 19940 kgs could be sold at a price ranging from a minimum price of 14 rupees and a maximum price of 105 rupees. So, in my view this initiative is at least providing a significant amount of benefit to the farmers. So, as the farmers are able to reach out to a wider buyer base and able to realize a better price. Of course, only 1000 Mandis have been onboarded into the Inam platform. I believe as the time progresses more Mandis will be coming in onboard, and India will be able to Indian farmers will be able to get a better price realization spot price realization from this particular market. With this we end our discussion related to the spot price. What do you mean by a spot price with respect to Agri commodities in India? As part of the derivative price risk management national commodity derivative exchange has been in the forefront in offering a wide variety of Agri commodity derivative products. Though we have another equally well-known important commodity exchange multi commodity exchange, the number of agri commodity offered at MCX is little lesser as compared to the form multi commodity exchange. As you can see NCDEX offers derivative futures and option contracts on a wide array of Agri commodity products and MCX also offers derivative contracts on some Agri products which are your crude palm oil cotton rubber and Mentha oil. And also I would like to draw your attention to the ADTV that is your average daily traded value at NCDEX. It is very important to note that the average daily traded value or NCDEX has significantly gone down over the last 8-9 years not because a farmers or traders are not coming to the exchange platform for entering into derivative contract. But government of India has been banning many agri commodity derivatives specifically commodity derivatives which are part of the essential commodities act. This particular table which shows which shows the different commodities which have been suspended for trading commodity derivatives which have been suspended from trading at various pointing time. And in this context, I would like to draw your attention to the latest round of derivative trading ban by government of India which was done in 2021. As you can see at a single day single office order the government of India banned about banned derivative trading in 10 agri commodities ranging from Channa, wheat, paddy, mustard seed, soybean, soy oil, soy meal etcetera. And in addition to this ban by the government of India CB also as a market regulator also has banned few other commodities which is guar seed, guar gum, castor seed, Mentha oil which is mostly due to the you know excessive speculation. As I have mentioned government of India banned 10 agri commodity derivatives in work at one go in December 2021. And the logic though government of India or rather the CB order did not mention that why these 10 commodity derivatives are being banned at one go it is believed that government of India was fearing that derivative trading is contributing to significant price rise. With this we will come to end of today’s discussion and in today’s session we discussed about the pros and cons of you know MSP. We also discussed the pros and cons related to the APMC act of government of India which is related to the spot trading of Agri commodities. We also discussed the E-national agriculture market which is an online portal which is connecting the physical APMC market. And through this E-NAM portal farmers are able to reach out to a wider buyer base and realize a better price. And we also discussed or primarily we have started discussing briefly about the role of commodity derivative exchanges specifically the NCDEX with respect to price risk mitigation opportunity provided by NCDEX to Indian farmers as NCDEX provides Agri commodity derivative for many Agri products. We will be discussing different Agri commodity derivative aspects in the subsequent session. Again, I eagerly look forward to interacting with all of you in the next session. So, thank you all of you.