Do Farms with a Higher Percentage of Debt Capital Pay Higher Interest Rates?

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Introduction

As I showed in AgManager publication GI-2018.7, Kansas farmers in the Kansas Farm Management Association (KFMA) pay an average interest rate very similar to the PRIME rate that banks charge to their best customers. A remaining question though is how does this rate vary by the level of financial risk We would expect that farmers with lower financial risk (i.e., lower D/A ratios) to have an average interest rate higher than farmers with a higher debt-to-asset ratio. This paper examines the average interest rate paid by farms with different levels of farm leverage. As in the previous AgManger papers GI-2018.8, GI-2018.9, and GI-2018.10, farms are grouped into quintiles based on 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 median interest rate is calculated for each quintile based on the effective interest rate for each farm. Within a farm, the interest rate is calculated from the average amount of debt for the year and the accrued interest expense.

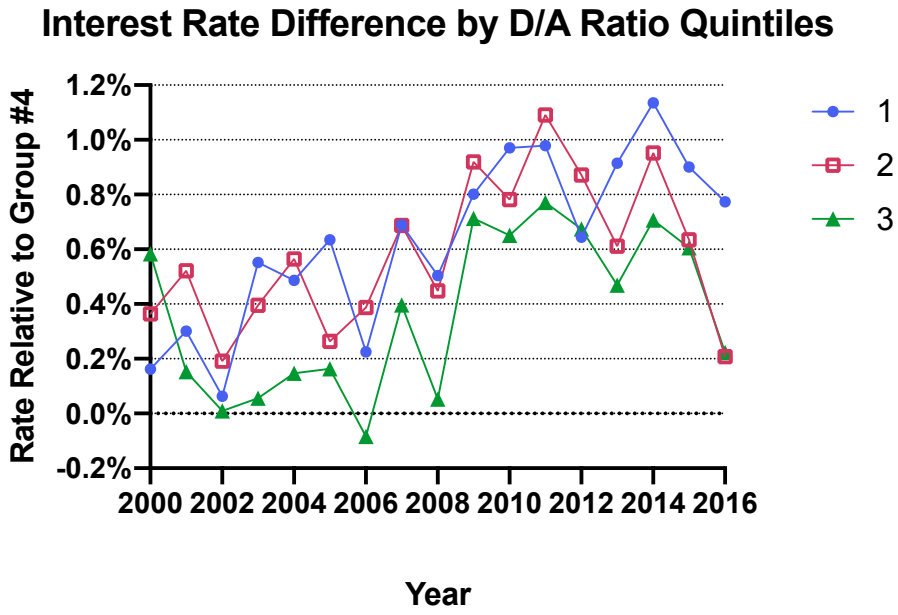

Figure 1. Interest Rates Relative to Farms with the Lowest Level of Debt

To make the analysis easier to visualize, the interest rate for each quintile is compared to the fourth quintile. This group should have the second lowest interest rate. The bottom quintile was not used because many of these farms have no debt and thus no interest rate. The median or average interest rate for this quintile would not be meaningful. With quintile four (the second least leveraged farm group) serving as the baseline interest rate, the

remaining three quintiles are then compared to quintile four.

Results

Figure 1 shows how the effective interest rates for the three most leveraged quintiles compares to quintile four. Farms with higher leverage did pay higher interest rates but in some years the difference was very small or non-existent. Until about 2006, the interest rate premium for more financial risk was smaller. After 2006, the interest rate premium became larger. In particular, after 2009, the interest rate premium was over 0.5% or more above the least risky farms.

The result of a higher premium since 2009 is interesting because interest rates have been much lower since 2009 as well. Thus, as a fraction of the base interest rate, higher risk farms have been paying a much higher premium for being more leveraged. With the PRIME rate at 3.25% since 2009 until recently, a 0.5% interest rate premium is actually 15% above the the base prime rate.

During 2005 and 2006 when the PRIME rate was much higher at around 8%, the risk premium for the most leverage farms was less than 0.25% above the least leveraged farms. This resulted in only a 3% premium to the base PRIME rate.