

Are Farm with More Debt Larger?

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Introduction

Farmers have two basic ways to expand their operations. They can either purchase more land or rent more land. Purchasing land for expansion will likely result in farmers having higher debt levels. One question to investigate then is whether farmers that are more highly leveraged (i.e., with higher debt-to-asset ratios) have more total assets. In AgManager papers GI-2018.8 and GI-2018.9, I examined farms by quintiles based on the D/A ratio to determine the level of risk and the net farm income for farmers in the Kansas Farm Management Association (KFMA) program. This paper examines the total assets of farms by quintiles of the

D/A ratio. The number of acres owned and farmed is also examined.

Procedure

To generate the quintiles, the D/A ratio for all the farms each year are ranked in order from highest to lowest. The 20 percent of farms with the highest D/A ratios are put into group one, the next highest set of D/A ratios are in group two, etc. The bottom 20 percent of farms with the lowest D/A ratios would be in group five. Once the grouping of farms is established, the median farm assets for each group is calculated. The total farm acres and the total acres owned are also calculated for these quintiles.

Results

Figures 1 and 2 show the median farm assets for the different quintiles. The results are broken into two parts to make the trends easier to read. Farm assets increased rapidly during the 2000's so Figure 2 has a different Y-axis scale. As the figures show, farms with the highest D/A ratios are actually the smallest. The other four groups of farms have very little differences in total assets. Thus, the degree of financial leverage appears to have little affect on the amount of total assets except for the most highly leveraged farms.

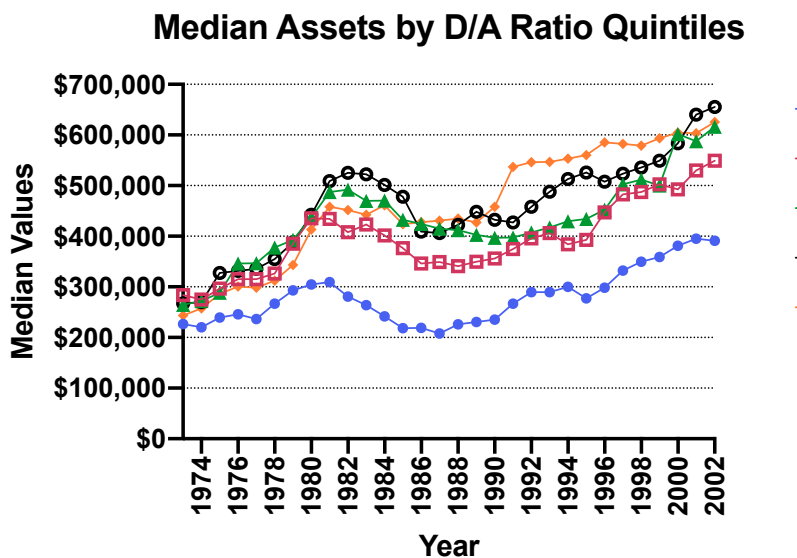


Figure 1. Median Assets by Debt Level Quintile from 1974 to 2002

Median Assets by D/A Ratio Quintiles

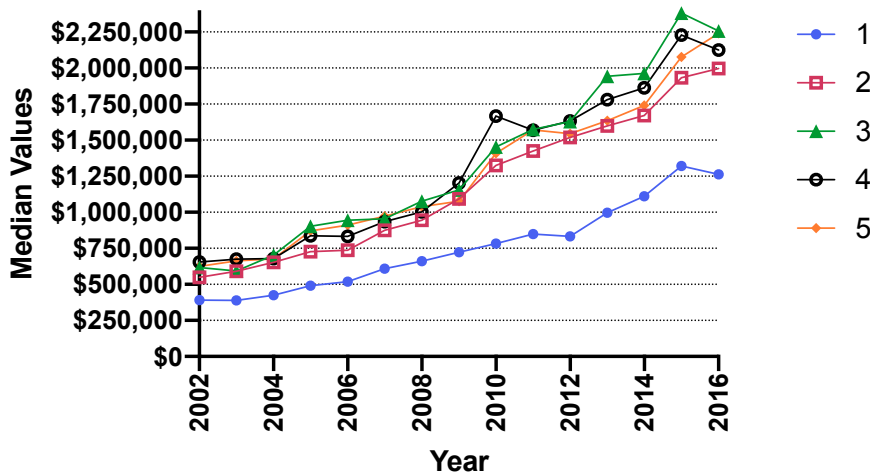


Figure 2. Median Assets by Debt Level Quintile from 2002 to 2016

Average Owned Acres by Quintiles of D/A Ratio

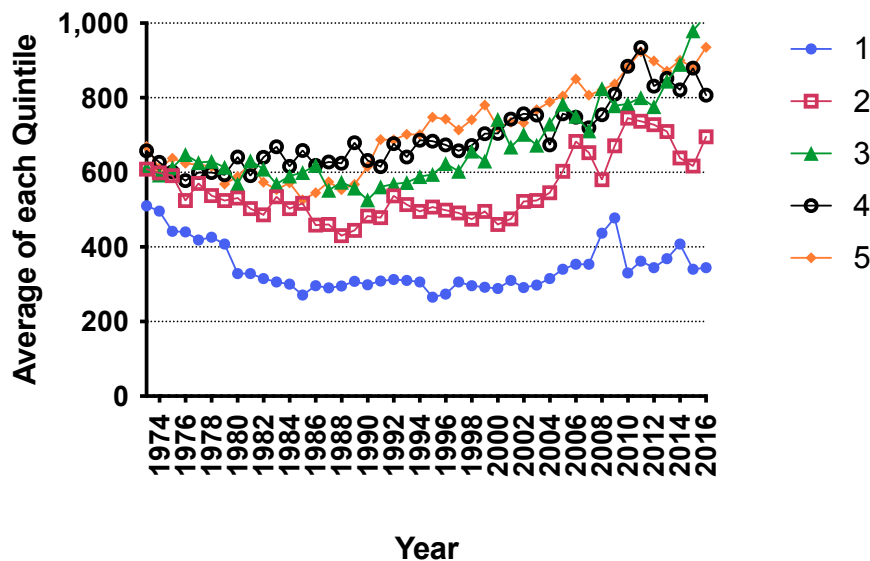


Figure 3. Average Owned Acres by Debt Level Quintile

These results of asset amounts are also seen in Figure 3 for the average owned acres. Just like with total assets, the most highly leveraged farms have the least amount of owned acres. Because land is the biggest asset on most farms, the similarities between Figure 2 and 3 are unsurprising. One interesting point from Figure 3 is that the number of owned acres for the most highly leveraged farms has remained fairly constant from 1978 until the present. All the other quintiles have increased the number of owned acres over time.

Figure 4 shows the number of acres farmed by quintile classes of the D/A ratio. Here, the least leveraged farms control the fewest acres. The most highly leveraged farms, despite having the fewest owned acres, have farm acreages similar to the other quintiles. These farms have made up for the smaller owned acreage base by renting more farmland than the other quintiles.

The smaller amount of total assets and total owned acres for the most leveraged farms (i.e., group 1) might be explained by age differences. Younger, beginning farm-

Average Total Acres by Quintiles of D/A Ratio

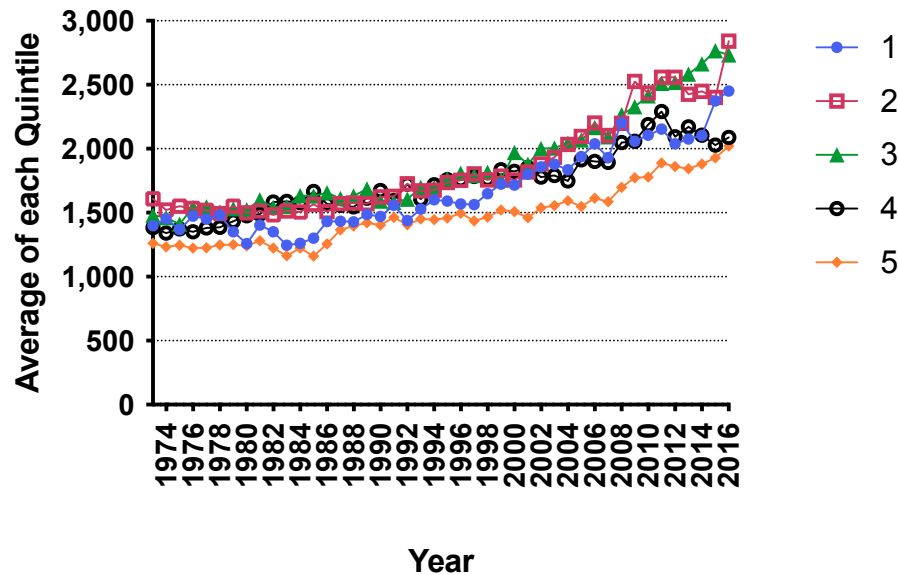


Figure 4. Average Total Acres by Debt Level Quintile

ers would most likely employ more debt in order to control enough farm land to farm (a future paper will specifically examine this issue). The result of the other four quintiles, which have minimal differences for total assets, is more difficult to explain although age might be a factor as well. The most highly leveraged farms, despite being at a disadvantage for owned acres, are still able to farm as many acres as the least leveraged farms.