

Good day everyone and welcome to our webinar, "Farm Income and Financial Forecasts, February 2018 Update." My name is Kellie Mendonca and I will be your host.

Our speaker today is Carrie Litkowski. Carrie is currently team leader for the Economic Research Service's Farm Income Team. 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. Carrie earned her bachelor's in economics and political science from Colorado State University and she holds a master's degree in economics from American University.

I think we're ready to start so, Carrie, you may begin the presentation.

Thank you, Kellie. Good afternoon and thank you everyone for joining me today. I'm going to present you with some of our highlights from our 2018 forecast, farm income, and financial forecasts. This is our first forecast for 2018, and this forecast will get revised throughout the year as more data becomes available, with our next release being in August. All the data that I'm presenting here today is now available on our website.

So, what is the farm sector? What does it cover? In my discussion today, we'll start by looking at the farm sector as a whole, which is comprised of a little over two million farms who operate over 900 million acres of land. Next I'll discuss the income and finances of the approximately eight hundred and twenty thousand farm businesses that account for about 90 percent of the total value of agricultural production. Lastly I'll look at the well-being of the over six million people who live in farm households.

First, some summary findings of our 2018 forecast and the order of topics that I'll discuss today. After remaining relatively flat in 2017, farm sector profits are forecast to decline in 2018. Net cash income is forecast to decline 5.1 percent, relative to 2017, in 2018. Net farm income is forecast down 6.7 percent in 2018. It isn't one particular component of income that is driving one's income down in 2018; rather, it's a combination of changes. Cash receipts is expected to decline slightly, 0.5 percent in 2018, but this is expected to be offset by an increase in commodity insurance indemnities. So overall the value of agricultural sector production is forecast to remain relatively unchanged in 2018.

Government payments, another source of income to farmers, are projected to continue to decline in 2018. Total production expenses are forecast to be relatively stable across 2016 through 2018, and I'll decompose some of that change on the U.S. balance sheet. Farm sector assets and debt are forecast to be largely unchanged from 2017, with overall equity rising by 1.6 percent, and farm households' medium household income in 2018 is forecast to be relatively unchanged from 2017, but has been inching upward since 2016.

We have two primary measures of farm income: net cash farm income and net farm income. Net farm income is considered a broader measure of income because it includes both cash and non-cash income and expenses. Note that this chart is in billions of dollars, adjusted for

inflation, and we're using 2018 dollars to go back and adjust the values for prior years. You can see that in 2018 net farm income is at a smallest level since 2002, and that cash in farm income is at its slowest level since 2009. Both measures remain below the average across 2000 through 2016. So what is causing this decline? As I said before, the combination of little changes in the components of farm income. We derived net farm income by measuring its component parts, and this allows us to deconstruct the change in the forecast. In this chart we can see which components are driving the decline.

Now this chart is in current or nominal dollars so it has not been adjusted for inflation. On the left we have net farm income, the forecast for 2017, and on the right we have net farm income, the forecast for 2018. The bars in red show the components which are pulling down farm income, and the bars in blue show the components that would contribute to growth starting with crop cash receipts or sales. They are expected to decline 1.5 billion in 2018. And then we have crop inventories. In net farm income, we make an adjustment to remove sales from inventories as they don't represent current production, and they would have been counted in the year in which they were produced. In 2018, farmers are expected to sell less from inventories and they did in the prior year, so that's where we're getting this one billion dollar increase for crop inventory. Livestock cash receipts are also forecast to decline. In recent years, farmers have an adding to livestock inventories, which is included in that farm income, but in 2018 farmers are expected to add less to inventory than they did in the prior year. So that's why this is shown as a decline of 0.9. The biggest component contributing to the decline in net farm income is production expenses. Production expenses are forecast to increase 3.5 billion dollars now because production expenses are subtracted out to the calculation of net farm income. This has a result of lowering income. Government payments are forecast to decline 2.1 billion, and then there's a 3.2 billion increase in all other changes, and this is reflecting growth in commodity insurance and entities and other farm-related income. In total, cash receipts or sales are forecast to decline just half a percentage point in 2018 relative to 2017.

This chart decomposes the changing cash receipts due to changes in prices vs. changes in quantity sold. When we hold quantities constant, the lower forecast prices in 2018 would bring down cash receipts ten point six billion dollars, but if we hold prices constant, the higher quantity is expected to be sold with increased receipts by 8.1 billion dollars, adding in changes for those commodities where we cannot isolate the price and quantity effect. You get a net result of that is a 2.0 billion decline in cash receipts in 2018. Diving deeper into cash receipts, we can look at total crop cash receipts and the components that are made up of it. They are forecast to decline slightly under 1 percent or 1.5 billion dollars in 2018, with most major commodity categories forecast to decline modestly, so the largest declines are expected for corn and vegetable receipts due mostly to forecast lower prices. Soybeans are a bit of an exception in that we're forecasting receipts to increase in 2018, as we expect a higher volume of sales to offset lower prices. Wheat is also a bit of an exception in that we are forecasting a small increase in prices, but this will be offset by lower quantity sold, leaving receipts for wheat slightly down in 2018.

Looking at the animal and animal products side: Following a forecast increase in 2017, animal and animal product cash receipts are expected to remain flat in 2018, or down just half a billion dollars. Cash receipts for all categories are expected to decline or remain steady, except for cattle and calves receipts. We're forecasting needs to increase 3 percent due to an anticipated higher production or higher volume of sales, which will more than offset the expected decline in prices.

Dairy receipts are expected to see the largest decline in receipts due to lower prices for milks that are expected in 2018. Receipts for broilers and hogs are expected to be relatively unchanged from the prior year. Another component of farm income is government payments. These are farm program payments made directly to farmers and ranchers without any intermediaries. In 2018, we're forecasting total farm program payments to continue to decline.

This chart shows the changes in payments by broad categories. Most of the decline is in payments from programs that are a function of crop prices or farm revenues, such as programs where payments are triggered when the market price falls below a set point. On the graph, these are represented by the green bar.

USDA's price loss coverage (PLC) and agriculture risk coverage (ARC) or ARC programs account for nearly all of these types of payments. Both PLC and ARC payments are expected to decline in 2018, accounting for most of the drop in government payments. In 2018, direct government payments do not include federal commodity insurance and entities. These are insurance payments to farmers for covered losses. This chart shows how federal indemnities and government payments account for a relatively small share of net farm income for the agricultural sector as a whole. Note this chart is in billions of dollars, adjusted for inflation. The top peach-colored bar segment represents net indemnities, which is federal indemnity payments to farmers less premiums paid by the farmers. These are forecast to increase 3.8 billion in 2018. Our forecast reflects an expected recovery to return to more normal or average weather conditions in 2018 in contrast to the relatively low level of covered losses in the prior two years.

Up until now we've been discussing the source of the farm income or revenue. Now let's look at the costs of goods and services used to produce agricultural output, also called production expenses. Production expenses have flattened out somewhat across 2016 through 2018. This chart shows total expenses in both current dollars and inflation-adjusted dollars. We can see that expensive peak in 2014 following the peak in net farm income in 2013, then looking at is the inflation adjusted series. Expenses have declined across 2015 and 2016 and is forecast to remain relatively flat across 2017 and 2018. Overall production expenses are down 13 percent from their peak in 2014, but overall expenses are forecast to decline 1 percent in current dollars, or 3.5 billion dollars. Most types of expenses are forecast to remain relatively stable from 2017. This chart compares the 2017 and 2018 expense forecasts by category. At the top we can see the fuels and oils. The expenses are expected to increase for the second year in a row following forecast higher prices for diesel fuel that we get from the Energy Information Agency due to forecasted increases in interest rates. Interest expenses are expected to be up

for the fifth consecutive year. Labor expenses are forecast to increase for the third year in a row as wage rate increases are putting upward pressure on a higher labor costs. Now, among those categories that are seeing decreased spending, feed stands out as because it is the largest category of expenses and we're forecasting it down for the third straight year due to lower feed prices for the sector.

Moving on to the balance sheet which provides us information on the value of physical and financial assets in the U.S. agricultural sector over time. In 2018 we're forecasting the balance sheet to be relatively unchanged from 2017. This chart is looking at the values in inflation-adjusted dollars in 2017 debt as represented by the blue area which forecast to be a highest level since 1984. So that's in 2017. In 2018, overall that is forecast to fall less than 1 percent which declines in both real estate and non-real estate debt. The value of farm sector assets, which is represented by the very top of the area chart, is forecast to remain flat in 2018. Real estate assets, which include the value of land and built buildings, accounts for roughly 80 percent of total assets.

Since 2015 there has been nearly zero growth in formed real estate assets. Putting assets and debt together, we can see farm equity, and this also is expected to be relatively unchanged from 2017. And it remains near the peak levels that we saw solvency ratios which, compared to the amount of debts relative to equity or assets invested in the farm sector, the ratios provide a measure of the sector's ability to repay financial liabilities or debts and loans through the sales of assets, so can be used as kind of like a credit check for farmers and farms.

Solvency ratios are shown on this chart. We see the debt-to-asset ratio and the debt-to-equity ratio. Also charted are those ratios, ten-year moving averages. Both ratios gradually increased since 2012 and are expected to be largely unchanged in 2018. Ratios still remain above the average for the prior 10 years. While some farmers may be struggling financially, the solvency ratios for the sector remained historically low and suggests the likelihood of default within the sector remains low.

Up to this point I've been discussing sector level forecasts. Now we can look at how these sector-level forecasts can be expected to affect farm businesses. Farm businesses are all farms where the primary occupation of the operator is farming, plus those farms that have three hundred and fifty thousand dollars or more in gross cash farm income. This is about 820,000 farms or 40 percent of all farms in the US, and they're represented by the blue and red bar segments on this chart: red being commercial farms and blue being intermediate forms. The gray bar represents residence farms. You can see that residence farms account for the largest share of total farms, but it's the farm businesses that account for the larger share of value of production assets and debt. Now residence farms are those farms where farming isn't the primary occupation and doesn't have sales in excess of \$3,500, so these can be such as retirement farms, hobby farms, or just where the farmer has a primary occupation outside of the farm.

Looking only at farm businesses, we can use data from the agricultural resource management survey (or ARMS) to estimate how the sector level forecasts can be expected to affect farm businesses. Average net cash farm income for farm businesses is expected to continue to decline in 2018 for the fourth consecutive year. Using ARMS data, we can look at farm businesses by commodity specialization. And to determine the commodity specialization, we identify a farm where 50 percent of production comes from a particular commodity. Average net cash farm income for all crop businesses is expected to decline in 2018 for all types of farm businesses. The decline in 2018 would mark three or more consecutive years of decline. The exception of cotton. After a large increase in 2016 and 2017, cotton farms are expected to see declines in average net cash farm income, reflecting the expected decline in the upland cotton receipts.

Wheat farms are forecast to have the largest percentage decline, and this is due to lower government payments and expectations of higher expenses. Soybeans, despite the expected increase in soybean cash receipts which I discussed earlier, average net cash farm income for soybean farms is expected to decline following a decrease in government payments and increase in expenses.

Looking at farm businesses specializing in animal or animal products, average net cash farm income for most of these businesses is expected to decrease in 2018 after remaining flat or increasing in 2017. The exception on this slide is cattle. Income is forecast to increase following growth in cattle production and cattle receipts, but the income still remains below 2014-2015 levels. Dairy farms, following the forecast increase in 2017, average net cash farm income is forecast to decline in 2018, perhaps falling to more normal levels due to expectations for lower milk prices in 2018. Poultry/hog farms are also expected to see declines reflecting declines in prices. By looking at how agricultural production is distributed geographically, we can forecast how average net cash farm income for farm businesses can be expected to change in 2017 relative to 2018 overall. The average change for all farm businesses in 2018 is 7.3 percent of decline, and the average is now at about \$93,000 per farm.

In 2018, the region expected to see the largest decline is the Northern Crescent, and this is due to lower dairy prices and receipts due to the large number of dairy farms in that region. Next is the Mississippi Portal Region, expected to decline 12 percent due to expectations of lower cotton receipts and higher expenses. The Fruitful Rim, we're seeing a decline here largely following the decline in vegetable and dairy receipts. The regions with the smallest declines are the Northern Great Plains, the Prairie Gateway and the Eastern Uplands. You have a fair number of livestock or particularly cattle operations in these areas and, where as I said before, we're expecting to see an increase in cattle receipts and production in 2018, which is softening the decline in average net cash income for these regions. In addition to looking at income for farm businesses, the ARMS data allows us to forecast debt assets and equity for farm businesses.

As discussed earlier, debt-to-asset ratio for the farm sector as a whole is relatively low at 12.6 percent. For both crop and animal, and animal-product farm businesses, the ratios of debts to assets are relatively unchanged from 2016 to 2018.

On this chart we're looking at the debt-to-asset ratios for highly and very highly leveraged farms, which are farms that have a debt-to-asset ratio of 41 percent or greater. So well above the sectors that to ask that ratio. For crops in 2018, nine percent of crop businesses are forecast to be highly leveraged or very highly leveraged compared to about seven percent of animal and animal product farm businesses. But both shares remain below the peak in 2002.

Up until this point I've discussed the financial performance of the sector as a whole, but this often does not give a complete picture of the well-being of farm operator households, which is often determined by a combination of on-farm and off-farm activities. So now we're going to go back to looking at all 2 million farms and the households associated with them. The majority of farm household income is coming from off-farm sources. All farm sources include farm wages, or from wages from jobs outside of the farm, or from non-farm businesses that they might operate in addition to other sources of income. Off farm income is forecast--this is the middle--to be up slightly in 2018. But looking at median farm income, it has been negative for the last few years, and becoming more negative slightly across 2014 to 2018. But the net result is that median total household income is relatively unchanged in 2018 and remains fairly flat. As I mentioned before, all of this data is available on our website. There you can obtain, you can view and download the data and tailor it for tailored reports. We also have a couple of data visualizations that let you dive into the financials of the farm sector. They are: Get to Know Your State, where you can pick your state and get some facts on it; a visualization on Digging into the Balance Sheet, we'll explore that more; and also the Farm Income Atlas. So I encourage you to check these out. Our next release will be August 30, 2018. At that time we will update our 2018 forecast and we will also convert our 2017 forecasts into an estimate. This concludes my presentation, so I'll hand it back to Kellie.

Thank you, Carrie! We have a few questions. The first question is, what guidance does ERS use to ensure forecasts can be relied on to present a reasonably accurate picture?

Good question! ERS is a Federal statistical agency, and so we follow the recommendations and the standards that are put out by the Federal government to maintain the quality and integrity of our estimates. Our methods are documented on our website because we want to be transparent, and to that end they undergo an internal review periodically to make sure that we're meeting the Federal statistical standards. And we also publish information. One of the data visualizations that I didn't show is that we have a visualization on the Forecast Evolution which will show you how our forecasts have evolved over time across a span of years, so you can see how for yourself or judge for yourself how reliable the ERS forecasts are, and you can even get that into by component. So we're very committed to being transparent, and we're also undergoing an external review of our programs so that we can put out the best numbers that we can.

Thanks, and here's another question: Slide 13 shows farm equity falling by 0.1 percent, but slide 3 shows equity rising by 1.6 percent. Which one is correct?

I think they are probably both correct. I'm looking at slide 13 now. This isn't in inflation-adjusted dollars, so we're going back and using 2018 price levels to revalue equity for prior years. And then slide three, look at that here. Slide three, I'm quoting the nominal or the current dollar value in farm equity so basically the difference I'm saying here is that when you account for inflation, farm equity is unchanged or declining just ever so slightly.

Great! Here's another question: Is the increase in real estate assets driven by coastal regions?

Oh, interesting question. I don't have the information on that to give you the rise in equity by region, unfortunately. We do have research here that is put out on farmland values. I would encourage you, if that's a topic of interest for you, to go look up that on the website. That might provide more information.

All right. Do your forecast for government payments include payments for hurricane losses?

Yes the forecast has, we do forecasts, government payments by type of payment, and that includes ad-hoc supplemental or disaster payments. So bringing up slide 9, this is represented by the very top purple bar on the chart here. So losses or payments to farmers for losses from the hurricanes would be reflected for current programs that already exist, are being reflected or taken into consideration in our 2018 forecast. But it's still really early and it could take a while for all the claims to get in, and for us to get a better idea of how much these payments might be, but we aren't speculating on any legislation for disaster relief that hasn't become law yet or hasn't been passed.

Okay, and here's another question: In land value, with interest rates increasing and rent is coming down, why don't you expect land prices to come down in 2018?

Now that's a good question. I think overall relying on trends which have been for maintaining strong farmland to demand, you will have to see how this one works out. You know I can't answer that directly, but it's something we're following. Because it has, I think something that people are perhaps expecting that; at some point farmland value might kind of max out. But overall, we're still kind of going with a flatness for that in 2018.

All right, are our US farmers and ranchers overall better or worse off financially than they were a year ago?

Another good question. The farm income forecast for the sector suggests that, as a whole, the farmers, the income is expected to go down. But it's still marginally early to get a handle on that, so perhaps the better comparison is 2016 to 2017, the year that we're just coming off of. And for that period we were forecasting incomes to be flat. But the closest I can get to individual farmers is by looking at farm businesses. And as I mentioned there, we had been

seeing some consecutive year-to-year declines in farm average net cash farm income for farm businesses. So I think you could say farm businesses are better off. A little bit vague, but we can definitely say that we are thinking that their incomes are lower in 2018 than they were in 2017. Okay here's another question: Why are cash receipts for fruit and nuts, why did they drop dramatically from the 2016 to 2017 forecast? What mainly caused the drop in cash receipts for fruit and nuts?

Yes, I believe it was largely--I'm going off memory here--but I think it was going off an expected decline in fruit and nut prices that we were forecasting for 2016-2017. Just checking notes... terrific! Yes, lower prices and it perhaps might be related to the ending of the, or maybe the lessening of, the drought conditions in California which had raised prices for fruits and nuts in the prior year.

Okay, here's another question: Can you comment on how you included trade risk into income models?

Unfortunately I cannot comment. We're using commodity forecasts from our experts on production and prices, and so those are what we are incorporating to our estimates. We're not, we don't have a trade assumption in here. We're using the commodity forecasts.

Okay so here's a question: Income in 2016 2017 and 2018 seems to suggest a floor has been set. Is that so?

I don't think I can say definitively. I'm not sure anybody can. But I do agree that it appears--I think I called it a flattening--across 2016-2017 and 2018, but the 2018 forecasts are still preliminary. And as you know, largely the crops haven't even been planted yet, so we'll have to see. But it does, to me, look like a flattening so far.

And, when will state-level data be available for 2017?

Great, yes. In our next release on August 30, in addition to updating the 2018 forecast and converting the 2017 forecast into what we call an estimate--meaning a value that is based on actual observed data--we will at that time be releasing state-level data through 2017.

What does farm household income compare to income for other households? How does it compare?

Okay, well, farm income or farm households. Their median income has, in I think since 1998 or so, tended to be higher than the median household income for all households. But I think it's interesting to also compare farm households against the median income for households that have a self-employed person in the household. Because, you know, farm is essentially, or in some cases, a form of self-employment. So when we compare farm households where there's a farm operator to households where a member of the family or the household is self-employed,



we see that the median values tend to be closer, but the farm median household income is lower.

All right, here's a question: Why is the median total household income greater than the combination of median off farm income and medium farm income?

Yes, a common question! These are median values so they don't necessarily sum up together to get you the total household income. And the differences in the median for each category has to do with how the population is distributed for each category. For instance, there are a lot of farm households that operate small farms, which are little or negative farm income. But a fewer number of farm households operate very large farms that earn a lot of income. So this is pulling median farm Income down, the medium farm household income down below the mean income. So basically those households with high farm income and low off-farm income are raising the median total household income above the median off-farm income. I hope that explains items.

Well, thank you so much Carrie, and I think that's all the questions that we have time for. So thank you, everyone, for joining us, and I hope you have a great day!