Different Ways to Look at the Aging of U.S. Farmers

Yes, farmers are getting older. The average age of farm principal operators went from 57.1 years old in 2007 to 58.3 years old in 2012. This increase has been frequently talked about since the release of the 2012 Ag Census data and there has been a wide range of reactions. Given that everyone is using the same data sources to examine this issue, the difference in opinion is due to how people are interpreting the data. With some saying “agriculture in this country is in a state of crisis and that in the near future we will not have enough farmers to keep up with the ever growing demand for agricultural products,” while others say that “farmers have always had a higher average age than the rest of the U.S. workforce and this is just a continuation of that trend.” In an effort to let the data tell its own story, we will look a little deeper into the farm age data by examining the data in a few different ways. Starting by comparing average principal operator age, which is the most widely quoted reference source for farm age, to the median age of the US workforce over time.

Even though farming is a vocation it is important to remember that it is also a business and thus the median workforce age is a more appropriate indicator of age trends than if we were to use the median age of the total US population. The graph below shows the average age of farm principal operators over the last 30 years compared to the median age of the US workforce over roughly the same time period.

In 1982 the average age of farm principal operators was 50.5 years old and in 2012 it was 58.3 years old. That means that over 30 years, the average age of farm principal operators increased by a total of 7.8 years or .26 years annually. This is compared to the median age of the US workforce which increased by .24 years annually. Given the constrains of the limited data available we cannot make a direct comparison between these two trends but what we can infer is that the average farm principal operator age is increasing at a marginally greater rate than the median workforce age. However, the relative rate of farm principal operator aging is only slightly greater than that of the general workforce.
Note for the above graph: The line equation and R-squared values on the graph above relate only to the slope of the best fit line for the data provided and should not be used to predict future trends due to the limitations of this data. In other words, because we only have a limited amount of observations we cannot run a normal regression analysis on this data that would result in a meaningful predictive value.

Another thing to consider when looking at farm age in terms of principal operator is that one is only really looking at a segment of the total farm operator population. 44% of all farms in the US have more than one operator. Secondary and tertiary (junior) operators account for 35% of the 3.2 million farm operators. When all farm operators on the census form are considered, this lowers the average farm age\(^1\) to 56.3 years old as of the 2012 Ag Census.

The graph below shows the difference between average principal operator age compared to the average farm age over time. Because this is only the second census that USDA has calculated the average farm age variable, we cannot establish a difference in trend. What we can say is that for the last two censuses the average farm age has been lower than the average principal operator age by around two years for each of the observations. As an aside; that the average farm age of 56.3 years old in 2012 is also closer to The Bureau of Labor Statistics median age of “Farmers, ranchers, and other agricultural managers” which in 2013 was 56.1 years old.

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\(^1\) Note: The term “farm age” refers to the average age of all farm operators listed on the Ag Census form. This includes the principal, secondary and tertiary operators.
The average farm age is lower than the average principal operator age because many secondary and tertiary operators have a lower average age than the principal operator, with the average age of secondary operators being 53.4 years old and the average age of tertiary operators being 46 years old as of the 2012 Ag Census.

We can also say that one of the factors that may keep the average farm age from decreasing more when junior operators are considered is the large number of spouses that are active in farm operations across the US. As of the 2012 Ag Census, when the spouse variable was introduced by NASS, 54.5% of all secondary and tertiary operators farmed alongside their principal operator spouse. Because junior operator spouses are most likely to be of similar age to the principal operator this has caused a dampening effect on the spread between principal operator average age and average farm age. This effect can be shown by looking at the distribution of spouses between secondary and tertiary operators and the resulting difference in average age between them. 61% of all secondary operators are spouses of the principal operator compared to only 11% of tertiary operators that are spouse of the principal operator. (For further details, see previous post on Women in Agriculture by the Ag Census Numbers.)

Without having any additional information about the relationship between operators we cannot examine how familial relationships on farm operations effect differences in operator age. But what we can say is by including the 1 million farm operators that are non-principal operators we are able to get a better representation of the farm operator population as compared to only looking at principal operators.

The next thing to consider is which segment of the farm population has the oldest average age. The graph below shows the average of principal operator age by farm sales.2

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Note: this information is not publicly available in terms of average farm age through the NASS web extraction tool.
As shown in the graph above, the oldest segment of the farm population in terms of farm sales are farms with sales less than $1000 a year. This is also the category of farms that make up the largest number of farms in terms of farm count, with 28.5% of all farms having less than $1000 in sales as of the 2012. Although this category accounts for the largest segment of the farm operator population, in terms of total value of farm sales they account for .02% of total farm sales in 2012.

The graph above shows the number of farm operations by farm sales in terms of age groups. As shown, by far the largest segment of operators are those that are 70 years old and older and have less than $1000 in sales. They account for 24.5% of all farms with sales of less than $1000 a year and 32.8% of all farm principal operators that are 70 and older. Excluding farms with less $1000 in sales from the calculation of average principal operator age would result in a .7 year decrease in the average age for 2012. This does not seem like a lot until you look at it in terms of change in average age per Ag Census, which are conducted every 5 years.

The chart below shows the changes in principal operator age by state between the 2007 and 2012 Ag Censuses, calculated in terms of an index value where a value of 20 equals a 1 year change. **Example:** The index value for the total US was 24 which is equal to a change of 1.2 years between 2007 and 2012.
23 of the 50 states aged less than the US average and one state (Nebraska) actually had its average age decrease between 2007 and 2012. There were also no states that had an index value of 100 or greater, which would indicate that there was some net level of operator replacement. (Meaning that if there were no new farmers entering agriculture than every farmer would age 5 years and the index value would equal 100.)

The map below shows a similar finding by looking at the county average farm age. The counties in red had their average farm age increase by greater than 5 years between the 2007 and 2012 Ag Censuses. The counties that are green had their county average farm age decrease between 2007 and 2012. The counties that are not marked had their average farm age stay the same or increase between 0 to 5 years. As shown, only a small number of counties, 46, had their average farm age increase by more than 5 years compared to 495 counties that had their average farm age decrease. This leads me to conclude that the aging of the US farm population is like aging itself, a gradual process where the numbers can be misleading.
Yes, farmers are older than many of the other segments of the US population but their aging trend is not that much different than that of the general population. Today people are living longer and retiring later and since this is true for the general population it is also true for many farmers as well. I would hazard to say that agriculture in the US is **NOT** in a state of crisis due to the aging of US farmers, at least.

Farmers as part of the population and agriculture as an industry are subject to the same conditions and constants as the entire population and all industries together, in which they change and evolve over time. My interpretation of the data is that this is just “a continuation of a trend,” rather than “agriculture in a state of crisis.” This does not mean that there isn’t work to be done to continue to insure that young and beginning farmers can find a place in agriculture, what this does mean is that there is no cause for a great amount of concern. Agriculture in the US continues to be stable and like so many other things is just evolving as time goes on.

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