

Is Net Farm Income Affected by Debt Level?

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Introduction

Net Farm Income (NFI) is probably the ultimate measure of farm success. Farms that generate an adequate income can cover family living expenses and will remain viable operations. Farming requires a substantial amount of capital though for the business to function. Debt capital is used by nearly every farmer but farms vary in their use of debt. Debt capital is not free and any interest expense will lower NFI. However, debt capital can help a farm become larger which could improve net farm income. In the paper AgManager GI-2018.8, I examined farms by quintiles based on the D/A ratio to determine the level of risk for farmers in the Kansas Farm Management Association (KFMA) program. While there is a wide range of debt levels among farms, there is a question about how this debt affects farm profitability. This paper examines the net farm income by quintiles of the D/A ratio.

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 average net farm income for each group is calculated.

Results

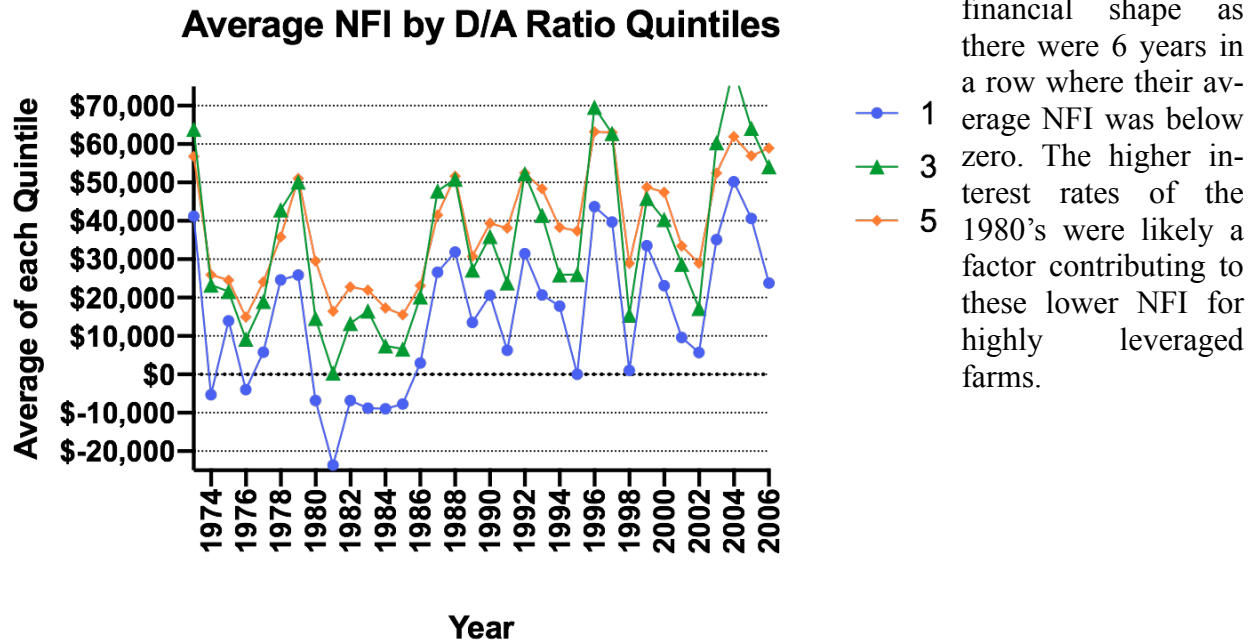
Figures 1 and 2 show the average net farm income for the different quintiles. The results are broken into two parts to make the trends easier

to read. Prior to 2006, most farms had NFI below \$100,000. After 2006, the increase in grain prices greatly increased the NFI of all quintiles. Thus, 2006 made for a good point to divide the results. Notice that the two figures have different Y-axis scales. Figure 1 also has removed quintile groups 2 and 4 to make it easier to read. Groups 2 and 4 have results that fit into the range of the other three groups.

As the figures show, group one, the group with the highest debt-to-asset ratios tended to have the lowest net farm income. The other four groups tended to have NFI that was closer together which made it difficult to say that one group had higher net income than another. One reason why the highest leveraged farms had the lowest NFI may have been because these farms were also the smallest.

Figure 2 indicates that the highest leveraged farms did not see the big increase in NFI from 2007 until 2014 that the less leveraged farms did. However, the farms with very little debt didn't see as much of an increase in NFI over this time period as did groups two, three, and four. Thus, it appears that farms with moderate debt were the ones to benefit the most from the higher grain prices of 2007 through 2014.

An important observation from Figure 2 is that the farms with very little debt had the least variability in net farm income. While the group five farms had the second lowest NFI from 2007 until 2014, these farms had the highest NFI in 2015 and 2016. Farms with the highest leverage, group 1, have been hit the hardest by the current downturn in the farm economy. However, during the peak of the 1980's farm crisis, these group 1 farms were even in worse



financial shape as there were 6 years in a row where their average NFI was below zero. The higher interest rates of the 1980's were likely a factor contributing to these lower NFI for highly leveraged farms.

Figure 1. Average NFI by Debt Level Quintile from 1974 to 2006.

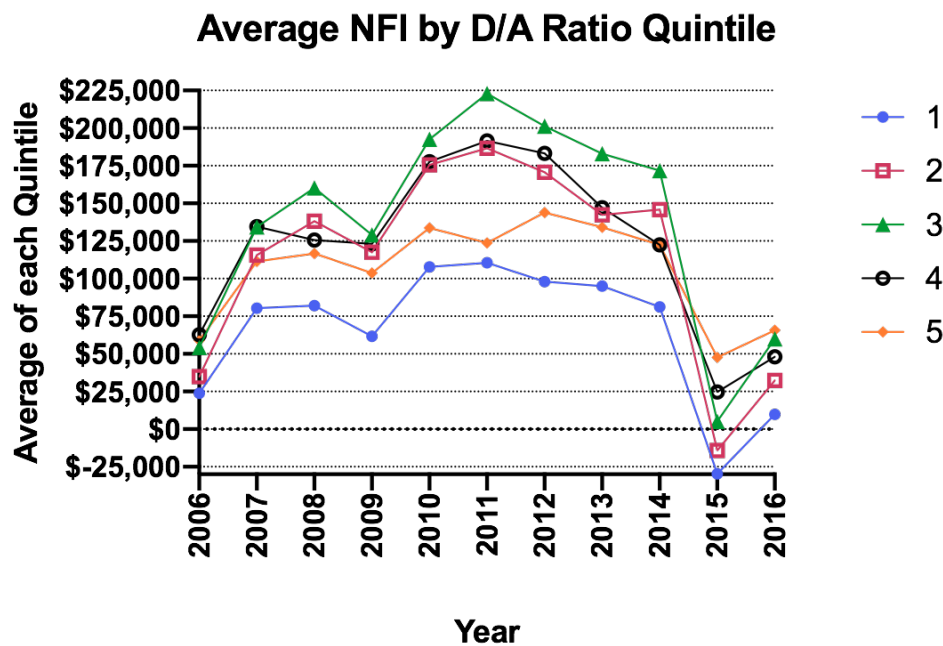


Figure 2. Average NFI by Debt Level Quintile from 2006 to 2016