Farm Income and Financial Forecasts, December 2022 Update - YouTube

Good afternoon, everyone, and welcome to our webinar: *Farm Income and Financial Forecasts, December 2022 Update.* My name is Liz Hills and I will be your host today. As a reminder, this webinar is being recorded and will be posted on the ERS website next week. If at any time during the webinar you have questions, please enter them into the chat feature at the bottom left-hand corner of the screen and our presenter will answer them at the end of today's presentation. Today, our presenter is Carrie Litkowski. Carrie is a Senior Economist and Farm Income team leader at the USDA's Economic Research Service. She is responsible for developing sector-wide measures of farm income, value-added, and the aggregate farm sector balance sheet. Previously, Carrie served as an Economist at the Bureau of Economic Analysis where she was responsible for the production of farm income and employment statistics nationwide. Thank you for joining us today, Carrie, the floor is yours.

Thank you, Liz, for that introduction and thank you all for joining me today as I present the latest USDA forecast for U.S farm sector income and wealth for 2022. And what a year 2022 has been, that's hard to believe it's already December. But you might say 2022 has been a record year for the farm sector in that many elements of the farm income statement are forecast to reach record highs in 2022. The ERS farm income and finance program measures, forecasts, and explains indicators of economic performance for the U.S farm sector. These can be used to gauge the financial health of the sector. We release forecasts three times a year and with today's release we're putting out our updated U.S. level calendar year forecast for 2022, to include some new and updated information as it has become available since our last release on September 1st. This includes some additional survey-based data on 2022 production, prices, and marketing patterns. We also are incorporating the latest forecasts from the November World Agricultural Supply and Demand Estimates report, the WASDE report.

So, what does our forecast cover? First, our data covers the farm sector as a whole, which is comprised of two million farms who operate about 900 million acres of land. About half of those farms are what we consider farm businesses, which we defined as larger farms and those were the principal occupation of the operator is farming. These farms account for about 90 percent of the total value of agricultural production in the U.S. and we have some additional data and forecasts on their finances. Lastly, we look at the well-being of the nearly 5 million people who live in households attached to a farm.

We're forecasting Farm sector income to increase to record levels in 2022 because a strong growth in commodity cash receipts. And this slide presents an overview of what we're forecasting for 2022 and the order in which I'll be discussing items today. First, net cash farm income for calendar year 2022 is forecast to increase 26, or almost 27, percent in 2022 relative to 2021 in nominal dollars. Cash receipts are driving much of this increase, or nearly all of it, as their forecast to increase almost 24 percent, these are receipts from crops and animal product sales. Direct government payments are forecast to decrease 36 percent, while federal commodity insurance indemnities are forecast to increase 80 percent. Moderating this growth from higher cash receipts in 2022 are production expenses which are forecast to increase almost 19 percent in 2022. On the farm sector balance sheet, farm sector assets, debt, and equity, are all forecast to increase, with equity forecasting to increase 10.6 percent in 2022. We can also simulate how these changes in cash receipts, government payments, and expenses might affect farms, on average. And we're forecasting the average net cash farm income for farm businesses, these are

the larger farms, and those where the operator's primary occupation is farming. It's forecast to increase almost nine percent in 2022. For those households that operate a farm, median total farm household income is forecast to increase 2.8 percent. Now note, in this slide, all the dollar values are in nominal dollars, so they're not being adjusted for inflation.

But this next chart is adjusted for inflation so with using 2022 dollars to adjust the values for prior years to be consistent with 2022. So, this allows for a better historical comparison over time. We have two primary measures of farm sector income, or profit, the yellow line is net cash farm income and this includes cash receipts from farming or the sales of farm commodities, as well as cash farm related income and government payments to farm operators less cash expenses, and these are the expenses that farmers incur to produce their agricultural commodities. And cash just means that there was some sort of market transaction. After increasing nearly 22 percent in 2021, net cash farm income is forecast to increase another 19 percent in 2022. This would put it at its highest level on record. Our inflation-adjusted series does go back to 1929. So, this is the highest in that whole time series. Net farm income, that's the blue line, is a broader measure of income that also incorporates non-cash items, like economic depreciation, and it accounts for changes in inventories. In 2021, net farm income increased 43 percent and is forecast to increase another seven percent in 2022. This would put net farm income at its highest level since 1973.

We derived net farm income by first measuring its component parts, or from the bottom up, and this allows us to identify what is driving the change in income from 2021. Now this chart I'm back to using nominal dollars, so no adjustment for inflation. For 2022, the forecasted increase in income in nominal dollars is due to higher cash receipts. So, in this chart, we have on the far left, net farm income estimate for 2021 at about 141 billion dollars. At the far right, we have the 2022 forecast at 160.5 billion. So, if we work our way from left to right, we are forecasting crop receipts to increase 45.5 billion in 2022, but we're forecasting about 18.1 billion of that increase was due to sales from inventories. So, we make an adjustment to subtract these out because a net farming income we are trying to get at income from current production only. So, when you combine cash receipts with this inventory adjustment you get a measure of the crop value of production. And it is forecast, this crop value of production, to increase 27.5 billion in 2022. Next. Livestock. or animal and animal product receipts, are forecast to increase 60 billion dollars with just a small adjustment for inventories and then production expenses. They're forecast to increase nearly 70 billion dollars in 2022. And this would pull down income, so that's why it's shown as red and as a negative, in this chart. Also pulling down income some are direct government payments, which are forecast to fall nine billion dollars. We have a 12.4 billion contribution to a higher income coming from all other changes and this primarily reflects the forecast for higher insurance indemnities in 2022.

In this chart, we look at the drivers behind the forecasted growth in cash receipts, which is predominantly higher prices received by farmers. Through a simulation, we can deconstruct the change in cash receipts into a price effect and a quantity effect. In other words, we can identify whether changes in prices are quantity sold or driving the change in cash receipts. So, starting from the left, in 2022 total cash receipts are forecast to increase almost 97 billion dollars, due to higher prices. That's the orange bar. And then another 7 billion due to higher quantities sold, that's the blue bar. There's about 2.1 billion of the increase that we can't attribute to either prices or quantity sold, due to our input data. And, in total, cash receipts are forecast to increase 106 billion dollars. The story is fairly similar when you look at crop cash receipts separate from

livestock cash receipts in that price effect, or the price changes are driving most of the increase. With- and to a lesser degree higher quantity sold. Now these are on net for all of the crop and livestock commodities in aggregate.

We can also look at cash receipts by commodity. We do calendar year forecasts, so they're not crop year but calendar year, and in this chart I'm back to looking at inflation-adjusted dollars. Before cash receipts for about 25 different crop commodities, or commodity groupings, and this chart focuses on some of the major crops. After increasing 15 percent in 2021, total crop cash receipts are forecast to increase 12 percent in 2022, in inflation adjusted dollars. Receipts for corn, soybeans, cotton, vegetables, and melons, and wheat are all forecast to increase in 2022. The largest dollar and percentage increases are forecast for corn and soybeans, which I'm going to talk about in the next slide. Receipts for fruit and nuts are forecast to decline in 2022 after an increase in 2021.

To give additional historical perspective, this chart looks at corn and soybean cash receipts since 2002. Corn receipts in 2002 are forecast to nearly match their peak in 2012. Our 2002-22 forecast for soybean receipts would put them at their highest level ever. Note that our forecasts are for calendar year, so receipts or sales in 2022 will come from crops harvested in 2021, but sold in 2022, and also crops harvested and sold in 2022. So, it's kind of a combination of two different crop years or crop marketing years.

Total animal and animal product cash receipts are forecast to increase 23 percent in 2022 after increasing 14 percent in 2021. On this chart, 2022 receipts for every commodity category are forecast to be at or near their highest level over the past five years, if not longer. The largest dollar increase is forecast for broilers at 15-billion-dollar increase, or 46 percent increase, putting them at their highest level on record. Receipts for hogs, after a large increase in 2022, are expected to decrease about one percent in 2022 once adjusted for inflation. So, they pretty much about stable hog receipts for 2022.

Government payments are another source of income to farmers. We define government payments as direct payments made directly to farm operators by the federal government, without any intermediaries. These are generally from foreign programs. We record them in the year in which they were received by farmers. Government payments reached a record level high in 2020 and this increase was largely due to supplemental and ad hoc disaster assistance to farmers for COVID-19 relief. And since 2022, these COVID related payments have declined in 2021 and are forecast to decline even more in 2022. Basically, we just have residual COVID-19 related payments in 2022. And this is shown by the purple bars on this chart. And these payments include payments from the Corona Food Assistance Programs, CFAP, and other USDA pandemic assistance paid directly to farm operators that were adversely affected by COVID-19. Also, we have in there as non-USDA pandemic assistance forgiven loans from the Small Business Administration's Paycheck Protection Program, for which we're forecasting no new loans in 2022. So, what I think is interesting in this chart for 2022 is this gray bar. And this gray bar, in 2022, largely represents what we call other supplemental and ad hoc disaster assistance. So, it's not- it's non-COVID related, and we're forecasting it to increase about 7.8 billion dollars. And this largely reflects realized in and anticipated payments in 2022 from the Emergency Relief Program, the Emergency Livestock Relief Program both of which were created by the Extending Government Funding and Delivering Emergency Aid Act and this gray bar also includes USDA assistance to distressed borrowers that was authorized from the Inflation Reduction Act. On to

some of the other categories, or one other category, of payments and those- one of them are those that are a function of commodity prices as represented by the orange bar segment. And these are expected to be minimal in 2022. In recent years, this category largely represents payments from the Agriculture Risk Coverage, Price Loss Coverage, and Dairy Margin Coverage Programs. And given the high level prices farmers have received- been receiving, we expect minimal payments in 2022 under these programs. The line on the chart shows inflation-adjusted total direct government payments. Payments across 2002 to 2021 averaged about 20 billion dollars in inflation-adjusted dollars. In 2022, government payments would be below that average but near the levels that we saw before 2019.

This chart looks at government payments relative to the rest of net farm income. It also includes another source of income to farmers, commodity insurance indemnities which are payments to farmers for losses covered by insurance. This chart is an inflation-adjusted dollars. The top peach bar segment shows indemnity payments paid to farmers less premiums paid by the farmers for federal and commodity insurance, or what I'll call net insurance payments. Net insurance payments are forecast to increase in 2022 to their highest level since 2013. The darker orange bar segment shows direct government payments, which I talked about in the previous slide. The gray bar represents net farm income excluding net insurance and direct government payments. And you can see that the income increase and net farm income isn’t coming from these federal government payments but rather, as we discussed earlier, it's coming from growth and cash receipts. In 2022, net farm income less insurance and government payments is forecast to rise about 13 percent, so that's that gray bar.

Let's look at production expenses which are the costs incurred by farmers to produce their agricultural output. This includes items such as feed, purchases, fertilizer, and hired labor, and interest expenses, plus more. The chart shows total expenditures in both nominal and inflation-adjusted dollars. Production expenses remain stable across 2018 and 2022 when inflation adjusted. For 2022 we're forecasting expenses to increase nearly 19 percent or 70 billion dollars in nominal terms, which would represent the largest year-to-year dollar increase on record. But this increase is lowered to about 12 percent or 47 billion when adjusted for inflation. But still, the growth in production expenses is exceeding inflation. At 442 billion dollars in 2022 expenses would be at their highest level since the peak in 2014.

When we look at expenses by category, we forecast spending for nearly all categories to increase in 2022. This chart I'm back to nominal dollars, so just looking at comparing spending in 2021 to forecast the spending in 2022. The price is paid for many production inputs have been trending upwards since 2012 and in 2022. And this is based on monthly index indexes the price is paid from the National Agricultural Statistics Service of USDA, from NASS. The largest dollar increases in 2022 are expected for feed and fertilizer with spending on fertilizer forecast to increase 47 percent. Fuel and oil and interest expenses are also forecast to see large percentage increases, in 2022. Depending on seed is the only category for which we expect a slight decline in spending, at less than one percent decline. And this also kind of follows along with the prices paid index which really haven't shown much of a change in prices paid for seeds by farmers, or a slight decline.

Another tool we can use to measure the health of the farm sector is the balance sheet, which provides information on the value of assets, both physical and financial, and the level of debt in U.S agricultural sector. The balance sheet is forecast to improve, or strengthen, in 2022. Farm

sector equity, the green area, has increased every year after 2019 and is forecast to continue to increase in 2022. Equity in 2022 is forecast to be at four percent from 2021, or if you want to go back to 2019 it's about a 12 percent growth. And this is an inflation-adjusted dollars. This growth in equity largely reflects increases in the value of farm sector assets, so that's the value of land and buildings. In particular, the value of real estate assets, which represents about 80 percent of total farm sector assets, has increased. Real estate assets increased five percent in 2021 and are forecast to increase nearly four percent in 2022. At the same time the amount of debt held by the farm sector, which is shown by the blue area at the bottom of the chart, is forecast to remain relatively unchanged in 2021. Declining less than one percent when adjusted for inflation. Non-real estate debt in particular has been falling since 2018 and is forecast to fall three percent in 2022. While real estate debt is forecast to increase. So, the two types of debt are nearly canceling each other out, as far as their increases and decreases.

Changes in the balance sheets have implications for farm sector solvency and other measures of financial performance and stress. This chart, looks at the amount of debt relative to assets and relative to equity, shown as a percentage. These are solvency ratios which provide a measure of the sector's ability to repay financial liabilities, debts, or loans, through the sale of assets. Both ratios have increased every year from 2013 to 2020. And in 2021, the ratios fell indicating improved solvency for the sector. And they are forecast to continue to improve in 2022. Yet, they'll still be just slightly above their average for the past 10 years. It's important to note that these solvency ratios are for the sector as a whole, and there is a lot of variation in the amount of debt held by individual farms. There are additional financial ratios including liquidity measures and other profitability measures available on our website.

Two other indicators of financial stress in the sector are bankruptcy rates and the debt to service ratio. After 2019, the farm bankruptcy rate has trended down. In 2021, bankruptcies fell about 50 percent, according to data from the U.S Courts. And in 2022, we're projecting bankruptcies to fall further based on filings through September. And that would get us to a bankruptcy rate of less than one farm bankruptcy per 10,000 farms. The Debt Service ratio, shown on this chart by the line, describes the share of production income, or gross income, needed for debt payments. And it's one measure of liquidity, or the amount of capital readily available as cash. This ratio has also been trending down and is forecast to continue declining as the value of agricultural production, or production income, is forecast to increase in 2022.

Up to this point we've been discussing the farm sector as a whole. Now let's look at farm businesses, an important subset of all farms. We define farm businesses as: all farms where the primary occupation of the operator is farming plus those farms that had 350,000 dollars or more in gross cash farm income, that's income before expenses. There are roughly 965,000 farms that meet this definition, and they are represented by the blue and orange segments for commercial and intermediate farms. According to the 2021 Agricultural Resource Management Survey, residence farms, which are those farms where the operator is retired or whose primary occupation is not farming, plus they do not have 350,000 dollars in gross cash income. These residence farms account for half of all farms. But commercial and intermediate farms account for over 90 percent of the agricultural production and they hold most of the sector’s assets in debt. So, using farm level data from the 2021 ARMS we are able to do a micro simulation and project how farm businesses may fare in 2022, based on the forecast for the sector as a whole. And we can break down the forecast for farm business income by commodity specialization and geographic region. So, we're going to shift perspectives here a bit by looking only at farm

business and looking at average net cash farm income levels. And this perspective is going to kind of give us a bit of a view of the diversity or that, you know, that exists in the farm sector. Not all farms are the same and, you know, when we look at everything in the aggregate it can be very different than when you start looking at farms by smaller groups regions or specialties.

So, first let's look at farm businesses that specialize in crops. And these are an inflation-adjusted dollars. Using ARMS, we can categorize farms by commodity specialization. Meaning that at least 50 percent of the value of production comes from a particular commodity. All farm business- businesses, regardless of their specialization or geographic region, are expected to see government payments decline and production expenses rise in 2022, on average. And this is expected to result in lower average net cash farm income for farm businesses specializing in wheat, cotton, specialty crops, and other crops, in inflation-adjusted dollars. The largest dollar decline is forecast for farm businesses specializing as in cotton. But average net cash farm income for farm businesses that specialize in cottons is still pretty high in 2022. Farm business is specializing in specialty crops, these are largely farms that do fruits, nuts, vegetables, or nursery, are forecast to see the largest percentage decline in our average net cash farm income, as fruit and nut receipts, in particular, are forecast to decline in 2022. Farm business is specializing in corn and soybeans are projected to see average net cash farm income increase in 2020 due to the large increases in cash receipts for corn and soybeans.

For farm businesses specializing in livestock, or animal products, the outlook is also mixed based on their specialization. Dairy farms, on the far right, these farm businesses are forecast to see the largest increase in average net cash farm income of 64 percent in 2022. The forecast increase in milk receipts is expected to be more than enough to offset higher expenses and lower government payments, on average, for these dairy farm businesses. Average net cash farm income for hog farm businesses is forecast to fall in 2022 after a large increase in 2021. And if you recall, for the farm sector as a whole, sorry yeah… for the farm sector as a whole hog receipt are forecast to fall or remain pretty stable once you inflation adjust them. Farm business is specializing in cattle and calves, and poultry, are also expected to see average net cash farm income increase in 2022.

By looking at how agricultural production is distributed geographically, we can project how average net cash farm income for foreign businesses can be expected to change in 2022 by resource region. Across all farm businesses, average net cash form income is forecast to increase nine percent in 2021- sorry 22, relative to 2021. Six out of the nine resource regions are expected to see higher average net cash farm income in 2022, in nominal dollars. Farm businesses in the Northern Great Plains are projected to see the largest increase at 26 percent. This follows the forecast of growth in corn, soybeans, and cattle and cows receipts, which make up a large chunk of all the cash receipts, or the aggregate cash receipts, in the Northern Great Plains. Farm businesses in the Southern Seaboard are expected to see the largest decline in average net cash income, following forecasted declines and government payments and higher expenses and we wouldn't expect farms in the Southern Seaboard to benefit from the high receipts from corn and soybeans, as that's not- not a lot of those there not a lot of those crops there.

Up to this point, we've discussed the financial performance of farm operations, but this may not give an accurate- accurate or complete picture of the well-being of households that own and operate farms. Farm profits are often shared with other stakeholders, they landlords and contractors and the well-being of farm operator households is determined by a combination of

on-farm and off-farm activities. So, now we're going to look at all family forms, which account for nearly 98 percent of all 2 million farms in the U.S. And we're going to look at the household of the farm operators for those family farms.

Nearly 5 million people live in a household attached to a farm. One measure of their well-being is household income. Farm households typically receive income from both farm and off-farm sources. This chart looks at median farm income, off-farm income, and total household income. The median represents the income level at which half of the households have lower incomes and half of the households have higher incomes. This chart is in inflation-adjusted dollars. At the median, income earned on the farm is low and is forecast to fall to minus 661 dollars in 2022. Meaning that at the median farm income is negative, or they're having a loss in net income. But recall that half of law firms are residential farms, which are small farms and where the primary occupation of the operator is not farming. So, this results in low and usually negative farm income at the median. Therefore, many farm households rely primarily on off-farm income. Off-farm income sources include off-farm wage income, non-farm business earnings dividends, and transfer payments. Median off-farm income is estimated to have increased in 2021 and is forecast to remain relatively stable, once adjusted for inflation, at $88,140 in 2022, at the median. Total farm household income, at the median, also increased in 2021. And is forecast to increase in nominal dollars in 2022 but decreased three percent to $94,794 in 2022.

This chart looks at farm household income by type of farm. So, the same grouping, or categories, of residence, intermediate, and commercial farms. For households attached to a residential and/ or intermediate farm, medium household income, as shown by the blue line, tracks very closely with off-farm income, the red line. And off-farm income accounts for essentially all of the household's income at the median. For households attached to a commercial farm, on-farm income is more important and drives the trends in median household income. On-farm income for commercial farms is expected to decrease one percent in 2022 and drive the decrease in total household income. For all types of farms median household income is expected to fall in 2022, in inflation-adjusted dollars.

All of the information I presented today, and more, is available on our website. We have tables, data tables, charts, maps, and a written summary of our findings. We even have a data archive up on our website now. The next release is scheduled for February 7th at which time we will update our 2022 forecast again and have our first forecast for 2023.

Lastly, I'd like to let you know that next week on December 6th, ERS will be releasing its annual report now called *America's Farms and Ranches at a Glance*, it provides additional foundational information on U.S. farm and farm households. This year's edition also explores farm household health insurance coverage, input acquisition practices, farm liquidity, and agritourism adoption. And I'd like to make a quick plug for the Agricultural Outlook Forum which will take place on February 23rd and 24th. The agenda is currently online and includes more than 30 sessions of 100 agricultural leaders and subject matter experts discussing key issues impacting the sector. During one of those sessions, I will be presenting the ERS farm income and wealth forecast for 2023. I'm really excited that this will be in-person, or at least there's an in-person element, it is also a virtual option as well.

With that, I will pass it back to Liz and be happy to take any questions you might have.

Thank you, Carrie. We'll go and open the floor up for questions now. As a reminder, questions can be submitted through the chat feature located at the bottom left-hand corner of your screen. So, for our first question, Carrie, what factors moderate the growth in the net farm income, it grows slower when compared with net cash income.

Yes, if you go back to that original chart. Now there's always this gap between net cash farm income and net farm income, even historically. And largely that gap are the non-cash components that are included in net farm income in particular the accounting for depreciation or capital consumption and also adjustments for inventory change. And when we look particularly at the growth in 2022, we are seeing a stronger growth in net cash income at about 19 percent versus the seven percent in net farm income. And a large part of that is the adjustment that we make for inventory change. And, in particular, the crop inventory of change adjustment. We are forecasting that a pretty good chunk of cash receipts in 2022- calendar year 2022 came from sales from inventory. So, they didn't come from the crop that was harvested this year but they're from what they had in inventories. And the net farm income measures trying to get at current production, or the value of current production, so we subtract out those sales from inventories. And that really is what resulted in this different growth rate between net cash from income and net farm income. Because the net cash income series just looks at the value of what was sold, when it was sold, versus the net farm income measure which looks at when it was produced.

Thank you, Carrie. For your next question: it looks like the whole Eastern / Southern part of the United States will experience a reduction in the net income. What are some of those drivers?

Yeah, there are… I think there are some unique things about those, you know if you look at like the Southern Seaboard, Eastern Uplands in particular, both regions for which we're forecasting average net cash farm income to decline. And part of it has to do with the commodities that are grown here, for instance, the Southern Seaboard, but I think it extends into the Upper- Eastern Uplands as well, that's where a lot of the hogs are. And we're not, you know, we're forecasting hogs to be pretty unchanged in 2022. So, that- the hog receipts aren't going to be able to offset the increases that we expect for production expenses and the declines in government payments. I think another characteristic of why these eastern farms, these farms on the eastern side of the country are having lower, or declining, net farm income, on average. Is that they tend to be smaller farms, especially when you compare them to like farms in the Heartlands or the Northern Great Plains, where you can have just these really large like corn and soybean farms. The farms in the East Southern Seaboard and the Eastern Uplands tend to be much smaller and they aren't really benefiting from this massive increase in corn and soybean receipts that we talked about because that's not really what's grown, or predominantly grown, on the East Coast. So, it's kind of a factor of what they produce and the size of the operations that I think are impacting these declines for these- a lot of the Eastern coasts. Of course, the exception there is Eastern Coast in the North like the Northern Crescent here you have those farms a lot of those farms benefiting from higher dairy receipts because the large concentration of dairy farms in the Northern Crescent.

Thank you, Carrie. Next question: For the expense items on slide 13 where is the expense for crop insurance? Is it part of property taxes or fees?

It is not on this chart at all. So, it's not part of property taxes or fees. The insurance premiums they are a part of total production expenses, but they aren't a category on this particular chart. In our tables, we have all- we have more line items so we just tried to make what would fit on this

chart here. But we have all of them on our tables up on our website and the premiums are included down near the bottom in our other, kind of our, other production expense category which is everything but the items that you see listed here. But there was an increase, if I recall correctly, an increase in insurance premiums we're forecasting that for 2022.

Okay, thanks Carrie. Next question: If I understand correctly, farmers are taking on less debt even as their expenses are up. Does this mean that farmers are using more of their on-hand cash to pay their bills?

That's an interesting question. I mean, we- in nominal dollars there is an increase in debt, it's just not at the rate of inflation. And yeah, I would say you know, if it's not coming from debt then it comes from their cash that they have on hand or, you know, as they're earning it, you know, as you know, they're getting in-cash receipts. They may be, you know, that may be one reason for the sale of inventories is to help cover higher expenses but private- you know, but also you know incentives with higher prices. But yeah, I mean, farmers can get their expenses, you know, they can finance expenses with debt or with cash or with income- gross income. You know, government payments is also you know, versus you know, we're expecting a decline in government payments in 2022 but that is another source of income, or the commodity insurance indemnities from which farmers may be able to use to cover their expenses.

Got it. Thanks, Carrie. For your next question: what caused net farm income to peak in 1973?

Yeah, when I went back- we've had the numbers and I was going back okay when looking to see when has net farm income been higher. I was a little surprised that it was 1973 because I didn't really have a good understanding of why net farm income might have peaked in 1973. So, I am not an expert on this topic, but it has to do with events that happened in 1973 that are often referred to as the Great Grain Robbery. So, if you're interested in some ag sector history you can Google that and get some interesting information. To try to summarize it and just kind of, a little bit, is that following crop shortfalls in 1971 and 72, the Soviet Union produced a lot of grain from the United States that subsidized prices. Which caused global grain prices to soar. And there's a really neat podcast that I found on the USDA website that explains how this incident led to meteorologists becoming part of the USDA's World Agricultural Outlook Board. So, if you get on the ERS website and search for Great Grain Robbery you should get that podcast, if you're interested in learning more about what happened in 1973.

Thank you, Carrie. For our next question: can you highlight which factor of production, such as fertilizer, labor, etc, comprises the largest share of total expenses? I asked to understand the increase in which factor of production would result in the highest net farm income loss.

Yes, on this chart we're showing you the dollar increase by the bars. So, you can see that feed accounts for the largest share of production expenses, right? A pretty big margin too. So even though feed is only for- only- I say only like it's small, but it's not. But even though feed is forecast to increase 17 percent that is one of the that does end up being one of the largest dollar increases for the different expenditure items. Following feed is fertilizer. As far as the share of total production expenses. And then labor isn't too far behind that. So, other than labor, you know, we talked about fertilizer having one of the largest percentage and dollar increases, in 2022. So, I single out fertilizer and seed as being the predominant factors in the dollar increase, or accounting for the largest chunk of the dollar increase in expenses, thus the downward pull on net income.

Thanks, Carrie. For our next question: Do you consider only federal or state taxes or- excuse me, Carrie, let me re-ask that question. Do you consider only federal taxes or state taxes also?

It's federal and state taxes.

Great, thank you. All right, for our next question: the total production expense increase was 18.8 percent, but the expense increase was more than 40 percent for all- almost all of the individual items. Can you explain?

Yeah, this kind of gives back to two questions ago. Yeah, you do have a lot of items on this where you're seeing 30, 40 percent change. But then you get to one of the really large expense items that I talked about feed. Feed is the single largest expense item for the farm sector as a whole. It increased 17 percent, so that's a big reason why the increase in aggregate expenditures is closer to the 17 percent for feed than say it is for the 47 percent for fuels and oils. Also, you know another major input item for the sector as a whole is labor expenses. And those are about the third- account for the third largest share, or sometimes the second, you have depends on what year you're looking at. Before 2022, I believe, it was the second largest expense item for the sector as a whole. And it is only forecast to increase six percent. So, ultimately to answer that question it comes down to kind of like the weight, you know, of these you know what is the actual dollar size of these component- of these different expense items. And that you have these two major one's feed and labor which had relatively lower increases than some of these either- some of these other items like fuels and oils and pesticides, which had a larger percentage increase, but a smaller dollar increase. I hope that makes sense.

Thank you, Carrie. For our next question: could you please repeat the components of the other government payment increase?

Yeah. So, I think- I assume you're talking about this other gray bar here. Historically, that other gray bar is just anything other than these other programs that we've- we've noted. But for 2022, in particular, that other gray bar is primarily what we call on our tables other supplemental and ad hoc disaster assistance. And what is included in that in 2022 are these emergency relief program, emergency livestock relief program, and the USDA assistance to distressed borrowers. That's not the only but those are some of the biggies. So, a lot of these relief programs that are a lot of them are new to 2022 that have been that have been enacted in order to provide release- some relief to farmers that are feeling financial stress, or may have experienced drought or other conditions that impacted their farm negatively.

Thanks, Carrie. For our next question: can you explain how net farm income increases but commercial farms show a decline in family income?

Yeah. Sorry, let's get to that, yeah. For the farm sector, as a whole, we talk about farm income breaking record highs. But then we get to this chart, and you see farm income for commercial farms being nearly flat in 2022. And I think a big part of the reason comes down to which farm, or what type of farm, is at the median. Because these are median numbers, so we're just picking the farm at the 50 percent distribution, at the middle of the distribution of all the income. And that depending on what that farm is, what type of farm it is, might depend if it was profitable or not in 2022 because we talked a lot about, in these last half of the presentation, about how different types of farms might be doing better than others. Or how different regions of the country farms might be doing better than others. So, I think it comes down to, you know, the

farm that happened to be at the median for commercial farms was probably not a corn or soybean farm. But one of these other types of farms that for which we're not really forecasting farm income to increase notably.

Thank you, Carrie. For our next question: do you take drought and climate change into account in the forecast?

Not directly. We get our commodity forecast and we talk about- like our commodity production and price forecasts. Those largely come from the World Agricultural Supply Demand Estimates report, the WASDE, reports. So, there's our- there are commodity analysts who do those forecasts, and they may be considering the effects of weather or drought will have on that impact, but we just take the projections as they provide them. So, we don't make an adjustment. And we're only doing a one year out this is the short runs forecast. So, that works for us to just look at those- those forecasts- those projections for something like commodity insurance indemnities, you know, we're looking at- at this point we have data from the Risk Management Agency on the indemnities that were paid out, you know, through you know the end of October. And so that reflects the payments that they have and even when we're going to be forecasting it for 2023 in January, we don't make any assumptions about whether or climate. For the short run forecast, you know, we feel like some of it's included in the input data that we use and also that because it is a short run forecast, we don't have to make any assumptions about like climate change or weather conditions.

Thank you, Carrie. We have one more question for today and that is: Feed is an expense for one ag sector but a revenue stream for another. So, doesn't that offset each other and the net farm income bottom line?

When I talk about the farm sector I'm talking solely about- it's defined as agricultural commodity production. So, the production of crops, animals, and animal products. So, this is- that's the farm sector. The production of feed is not the farm sector. It is technically like a farm service or, you know, or ag services part. So, they're not really the same sector. But in our tables, if you look at our expense table, we do acknowledge that inputs like feed and seed are- oh no it just skip my brain. But their inputs… oh I can't believe it just- it just left me. We separate those kind of inputs or production expense items from the ones that definitely come from further away from the farm sector, like you know, like your gasoline, your fuels and oils, or your interest. But now, yeah, there is a loop. I can kind of see that, you know, the same farmers that are growing corn will have that corn for instance processed, or a certain portion of that corn, may be processed and turned into feed. So, there is a loop there and we do kind of see it like, you know, if corn prices are going up often times, we will see feed prices go up at the same time. So, we will have an increase in receipts and an increase in feed. But the timing can vary a little bit like sometimes we don't see this feed price increase until a little later after we've seen corn prices increase and it doesn't- it's not like a one for one, you know? It doesn't usually translate directly that, you know, an X percent increase in corn prices is going to result in an extra- X percent of- the same percentage increase in feed prices.

All right. Thank you, Carrie. That's all we have time for today. Thank you again for giving us a great presentation on Farm Income and Financial Forecasts the December 2022 Update. And thank you to all of our listeners for taking time out of your day to join us. We hope that this has been helpful. As Carrie mentioned, our *America's Farms and Ranches at a Glance 2022 Edition*, which was previously known as *America's Diverse Family Farms w*hich will be released next

week. We will also be hosting a webinar for this report on Tuesday December 6th at 1 p.m. Eastern Time. For more information and to register you can visit our website at www.ers.usda.gov/conferences. Lastly, if you haven't already done so, 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. In addition to our website and Charts of Note app, you can find more ERS content on our social media sites, Twitter and LinkedIn. Again, thank you for joining us today and this concludes our webinar.