

Webinar Transcript: [Data Training Webinar: Price Spreads from Farm to Consumer & Meat Price Spreads – YouTube](#)

Good afternoon, everyone. My name is Valerie Negron, your host for today's webinar. On behalf of USDA's Economic Research Service, welcome and thank you for joining us for the fourth event of our data training webinar series. Today's webinar will feature ERS Economist Hayden Stewart and Cross Commodity Analyst Bill Hahn who will provide an overview of and walk us through how to access and use ERS's price spreads from farm to consumer and meat price spreads. These two data products compare prices consumers paid for foods with prices received by farmers and ranchers for their commodities. As part of the data training webinar series, this webinar is meant to teach those interested in ERS data how to access and fully utilize our many data products, and what better way to do so than connecting you directly with the experts. In the year ahead, this webinar series will continue to connect viewers with ERS specialists for a variety of data products. If interested, a full schedule of the series can be found on the webpage on our webpage, which I'll link to in the message center here shortly. Before I introduce our speakers, I'd like to remind you that this webinar is being recorded and will be posted to the ERS website next week. If you have any questions during the webinar, please enter them into the chat feature at the bottom, left hand corner of the screen, and our Economists will answer them during a Q&A session after the presentation. Now, it's my pleasure to introduce today's two speakers. Our first speaker is Hayden Stewart. He's an Economist in the food markets branch of our Food Economics division. His research focuses on consumer economics and the food market structure and performance. Joining Hayden is Cross Commodity Analyst, Bill Hahn. Bill is part of our Market and Trade Economics division's animal products cost of production branch where he has worked on livestock related research since 1986. Thank you both for joining us today. Hayden, I'll hand it over to you.

Hi, thank you for the introduction, Valerie. This is Hayden, and I'm pleased to be here today with my colleagues Bill and Jeffrey and talk with you about ERS price spreads data. Of course, I appreciate everyone who is listening in and taking the time to join us. During today's webinar, we will first define what we mean by price spread. We will then explain the background a little behind why ERS developed these data, along with some background on how the data are commonly employed. For those of you interested in taking advantage of the data yourself, we will further provide an overview of what is available and demonstrate where to locate the data on the USDA ERS website. And finally, we're happy to take any questions you may have.

So, to begin, whether we're talking about an apple, a loaf of bread, or a cut of meat, the foods that you and I buy at grocery stores generally started in some form at the farm. Food manufacturers, wholesalers, and retailers, among still others, may have also played a role at some point by transforming or transporting that initial farm product. Price spreads are the difference in a food's value at any one of those stages and a different stage of the production and marketing

chain. Farm to retail price spreads, as the name implies for example, are the difference between what a consumer might pay for an item at the grocery store and what farmers receive for the agricultural commodities embodied in it. In this slide I'm showing you here, we consider fresh field grown tomatoes, and as you can see on the first bullet, we will start our calculations with a simple measure of the food's retail price. Now the data here are from 2021, and in that year the monthly average retail price of fresh field grown tomatoes was \$1.85 per pound. Okay, that's the first of the stages in the marketing chain I mentioned or the last, actually, the case would be. And as you can see, we're next going to have to consider some kind of conversion factor. We have to ask ourselves, "okay, for that pound of fresh field grown tomatoes, what did farmers supply initially at the beginning of the chain?" In the case of tomatoes and most other fresh vegetables, we have to assume that some amount of product was damaged, spoiled, or otherwise lost. In this particular case, tomatoes, we assume that 1.2 pounds are supplied for each pound at retail. The next step and as you see in the third bullet there is, we're going to have to value that 1.2 pounds at the farm level, and we have data for that on what prices, you know, were received by farmers for their commodities. And in 2021, approximately 66 cents was received by farmers per pound of tomato at retail. And then the last two bullets here, you can see the calculations. In order to calculate the spread, you would subtract the retail value from the farm value. It's \$1.19 in this case. Also of interest is the farm share of the retail price, which is based on the ratio of the values at the two stages.

Um moving along, um, we showed you all this stuff: why we- how we get there, what we do, but why? What is our motivation in calculating farm to retail price spreads? Well for one thing, we have to do it. The Agricultural Marketing Act of 1946 requires USDA to estimate the spread between retail and farm level prices for various commodities and various forms. That's the marketing cost, the value added by all members of that production marketing chain past the farm gate up to the point where the consumer buys it in the grocery store. But aside from the fact that we have to do it, there's also some very broad interest in these data including interest from farmers and ranchers, the general public, as well as academic and government researchers.

As I said, they have many uses and users. Farmers and ranchers are often interested in the difference between the prices they receive and those higher up the supply chain; therefore, we will receive questions from organizations that serve or represent them. I have, for example, recently discussed our data with a publication that serves dairy farmers. The editor of that publication used our estimates in an article that compares the farm share of retail milk prices with the farm share of retail cheese prices. The article also compared both of those farm share estimates with corresponding estimates for non-dairy products like fresh strawberries and fresh tomatoes. Therefore, there's some understanding of- of what dairy farmers receive and the way of share of retail prices compared with growers of fruits and vegetables. Then, you know, aside from the agricultural community there's also a lot of interest in the general public, especially during times of high or increasing food prices. Um, so as another example, I found, not long

back, a blog online about food price inflation, and the author of that blog had used our data. And he noted how money paid to farmers for wheat represents only 4% of retail bread prices then rising wheat prices shouldn't really explain why bread prices are higher. Something must else explain besides the price of wheat why bread is, you know, costing more money. And then, as I said, finally there is interest among researchers- researchers in both academia and government. And to highlight a few, uh, recent studies I'll now turn it over to my webinar co-host Bill.

Looks like we are having a bit of technical difficulties. We'll be right back folks.

It appears we have Bill online again. Thank you, Bill for joining us, um, are you able to hear us?

Yes, I can hear you. I'm sorry.

Thank you, Bill, no problem. Continue with the webinar, and we apologize for technical difficulties.

Yeah, all right. Okay. Hi, my name is Bill Hahn. Sorry, my phone got- my phone blanked out on me for some stupid reason. Okay, so a personal story here. Um, I've been using the price spread data since 1980 when I was in the master's program. I used the- our retail prices for beef and pork as the retail prices of beef and pork for demand analysis purposes. A lot of other researchers have done work with this. A lot of people in the government, you know, we've covered things like for instance meat demand, price transmission studies, or demand- demand in general, price transmissions comparing how prices move at different levels of the marketing channel, and- uh, and- and some other research that worked on things like, you know, anti-trust issues. Here on this slide, we have a couple of examples of some research that Hayden and I did together with some other people. Uh, the- the screenshot on the left is an Amber Waves publication. Amber Waves is the ERS online magazine periodically updated. And on the left you'll see a journal article that we published before then and is the basis for, you know, this Amber Waves what we call finding. One of my great things about this USDA research or government research in general is that all these- all our publications are not copyrighted. You can quote them freely and use them as you see fit, and in fact that journal article there, you know, because of a USDA policy is also freely available to anybody who's actually interested in it. Okay, go now- next slide.

There we go. Okay, sorry. All right, so, I got confused. ERS estimates two prices, price spread data. We've got the meat price that I'm in charge of and these look at meats, poultry, and eggs, and we got this price spreads from farm consumer which are the other agricultural items that Hayden was talking about earlier.

Now, how to find this data on the ERS website, which is [www.ers.usda.gov](http://www.ers.usda.gov). If you go on- onto this- onto the website, and at the top of the website there's a sort of maybe navy blue, bluish bar, and they have something, a number of links. One of which says data products.

So, if you click on that and then start scrolling down, you'll find all the various price spreads in listed alpha- or various, all kinds of data listed in alphabetical order. We've got the meat price spreads here, and you hit- click that link you end up on this page. And what we're going to be showing you next is some of the data from the choice beef values and spreads, okay.

Now, I'm going to- basically, there are four what we call values in there. You know, we'll talk about this a little bit more in detail later but, you know, our- our retail grow- retail steer- our retail beef is sort of composite made up of all kinds of different beef cuts, so it's not really a price for a specific kind of beef so we call it a value. So, our basic values, we have a retail value and that would be like the purplish line close to the top. There's the gross farm value, which is a red line. There's a wholesale value of the green line. You'll notice that those two, the red- red line and green line track each other fairly closely, but they start to diverge about 2015. And then, at the bottom, which you can barely see something called the byproduct value. Now, we trade- we track the retail prices, in fact the price for beef at the grocery store, but steers and heifers and cows and bulls will produce things other than meat. You know, they got hides, edible and inedible byproducts, fat, and bone. All these have some value, and the byproduct credit or byproduct value corrects for those values there.

I want to show you some of the recent beef and beef values and spreads. So, I've got the- the data comes out monthly on the retail level, and the most recent, uh, data we have is for May of this year. So, I've got January through May of this year and before that, and these bar charts I've got the, uh, annual average for 2020 and the annual average for 2021. So, if you look at this the blue bar is that- is this- basically the meat value of the steer, okay. Now, the red bar is the- when you add the red bar to the blue bar you get what the wholesale value of that meat is worth, and you add- and the total height, top of the green bar, is the retail value. So, looking at this thing, um, retail beef values so far this year have been somewhat higher than they were for the average of last year. Their uh- the price spread for these guys, or sorry, the farmer's share has fluctuated around between 39 to 41%. Generally speaking, actually, prices- prices for the re- the total retail price of beef is actually- is lower, uh, and have been slightly decreasing for- from January through May of this year. Um, the farm value of beef has- is in fact a bit higher this, uh, in May than it was the beginning of the year, which is why for instance that farmer's share is 41%. The retail price has gone down, the farm price has gone up, so they've got- ended up with a larger share of the retail dollar.

We've also got more meat price spread tables here. We got a point there to the pork values and spreads. Um, that has data that's quite similar to the- to the- to the beef values and spread in

terms of having, you know, spreads and- and gross farm, net farm, by-product, retail, and wholesale values. There's also sheets on here for what you call retail prices for beef, poultry cuts, eggs, and dairy products. I get my retail prices from the Bureau of Labor Statistics, and every month I put these in this sheet. And so, I'll show you all these animal products. You know, one it's a nice convenient place to find the bureau of labor statistics data. And then, there's a summary file down here, which is- has a few- it shows only a couple months of the most recent stuff. So, it does it's not- it's much less detailed than our other guys. I got this historically monthly data which for beef and pork goes back by month in 1970, and you that's where I got that data from that- that first beef graph over time.

We have more information about meat price spreads, and- and you can find our documentation link at close to the top of the meat price spread file.

And let's talk about that documentation for a bit. So, the idea here is you're want to price an animal at different points in the marketing chain. We price the whole animal as it leaves the farm, and we price the whole carcass as it leaves the packing plants. As I mentioned before, we're going to include byproduct values correction for the non-meat parts of the animal, so for that part of the packer sales that is not meat. And then when we get the grocery store, we buy back all that animal's meat from the grocery store meat case. So, that gives us our values at- at the three points in the marketing channel for meat.

Keeping on with the methodology, so we have a fixed proportion between farm, wholesale, and retail. Basically, we're figuring that it takes 2.4 pounds of steer to make a pound of retail beef. That pound of retail beef is almost entirely boneless by the way. A steer- 63% of that steer, that- that- dressing percentage, 63% of the steer is the, uh, is a carcass meat. On the hog end you- it's 1.87 pounds of hog per pound of retail meat, and they have a 74 dressing percentage. So, it works out, you know, that the hogs have- or have more meat- or more retail meat per pound of- well, the lower conversion factor means that hogs have produced more meat per pound of hog than steers do, and we transfer all the prices into a retail weight equivalent. So, for instance I'll start with my steer price multiplied by 2.4 pounds at that 2.4, and so, that by, you know, my gross farm value for steers is 2.4 times a preference steer price.

We got basically two sets of data or sources for our data. U.S. Department of Agriculture's Marketing Service provides a wide range of data on a wide range of products for meat. In livestock we have farm, wholesale, and byproduct data, and typically what we're using for these something they call negotiated prices for the farm and wholesale values. Negotiated means that somebody, you know, basically argues over the price, buyer and seller comes with some kind of agreement. There's other pricing methods and that's not part of the seminar here. The retail data comes from the Bureau of Labor Statistics. These are the people that publish the Consumer Price Index or the CPI. To actually get the Consumer Price Index they send people out to grocery

stores, among other things, where they- they collect prices base- of- of- of the products at the stores. We're sending back to Washington where everything's averaged up to make a, uh, make a price. Okay, and then, they pub- in addition to the Consumer Price Index those things that they calculate a large number of observations on will get published in their retail price database.

And now we're going to switch over back to Hayden- Hayden to continue to talk about the other price spreads data.

Okay, hey thank you, Bill. Well, as Bill explained our meat price spreads data product includes information for meat, poultry, and eggs. Data for other commodities can be found in price spreads from farm to consumer. If you are interested in data on say fresh vegetables or dairy products, you will find it there. Please go to the ERS website and navigate as Bill did through the list of data products and find as it says price spreads from farm to consumer. Once you find and click on that data product, you will arrive at the page shown here. At the top, you'll see that there's some introduction and some explanation of this data product, what you can find in it, and what its motivations and- are. Plus, at the bottom you'll, you know, where the red arrow's pointed, you'll see a list of different products, links to dairy, fruits, vegetables, and items made from selected field crops.

Now, before I get into any of the exact data that are available here, I'd like to point out that we have information for both individual food products as well as what we call market baskets. This approach allows us to provide what we consider to me- to be a more complete picture of what's going on. Milk produced by dairy farmers, for example, can be used to make whole milk, skim milk, cheese, ice cream, yogurt, butter and still other foods. Now, dairy farmers may desire an estimate of the farm share of any one of those specific foods retail price, and we do provide those data for a few individual dairy products. However, dairy farmers may also desire something more general. They may desire a general comparison of what they receive for their milk as a whole and overall retail dairy prices. In order to further provide that type of information, we create market baskets. These baskets contain a mix of foods that represent what U.S. households commonly buy at retail stores. Continuing with my dairy example, for example, as an illustrative example, it has 14 different items in it. However, the amounts of the foods vary. The dairy basket holds more fluid milk and cheese for example than it does ice cream and butter. That's because households generally buy and consume more fluid milk and cheese than they do ice cream or butter. So, finally by following this basket and its value at both the retail and farm level over time, at least for each year, we can provide that very general estimate of how much of retail dairy spending in general goes back to U.S. dairy farmers.

So, um, let's just say, for example, you went there and initially, you know, you were in this data product, and you looked at the list of available foods for which information are provided and-

and you said: okay, I'll start by looking at whole milk, and you can see the arrow pointing to the appropriate link to get to those data.

And here are the data or a segment of the data you would find there in graphical form. So, what you will find is the information on, uh, what was the average monthly price of a gallon of whole milk at retail here in say 2010. That taller, light blue bar in 2010 looks like it's pointing to around three and a quarter. So, that's what households paid at retail, you know, in 2010 on average roughly for a gallon of whole milk. The dark blue bar about half the height of the light blue bar shows the farm value, and it looks to be let's say around a dollar fiftyish. So, in that year the farm value was roughly half of the retail price, and the farm share was correspondingly around 50%. Now, that uh, red line at the top of the graph, mostly at the top of the graph, you can see that it fluctuates over time. Um, I think it peaks around 2014. That's when I believe the farm value of milk was- was particularly high, and it looks like it reached somewhere around 60% that year before dropping in 15 and 16. And then, it recovered a little bit up until 19, and the farm share has fallen- well fell in 20 and 21 as retail prices increased more than farm values did, at least that was the story up through 2021. It may be different this year. Um, so again, that's the sort of information you could find about milk, and that same area where you found milk you could have found cheese, you could have found ice cream, and you could have found butter data.

But, going back to my example earlier, let's say you weren't interested in butter, cheese, ice cream, or milk only, and you wanted that very general estimate of what do U.S. dairy farmers receive as a share of overall consumer spending on dairy products or retail or overall retail dairy prices.

Well, you click on that market basket, and it would bring you to something like this. Again, I've presented the data that are available in graphical form, and what you can see is that the farm share of retail dairy prices fluctuates. In Bill's graphs, I think you saw the same thing. There's a lot of year-to-year volatility. If you recall, I believe I mentioned it, in 2014 farm share seemed to be at a peak, and then it went down in 15, 16, recovered a little bit. But, mostly it looks to me like it's fluctuating somewhere in the neighborhood of 30% over at least the last 10 years or so.

Now, as Bill also has available um you- you know, you have the data. You- I really invite you. Please come to our website. See what's available. In looking at what is there and the numbers we provide, and it's always a good thing you may become interested how exactly does ERS come up with these numbers. What- what are what are the steps involved? Could I re-, you know, kind of reimagine them myself and my head how I would come up with them on my own? Or- or you just want to know more about what we're doing, please go to the documentation section. There's a red arrow here pointing you to that link for our documentation, and again, I invite you there. You'll find information about how we calculate our estimates for individual foods like apples,

tomatoes, and fluid milk as well as how we created our market baskets for dairy products, fresh fruit, and fresh vegetables as well as exactly what is in each of those baskets.

Now, in this next slide, um and again, there's a lot of documentation. I had to pick something to show in today's webinar, and I chose the step-by-step instructions that you see here for Cheddar cheese. If you read through this part of the documentation page you will see that much like how Bill used his fixed proportion conversion factors to assume how much live animal is needed to produce a pound of beef and pork, we use conversion factors for cheese and other products too. In this case, we're asking how much milk is needed to produce a pound of cheese, and instead of the six proportions that Bill mentioned we're using something called the Van Slyke formula, and you find out I believe roughly 10 pounds of milk are needed to make a pound of cheese. And we will also as Bill takes out byproduct value, we'll account for the amount of whey that is produced along with Cheddar cheese, and we'll take that out, and then, we'll need data that we get from USDA's Agricultural Marketing Service on the value of milk at the farm. And we'll value that 10.3 pounds of milk net- the value of the- the whey, and we'll compare that to the retail price of the Cheddar cheese, which in- I think this is 2011, it was about \$1.72 it looks like, and um, it worked out that year. So, you know that the- the pound of Cheddar cheese was \$5.42. The retail value was \$5.42. The farm value looks like a \$1.72. Worked out for about a 32% farm share I believe. I apologize, the numbers are a bit small there. I was straining my eyes to read them. I hope you're not as well.

Now, uh, lastly on the methodology, I'd like to point to where you can get more information on the data sources we use to produce our data. And Bill already explained to you about the Bureau of Labor Statistics and how those data are collected as a part of the effort to measure inflation, and we also use those data for price spreads from farm to consumer. Plus, we supplement that with some proprietary scanner data that ERS purchases in order to make it possible to calculate price spreads and farm share estimates for a few other foods. For farm level prices, we rely on information from other USDA agencies like the NASS and the AMS.

Now, one very interesting feature of this data product, in my opinion, is something that my colleague Jeffrey has worked hard to produce and that's interactive charts, visualizations. By interactive I mean that- that you the user can go in and make choices, and the figure will change to depict the type of information you ask of it. So- so, to see these interactive charts you just click where the red arrow is pointing here.

And this is a screenshot of just one of the- the many that are there. I believe there's four in total. And this shows the, uh, market basket data here for fresh fruit and fresh vegetables. I think the takeaway here is that the farm share is a little higher for fresh fruit than it is for fresh vegetables. So, both fluctuate over time, and you the user could go in and click on this- one of these boxes to



your right if you wanted and have it add the data for milk and dairy products in there too, if you wanted.

And as I said, there's a variety of other information available through those interactive charts -- each different, each very colorful. I hope easy to follow. This here is an exercise that allows you to simulate how a change in the farm value of certain fresh fruit would affect those products retail prices. Again, I invite you to- um to journey to the website and check it out yourself. Thank you.

Thank you, Hayden. We'll go ahead and open the floor for questions now. As a reminder, questions can be submitted through the chat feature located at the bottom, left hand corner of your screen. Before we begin, I'd like to introduce our panelist Jeffrey Hyman who will be helping us answer questions. Jeffrey is an Economist with the Food Economics division's food markets branch. His research revolves around economic factors related to diet quality and food choice. Jeffrey also manages ERS's price spreads from farm to consumer data product. Thank you for joining us today. For our first question: why are there two different price spreads data products? There's the consumer price spreads and the meat price- price spreads.

Well, thank you Valerie. That's actually a very good question. One reason is it just worked that way over history. Bill- bill's division has long been studying, uh, the value of animals at different stages of the marketing channel, and my division has been putting out price spreads data for a variety of products, and there was no need to overlap so to speak. Also, I would point out and- and bill may choose to elaborate on this. There's some interesting differences in the technology. In the case of say fresh fruit or fresh vegetables when we talk about building a market basket or dairy products, we want to build baskets that represent what consumers buy at retail. Whereas in the case of meat products there's a need to assemble products at retail and put them back together in proportions that would essentially recreate what can be harvested from an animal. Bill, would you like to add to that?

Uh, this is Bill speaking. That- Hayden is essentially correct on that. Part of the problem here is that, you know, you- you- take a gap- you take some farm level milk, and you can turn to cheese, or you turn it into the fluid milk or a wide variety of products. A single animal produces a wide variety of meat cuts, and if you've been in the grocery store you know that different meat cuts, different cuts of beef, different cuts of pork all have different prices. So, that's one of the reasons that we- we- we've done it this way. Another- another thing that- that- that we have is a meat end of life that's a lot- less common for the other products is that we do have a good wholesale data on what wholesale meat cuts sell for. So, that allows us to, um you know, to actually look at what the- at a packer level kind of thing as well.

Thank you, Bill, and thank you, Hayden. For our next question: how do you determine what is in a market basket?

Well, as I said earlier, the goal in producing market baskets is to create a set of foods that typifies what a household might buy at retail stores. So, when I think, for example, about fresh vegetables, and if I want to give vegetable growers, shippers an idea of what they receive in the way of consumer spending or retail prices on fresh vegetables, I would want my basket to give more weight to more commonly purchased and consumed products. But I would also want it to have a large variety of products so that it was meaningful, it was- it was broad, and- and it was-, and it covered enough products that- that it was informative to make a statement like “in general what do fresh vegetable shipper, growers make as a way of the share of the retail price?” But I would have to give a larger weight to potatoes and lettuce and tomatoes than I would to foods that are still- should be in the basket but maybe not weighted as heavily, and in total we put about usually around 14, 15, 16, products in our basket. That's certainly the case of the fresh fruit, fresh vegetables, dairy, sorry um, and in the case of the fresh fruit, you know, you- you'll have- um you know, have apples and- and oranges and- and grapes. You won't have bananas because um the uh- there's not really a large U.S. commercial banana growing industry, and in the dairy, you'll find fluid milk and it's different fat content levels, whole, skim. You'll find a few different types of cheese and yogurt, ice cream, butter and so forth. Again, all meant to create baskets that typify or represent what households might buy but give greater weight to those more commonly purchased and consumed.

Thank you, Hayden. Looks like we have another market basket question. What kind of foods are in the fresh fruits and vegetable baskets? For instance, if I click on fresh fruits there is a list of different fresh fruits. Does that mean those are what are in the back- what's in the basket?

Well not- not exactly, Valerie. You see, if you go to our documentation which again, I invite users to do. You can get a complete list of all the fresh fruits and fresh vegetables in the basket. The list that you see on the, uh, data product website with the links, and it shows you what you can get information for as a standalone product. So, for example, we have information for tomatoes, lettuce, and- and- and I think potato and broccoli, but our basket for fresh vegetables I believe contains 15 or 16 different items. It also has asparagus, bell pepper, cabbage, carrots, celery, corn on the cob, cucumbers, uh romaine lettuce, sweet potatoes, and- and others still that I can't think of off the top of my head. Again, it's um it's a- it's a larger number of products because it needs to be broad enough to typify what households would buy at retail, and households don't just buy four or five products. It needs to be broader than that.

Thank you, for our next question: is seafood included in the analysis, and how about lamb and sheep? If they are included, where do we find them?

Well, um, since Bill is our meat Cross Commodity Analyst, I- I'd like to pass that- that question to you, Bill.

That is- okay, that's an excellent question there. Okay, they're all excellent questions. We don't have- we don't have much in the way of uh- we're not collecting much in the way of seafood data. We at ERS, we- we do rely heavily on – okay, I'm thinking – sorry, a little fuzzy here. The- um yeah, we don't have a lot of seafood data. We don't have much in the way of retail seafood information. So, if you want that- that's- that's and- unlike many other countries in the world, typically the ministry of agriculture includes fisheries, and- and fisheries are covered by the- I think the Commerce Department here in the United States. That's another thing sort of outside, it's outside the USDA purview. As far as lamb goes, we don't have any good retail lamb prices coming from the Bureau Labor Statistics. Well, presumably we could, you know, we might be able to get something from the scanner data. But, you know, the- that- that doesn't come out as often as the rest of the data, and so at best case scenario we're probably gonna have to go for like an annual a lamb thing. But no, we don't have a- sorry we have no lamb data, no lamb retail data.

Next question: can you give me some examples of products for which the farm share of the retail price is high and some for which it is low, and in general what determines whether farm share is high or low?

I'd like to pass that question to Jeffrey with whom I manage the data product. Jeffrey, could you take care of that please?

Sure, happy to give some examples, and in some years the farm share of the retail price has been less than 5% for bread and about 20% for flour. Bread's lower farm share is to be expected because bread is made by mixing flour with other ingredients and baking and slicing. These additional marketing services cost money, and the more any such marketing costs contribute to a product's retail price, the lower the farm share of the price will be. Similarly, the farm share of the retail price is higher for fluid milk at about 50% than it is for ice cream at about 20%.

Thank you, Jeffrey. Here's another question: do we have forecasts for retail and farm prices?

Well, Bill, do you think you could answer that?

Yes, I can. As part of our outlook program, we do. If you go to the ERS web page and look under publications, you will find a large number of these monthly or periodic outlook reports where we typically include like the most recent data on prices for many products along with production and such and in production, trade, imports, exports, demand, and so we'll have farm price forecast in there. For instance, in the Livestock, Dairy, and Poultry Outlook report we have- right- the most recent one released, we've got forecasts for the rest of the year by quarter,

and like the first quarter and annual averages forecasts for, um, for 2023. Now, we aren't doing say for instance forecasting these retail prices for say, I would say, the retail choice beef composite or the retail pork composite that I calculate. But a different part of ERS and a different product has the, uh oh, food price inflation forecast, the Food Price Outlook, and you look under the data products you'll- you can find that one, and you'll find our forecasts for the Consumer Price Indices for a lot of different foods.

Thanks, Bill. Our next question is related to the information you showed on slide 30. Do changes in farm value for some products affect retail prices more than others?

Yes, absolutely that is true. As we saw on slide 30, uh clearly uh, some retail prices are more sensitive to changes in farm prices than others. Generally speaking, if the farm share is greater, the retail price will be more sensitive than otherwise. Let's imagine, for example, that you have a retail product that costs \$2, and if the, uh, farm share were say 20 cents, 10%, then, you know, increasing that farm value from say 20 cents to 30 cents might increase the retail price by- to \$2.10. As a percentage that's not, you know, two to 2.10. It- it is smaller than if, you know, there were instead of an increase from 20 to 30 an increase from say 50 to 75 cents. Um, the larger farm share means that a percentage increase in the farm value is going to lead to a larger absolute change in the retail price.

Thank you, Hayden. For our next question: it appears from the figure shown in the webinar that the farm share of food's retail price can vary widely over time. What sort of factors can cause such changes?

That's a great question for Jeffrey. Do you think you could handle that, Jeffrey?

Sure, yes. So, farm level prices can change a lot from year to year and cause corresponding changes in the farm value of the food prices; however, long run trends in the farm share of retail food prices also reflect changes in consumer preferences, the technology used to process and distribute foods, as well as trends in prices for inputs such as labor, energy, and raw agricultural commodities. If, for example, consumers were to increase their demand for value-added fresh cut fruits and vegetables such as salads above what it is now and reduce their demand for fruits and vegetables still requiring cutting and chopping below what it is now, you would expect the farm share of fresh fruit and vegetable prices to fall. It- all that preparation adds convenience, it- it saves consumers' time, and it also costs- costs money, which implies higher marketing costs and lower farm share.

Good to know, Jeffrey and thank you. For our next question: how do you get retail price data? Is it through retail scanner data?

Well, there are a few different sources of retail prices that -- this is Hayden again. As Bill mentioned, as I mentioned, the Bureau of Labor Statistics is a key source of publicly available information on average retail prices. They have staff that will go out to grocery stores and collect data on- the- on the foods that they can see. They'll go in and they'll collect prices for different cuts of meat, different dairy products, different fruits, different vegetables, and loaves of bread. If they have sufficient data, they will report an average retail price for some of these products, and we do take advantage of those data. However, there are also a lot of foods for which we would, you know, like to provide information, and unfortunately the data are not available from the Bureau of Labor Statistics. So, in that case, we will rely on scanner data. We're constantly re-evaluating which products we feel are necessary. As Bill mentioned, at this time, we don't do any calculations for lamb. We could perhaps if we wanted to consider that down the road. We have recently added, uh, though like soybean oil to our- our list of products, and that average price is not available from BLS, and we do calculate it from scanner data. So, it depends- depends on what's available but we rely on- on available public- available public and private data.

All right, thanks Hayden. For our next question: has ERS ever done this analysis using input-output tables, that is determining the share of the final demand dollar for the different industries in the supply chain such as agricultural- agriculture manufacturing, wholesale, retail, etc.?

Well, that's a great question, and yes, we have another data product that I would invite users to check out. It's put together by a different team of economists, and it's called the Food Dollar Series, and the Food Dollar Series does use input-output tables, and the underlying source I believe is the Bureau of Economic Analysis. For further details you would need to contact that team, and they- they use this input-output technology to report the farm share of food spending in general. They then provide a food at home and- as well as a food away from home dollar too, and there is a breakout. Uh so I- I can't- I, and- I shouldn't speak, because I'm not a part of the team, to exactly what the components are, but I believe it's many of what you mentioned, Valerie. I believe you can see the wholesale component. You may- I think they even have an energy component. There's different ways of breaking it down that are very interesting and useful.

Thank you for that great information, Hayden, and that looks like that's all the time we have for today. Hayden and Bill and Jeffrey, thank you for a great presentation on ERS's price spreads data products. Many thanks again to Jeffrey for your assistance during the Q&A session as well, and finally, thank you to our listeners for taking time out of your day to join us. We hope this has been helpful. Before closing, we'd like to highlight the next segment of our data training webinar series. This July we'll host a webinar on two of ERS's agricultural productivity data products, the agricultural productivity in the U.S. and the international agriculture productivity data sets. Be sure to visit [www.ers.usda.gov/data-training-webinars](http://www.ers.usda.gov/data-training-webinars) for more details in the coming weeks. You

can also sign up to receive announcements of upcoming data training webinars by contacting the email at the top of that page.

Lastly, if you haven't done so already, we'd like to invite you all to download the new ERS Charts of Note mobile app. With this app, available free of charge on Apple and Android devices, you can receive digital snapshots of ERS research delivered straight to your mobile device. Again, thank you for joining us today. This concludes our webinar.