

Webinar: The Changing Organization and Well-Being of Midsize Farms, 1992-2014, transcription

Good afternoon everyone and welcome to our webinar, The Changing Organization and Well-Being of Midsize Farms: 1992 to 2014.

My name is Nancy McNiff and I will be your host.

This webinar is being recorded and will be posted at a later date on the ERS website.

At any time during this webinar, you may enter a question into the chat feature at the bottom left corner of your screen and our speaker will answer at the end of the presentation.

Our speaker today is Christopher Burns.

Chris is an agricultural economist in the Farm Economy Branch of the Resource and Rural Economics Division. His research evaluates how policy and economic factors influence farm household finances, farm structure and farm production decisions. I think we're ready to start. So Chris you can now begin your presentation.

Great. Thanks Nancy. Welcome everyone to the webinar.

My name is Christopher Burns and I would like to present some of the main findings from the recent released ERS report, The Changing Organization and Well-Being of Midsize Farms: 1992 to 2014.

So to get us started, let's just quickly go over why we wanted to study midsize farms?

So the first reason is you know many midsize farms can be representative of small farms that were successful and grew in size and so we, we might be interested in knowing what are the factors that allowed these farms to successfully grow into the midsize category. Second of all they represent a sizable share of total U.S. agricultural output.

And I'll talk more about that in the next slide.

So just to give you a quick preview.

We're going to look at how midsize farm operations and how their households have changed through the time period from 1992 to 2014. We'll compare how a midsize farm compares with other farm sizes.

We'll look at how their numbers have changed over this time period. We'll be using for that, for that particular aspect we'll be looking at the Census of Agriculture which is the best source of data on farm numbers. Then we'll look at how the midsize farm households have changed and in particular how their well-being, financial well-being has changed. And then we'll look at how production on midsize farms has shifted during this time period. And finally what we'll dig a little more into sort of why their numbers have changed and will examine sort of two ways that midsize farms, why, why their numbers have changed over time. We'll look at entries and exits from farming and we'll look at transitions.

So that means where a midsize farm might grow

into a large farm or shrink in size into a small commercial farm and then we also look at some of the factors that affect midsize farms survival. So that's sort of a brief overview of what we're talking about today.

Okay. So I'm moving on. So on this next slide I want to do two things. First I would like to define a midsize farm based on how or explain how we're defining it in this report. And then I want to compare a midsize farm with smaller and larger farm sizes using the most recent data or the most recent data as of when this report was released which is the 2014 10 Year Ownership and Transition of Agricultural Land Survey. So to start with let's, let's, let's define a midsize farm. So we define a midsize farm as having between \$350,000 and a million dollars in gross cash farm income. So gross cash farm income is essentially a measure of gross revenue by the farm operation in a given year. So this would include sales of crops and livestock, government payments, other and other related farm income and that would include things such as production contract fees and custom services. In addition, if the farm is engaged in direct sales or sales from agritourism, this would also be included in gross cash farm income. That is assuming that is

part of the farm business. If it's a separate business that would not be included in this measure of total revenue. So that's how we're defining a midsize farm in this report.

Now for comparison purposes, we created three other size categories based on our, our farm typology at the Economic Research Service.

So we define a very low sales farm as having less than \$10,000 of gross cash farm income.

We then defined a small commercial as having between \$10,000 and \$350,000. So it's filling the gap there between the very low sales and the midsize category. And then anything any farm with over a million dollars in gross cash farm income would be considered a large farm in this, in this chart here.

So look at looking at this chart on the right.

We're examining the distribution of farms by their numbers using the blue bar, their acres operated with the green bars and their total production in the red bars.

So you can see the midsize farms are over towards the right, they represented a most more than a fifth of total U.S. production in 2014.

And almost a quarter of total acres operated but they only represented about 6 percent or about 125,000 farms in 2014. So you can see that the distribution of farms in the blue bars and the distribution of production is very skewed where the

majority of farms fall into a very low sales and small commercial categories, whereas the majority of production is occurring in midsize and large farms. Just to give you another sort of reference here. When we look at acres, acres operated, the median midsize farm in 2014 operated 830 acres whereas a median small commercial farm might operate or would operate about a 155 acres. So one thing I've been I've sort of been getting questions about since the report is you know when we look at you know maybe the you know we sort of ask questions about sort of what's happening with farms in the middle? It depends on how we define them and if you're thinking about maybe a small, a small, a small commercial farm that's probably a more representative of sort of what some people might think about when we talk when they talk about you know the middle of agriculture and that group is much larger than midsize as we define them you can see in the bar there they represented 42 percent of all farms in 2014.

Somewhere around 800,000 farms fall in that small commercial category. So that's, that's sort of important. Just as you know as we go forward in the presentation and we look at changes in their numbers you'll see that midsize farms and small commercial farms sort of broadly represent this middle part of agriculture

but they look some what differently in the midsize category is a much larger farm at the median.

Yeah and also just as another reference point here, a large farm in this, in this graph here we have a median acres operated of about 1,800 so very, very large at the median.

So it's important to keep that in mind as, as we go forward so this distribution, the distribution of farms and the distribution of production are very skewed.

Okay so moving on to our next slide, one of the main findings of the report is that midsize farm numbers using the Census of Agriculture, we found that they had declined about 5 percentage points from 1992 to 2012.

So just to give you a little bit more background there we're following farms using this gross cash farm income measure and we are deflating their revenues using a price index for farm products.

So that way we're comparing farms consistently through time and we're able to sort of look at this size group. So if we look at midsize farms, they declined about 5 percentage points, small commercial farms obviously kind of stand out there also having declined about 22 percent.

And as I said before they're a much larger group of farms almost 800 more than 800,000 farms in 2014. So generally in the middle

we see sort of decline in the number of farms but at the extreme, at the very low sales and the large farm category we see increases pretty significant increases in farm numbers. So we see growth in large and very low sales farms with large farms almost doubling in number from 1982 to 2012. Part of that is been driven by the fact that larger farms tend to be more profitable. They tend to have lower operating or lower per unit costs than smaller farm sizes and so they're able to sort of expand their operations and take advantage of the economies of scale. Part of the increase in low, very low sales farms is actually due to increased efforts to count them. This has always been a group that's been a little bit harder to get a firm number on because there are so, so many of them and they, you know, they, they're obviously very small farms so part of that increase is due to actually just to better improvements in methodology to count them. Alright. So moving on.

So another part of the report that we wanted to look at here was how midsize farm principal operators and their household had changed over this period. So much like the entire farm sector, we see that median midsize principal operator has gotten older going from median age of about 47 years in 1992 to 56. They've also become more

highly educated so a greater share of midsize farm principal operators have some college or have completed college in 2014 as compared to 1992. We also see that their household well-being measured in financial terms at least has improved dramatically in some cases, farm household income has increased from about \$84,000 to \$130,000 over this time period, off-farm income has also increased, more than tripling over this time period. And so as a whole total household income has, has almost doubled during this time period for the midsize farm category. In addition households have seen dramatic increases in their net worth and much of that has been driven by increases in real estate values.

So you're probably aware that over the last 10 or 15 years there's been a rapid rise in farmland values across the U.S. and so many farms have seen their real estate, their farm, their farmland double or more than double in value over this time and so we see that through the increase in household net worth. So in financial terms, midsize farm households are doing very well in 2014.

So another thing we want to look at in the report was, was beginning midsize farms and we're sort of interested to know you know were beginning midsize farms declining or had they been

increasing over time?

So first of all let me define a beginning farm, we define a beginning farm as, as a farm where each operator on the farm has no more than 10 years of experience so that you know if there is a first or a primary operator and then if there was a son or a third operator we would call it a beginning farm if all the operators had 10 years or less experience not just the principal operator.

So we found using the Agricultural Resource Management Survey which is our best resource for information on the financial well-being, production practices and resources use of farms in the U.S. on an annual basis. Using this data we found that the share of farm, of beginning midsize farms has held relatively steady since 2005 and about 9 percent of midsize farms are, are beginning midsize farms so that seems to bode well for this group. If we look at midsize farms with any operator being a beginning operator so that could be the primary operator or secondary or third operator then this percentage doubled to about 18 percent so almost one in five of midsize farms have a beginning operator either the primary or second or third operator on the farm has less than 10 years or less in experience.

All right so moving on to production, we wanted to

look at how the production on midsize farms has changed over this time period.

What have they become more specialized in? What have they moved away from? And what we found was in general midsize farm production has increased in terms of cash grains and oilseeds.

So a plurality of midsize farms specialize in cash grains and oilseeds in 2014. They represented about almost 60,000 farms. In general the trend that we've seen is that from 1992 to 2014 there's been a shift towards cash grains and oilseeds, hog, production of hogs and poultry over this time period.

But at the same time we've seen a decline in the share in dairy and high value crops like fruits and vegetables and other crops such as hay, tobacco and cotton. And I know this, this trend

I think has been sort of talked about in other ERS reports especially in dairy there's been you know other reports have talked about the increasing share of production, dairy production that's occurred, occurring on larger farms over time. So this sort of matches sort of what they've found in these reports.

And then looking at a sort of a geography of midsize farms, we can see that because there are specialized in cash grains and oilseeds, they're located generally in the Northern Plains and

Corn Belt regions are they're more concentrated in those regions as you would expect. And in fact when we look at the census data we see that since 1992, there's actually been an increase in these areas of midsize farms so there has been a concentration, an increased concentration of midsize farms in these two regions over time. Those are the regions that we have highlighted in green there with more than 10 percent. You can see that you know in general midsize farms are found throughout the country but in particular are concentrated and the Northern Plains and the Corn Belt regions.

So then a big part of this report was, was really interested in understanding why their numbers had declined from 92 to 2012. And so we wanted to look at changes in farm numbers for midsize farms and we also wanted to sort of compare them to, to the smaller and large farm categories as well. So we think about changes in the midsize farm numbers, we can think about that happening in two ways. First would be through farm exits and entries. And when I say an exit here I mean that the operation no longer exists. So what we're able to actually capture in the census data is we're able to see for instance if, if an operator retires and passes the farm to his son or daughter, we actually

have a way to measure that and that would actually be considered a farm that stayed operating through, through this time period, so we wouldn't count that as an exit. However if the farm ceases to exist either because the operator reaches an age where they don't want to farm and there's nobody to take over the business or simply because they, there's a business failure, they go bankrupt or something like that. That would be an example of a farm exit and similar, in a similar fashion, an farm entry would mean a new farm entering and operating in the midsize category.

And to differentiate that from transition, so we also wanted to look at how midsize farms move from the midsize category and how they expand upwards to a large farm and how they would transition down into the small commercial farm category? So that's how we can think about midsize farm numbers changing through time either through exits and entries or through more farms moving you know out of the midsize category or into the midsize category through time. So first let's look at exits and entries. So using that two most recent census years which are 2007 and 2012, we found that more midsize farms had exited than entered.

And so what we see is a negative net entry rate when we when take the difference of those two numbers we see that more you know overall there are

more exiting than entering. And if we go back in time to earlier census years, 92 to 97, we also find a similar, we have a similar finding.

It's interesting to note though that they actually had the lowest exit rates. So if we look at this chart on the right about 8.2 percent of midsize farms exited between 2007 and 2012 which is lower than large or small commercial farms.

So in effect that means that they actually survive at higher rates. There's just fewer of them entering the category.

And so the second thing we looked at was farm transitions and this was sort of an interesting challenge. We were able to sort of use the census data to do this and what we found was most midsize farms were, stayed in their, in this midsize category from 2007 to 2012. However a full 25 percent had actually moved down to the small commercial farm during this time period and another 15 percent had moved into or over 15 percentage, percentage points, midsize farms had moved into the large farm category. So when we compare them to a small commercial or a large farm, they're relatively more mobile. They move up and down in size more often, but we found a similar result when we looked at earlier years from 92 to 97, roughly 58 percent of midsize farm

stayed midsize between census years but another 42 percent were moving up or down.

And so we explore this a little more in the report.

And just to give you a little bit of an idea about why, part of the reason is due to the way we defined them so simply because we defined them using gross cash farm income and we and we define their lower limit as \$350,000 and their upper limit as a million. It makes them more likely to move in and out of this category simply because of the range of those values. So we found that a lot of midsize farms are actually located near the upper and lower boundaries.

So there you know between census years they may be, they may move up or down due to changes in prices as they expand or contract their operation.

So that's, that's part of the reason for this finding or for this, for this result.

So then we wanted to dig in a little bit more about sort of in a what are some factors that affect midsize farm survival? What makes them more likely to survive? What makes them less likely to survive over time and when I say survive I simply mean more likely to be observed in the next census year? So first of all as I said earlier you know they had the lowest 5, 5 year exit rate so that actually when we model this we find that they have a slightly higher probability of

survival when compared to small commercial or large farms. So in fact that seems to be a good finding for midsize farms. When we look at factors that affect their survival, we find some, some results that are consistent with other reports and journal articles that have been written about farm survival.

If the operator or if the operation had a beginning principal operator that is the principal operator had less, 10 years or less of experience, they were more likely more likely to exit.

So essentially this means you know experience matters, if you have more experience in farming you're, you're more likely to survive in farming simply because you have acquired sets of skills and you understand the, you know the, the, the up and down of the farm cycle of farm income.

We also found operators that rent all of their land or nearly all of their land are more likely to exit farming. This is probably also likely related to being somebody new to farming. If you're renting all your land and you don't own a lot of land, you don't probably have a lot of resources or sort of, value or farmland value to sort of borrow against if you want to, if you needed to get a loan for instance. If the operators retired from farming, they are more likely to exit. So this is a pretty straightforward finding if the operator consider themselves to be retired from farming,

they were more likely to exit in the next census year.

And we also found that farms that specialize in other crops such as tobacco, cotton, hay, peanuts, they were also more likely to exit between census years.

Some factors that made them more likely to survive, operations where they rented about half of their acres operated, were more or less could survive.

And again I think this sort of relates to the life cycle of the operator, somebody who's renting about half of their acreage maybe sort of mid-career in terms of farming.

They don't own all their land yet so they're not quite towards the end of, maybe the operator lifecycle but they don't also rent all their land so they're not at the beginning of that life cycle. Operations that were located in the Midwest which is where we find majority midsize farms were more likely to survive. Again principal operators between the ages of 45 and 64 sort of that mid-career age group. And also it was the operation was a poultry farm, they were more likely to survive. These are all results that were statistically significant at the 5 percent level. I think the poultry farm result may you know may have something to do with the sort of the guaranteed, some guaranteed income is coming to the farm because most poultry operations have production contracts and so they sort of have a guaranteed, guaranteed source of

revenue of some type.

So then in the last parts of the report, we wanted to take a look at sort of what are some pathways forward for midsize farms and since cash grain and oilseed farms are you know plurality of midsize operations, we wanted to understand how, how they were able to expand and the finding that we have is, is renting land is really important for these cash grain and oilseeds farms. So in this table on the on the right we looked, we broke out midsize farms into four categories, and this is based on their gross cash farm income change. How much it changed between 2007 and 2012? Did it, did it go down? Did it go up? did it go up by a lot? And so we're looking at sort of how much did their gross revenue change over this period. And we find a very strong relationship between renting land and an increase of their gross revenues over this time period. And in fact midsize farms that more than doubled their gross revenues were renting nearly twice as many acres as those who were sort of falling between this you know, between the category of you know doubling and not going up at all. Midsize farms that more than tripled their gross revenue rented three times as many acres, almost three times as many. And it's important to note as you look at this chart that all four categories are roughly owning, they own roughly the same amount of land.

So they own between 400 and 500 acres.

They're just renting significantly more, significant amounts of land to, to grow in size.

You know so for a midsize farm that makes you know \$500,000 in gross cash farm income and they double their gross cash farm income between census years that means that they've now moved into the large farm category. You know they've passed the million dollar mark.

And so this really I think emphasizes the importance of having access to good, to high quality land particularly in these cash grain and oilseed midsize farms. And you know not having the access to that land could potentially be you know binding or some sort of a limiting factor for these, for these operations that want to grow in size.

Okay so those are some of the main findings of the report.

I just want to quickly go over a few of the conclusions and then I'm going to turn it over for questions. So again we found that midsize farm numbers again we define a midsize farm as having between \$350,000 and a million in gross cash farm income. They were down about 5 percent from 1992 to 2012. However in 2014, this group still represents over 20 percent of U.S. agricultural output. In general, their operators are older but have become more highly educated. Their households have seen

higher levels of total income and net worth over this time period driven by high commodity prices and increasing land values. The decline in their numbers has been driven by both farm exits and transitions. We find that midsize, more midsize farms exited then entered between the periods of 92 to 1997 and 2007 to 2012 suggesting that if we held everything else constant their numbers would decline for that reason. We also find that midsize farms are more mobile than other farm sizes meaning they grow and shrink in size more often than small commercial or a large farm. But also part of that is due to how we define the size group. When we looked at factors that affect survival, we found you know beginning midsize farm or midsize farms with beginning operators were more likely to exit, also those with retired operators were also more likely to exit. But we also found that renting land is a pathway forward for midsize cash grain and oilseed operations to grow in size and successfully increase their gross revenues and hopefully become more profitable.

Alright, thanks for your for your time.

I'm going to turn it over to Nancy now for some Q&A and I'll try and do my best and to answer some of your questions. And if I, if I can't then I'll probably ask you to leave your email and

I'll follow up with you.

Thank you Chris. We have a couple of questions already. But first I was going to remind everybody if you do have a question you can enter it into the chat feature and I will relate it to Chris for him to answer.

First off a little clarification on Slide Number Five. It's about the, I'll go to Slide Number Five so you can see, the question was this, this is talking about farm operators became more educated but it looks like in the completed high school area, that fewer operators had completed high school.

Can you explain that?

Oh yes so what, yeah what I, what I am trying to show there is the share of principal operators with, who have completed some college or completed a B.A., a bachelor's degree or higher is, has increased over time. The share of, of midsize operators has increased from about 46 percent to 50, 58 percent, 59 percent who've completed some college or college over that time period so the relative share has increased in those two categories.

Okay we have another question, from 1997 until 2002,
was there an increase in midsize farms?
Do you have that information?

I don't have that in front of me.

I can, I can get back to you.

I think this is from Lori.

-Yes.

-Yeah I have data on that.

And I can't remember off the top of my head.

She was also asking about 2002 to

2007 as well. Yeah I do, I do have that data.

The net, the net change has been you know as we show

obviously has been, has been negative and off the

top of my head I think that the trend has been

down since 2002 at least I think it may,

it may have gone up slightly in 1997 but has

been sort of a steady decline since 19 or since 2002.

But I can get you that data.

Okay the next question has to do with what did you
have information showing how many of these midsize
farms utilize USDA's technical or grant support?

I don't, I didn't look at that actually, yeah no I don't
have that. I can, yeah, I can again, I
can, I can go into the data and take a look at that
for, who asked the question?

-Paula Daniels

-Okay.

Thanks Paula.

Yeah I can go look at our data and get back to you on that.

And then there's a question about the data.

It looks like so you have up to 2014 data, is that the latest you have? And if so why isn't there more recent data?

Right. So yeah. So the 2014, that's the 10 Year Ownership and Transition of Agricultural Land Survey or TOTAL.

That's, that was the most recent data we had at the time the report was released. We currently have 2015 data now from the, from the Agricultural Resource Management Survey also known as ARMS. So we do, there is a more recent data set now but at the time of the report you know it's important to realize that, that ARMS is an incredible undertaking. We survey about 20,000 between ERS and NASS jointly administer the survey. We survey about 20,000 farms every year and it, it takes I think almost nine months from the beginning to the end process to sort of have the data ready so. So in essence we're always about a year behind with the, with the data. But but it's still, very, very recent data obviously.

Okay we have a question, while wondering if you had looked at beef operations at all and looked at changes in that sector?

Yeah we, we let a little bit of that when we looked at farm survival. We looked at whether beef farms, beef cattle operations for instance were more likely to exit or not. And I, I don't remember, I can get back to you about that. I don't remember if there's a significant finding. I have a feeling it was not because I would probably included it in the webinar, yeah but no I mean we didn't drill down really into that too much. You know because so many midsize farms are concentrated in cash grain and oilseeds we sort of, we sort of drill down on that particular commodity specialization but that's a good question and I can, I can get back to you, who asked that question?

That was Dimona Dewayne I guess.

Okay, so we have another question about dairy farms. Did you look at what the factors that were contributing to the dairy farm type decline?

I didn't but I think I would refer you to another ERS report which actually does a really good job of talking about the changes in dairy operations over the last 20 years or so. And that's by Jim McDonald. And I can't remember if there's somebody else on that report.

It's available on the ERS website, I can also send it to you if you give me your e-mail.

I think that they in general, I think we cited in our report we cite, we cite the study that I think you know finds that dairy operations have increased significantly over this time period in terms of the number of cows on the operation. And you know the vast majority of dairy production is now shifting towards larger operations.

So I can, I can send that report out if you're interested in more detail. I would, I would definitely refer you to that report

Okay yeah we have her email, we can send it to her. The USDA farm typology changed in 2013, and so they're asking if, did your study account for the fact that the midsize category has changed over time? Yes, yes it did. So that's a very good point actually. We, we do, we do use the updated ERS farm typology which did change in 2013. It changed mostly due to, there have been significant increases in commodity prices for both inputs and outputs for operations over the last 5 to 10 years starting in like 2007 with the run up in corn and soybean prices. So we did use the updated typology that's why we're using \$350,000 to a million for a midsize farm. You know with that said it's you know it's important to

realize that you know we're defining a midsize farm with this particular measure but you could define a midsize farm in other ways.

You know I know in the literature, people have defined them with using farm sales.

You know and use smaller like \$250,000 to \$500,000 or something like that. So this is obviously, this is not the only way to define a midsize farm.

But but yeah we did use a consistent measure so when we go back through, through time to 1992 we made sure that we used gross cash farm income the whole way through and so we were we were using the same measure through time. That presented some challenges actually using the census data but we overcame that with some solutions, you can read about that in the report.

Okay that's all the questions that we have.

Thank you very much Chris. And thank you all for joining us. And everybody have a great day.

Thank you very much.