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Basic Ag Marketing Lunch & Learn - Session 2: Using the futures market to manage price risk

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Well. Good evening. I have, 7:00 straight up, so we're going to get started tonight. Hope you're all keeping warm. It's been a cold few days. We, we're, I think 27 below. About this time last night at our place. So I know the Cavs were pretty cold this morning. We're not going to have to feed them, so hopefully, it looks like a warmer weather is on its way.

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And I know that, I'm going to be looking forward to that. So again, hopefully you're keeping warm tonight. I've got the recording going and we're just going to go ahead and get started. And I want to start off with a little bit of, recap of last week. I hope you had an opportunity to take a look at the material that I sent to you Friday.

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As I mentioned, our first evening, every week I'm going to send you a summary from Brock Associates and Cattle Facts. Just a couple of the probably hundreds of different market, information and analysis services out there that a person could, take a look at, also provided you with a copy of the wash report. I had thought I had included the link to that report in your, basis charting, handout, but got to look at it, and I didn't, so I wanted to send that on to you.

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But typically, when I teach this class, in February, the markets are pretty benign. I mean, they just, basically, trade sideways there. Just not much excitement out there. Very little shakes the markets this time of the year. Typically we spend more time talking on, basis differences. And, there have been times that I've taught this class starting in mid January, and we've seen some real interesting things happen in bases, especially feeder cattle bases, in January.

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In years past where we've actually had, very strong local basis. We've had situations where we've been as high as, 50 to \$0.75 over, the feeder nearby feeder cattle futures. So that's been something we could talk about. But, this is the first year I can remember having, this much movement in the futures market. So let's talk a little bit about what happened.

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So, the February was just released at 10 a.m.. Our time on, last Thursday, the ninth, excuse me, last Tuesday the ninth. And so, basically, it estimated corn exports at 2.6 billion bushels. And that came in significantly lower than the trade had estimated. The trade was expecting the USDA to say, well, we're going to up that, corn exports to 2.7 billion bushels or more, and that would be for the old crop.

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And so by doing that, they only reduced carryover stocks by 50 million bushels. And so that leaves us a start to use ratio of, above 10%. So that immediately caused some issues with, the old crop grain market, because, it just basically said, hey, we've got more corn out there than we thought we had. And so what happened is, if you looked at March 21, corn, which is the New York by corn market, if you looked at that market on Monday, Tuesday, it was trading at 563.

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It actually went limit down our close to limit down. The very next day after this, watching report was, announced. And then it kind of slowly built back, but, Friday it was still down considerably. It was trading and closed at 539. So what happened to the nearby feeder cattle? Market? Well, on 12 eight it was trading at one 3745.

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That's where it closed. And then, at, November 12th, that Friday hit had gained considerably. It was up to 140, 85. And that would make some sense. Obviously feed is by far and away the largest, expense item, single expense item in the livestock feeding budget. So if you are, a cattle feeder, and the price of corn goes down, then you can afford to pay more for feeder cattle.

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Going into the loss, you're willing to bid those up. And that's basically what we saw happen with, that feeder cattle market. So some pretty big changes in a, in a short period of time. Well, in addition to affecting old crop, it also had ramifications on new crop. Before I get to that, let's just look at a couple of charts.

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Here's that March corn futures. You can see that, we've got February 8th right in here. And then February 9th and the thing is just dropped off. So we can see the effect of that report on our nearby March corn. And that would reflect what we call old crop corn. Corn. It's currently in the band to be marketed.

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If we take a look at feeders we see the effect of feeder cattle. Again, this market is going up. The cost of corn goes down. I could pay a little bit more for feeder cattle to make sure I keep that lot for.

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So we take a look at new crop, what happened there. And so we've got to think about the effect of this news. This was the report we've reduced, what we thought the or the USDA did what they thought would be the, corn exports by reducing that, they and then, kept the carry over and above 10%.

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And so that carryover from old Crop's new crop obviously affects the supply of the new crop. And so if we look at December 21st corn and we're going to talk a lot about December corn in the corn market. This is the December contract is what we call the bellwether contract. And we mentioned that because as we'll see tonight when we're using futures to, take out some of the price risk in corn, because across the country, most of the corn is harvested kind of in that October November timeframe.

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We tend to use December. Corn is the month that we will hedge against, a corn market. If we look at feeder cattle, a lot of people will sell, weaned calves in October. And so they may use that feeder cattle contract, as we'll see later tonight is a way to do some price risk. They're, they're, they're caps.

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And so again, we saw December corn, at trading and closing at 458 on February 8th. And then by the end of the week after the washi report came out on Tuesday night, it had dropped to 449. Feeder cattle were trading at one 5295 on Monday, and they were trading at 154. 0.40 on Friday. So again, if we roll over that carry over from one crop year to the next, it increases the supply of corn, more supply available.

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Prices come down. If I'm looking to feed cattle, I can bid those feeder cattle up a little bit because I don't have to pay as much for corn. We can take a look at both of those, looking at charts that again, we can

see how those, December corn futures just pretty much tailed off. After the announcement of that report on the, the ninth.

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And if we looked at feeder cattle, we can see that it kind of went the other direction. So last week was a great learning experience. Great opportunity to see markets make some fairly substantial moves in a pretty short period of time. And as I mentioned, that typically doesn't happen this time of the year. Markets are usually pretty benign.

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They trade sideways. Again, not a lot of excitement in the markets, in a typical year. So again, this was kind of fun to look at. Any questions or thoughts about, what we just talked about. Anything that, you've read in any of those reports, or even the washi that you might have either questions or comments about?

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Okay. Again, if you have questions, zap them in the chat there or feel free to unmute your mic and, and ask away any questions from last week. Now that you've had a time, to maybe think about that again, if you recall from last week, we we became familiar with cash markets. We looked at several online bids, and learned how to read those.

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We spent quite a bit of time talking about bases. We learned how to track local bases, primarily using the, geo grain tool. A good tool to track local bases. But we also learned how to predict bases, not only using geo grain, but also, the k state, bases tracker, as a way, then that we can predict what bases is going to be in the future.

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Then we looked at a for contract, how those typically look. And then we evaluated that for contract. And we went through if we were contemplating, signing a for contract, what be some of the things we would look look at. We'd certainly start with cost of production. Is the market for that for contract offering a surprise?

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It's above our cost of production. Hopefully we always have those opportunities. Some years we do, some years we don't. It's pretty important that obviously we're trying to market at a price above cost to production. We also talked about basis. Is the basis embedded in that for contract. How does it compare with what we think historically bases will be at delivery time as specified by that contract.

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And as you recall from our example, looking back at historical bases for that particular cash market, we would expect bases to be about \$0.30 under at time of delivery. This particular contract, we looked at, basis was \$0.10 under. And so, from a basis standpoint that for contract appeared to be attractive. We also talked about what's our general market outlook.

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Do we have a feel that the market's going to continue to, go up. And so, we may have an opportunity for a contract at a better price. We think markets are going down and there's some urgency to lock something in. Now and then we talked about the effect of a marketing plan. Maybe we have established a trigger point, a price point.

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And when we have the opportunity to, to lock in that price according to our marketing plan, we're going to do that. And so those are some things that we talked about as far as remember how we would go about evaluating a for contract. So again, questions from last week or comments that you might have about what we covered at that point.

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Okay. Let's go ahead and continue to move forward. Do you need to talk about a correction? And, I've got to think I looked up my notes here. I had a, what have you, seven a, text message about this. And at first I, responded and gave everyone the the incorrect message or information. But I want to, give a shout out to Justin Warren.

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So Josh and brought this to my attention. Feeder cattle are, not a contracts that I follow and trade very closely. And so, I was, giving you some information that was false. It was off the, the feeder cattle, had been, settled before. But Justin is exactly right. That feeder cattle contract now is, based on, 700 to 899 pound, medium large frame number one and number one and two feeder steers.

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The nice thing about that is we'll see in a minute. It makes it a little easier to calculate the local price, because we don't have that, that wide, weight spread. And we don't have to factor heifers in. So it just makes this a little bit easier to, to come up with. And so if, if we look at the example we had last week using that, market report from, Loma Livestock, and we plug in those numbers again based on how that contract works from that report, we had an average price of \$133 100 weight for the 7 to 750 weight, one 3125 750 to 800, one 2925 for 808

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50. And that particular week at that market, they did not have enough, cattle 850 to, you know, 900 to give us, much of a report. So if we were to average those figures, we came up with that average price for those, steers at that particular market of one 3133. And so to correct our chart, then, if we look at that spot cash price of one 3133, the nearby futures, for the 1st of February close at one 3793.

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So that gives us a basis of 660, which is a, a much tighter basis again than we had the last time we calculated, because we are using those heavier weight animals. And again, when we take the heifer out of the mix. So continuing this, basis tracking, I went ahead and tracked the wheat and corn markets.

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On 211, a week after this, two four market and, we can see that we had, our futures prices for both wheat and corn did decline, significantly. Interestingly enough, in both of those markets, the basis remained the same. There was no basis change. And so our spot cash price then obviously would go down, with a reduction in that, futures contract price.

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I did look for the, feeder cattle prices at Loma. They actually advertised a sale on February 8th. But, as of this afternoon, when I went to their website, they had not yet posted any market results, so I wasn't able to, post that. So again, if you're doing some basis tracking, encourage you to do so, you know, at minimum, if you're tracking a market, track it on a weekly basis, try to look up the market information on the same day of the week, if you can.

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And, obviously, we as we talked before, typically the grains are a little easier to track because they typically give, usually, in addition to their spot cash price, they'll quote the futures price. And then in many cases they'll calculate, the they'll calculate that that difference your basis for you. So I guess also has a good question here is cattle base is a little backward.

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Because the only way to find a base is I've already completed sales. I don't know that. I would say it is. It's backward. I mean, we could actually if if you miss, a day sell for a, corner a grain, you could go back and find, the whole issue with the basis tracking, regardless, is the commodity is to be able to have a feel for what basis does on a seasonal from a seasonal standpoint, and then also for you to have an awareness of what basis is currently doing.

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Because, as I mentioned before, there are times when if we're so, focused on the futures market, which most people are and that's, you know, that's what you hear when you listen to a market report on the radio or on television or whatever, or you catch it on your phone as you hear the futures price, you typically don't hear basis because basis, is dependent about those local markets.

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So you may hear if you've got a good source of information, you might hear, selected number of local cash markets occasionally. But then you've got to do the, the math to figure the difference. So basis in cattle is a little different in that it's just more difficult to find. And typically we're not selling cash cattle every day of every business day of the year.

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We're on the grains. We are. So I think those are the big differences. A great question, garrison. Did that answer the question? Do you have any follow up questions to that? I guess what I was really getting at was, you know, at an elevator, you can see what the basis is, whereas at a, at a sale, you have to have a sale to get a basis.

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Unknown

Yeah, that's that's a good point. And in reality, you know, it's kind of the difference between an online bid and, you know, you get an online bid from an elevator because they want to buy your grain. Typically when we look at most cash markets for, cattle, for example, or livestock, that's an auction market. So we have to wait after the fact to get that report.

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And those bids are coming from individuals, not from that auction barn. That's that's, you know, facilitating the sale of the cattle. So that's I think that's one of the big differences. And my basis is a little bit more difficult to come about with cattle. But you make a good point. It's really the difference between, the fact that the grain elevators are constantly wanting to purchase grain and constantly offering prices where and when we sell cattle at a a sell barn or a public auction, the process is just a different process.

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Other questions or thoughts about basis? Obviously that's that's something good for you to consider. I mean, we're going to get into the woods with basis tonight big time. When we look at, futures trading.

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Okay. We'll go through these five common mistakes again. I again, I think this is something it's really valuable. I personally use it. It's kind of

the mindset I'm having when I'm thinking about marketing, you know, what can I do to avoid these mistakes. And so just to reiterate those, you know, we talked about not knowing your cost of production is an issue.

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We talked a little bit about that last week. What briefly talked about it this week. We will have an opportunity later on to really get into how you do this and how you do this. Well, tonight what we want to talk about is mistake number two reluctance to pre harvest price commodities. And I hope that after the first few minutes of the session tonight, I can convince you that there's really good reasons for you to think about this.

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That that it should be something that you do on a very regular basis because as you'll see, it makes some real important, market sense. We talked about local basis last week. And again, we're going to apply it this week so we don't escape it. Failure to have a pricing strategy that's going to really come in, about the fourth week and then the fifth through the eighth week.

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We're really going to concentrate on, putting together our marketing plan. And that marketing plan is all about pricing strategy and pricing triggers. So we'll spend quite a bit of time on developing a pricing strategy. And then again, we'll talk briefly on the grain side, this idea of holding on price, grain and storage too long. Storage is a very valuable tool in marketing.

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You can use it, to your advantage in most years. And so it's it's a big part of, of marketing grain, but, we can't have some issues if we hold that short grain too long. And again, as I said, is the person that I attribute these to. So I want to try to convince you in the next couple of slides why pre harvest pricing commodities is important.

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Let's start off with corn. And corn is a great place to start because as we kind of analyze why this is important, it's more more profound in corn than almost any other commodity. And so this is actually a study that that asset, out of Minnesota did. So, Ed looked at from 1990 to 2014, he looked at the super corn futures in each one of those years, and he looked at the price of December corn futures.

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May 1st. Think of that planting season. He also looked at the price of that December corn futures contract. On October 1st of the same year, getting close to harvest. And what he found was in 19 out of 25 years, or

76% of the time, corn prices were higher in May than they were in October. And of those years, 19 out of 25, that difference was an average of \$0.29 a bushel.

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So basically what we're trying to tell you here, if you're a corn farmer, three fourths of the time you should be looking looking to pre harvest price some of your corn crop and that you're probably looking at an average of, almost \$0.30 a bushel, of additional income. Or if additional price of that corn if you do that.

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So it's pretty compelling. If you raise corn, you know, you really need to be looking for opportunities to pre harvest prices. If we move to soybeans, we see the same, type of a situation in soybeans. We're going to use the November contract. That's the bellwether contract for soybeans. We typically harvest soybeans ahead of of, corn. And so we're going to harvest around that October November area.

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So we're going to hedge using the November contract. So again it's not quite as pronounced as it was with corn only about 64% of the time. But in in the case of soybeans, that price spread is even a little bigger. It's about \$0.31 a bushel. I did the same kind of an analysis on my own for, Kansas City wheat futures, and I use that July contract again in winter wheat.

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That's the bellwether, contract. That's when we're going to hedge. Wheat is the July contract because we typically harvest wheat in this part of the world. You know, from May, June, July. And so with wheat using that July contract from October 1st of the previous year, because we're going to plant winter wheat in the fall to July 1st of the next year.

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But looking at that October contract, 14 out of 25 years, or 56% of the time, we saw those prices decline from October to July. We just really an interesting commodity. It just simply doesn't follow. The real neat, predictable patterns that we see in, corn and soybeans. And that's primarily because, we, well, we produce wheat all over the world, and we have spring wheat.

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We have winter wheat. And so we're actually harvesting wheat at some almost every month of the year. And so we have this really consistent supply of wheat year round. And so the markets don't follow those really nice predictable patterns like we've seen in corn and soybeans. Even given the fact that, you know, there's a considerable amount of corn and

soybeans produced in South America, and that would be in the season opposite to our own.

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We know now that they're they've harvested, one crop of beans and I think one crop of corn in South America, and they're planting another one. So, another question here. Would it be less risky to carry grain into a higher market than it would be to price in the harvest crop? Some years, yes. Other years? No.

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The, the typically what we're going to look at and what we would recommend in pre harvest marketing is we're going to pre harvest market a portion of the crop that we're producing. And when we talk about a marketing plan we'll actually give you a way to determine how much what's the maximum amount of that crop. You could pre harvest price in any given year.

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And it's based on crop insurance. We'll go through how you would, you know, determine how many how much crop insurance you're going to, you're going to buy what level of insurance. And that'll tell us, when or how much we can pre harvest price, in most years because especially in corn and soybeans, this seasonal trend follows pretty closely.

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And most years it's probably a good marketing plan to pre harvest price a percentage of the crop. Now this year didn't work so well. This was an outlier. This would be that one out of four years. It didn't work because what happened was the Chinese came in and started buying a lot of corn after harvest.

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And we saw those harvest after harvest prices really explode. And so, sometimes that happens, but luckily we can use options markets to recover some of that upward market movement. Even if we sold all of our commodities. So we'll talk about that next week, actually go through the math and show you the process. So in most cases it does make sense to pre harvest price a portion of the crop.

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Feeder cattle also show a pretty strong seasonal pattern. Certainly notice that we typically see feeder cattle bottom out in this February, March and April period of time. Any idea why that would be the time of the year that we would typically see our lower prices in the, feeder cattle market? Why does that tend to be their seasonal low?

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Any ideas?

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Age on the cattle. That's when they're getting to be the most sold, because they were born early there and then weaned in October. And then that's when they're going to slaughter. Exactly. Exactly right. Thanks for that. Garrison. Our garrison. Yeah, that's exactly right. So the the bulk of of the cattle, born in this country are spring born calves.

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They're, as Carson said, they're weaned in, October. That's when they're hitting, that feeder cattle weight of, the, 78 weight cattle. So that's where we see that market decline. So there's several ways that we can pre harvest price commodities. We have already introduced to you how you could do it through a for contract and some advantages and disadvantages of for contract.

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So tonight what we want to do is introduce the idea of hedging using futures contract is another tool in your toolbox. So I like to use the metaphor of your marketing toolbox. Hopefully last week we you bought the toolbox. You have this empty toolbox. And we added a tool last week. And that tool was for contracting. So this week we want to add one more tool to your your toolbox.

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And that's hedging using futures contracts. Next week we're going to add using options markets as a way to to pre harvest or to price commodities. And so you don't have another tool in the box. And we'll continue to add tools as we go through the next seven weeks of this class. And then in addition to adding tools, the other thing we're going to give you is a matrix that, looks at primarily, futures prices and what, what we think are going to happen with futures prices and what we think will happen with basis.

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And based on those two, market functions, we're going to develop a matrix and we're going to plug these various tools into the four corners of that matrix. And so based on what you think is going to happen with the futures prices going forward, basis prices going forward, then you can determine which of these tools in your toolbox would be the best one to use.

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So hopefully we can give you some, some thoughts and a procedure of how you pick that right tool out of the box. So what are we want to accomplish tonight? Well, first of all, we want you to become familiar

with futures markets. We also want you to understand margin requirements. Margin is a dirty phrase. It's a dirty word.

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And if you've ever, had a discussion with someone who had a bad, bad experience, in the, futures market and hedging, it probably revolved around margin. So we'll we'll talk about margin. We'll talk about how it works. Also we'll talk about the fact it's nothing to fear. And basically when you're in a situation where you're, in a position where you're making margin calls and you've probably heard of those two, you're losing money on one side of the equation, but you're making money on the other, and it balances itself out.

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And we'll actually go through the math tonight and explain how all that works. We want to show how hedging works. And, the futures market is a tool we use to hedge, hedging itself, basically takes on a little different, it's, it's really a technique that can be used a lot of different ways. But we're going to show you how to use, do hedging, using futures market as a tool.

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We want to show you how to determine the financial outcome of a perfect hedge. And that's a hedge where there's zero basis. And we'll start all of our examples tonight using a perfect hedge. Because the math works out very easy. It's a good way to understand the process of hedging if we don't have to, muddy the waters with basis.

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Then we'll work in a basis. Hedge. Think of a perfect hedge or zero basis, kind of being the, the simple way to look at it. Or if we add basis to it, that's a real world example, because we have to deal with the difference in those cash markets. We'll also look at a hedge when the market moves in the opposite direction.

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And what that does to you because that happens as well. We may be putting on a hedge because we anticipate markets declining and, markets go the other way. The markets and improve, prices improve. Well, how does that affect us? What does the hedge look like when markets go in an opposite direction. And then finally we're going to talk about a process called cross hedging.

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And I introduced this to you kind of in in theory or name only last week, as a method to use, a contract.

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Of one commodity to protect the price of another commodity that may not be traded. And we used the example last week, grain sorghum and corn. And I mentioned that, you know, we don't trade a grain sorghum contract to any of the exchanges, but we do trade corn and initially, because grain sorghum has about 85% the feed value of corn, we did a cross hedge where we would determine the value of grain sorghum at 85%.

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The value of corn. And so we could actually for contract grain sorghum use in the corn market. Well, tonight we're going to use a cross hedging example as a way to protect price of wine calves using the feeder cattle, contract. So we'll go through an actual example. I went back and looked at, the October feeder cattle contract and, the, Sterling Livestock sale here in Sterling and plugged some actual numbers in for us to, to take a look at.

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So that's what we're, we're going to try to accomplish tonight. This is a slide you've seen before. Remember we introduced last week that as we talk about futures contracts we use a series of symbols. We use a symbol of the actual underlying commodity or contract. We've given every month it's own symbol or own letter. We also indicated that, you know, the year the contract is traded, because there will be a, a number in that formula.

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And, the contracts that are traded in 2021 will have a one in, in that, symbol or string of symbols.

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Unknown

The other thing that's important to note is that each contract has, specifications. And this is pretty an A pretty important concept because, futures contracts are traded worldwide. We wanted to develop a system of specifications so that, a corn contract, traded in Chicago by someone in, in China, is the same contract traded in the exchange in Chicago by someone in Colorado.

00:36:13:12 - 00:36:45:21

Unknown

And so, because the contract is it has specifications in it's a standard contract. We can trade these worldwide. So a corn contract, 5000 bushels traded in the months of March, may, July, September, December. It's quoted in cents per bushel. The minimum that the price can fluctuate is a quarter cent per bushel. That quarter cent represents \$12.50 on a 5000 bushel contract.

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We have a daily limit of \$0.25 a bushel. If the price goes above the, the opening price, or, excuse me, the close price of the close of the previous, session, if it goes up or down, more than \$0.25 a bushel, we've we stopped trading and, suspend trading into the next trading day.

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Once we reach that limit, most markets have a mechanism where we can expand that limit a little bit. That trading limit is a pretty important concept, because one of the things we don't want to have happen in futures markets is that the prices either just take a wild swing up or a wild swing down. And so what the limit does is when we hit a limit, we immediately stop trading.

00:37:41:23 - 00:38:03:18

Unknown

All the traders go home for the day. They have a chance to, reconsider what's going on the market, come back and start all over again. Now, it could be a situation where we hit daily limit up or down in the very first trade in the morning, right as the exchange opens or trading opens, and immediately it shuts down and we come back the next day.

00:38:03:20 - 00:38:27:24

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And so when markets are really moving, they can make limit moves up or down for a number of days. But again, every time we hit a limit we stop. I was fortunate or I guess, maybe not fortunate. I thought it was fortunate. I was actually, on a tour of the, Kansas City Board of Trade.

00:38:28:01 - 00:39:00:20

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When the Kansas City Wheat contract was traded in Kansas City. It's no longer trading in Kansas City. It's traded in Chicago. That contract was actually purchased by the Chicago Mercantile Exchange, but they still call it Kansas City Wheat. But I was actually taking a tour of the exchange with another group of, producers the day that the, nuclear plant in Chernobyl, Russia, went through its meltdown.

00:39:00:22 - 00:39:31:06

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And I'm really dating myself because there's probably a number of you on this zoom call tonight that don't even remember that. So I guess I would encourage you, if you don't know about it, Google Chernobyl. I'm sure you'll find it. But those of you that were old enough to recall what happened, nuclear power plant in Russia, I went through a meltdown, and it released a massive amount of, radioactive, radioactive material, and it spread for hundreds of miles.

00:39:31:08 - 00:39:54:24

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And it so happened that Chernobyl was in a fairly important wheat growing area of, the Soviet Union. So we're taking a tour of the Kansas City Board of Trade, and we're looking at that wheat pit and nothing's going on. The traders are drinking coffee, and they're shooting the ball with

one another, and occasionally one of them will make a hand signal for a trade.

00:39:54:24 - 00:40:21:22

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And someone else, I'll take that trade or, you know, you're doing a little bit, but not much at all. And if you've ever been on the exchange floor in those days, across the top was a, a moving, it's not really a ticker tape, but, it gives the headlines of the day. So news, news flashes are going across the top, so that the, traders could see what's going on in the, in the world.

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Well, it flashed that there had been a meltdown of this nuclear reactor in Chernobyl, Russia. And, you could literally see guys spitting coffee out of their mouth, throwing coffee mugs down. The phone started ringing, orders were coming in, and it was just utter chaos because was a blink of an eye. And the, announcement of that, meltdown at that nuclear reactor that had a tremendous impact on the potential demand, our trade me supply of wheat for the entire world.

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Basically, we had a great reduction in the amount of wheat that could come to market the wheat supply, the world supply. So the market just went crazy. And I believe for several days after that, the market was limit up, limit up, limit up. And then finally after we had a chance to kind of get a feel for how much, how widespread the damage was, how it really affected the market, then the market started to to, settle down a little bit.

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But that limit up is a pretty important, constraint to commodity markets that, it's important to keep those markets from running away one way or the other because this is a deliberate contract or potentially delivered the last trading day. It's a business day prior to the 15th day at the counter, two months of the contract month. So for example, the December contract would expire or the last trading day would be the business day prior to the 15th of December.

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Because this is a deliverable contract, you could deliver it. And we'll talk about that as we go on tonight. The delivery points for this particular contract, the corn contract or along the Illinois River. And so if you are a corn farmer in Iowa or Illinois, you might actually deliver this contract physically deliver the corn. If you are a corn farmer in Colorado, you would never deliver this contract.

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It makes no sense to pay the freight to deliver corn to the Illinois River. And so what you would do, and we'll explain how that works, is you would offset your positions. You would never keep the position on past that last trading day and be forced to deliver this contract, because the delivery point is so far away. Live cattle 40,000 pounds.

00:42:50:01 - 00:43:30:03

Unknown

You can see the trading months, the price fluctuation, the daily limits. A little different. Delivery on these contracts. Last business day of the contract month. Notice that one of the delivery points for live cattle is a Greeley. So, this is a contract that we see delivered in this area occasionally. If you are a cattle feeder and you've had sure you're fed cattle on the live cattle contract, there are times you may deliver that contract because Greeley is not that far away.

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Feeder cattle again, you can see the the specs here. This contract is not delivered. It's a financially settle contract. And basically what that means is if you don't offset this contract, the value of that contract will be based on, the value of those, cattle that make up the specs of this contract. At a certain point from a certain market.

00:43:56:13 - 00:44:22:10

Unknown

And so although you don't deliver this contract, it could be cash settled. And there may be times you may want to do that. Lean hogs. Again, the information about this contract, it is also financially settled. And so, we never actually deliver lean hogs anymore. At one point we did. There used to be delivery points for feeder cattle as well.

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Heart rate of winter wheat, 5000 bushels of trading months. The delivery points Kansas City, Hutchinson, Kansas. The Salina, Abilene, Kansas and Wichita, Kansas areas. If you were far eastern Colorado, maybe Burlington not right on I-70, you might consider delivering this contract. But chances are you probably wouldn't. You're probably going to offset it. So a little bit of a, question here.

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Notice, excuse me, that the hard red winter wheat is a 5000 bushel contract and corn is a 5000 bushel contract. Any and soybeans are 5000. The grains are 5000 bushel contracts. Any idea what's so magic about a 5000 bushel contract in these particular commodities? Railcar volume.

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Unknown

I miss that. Say it again, please.

00:45:30:11 - 00:46:06:24

Unknown

The volume of a railcar? Yes, volume of a railcar. And, also the old, grain bins for 5000 bushel bins. You know, modern grain bins are much larger than that, but railcar plus a bin size in the old days, if we look at a, live cattle, 40,000 pounds. Any idea why that one sub 40,000 pound contract?

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How many live cattle on a on a truck on a cattle plot? Something pounds worth. Yeah. Same thing with feeder cattle. But a few more on, there and then. Life. The lean hogs are, you know, fat hogs, 40,000 pounds. So those contracts were more standardized for transportation and storage as well. So basically, what is this futures contract?

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Well, it's a binding agreement between a seller and a buyer to take delivery of underlining commodity or a financial instrument. They also trade futures on all kinds of different things, at a specified futures date with agreed upon payment terms. And as I mentioned, most futures contracts contracts don't actually result in delivery of the underlying commodity. I think it's upwards 85, 90% of all futures contracts are offset.

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They're not delivered upon. And, partially because of where you would have to physically deliver the commodity if it's a deliverable contract, unless you are close to those delivery points, there's a financial disincentive to deliver. We talked about these contracts being standardized. And again, that allows, those contracts to be traded, across the globe. So that's another very important part of of the contracts.

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Futures contracts are then, traded through an exchange and exchanges are, serve a very important function. And when it comes to most commodities, especially the commodities, you know, the world's largest exchange is the CME or Chicago Mercantile Exchange. And, at one point, we had two exchanges in Chicago. We had the Chicago Board of Trade, or Cbot, and the Chicago Mercantile Exchange.

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Cbot typically traded the grains. The CME traded the live stock. CME purchased Cbot. Now all of the contracts are traded to the Chicago Mercantile Exchange. So the exchange really, acts as, holds two functions. First, it is, and I could say probably more than to, three main functions. First, it, is a referee. It, the exchange make sure that all the players play by the rules, that all the contracts are, followed the trading rules are followed.

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Secondly, it provides a place for trading to take place. We do have, electronic trading, some contracts, especially the ag economy are commodities, but some commodities are now are traded, exclusively electronically. In the, livestock commodities, we have electronic trading. Plus we also have face to face or what's known as open outcry trading.

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So the exchange also, provides a place for trading to take place. A physical presence, as being the referee, they also have a mechanism for settling disputes among traders. And they're able to, settle those disputes within the exchange to avoid the disputes going through the court system, because the court system would be, take a lot of time to dispel or to take care of those disputes the longer it takes to, rectify a dispute that interrupts the market.

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If people are suing one another, they're not trading with each other. So the quicker we can take care of those disputes, the quicker we can get people back to trading with one another. Then the third thing is the exchange acts, as is the bank. It's really the way that, these contracts are financially settled. And so it's that one clearinghouse of settlement of the contracts.

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And so again, we'll we'll explain a little bit how that works. Futures markets provide two very, very important functions. And those two important functions are number one price discovery. And I'll give you a little bit of an example. I don't know how many of you are familiar with, industrial hemp. And some of the things have been happening since about 2014 when we, made industrial hemp legal here in Colorado.

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So that's, a commodity that's, a product that that people have tried to promote and try to produce. And one of the big issues with, the hemp market has been this history of price discovery. It was hard to determine and still is hard to determine. What's a fair price for hemp? And that's primarily because we don't have this exchange or a public marketplace where people can come and buy and sell it, and then we can report those sales we don't have, even though it's been tried in some states.

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Unknown

Kentucky tried this a little bit. We don't have a hemp auction barn, for example. So on any given day, it's very difficult to determine what, a pound of hemp biomass that I might, sell to someone to process in the CBD is worth contrast that with, corn. Are we are feeder cattle or lean hogs? Every business day of the year.

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Unknown

I can look on my cell phone and I can determine, what the national price of corn is or the world price of corn. Really? Because I can look at a quote from the Chicago Mercantile Exchange. Now, as a corn farmer, I can tell you there's a lot of times when I look at that price and I do not like it, but I know what it is.

00:52:21:22 - 00:52:53:06

Unknown

And so price discovery is pretty important. Price discovery is power. The more people that have access to that price of that commodity, buyers or sellers, it puts us on an even playing field. It's power. It's been a real issue in the hemp market because we we don't know what the prices are. So if I'm a processor and I'm offering to buy your hemp and no one knows really what the price is, I can take advantage of you as a seller.

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And so price discovery is a very, very important function. The other thing that it provides for us, and this is important for us in agriculture, it's a way to transfer price risk. And you got to think about this in these terms as far as price risk is concerned, some of you may be, getting ready to cap or maybe you've started calving.

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Unknown

As soon as those calves hit the ground, you experience price risk. You don't have a, maybe a handle on what prices are going to be in October when you go to sell those calves. So there's a risk at that price could drop between now and October. And as a producer, you assume all that risk. And and it's a big amount of risk.

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Unknown

It could you know, it can make or break your, your, you know, your business. And so that is a huge issue. Price, price risk. Corn farmer. As soon as I plant corn, I take I'm taking a risk that prices are going to go down. Garson had another good point. Is hemp also have a problem with standards?

00:54:03:14 - 00:54:26:08

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Absolutely. Again, as we went through the standards of each one of those, futures contracts, they don't have that with hemp. And so that's another issue. And try to trade it. What good hemp or good biomass. Hemp. Hemp biomass means to me could be totally different than what it means to someone else. Clear across the globe.

00:54:26:10 - 00:54:54:10

Unknown

So exactly. Those not having a standardized contract really causes a problem or even standards, for the product causes tremendous problems. With that, that commodity, I, you know, we did talk about, feeder cattle

being, medium and large, frame number one and number two, the standard for corn is number two, yellow corn. And so we have grading standards for most of our commodities.

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And those standards are built into those, futures contracts. So a couple of very important things that that futures market does for us in that it provides price discovery. It gives us an opportunity to transfer risk, price risks to someone else. So one of the things that is important for us to note is that, the value of a futures contract, changes sometimes second to second, day to day, month to month, because the price is quoted for, a particular futures contract is based on that standard contract.

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And so if we think about the grain and oilseed contracts or 50,000 give me 5000 bushels. Live cattle and lean hogs are 40,000 pounds. Feeder cattle futures or 50,000 pounds. That price is multiplied by the size of the contract and it actually fluctuates. Or the value of that underlying commodity fluctuates as prices fluctuate. Probably the best way I can illustrate that is with this next slide.

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So let's just look at a fictitious example here. Let's say we have a buyer or someone who wants to go long in the market. And we're going to covered longs and shorts in just a minute. So let's say a, buyer buys a future futures contract and they pay \$6 a bushel, let's say that day to, nothing happens.

00:56:33:04 - 00:57:01:06

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But the price of that commodity increased to \$6.10 a bushel. So if I bought something at \$6 and I could sell it at 610, that means I made a ten cent profit. So if I take that \$0.10 a bushel times 5000 bushels by doing nothing because the value of that commodity went up, I've just gained \$500. Let's look at the other side of that.

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Let's look at a seller of that contract or someone going short. So if I sold that contract at \$6 a bushel and on day two it went up to 610 a bushel, if I sold it at six and they get out of it, I have to buy it back at 610. I just lost \$0.10 a bushel. So that ten a bushel loss times the 5000 bushels of a contract means I lost \$500 that day.

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And so every time price changes, the value of that contract changes as well. And in this case, one of the functions that, that, that, futures exchange, takes on is they become a bank or what we would call a clearinghouse. And so what this bank does is at the close of every day, it settles every position. And so in essence, as the long position or the

buyer of the contract, \$500 would be, would have been, deposited in my trading account that day because my targets of that contract went up, because the market went up to \$0.10 as a seller, I lost \$0.10 a bushel.

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And so I would have \$500 taken out of my account. And so at the end of every day, the Exchange Clearinghouse, changed our or accounts for the value change of every contract by every, person that has a position in that contract. Now, this might be where we come to the, talk about, the idea of a margin call.

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Unknown

It could be that as a seller and the fact that I lost \$500 that day, I might that might trigger a margin call. I might have to replenish my contract or my account. Excuse me? My account with the clearinghouse by \$500. One other way for you to think about margin is earnest money. And probably most of you have had the experience of buying a house.

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Unknown

And in the process of buying the house, you may have had to put up earnest money. And as you recall, the earnest money basically says, that's my guarantee that I'm willing to live by the the, The agreement in the contract. And so that helps the, the seller of that contract know I'm good for it.

00:59:49:20 - 01:00:23:03

Unknown

And so we can think of, margin as the same thing. It's earnest money. It's a way to to maintain your position in that futures contract. Even if the market goes against you. Any questions about, this change in the value of the underlying contract as prices change? And again, we've given you a little bit of a, an insight into this idea of margin.

01:00:23:05 - 01:00:57:15

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Okay. We're going to go through this and give you some more examples. Work some more math here so you can see, how this works. I'm not going to go through all these terms. Actually going to send you a pretty good, handout that has a lot of futures terms. So as you start to hear, the terminology, you're able to maybe look these terms up and understand them a little bit more, what I've listed for you and what you have in the handout are probably some of the most commonly used terms.

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Unknown

Futures contracts in a farm marketing program, or I should say a commodity marketing program. Again, it's very helpful in marketing grain and livestock. They're a temporary substitute for a transaction in a cash market that will occur at a later date. One of the other things that I didn't mention about the value of the futures exchange is they also provide a very important, function or or provide this very important

function to markets in that they provide what we know as liquidity, futures, contracts, are traded every business day of the year.

01:01:40:09 - 01:02:07:14

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And so, if we want to, utilize futures contracts as a way to hedge our commodities and reduce our price risk, again, we have that opportunity. Every business day of the year. We can't always say that about our local cash markets. We certainly don't in most cases, we can't sell, cattle every day of the of of business day of the year.

01:02:07:14 - 01:02:35:22

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Typically our local livestock auctions, you know, only have a sell maybe once a week. And in some cases during certain times of the year, they may not sell every week. Local feedlots may not be buying every day of the year as well. And so sometimes the access to a liquid market is very limited. And our local, area, again, these are traded every business day of the year.

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So we have that liquidity in the market. Futures are also used as a source of price forecasts, because they're traded months in the future. We can give us it gives us a prediction of what a particular commodity is going to be worth sometime down, down the road. And so that's also a really important function of, futures contracts as far as it relates to commodity marketing on the farm or ranch.

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Another, I guess, plug for knowing your cost of production. This is an example of a grain marketing, plan worksheet. And, you can see what, we're trying to figure out, how many bushels that the commodity that that we have to sell and what does it cost to produce that commodity? And so we're looking at trying to come up with price goals again, based on cost of production.

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So let's get into this discussion of the hedge. Probably something you've heard a lot about hedging on the futures market. And so what what really is that? I think this is probably the most simplistic yet complete, definition of hedging that I've seen. It's a transaction intended to reduce risk, in this case price risk. And as you'll see, the way we do this, excuse me, is we take an equal and opposite position in the futures market to your cash position.

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And we'll show you how this works. How many of you have heard the old saying hedging a bet? I mean, we've used this concept of of hedging before and probably in, you know, common conversation. The best example I

can give and this happens all the time we're all aware of it is, say I'm a company and, we're in, an election year.

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We just went through one, and I'm not sure if the Republican candidate is going to win or the Democrat candidate is going to win, but to hedge my bets, I'm going to donate some money to each one of their campaigns. So if the Democrat wins, I've contributed to their campaign. Hopefully they will look at my business in a favorable light.

01:05:07:20 - 01:05:36:18

Unknown

If the Republican wins, I've contributed to their campaign. Hopefully they will view my business or my needs in a favorable light. So, hedging is not the concept of hedging is probably not a foreign concept, where it becomes a little foreign to us is how it works when it comes to marketing commodities. So let's have a little discussion about this terminology.

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Long and short. This is pretty important terminology as it relates to, hedging and using the futures market. If you are a producer of a commodity, if you are a corn farmer, if you are a wheat farmer, if you are, cattle feeder feeding, out feeder cattle, or maybe you're a cow calf operator and you're, retaining ownership and feeding your only your own calves until they get big enough to be feeder cattle, or you're a feedlot and you're producing live cattle or you're a feral to finish hog operation and you're producing market hogs, then you're said to be long in the cash market you physically own and and you're physically producing that commodity.

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And so if you're long cash, in order to hedge, you've got to take the opposite position in the futures market. So you have to sell a futures contract. And by selling you've gone short in the futures market. So in order to hedge you take your long cash position and you've got to go short in the futures market by selling a contract.

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Let's say that you are in a position to use the commodity. You're a flour miller. You need to buy wheat. You are a cattle feeder. You need to buy feeder cattle and corn. You are using the commodity. So that means you need to come on your short the physical commodity. So for you to hedge, you've got to buy futures contracts and you've got to go long in the market.

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And so the terminology of long and short relates to your position in the cash market, whether you produce the commodity or use the commodity. And then you take the opposite position in the futures market. So let's go

back a slide. And we said that hedging is taking an equal. And opposite position in the futures market to your cash position.

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So we just described the opposite side of this. Now we'll talk about what equal means.

01:08:03:07 - 01:08:31:21

Unknown

So let's diagram a hedge. And we're going to do it from the the viewpoint of a corn producer I'm producing the commodity. I'm long in the cash market. So and in order to hedge I've got to go short in the futures market. I've got to sell a contract. So let's say that today cash corn is selling for 445 a bushel.

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And I'm concerned that by the time I get ready to harvest that corn in November, the cash prices are going to be lower than 445. I have price risk. I have the risk that my commodity will be worth less at harvest than it is today. And I would like to mitigate that risk in some way. So what I could do is I could sell or go short in the futures market at 445.

01:09:04:24 - 01:09:39:04

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And so I am taking an the opposite position in the futures market, opposite of cash. And for our purposes, let's say we're selling one corn contract. And so the equal position is I'm selling one corn contract. And that one corn contract represents 5000 bushels of corn. So I am in essence, taking the risk out of the price risk of that 5000 bushels of corn.

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So we've talked about an opposite position, equal meaning the amount of commodity that that we're covering. One contract and, 5000 bushels of corn. So we go along here and on April 15th, cash corn is now worth \$4.55 a bushel. So in two months time, my cash corn is now worth \$0.10 more.

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At that same time, my futures contract is worth \$0.10 less because I sold it at 445. If on April 15th I wanted to get out of that contract, I would have to buy it back at 455. So I've lost \$0.10. I might have a margin call. I would have \$0.10 pulled out of my account by the exchange. And so we have an equal and opposite reaction as far as cash is concerned.

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Unknown

And futures are concerned. Let's go to July 15th. Corn has gone up to 480 a bushel. So now that contract has just gained another \$0.25. It went from 455 to 480. What happened on my futures contract? Well, it's lost another quarter. I probably had a margin call because now that 455

position that I had, if I wanted to buy that back, I'd have to pay \$4.80 more to have to pay margin of \$0.25.

01:11:28:17 - 01:11:52:22

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So it's very likely I've had a couple of margin calls here. And I'm thinking, man, this isn't such a good thing. I'm having a margin call. Maybe I have borrowed that money. Maybe it's part of my hedge account with my lender, and my lender is getting a little nervous. Why are we paying these margin calls? Well, a good lender would understand.

01:11:52:22 - 01:12:20:17

Unknown

And hopefully you as the farmer, corn producer would understand. Yeah. I'm losing money in the futures side of this transaction, but my cash commodity is worth more. And so, at this point, if I had that cash commodity to sell, I would come out okay, because I could sell it and get that \$0.25 profit and pay it toward that.

01:12:20:19 - 01:12:41:23

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And then this case actually would be the combination to the \$0.35. Now, maybe I don't have that cash commodity that is new crop corn. So at this point the last thing I want to do is get out of my futures position because I don't have that cash corn to sell. I'm just going to lose. So I want to stick with this.

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Unknown

So 915 rolls around. Cash has come back. It's dropped to, 455. The bushel, meaning the cash is worth \$0.25 a bushel left less futures did the same thing. And so in essence, \$0.25 now went into my account at the clearinghouse for the exchange. I made a little bit of money, just as we expected. The market's coming down as we get closer to harvest.

01:13:13:07 - 01:13:43:09

Unknown

Cash is now at 445. And so it's worth \$0.10 less than it was in November or excuse me, in September. And the futures price is, gone down as well. So another \$0.10 has been put back into my, futures account at the clearinghouse. And so I'm kind of back to where I started. So finally on November 15th, I harvest my corn.

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I sell cash corn at 435. So my prediction was right back here in February. I was concerned that the, corn price would be lower at harvest. And so that's why I put the hedge on in the first place. So as soon as I sell the cash corn, I no longer have price risk. I've sold it. I've paid for it.

01:14:10:05 - 01:14:41:21

Unknown

The price changing prices don't matter to me. So remember back on 2015, I sold that contract for 445 today. I could buy it back for 435. So basically I sold futures on, 215 at 445 to offset the contracts because I don't want to deliver it. I can buy it back. So I sold it for 445 and now it cost me five fourth.

01:14:41:23 - 01:15:11:20

Unknown

I sold it for 445 and now it cost me 435 to bought it. Buy it back. So I actually have a futures profit of \$0.10. I'll actually get a check from the exchange \$0.10 on 5000 bushels, or a check for \$500. I add that to my cash price of 435. And so in essence, I sold the corn for \$4.45.

01:15:11:22 - 01:15:38:21

Unknown

And that's exactly what I planned to do way back here in December. So this is an example of a zero basis or perfect hedge. And it shows us as the value of the contract changes from the time that I sold the contract to the point where I harvest my corn, sell that cash corn locally, and offset the futures contract.

01:15:38:23 - 01:16:15:21

Unknown

How changes in cash and changes in futures follow one another, and how the value of both the cash commodity and my futures contract change over time. Pretty important concept to understand. It's very typical that the first time you see this you may not quite understand it. So again, I want to take a brief break here and ask if you have any questions about, how this hedge works.

01:16:15:23 - 01:16:39:09

Unknown

Okay. Again, feel free to use the chat or just to, turn on that. Mike, if you have questions. So I want to go through a couple of examples, and I'm going to go through an example of a corn producer. So someone who has the commodity to sell, someone who is long in the cash market needs to go short in the futures market.

01:16:39:11 - 01:17:00:24

Unknown

And then I'm also going to give you an example of a wheat miller, someone who needs to buy the commodity, who is short in the cash needs to go long in the future. So we'll show you how it works on both sides of the hedge. We're going to start both of the examples with a perfect hedge zero basis.

01:17:00:24 - 01:17:35:12

Unknown

Then we'll do a basis hedge and then we'll show you what happens if the market goes against you. And so here's our perfect hedge. This is price declining. And we didn't exchanges weren't open today. It's President's Day. So I believe this, is probably the price last Wednesday when I put this together. So let's just say for the sake of, of, an example that today, December, corn futures are trading at 445.

01:17:35:14 - 01:18:06:04

Unknown

So it's February. You haven't even planted the crop. You won't plant it all, late April through mid-May. But you're concerned that, that price at harvest will be lower than for 45. And you would like to take the risk, that you have of prices declining. You'd like to mitigate that risk? So at this point, you're looking to, utilize a futures market to do that, to, to transfer that risk.

01:18:06:06 - 01:18:33:15

Unknown

So you could call your broker and you could tell or sell December 21st corn futures at 445. And as we'll talk about later, it's probably a little early to do this. Although we sold on a for contracts from Corn in November this year, which is the earliest we've ever sold, corn. That's for 21 deliveries. So although this is a little early, you know, you could do it.

01:18:33:15 - 01:18:55:01

Unknown

You could actually do this, a couple of years in advance. And there are people that do that on a regular basis. So I call the broker, tell my broker, sell December 21st corn futures at 445. And so I go about doing my thing as a corn producer. The prices are probably going up and down. I may have had margin calls.

01:18:55:03 - 01:19:17:13

Unknown

I had money taken out of my account, maybe had to have a margin call to replenish it. I've had money put in it. Things have happened between, today, the 15th and November 20th, when I harvest the corn. So I take that corn and I take it right down to the elevator. On the day that I harvest it, I sell it and the local prices for 15.

01:19:17:15 - 01:19:42:16

Unknown

So I'm pretty happy with my decision I made back in, in, February because, corn prices did go down. They declined \$0.30. And so I'm feeling pretty good about that decision I made back in February and, pretty good. Feeling good about selling those December 21st corn futures. So I've already delivered the corn. I don't have it anymore.

01:19:42:22 - 01:20:06:21

Unknown

So I the last thing I want to do is deliver it to the along the Illinois River somewhere. And so I got to offset that contract. So if I sold December corn futures in February, in November, I've got to buy it back. And because this is a perfect hedge on a zero basis, the futures price and the local cash price are exactly the same.

01:20:06:21 - 01:20:33:15

Unknown

415 so I call my broker and I tell her to buy back December 21st corn futures. They're trading it for 15 that day. So what was in that price for the corn. So I sold December futures for 445. I bought them back for 415. So I made \$0.30 on the futures transaction. I'm going to get a check from my broker for \$0.30 a bushel.

01:20:33:17 - 01:21:04:21

Unknown

I can add that to the 415 I got in the cash market. So in reality I sold the corn for 445 a bushel. That's exactly what I plan to do. Way back in February. Questions about a perfect hedge zero basis price declines. And I'm a producer of corn.

01:21:04:23 - 01:21:33:09

Unknown

Okay, so there are usually a broker fee on that one. Absolutely. And thank you for asking that. I don't include the broker fees in the math because typically they're depending on what kind of. And we'll talk about, brokers the fourth night and brokerage fees, depending on the type of account you use, the type of assistance you get from your broker, those fees are, typically anywhere from a penny to \$0.03 a bushel.

01:21:33:11 - 01:21:56:00

Unknown

So they're very small. And because they're pretty small, I typically don't even include them in the math. But good question there. There would be a brokerage fee included in there. So we're going to do another zero basis or perfect. But this time we're going to see what happens when the price doesn't do what we think it's going to do.

01:21:56:02 - 01:22:19:20

Unknown

So we're going to pretty much set this up as we did the last time. Today's the 15th, December corn futures are trading at 445. We think there's a pretty good chance that prices are going to be lowered harvest. So we call our broker and say sell the shipper corn futures at 445 November 20th rolls around. We harvest our corn, but prices actually went up.

01:22:19:20 - 01:22:43:04

Unknown

We're able to sell cash corn at 465 a bushel. So again, a zero basis hedge. Cash and futures are the same. In order to offset our contract. And again we want to do that. We've already delivered the corn. We don't have it to deliver against the futures contract. And we darn sure don't want to truck it or ship it to the Illinois River.

01:22:43:10 - 01:23:10:04

Unknown

So to offset the contract, we have to buy it back. So now we have to buy that contract back at 465. So what's the net price of corn? Well, we sold December futures at 445. To get out of the contract or offset that position, we have to buy it back at 465. So we we lost \$0.20. We would have paid \$0.20 into our margin account to cover that.

01:23:10:04 - 01:23:37:06

Unknown

That's already gone. We got 465 for the cash. But once we subtract that futures loss, our net selling price for the corn was 445. So I've got to ask a very important question, and I want you to kind of scroll down and find your menu bar. And I want you to go over to where you can let's see where that is.

01:23:37:08 - 01:24:01:16

Unknown

Where you can raise your hand, find that, or you can raise your hand if you would. So I've just given you an example of a, hedge when price increases. And my question to you is, how many of you, by show of hands, think that the hedge did not work?

01:24:01:18 - 01:24:15:20

Unknown

Okay. Okay. How many of you think the hedge did work? And I'll show your hand if you think it did work.

01:24:15:22 - 01:24:45:17

Unknown

Okay, we got a few of you that are brave enough to put your hand up. That's good. When you look at this from the very beginning, once I go through this, it would appear to you the hedge did not work because you got less for your corn than what you would have liked. But in reality, the hedge didn't work because you locked in 445 back here in February and you got 445 when you offset the, the, the contract.

01:24:45:19 - 01:25:10:03

Unknown

So the hedge did work. The market went against you, and you're probably sitting here thinking, well, I'd have been better off had I not hedged the corn under these circumstances. And there's some truth to that. But there's some also some truth. Looking at the other side of this, if 445 was, a profit for you, it's above your cost of production.

01:25:10:05 - 01:25:47:14

Unknown

You still made money. And the old adage is, it's very hard to, go broke if you make money. The other thing is, you didn't have price risk for the entire time that hedge was in place. So hopefully you slept better. It may have been a situation where that locked in price, could have helped you, in securing an operating line, an operating loan, because you were able to to take that information to a lender and say, I've already locked in a price of 445 on part of my corn.

01:25:47:16 - 01:26:12:00

Unknown

And so even though you would have made more money had you not put the hedge in place, in essence, the hedge did work because your goal was 445 and that's what you got now. That's one of the reasons that we don't

hedge, every bushel of corn or every head of cattle or every bushel of wheat that we think we're going to produce.

01:26:12:02 - 01:26:36:11

Unknown

Because the market can't go against us. And we'll talk about some other reasons. We don't hedge all of it either. It's there's some, economic safety reasons why you never do it. But the bottom line here is, even though the price went against you and you could have got more money had you not hedge this, this corn, the hedge still worked.

01:26:36:13 - 01:26:57:23

Unknown

Okay. Let's go another example here. And this time we're going to do, the, same, type of, hedge, but we're going to do a real world hedge. We're going to give you, what happens, when we include basis. And so this is the real world example. We're going to set it up the same way.

01:26:57:23 - 01:27:28:15

Unknown

We're going to use the same numbers again. December corn futures are trading at 445. We call our brokers and we tell our to sell December futures at 445. We harvest corn on the 20th. We sell cash corn at 395. Futures is trading at 415. So again, we don't want to deliver corn against the contract. So to offset the contract, we have to buy it back.

01:27:28:17 - 01:27:47:14

Unknown

So if we look at that particular situation, if cash corn is 395 and the nearby futures contract is trading at 415, what is basis that day?

01:27:47:16 - 01:28:13:20

Unknown

And I've given it to you. So if you look there we can calculate basis. We take cash minus futures. So $395 - 415$ is -20 . So we said that the local basis or basis is $\$0.20$. Under that day. So what's the net outcome then. We sold futures for 445. We bought it back for 415. We made $\$0.30$ on the futures transaction.

01:28:13:20 - 01:28:42:01

Unknown

We sold our corn for 395. So for 25 was our net price for corn. And you can see that the difference between what we actually got, for this and that price for corn and what we, what we hedged it at in December. There's a $\$0.20$ difference. And that $\$0.20$ is basis. This is why being able to predict basis is very important.

01:28:42:03 - 01:29:16:24

Unknown

Because what we would have done, because we're working with basis before we called our broker and told her to sell that December 21st contract, we would look at a basis chart and we would want to know what is basis doing in that week of the year of November 20th, thereabouts, when I typically

sell my corn so that I could include the basis in the calculation and be able to predict about what that net is going to be.

01:29:17:01 - 01:29:47:10

Unknown

Let's say the basis table actually said that typical basis, the average in the last five years was \$0.30 under. So if we do the calculation back here in, in February, we would have predicted a net price, for 15 a bushel because we would have calculated a 30 cent under basis. So then the question becomes, based on our cost of production, is 415 above that cost production.

01:29:47:10 - 01:30:20:20

Unknown

Would that provide a profit? Would that provide an acceptable margin? And if we're thinking that prices are on a decline, will we accept for 15 now realizing basis could be 440, which would make that price even lower? Or in this case it was 420. So basis narrowed and it was to our advantage. But in any case, being able to predict basis is very, very important because it gives us a better idea of what our actual net price will be.

01:30:20:22 - 01:31:04:06

Unknown

So you can see with this example again how important basis is questions about this transaction and the effective basis when we work it into, a hedge, a hedge example. Okay. So Ginger has a great question. Is a hedge profit or loss tax differently than the income of selling the commodity? The answer is no. If you are a producer of the commodity or a user of the commodity, and it's a true hedge, profit or loss or considered, ordinary income and are there tax just like the selling of the commodity?

01:31:04:08 - 01:31:40:01

Unknown

Now, we haven't talked about another player in this whole, futures market, scenario. And that's a speculator. And a speculator is a person who neither produces a commodity or has need for the physical commodity. And they make money, just by buying and selling contracts, and they make or lose money based on how these contracts move. In their case, as a speculator, any profit that they make is taxed, as a capital gain.

01:31:40:01 - 01:32:01:11

Unknown

And so they pay a different tax rate than a hedge or would pay. So one of the things that's important is if you're going to hedge number one, you need to either, produce or physically use a commodity to qualify for as a hedger. And then the other thing you've got to be careful of, and we'll talk about this a little later.

01:32:01:13 - 01:32:24:10

Unknown

One of the reasons you never hedge more commodity than you can physically produce is those contracts above what you physically can produce are considered speculative positions and could be taxed as capital gains. So great question Ginger. Thanks for asking that.

01:32:24:12 - 01:32:47:23

Unknown

Okay. We're going to now look at a wheat buyer. So in this case I need the commodity I'm short in the cash market I need to go long in futures. And as we'll see I have a little different perspective of why I would want to hedge a commodity that I would like to purchase. So if I am a buyer of wheat, I'm a wheat miller.

01:32:48:00 - 01:33:13:09

Unknown

My fear is that prices will go up. And so I'm constantly buying wheat. I take that wheat and I mill it into flour, and maybe I sell flour or I take it to the finish, baked product. And so when I develop a budget for, what I can, what I'm going to, what it cost me to, to make a loaf of bread in order to make sure I maintain a profit margin.

01:33:13:11 - 01:33:44:02

Unknown

I've got to price in all the inputs. And I know wheat price wheat can change. And so I would like to hedge against price increases. I'd be able to I'd like to lock in a price so that I can put together a budget that includes a profit margin. And so in our example, I've got to buy wheat in May and the Kansas City, May, wheat futures are trading at 617 and at 617 a bushel for wheat.

01:33:44:02 - 01:34:07:15

Unknown

I can make a profit if it goes much higher than that, I can't. And so there's a possibility it could go higher. I would like to lock in the maximum I have to pay for wheat. So what I would do then is I would call my broker and tell her by May 21st, KC wheat futures at 617 a bushel.

01:34:07:17 - 01:34:29:17

Unknown

Let's say March 20th I need to buy wheat. And so I go to the local elevator. Or maybe I call some farmers and say, you know, what are you selling wheat for? And I find out the going price for wheat is 674 a bushel. And, in order to stay in business, I've got to produce bread. I've got to keep my.

01:34:29:19 - 01:34:58:09

Unknown

I've my bakery going, so I have no choice. I need to buy it. I'm really glad at this point that I did, lock that price in at 617, because at 674 a bushel, I can't make any money. I lose money. So, I don't want to, take delivery on wheat. I've already bought it. And to take delivery on wheat, I'd have to have it trucked for some from somewhere in Kansas.

01:34:58:11 - 01:35:28:21

Unknown

I don't want to do that. So to get out of the contract, I have to offset it by selling it. So I sell the contract at 674. So what's my net price? Well, I bought a contract at 617. I sold it back at 674. So I made \$0.57

a bushel on the futures contract. I'm going to get a check from my broker, an equivalent to \$0.57 a bushel on 5000 bushels per contract.

01:35:28:23 - 01:35:51:13

Unknown

I subtract that from what I paid for the wheat at 674, and my net is I bought wheat for 617. And so again, at 617 I can mill wheat, turn it into bread, and I can make an profit. So I'm pretty happy with that. Okay. What happens if prices decrease?

01:35:51:15 - 01:36:20:02

Unknown

So same scenario wheat trading at 617 I call my broker and say buy may contract at 617, March 20th I need wheat cash prices. 589 price went against me. So this is a zero basis hedge. I sell back wheat futures for 589. So what was the net net price? Well, I bought at 617 to offset the contract.

01:36:20:02 - 01:36:45:01

Unknown

I have to buy it back now at 589. So I lost \$0.28. I had to \$0.28 to the 598 I paid in the cash market, and I still netted 617 a bushel for the wheat that I had to buy. And again, the hedge worked. Would I have liked to have not had this hedge and just bought wheat at 589?

01:36:45:03 - 01:37:15:11

Unknown

Yeah, probably. But again, did I sleep well knowing that I could buy weed? It had wheat locked in at 617. Yeah, I did maybe I had to borrow operating money to keep my business going. And the fact that I had lock that we then at 617, which, allowed me to have a reasonable profit margin on the loaves of bread that I was producing, maybe that helped me get that know or get that loan.

01:37:15:13 - 01:37:49:04

Unknown

So there's some value to, having that price protection even though the market went against me. This had the basis to it. Again, we're going to go to 617. We're going to buy KC futures at 617, March 20th. We buy wheat cash wheat is 674. Futures is trading at 694. So there's that \$0.20 a bushel under basis is 20 under.

01:37:49:06 - 01:38:26:02

Unknown

Net price for wheat I bought May wheat for 617. Bought sold it back at 694. I made \$0.77 a bushel on my futures transaction. I paid 674 in the cash market. So I take that from my cash price. And so I actually had a net 597 paid for the wheat. And again, that 597 is \$0.20 a bushel less than a 617, which is a reflection of what basis did.

01:38:26:04 - 01:38:42:18

Unknown

So in this case, I'm pretty happy with that basis being a little under, because in reality, it actually was a better price than what I had planned during the hedging function.

01:38:42:20 - 01:39:32:17

Unknown

Questions about the examples we've gone through with, futures hedging. Again, both from a person who's, in our example, a corn producer. Long cash needs to go short futures, or in this case, buyer of wheat. A wheat miller bread maker who is short in the cash market needs to purchase the commodity. So they've got to buy or go long in the futures market in order to put together a hedge.

01:39:32:19 - 01:39:40:03

Unknown

Okay. Let's talk about cross hedging now.

01:39:40:05 - 01:40:03:16

Unknown

So hedging is a cash commodity in a futures market of a different commodity is this cross hedging. And we realize that, not every commodity is traded. We've talked about grain sorghum or Milo. It's not a traded commodity. We talked about millet. Millet is not a traded commodity. There are a lot of commodities that are aren't traded.

01:40:03:18 - 01:40:30:08

Unknown

Typically, the reason that a commodity might not be traded is a very small market. And because it's a small market, there's not a large amount of production. There's concern that there may not be enough volume or interest in trading the contracts to have a viable market. One market right now that is probably been on the bubble for, you know, maybe the last 30 years is the open market.

01:40:30:08 - 01:41:05:06

Unknown

We do trade OTC contracts, and that market is, a very small market. There's not a lot of interest in trading OTC contracts because it's not a major crop anymore. That OTC contract really came about, in the days before mechanized agriculture and specifically tractors, in the days that we had, use horses to power agriculture. A lot of oats were produced in this country, and there was a need to be able to, to buy and sell OTC contracts.

01:41:05:08 - 01:41:38:14

Unknown

But that, is a commodity that's just not traded. Very much. In the mid 80s, the Chicago Mercantile Exchange tried a, cash contract, a wink calf contract for five and six wheat caps, and that contract just never caught on. Cow calf producers, didn't trade it. Seeders didn't trade it. And so it just never developed enough volume to be a, a widely traded horse.

01:41:38:16 - 01:42:06:18

Unknown

It just not the interest for liquidity in the market. And so that, commodity, ceased being traded. And so, those are the reasons that, you know, some commodities are traded in, some aren't. You know, we've been talking about the demise of the OTC contract for 30 years. Eventually it may happen. It'll just become the volume won't become so low that there's not enough interest in a contract.

01:42:06:18 - 01:42:31:00

Unknown

The prices don't move very much. And, it'll it'll be ceased being traded. So here are some examples of where we can do some cross hedging. We've talked about grain sorghum and corn. And again, typically, because of the difference in feed value we will take the corn contract. We'll discount it by 85%. And that will determine the value of the sorghum.

01:42:31:02 - 01:43:00:11

Unknown

That's traded against the corn contract. We don't trade a sunflower contract. However, especially for oil sunflowers, we can use the soybean oil contract. And so if we wanted to be able to for contract soy or sunflowers and be able to, offset the price risk on the futures exchange, we could trade, soybean oil contracts.

01:43:00:13 - 01:43:34:12

Unknown

And then the one we're going to talk about tonight is win calves in that feeder cattle contract. Now, the biggest challenge in cross hedging is trying to take an apple, an orange example and turn it into apples versus apples. We talked about how we typically do it in grain sorghum versus corn. It's pretty straightforward based on the relative feed value of each and the fact that grain sorghum is about 85% the feed value of corn.

01:43:34:14 - 01:44:06:12

Unknown

Corn is grown primarily as livestock feed. Then if we want to price grain sorghum, for for contract or price it based on the corn contract, typically what we do is we will, discount the grain sorghum price by 85% of the corn price. Now there are times and one is one. Now are we any at a time now where cash grain sorghum is actually more valuable than cash corn?

01:44:06:14 - 01:44:36:00

Unknown

China is buying sorghum. They they consume a lot of sorghum. And so it doesn't always work that way. So when we talk about wine cabs and feeder cattle, again, we are taking an apples and orange example, and we're trying to turn it into an apples and apples example. If you recall, when we looked at all of the, contracts earlier, there's standardized, it's a standard commodity.

01:44:36:00 - 01:45:09:16

Unknown

It's a standard number of bushels or a standard weight. We standardize the, quality of the corn. It a standard, CME contract for, for corn is

number two, yellow corn. And so one of the issues we have with trying to standardize wean cabs and feeder cattle is two things. The and the biggest being, or the biggest issue is a difference in weight and difference in price.

01:45:09:18 - 01:45:50:06

Unknown

Per pound. Feeder cat are weighing calves five and six weight. Calves typically bring more per pound than feeder cat 7 to 8 wave calves. And so we have to figure out a way to come up with an equivalent value because of this price difference. So that feeder cattle contract is 50,000 pounds. So how many pounds of weaned calves at various weights do we have to be able to sell to be equivalent in price to a 50,000 pound feeder cattle contract?

01:45:50:08 - 01:46:24:18

Unknown

And as I mentioned before, typically pound for pound when calves bring more on a per pound basis than feeder cattle. And so 50,000 pounds of feeder cattle, that price is equivalent to fewer pounds of weaned calves. We have to be able to make a conversion somehow. And so some research was conducted several years ago to come up with a method to do that.

01:46:24:20 - 01:46:50:19

Unknown

So in our example, let's put together our, our, example cowherd. Let's say that we have 300 producing cows are winning percentage is 85%. That means we produce 255 calves. We have a 10% replacement rate. So we're going to pull 30 heifers out and retain those. We have a total of 225 calves to market. Our average.

01:46:50:19 - 01:47:35:17

Unknown

Well, selling weight for shears and heifers is 550 pounds. So if you take 550 pounds times 225 head that we have means we have a total of 1200 or, excuse me, 123,750 pounds of calf to sell. And so what we want to know is how many feeder cattle contracts does that represent? If we just took that number and divided it by 50,000, that's the size of the feeder cattle contract, that would say we could only sell two because we got to sell on an 50,000 pound lots.

01:47:35:19 - 01:48:04:22

Unknown

So two would be 100 thousand pounds of feeder cattle or two contracts. But again, because her weaned calves are worth more per pound than feeder cattle, we got to come up with a conversion. So some research was conducted to kind of figure out how to do this. And this was actually conducted at, the Dodge City, Kansas, a live market.

01:48:04:24 - 01:48:38:11

Unknown

And, information gathered information on this market for a number of years to try to come up with, how this would work. I've asked a number of people who are much more, gifted in the area of cattle marketing than I

am. Would this work for other markets across the country? And they basically said, this is a lot like, you know, it's close enough for, horseshoes and hand grenades, so it's probably going to work.

01:48:38:13 - 01:49:04:00

Unknown

So but what you can see from this table is interesting. First of all, we're taking into account that the market changes month to month. Some markets are better than others. Again based on seasonality. And there's a difference in the weight of cattle on a pound per pound basis, 3 to 4 weight cattle, are worth more pound a pound than 4 to 5 weight cattle that are worth more than 6 to 8 weight cattle.

01:49:04:02 - 01:49:43:10

Unknown

And you can see this chart goes even further than what we have. And so this is the column that's important. How many pounds of steers at this 3 to 4 weight range in January are equivalent in price to a 50,000 pound feeder cattle contract. Well, in January if we're talking 3 to 4 weight steers and it takes 29,976 pounds, a feeder cattle to be the price equivalent of 50,000 pounds of, feeder cattle.

01:49:43:12 - 01:50:25:03

Unknown

So for our purposes, 6 to 8 weight calves sold in October, it takes about 40,193 pounds of those cattle sold in October to be equivalent to a 50,000 pound feeder cattle contract. From a price standpoint. So I'm going to give you an actual example based on that example. We could actually sell three contracts because if we take our total production divided by the 40,193 pound equivalent, that would be three contracts.

01:50:25:05 - 01:50:50:06

Unknown

Now, if you're a novice trader, you're just starting to do this. The recommendation would be no more than one contract. If you're an experienced trader, the idea would be no more than two. The question becomes why wouldn't I want to contract all three if it looked like the price was, you know, the market was offering me an opportunity to lock these in at a profit.

01:50:50:08 - 01:51:16:09

Unknown

And this is an important question for, other commodities. Why do we never hedge our total expected production? Any ideas why we wouldn't want to do that, even though we might be an experienced trader?

01:51:16:11 - 01:51:35:21

Unknown

Okay, let me let me answer it for you here. Based on the loss. Loss of loss of cattle. Yeah, exactly. You could you know, there's a, production risk here. You could lose some of the cattle and you wouldn't be able to fulfill the contract. And so in that case, whatever you can't fulfill on the contract, those aren't hedge.

01:51:35:21 - 01:51:59:10

Unknown

Those are speculated. And so, there's some issues with that. So, Justin, thanks for the answer. So let's go through an example here. And I'm going to use actual market data. July 6th, 2020 feeder cattle were trading at one 3785 the October 20th market. So at that point, I'm expecting the feeder cattle price to go down in October.

01:51:59:12 - 01:52:26:02

Unknown

So I go ahead and sell October 20th feeder cattle at one 3785. I plan to cash sell my calves in October based on their weight. That one contract is equivalent to about 73 calves, 40,000 pounds. I just rounded that down. Divided by five, 50 per calf, 73 calves. So October 28th rolls around. I sell the cash calves at.

01:52:26:02 - 01:52:59:13

Unknown

This was actual, market here in Sterling on October 20th 28th, 2020. I sold, calves for selling at one 4590. I sold those 73 to to make that contract work out. That was actually, 40,150 pounds. I bought back my October 20th feeder cattle contract. It was at trading at one 3517. So the market had gone down.

01:52:59:15 - 01:53:31:01

Unknown

And so here's where the math gets a little tricky. So what was my actual return on the calves? So I sold the October feeder cattle at one 3785. I bought it back to offset the contract, and I made, \$2.68 100 weight. So if I take that to 68 times 500, 100 weights, I'm going to get a check for 1000, \$340 from the, exchange.

01:53:31:03 - 01:54:12:09

Unknown

If I take that 1340 and divide it by the actual pounds of feeder cattle I sold, which is, 401.500 weights, that's an extra \$3.30 per 100 weight that I got for those cattle. So then my net cash price was the fourth, one 4590 that I got for the cash cattle plus the 268 on the futures. And so I actually sold those cattle for 148, 58 and actually, I've got a math error there because that should actually be that.

01:54:12:09 - 01:54:42:07

Unknown

333 plus, one 4858 so it's a little bit better than, what I calculated. But so here's the example of again, being able to lock in a price. Using the feeder cattle contract for those winning calves. And what we could do with this particular example is we could actually figure a basis difference. Now that we know what the weight difference that we have to calculate.

01:54:42:09 - 01:55:05:17

Unknown

So we could have actually gone back here in October, just as we did with the, corn and wheat examples. And we could have predicted and calculated

basis and come up with a pretty good idea of what that, actual price would have been.

01:55:05:19 - 01:55:29:09

Unknown

We'll work through some more of these cross hedging examples towards the end of the class. And one of the things that that I wanted to, show here was, by picking the date of July 6th of when I would have done this, looking at maybe I have the opportunity to, video market my cattle or maybe use cross hedging.

01:55:29:11 - 01:55:54:17

Unknown

We could have actually picked some probably better dates based on that seasonal pattern, feeder cattle and probably made this thing work out a little bit better. Also, I can tell you, if you have a cash market that's kind of on the lower end of the spectrum as far as cash markets go in the state of Colorado, obviously this works a little better, because you're adding a little bit more on the future side.

01:55:54:17 - 01:56:20:08

Unknown

So. Okay. We have about four minutes before we're at the 9:00 hour. We have covered a lot of ground tonight. You've had some excellent questions. If you have any questions at this point, please feel free and ask those of you that have signed up for a commodity challenge. You'll be getting your second challenge in the next day or two.

01:56:20:10 - 01:56:41:05

Unknown

We'll actually have you go on site and, sell some futures contracts. So you got a feel for kind of how that works, and then we'll have an opportunity to monitor what's happening with those positions as we move forward, which will be kind of fun in the markets moving in. After that, we may see some things happen, which would be fun as well.

01:56:41:07 - 01:57:10:03

Unknown

One of the things that, I'd like to mention, as with the, session one, program, session two will be recorded. And even though you've sat through the live session, this might be one that you may want to look at the recording. Obviously, the nice thing about the recordings are you two YouTube recordings and so you can advance them anywhere you want and not have to sit through the whole thing.

01:57:10:05 - 01:57:29:22

Unknown

But I do find that, a number of people will go back and review this session. Session two and session three when we talk about options next week. Because sometimes it just takes a little while for all of this to soak in. And the opportunity to go back and and look at it again can be very helpful.

01:57:29:24 - 01:57:53:12

Unknown

So at this point, any questions you might have that, you know, again, you utilize chat or if you want to, unmute that mic and ask a question, please feel free to do so.

01:57:53:14 - 01:58:13:00

Unknown

If you have questions after we end tonight, any and you're unable to get a good answer, even reviewing please feel free to send me an email message. I do monitor those throughout the week. I can tell you as a person taking the course, you're a priority to me. So I try to answer your emails first.

01:58:13:02 - 01:58:38:19

Unknown

So if you have questions or comments, feel free to, send me an email and I will get right back with you. With that in mind, I'm going to go ahead then and we'll start to share and, we'll go ahead and close out for this evening. And tell you, I enjoyed, the program tonight.

01:58:38:19 - 01:58:55:22

Unknown

I hope you did as well. And we will catch you, same time next week. And next week we'll talk about options. So have a great rest of the week. Hope things warm up where you're at, and we'll see you next Monday evening for Monday night marketing. Have a great week. Bye now.

END TRA