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U.S. Farm Sector Balance Sheet

Michael Langemeier

Center for Commercial Agriculture
Purdue University

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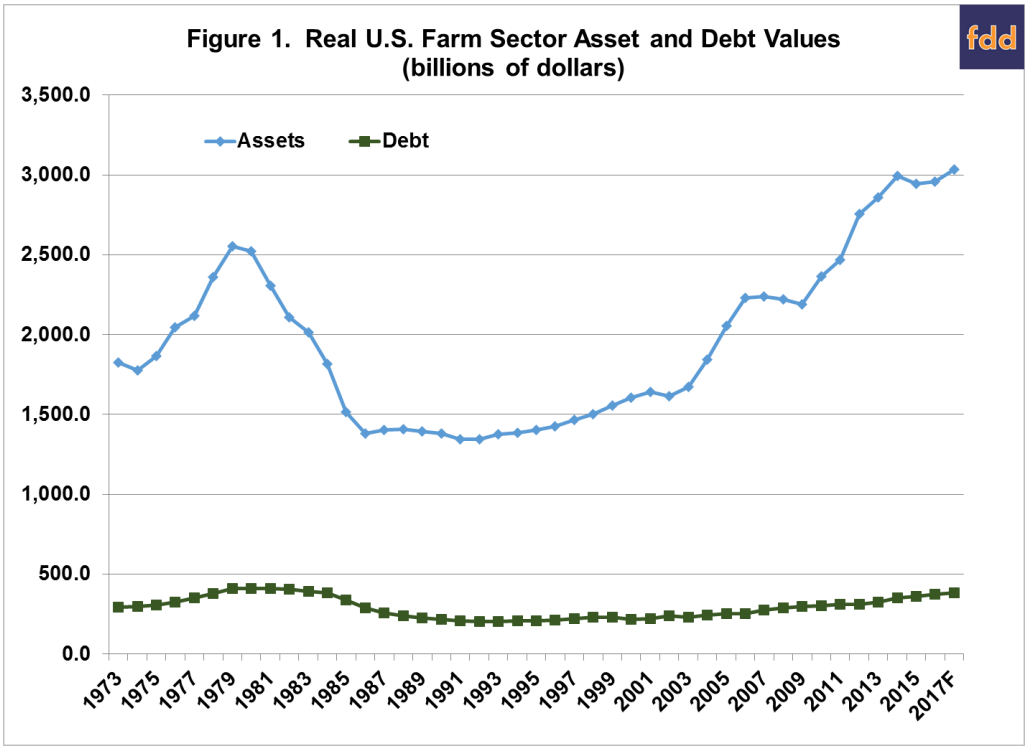
U.S. net farm income has declined approximately 49% since its peak in 2013. The balance sheet for the U.S. farm sector continues to adjust to the declines in U.S. net farm income since 2013. Specifically, asset values and debt levels have adjusted to tighter cash flows and net farm income. This article discusses changes in the U.S. farm sector balance sheet as well as liquidity and solvency ratios.

Trends in Real Assets and Debt

Before analyzing the farm sector's current balance sheet, we will review trends in real assets and real debt. Figure 1 presents real U.S. farm sector asset and debt values using 2016 as the base year. With the exception of 2017, the values for each year represent end of the year values. Prior to 2007, the peak in real assets occurred in 1979 at a value of $2.552 trillion. This peak held until 2012, when real assets for the farm sector totaled $2.754 trillion. Real assets are projected to be valued at $3.035 trillion in 2017. The 2017 value of real assets is 1.4 percent higher than the value reached in 2014, which represents the most recent peak in real net farm income.

The peak U.S. farm sector real debt occurred in 1979 at a value of $412 billion. Real debt for the U.S. farm sector was below $300 billion from 1986 to 2009. Real debt has being increasing since 2003. Since 2014, the recent peak in terms of real assets, real debt has increased 9.9 percent.

Projected farm sector equity in 2017 is expected to be very similar to farm sector equity in 2014. Prior to 2007, the peak in U.S. farm sector equity occurred in 1979 at a value of $2.141 trillion. Farm sector equity in 2014 and projected farm sector equity in 2017 are $2.643 trillion and $2.650 trillion, respectively.



Farm Sector Balance Sheet

Table 1 presents the U.S. farm sector balance sheet for 2007, 2012, and 2017. The values in table 1 represent real values using 2016 as the base year. The 2007 and 2012 balance sheets represent end of the year balance sheets. The 2017 balance sheet represents forecasted values and was updated on August 30, 2017.

Table 1. Balance Sheet of the U.S. Farming Sector

	2007	2012	2017
Farm Assets (billions of dollars)			
Financial Assets	66.9	144.7	82.0
Purchased Inputs	18.3	22.4	14.4
Crops Stored	61.8	67.7	49.1
Animals and Products	102.0	99.9	113.6
Machinery and Motor Vehicles	222.3	254.7	252.2
Real Estate	1,767.4	2,165.0	2,523.9
Total Farm Assets	2,238.6	2,754.4	3,035.2
Farm Debt (billions of dollars)			
Nonreal Estate	124.4	129.7	145.6
Real Estate	150.3	181.0	239.3
Total Farm Debt	274.6	310.7	384.9
Farm Equity (billions of dollars)	1,964.0	2,443.7	2,650.3

Projected real asset values for 2017 are higher than values in any other year during the 1973 to 2017 period. However, it is important to note that the only asset categories with higher values in 2017 compared to 2012 are the value of animals and products and real estate values. Financial assets, purchased inputs, and crops stored declined sharply from 2012 to 2017. The value of machinery and motor vehicles declined approximately 1 percent from 2012 and 2017. The 2017 value of machinery and motor vehicles is approximately 13.5 percent higher than the corresponding values in 2007.

Nonreal estate debt has increased 17.1 percent since 2007 with most of the increase occurring since 2012. The increase in real estate debt is even more dramatic. Real estate debt has increased approximately 59 and 32 percent since 2007 and 2012, respectively. Farm equity in 2017 is 35 percent larger than it was in 2007, and 8.5 percent larger than it was in 2012.

A common size balance sheet for the U.S. farm sector is presented in table 2. Common size balance sheets use percentages rather than actual dollars and are useful when comparing balance sheets across farms or years. The percentage of assets accounted for by financial assets, purchased inputs, crops stored, animals and products, and machinery and motor vehicles was 21.0 percent in 2007, 21.4 percent in 2012, and 16.8 percent in 2017. Interestingly, the percentage of assets represented by crops stored, animals and products, and machinery and motor vehicles was higher in 2007 than it was 2012. Currently, land makes up approximately 83 percent of total assets.

Table 2. Common Size Balance Sheet for the U.S. Farming Sector

	2007	2012	2017
Farm Assets			
Financial Assets	3.0%	5.3%	2.7%
Purchased Inputs	0.8%	0.8%	0.5%
Crops Stored	2.8%	2.5%	1.6%
Animals and Products	4.6%	3.6%	3.7%
Machinery and Motor Vehicles	9.9%	9.2%	8.3%
Real Estate	79.0%	78.6%	83.2%
Total Farm Assets	100.0%	100.0%	100.0%
Farm Debt			
Nonreal Estate	5.6%	4.7%	4.8%
Real Estate	6.7%	6.6%	7.9%
Total Farm Debt	12.3%	11.3%	12.7%
Farm Equity	87.7%	88.7%	87.3%

Nonreal estate debt as a percent of total assets in 2017 is smaller than it was 2007. Conversely, real estate debt in 2017 was quite a bit higher as a percent of total assets than it was in both 2007 and 2012. Nonreal estate debt as a proportion of nonreal assets is currently 28.5 percent and real estate debt as a proportion of real estate assets is currently 9.5 percent. Total farm debt as a percentage of assets in table 2 ranged from 11.3 percent in 2012 to 12.7 percent in 2017. Long-term trends in the debt to asset ratio for the U.S. farm sector will be discussed further below.

Liquidity Ratios

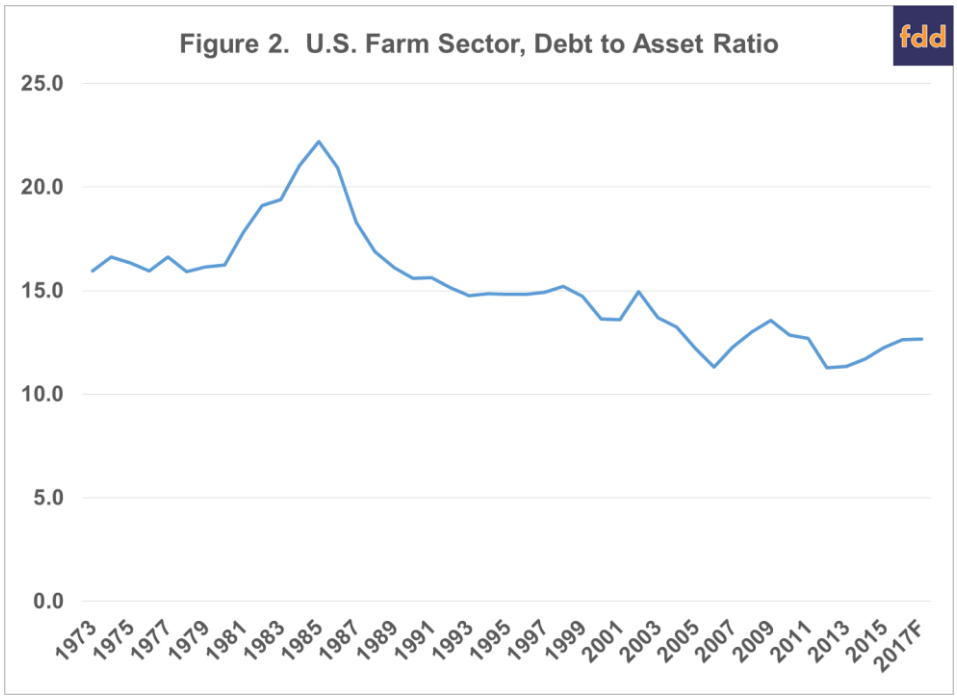
USDA-ERS has been reporting the average current ratio and the average working capital to value of farm production since 2009. Working capital is computed by subtracting current liabilities such as operating debt and the current portion of term debt from current assets such as financial assets, inventories of purchased inputs, and crop and market livestock inventories.

The average current ratio for the farm sector declined from 2.87 in 2012 to 1.55 in 2017. The 2017 value is well below the commonly used benchmark value of 2. The average working capital to value of farm production ratio declined from a value of 0.37 or 37 percent in 2012 to an average value of 0.15 or 15 percent in 2017. A commonly used benchmark value for this ratio is 35 percent or greater. The average 2017 values for both the current ratio and the working capital to value of farm production ratio illustrate the liquidity problems that farms currently face.

Solvency Ratios

Solvency ratios, such as the debt to asset ratio, provide an indication of the farm's ability to repay all financial obligations if all assets are sold, as well as an indication of the ability to continue operations as a viable farm business after a financial adversity, such as drought.

Figure 2 illustrates the debt to asset ratio for U.S. farm sector since 1973. The debt to asset ratio peaked in 1985 at 22.2 percent. The debt to asset ratio has been below 15 percent since 1999. The 2017 debt to asset ratio at 12.7 percent represents the highest ratio since 2010, but is still relatively low by historical standards. That is why many economists indicate that U.S. agriculture is currently facing a liquidity crisis, but not a solvency crisis.



How could a solvency crisis similar to that experienced in the 1980s come about? For solvency to increase dramatically at least two things would need to happen. First, net farm income would need to stay relatively low compared to the average since 2007. Net farm income was below the average since 2007 in 2015, 2016, and 2017. Second, land values would need to sharply decline. A relatively low net farm income and a decline in land values would increase total debt and decrease asset values, resulting in an increase in the debt to asset ratio. The decrease in land values would have to be very sharp to repeat the conditions experienced in the 1980s. The combination of relatively low net farm income and sharply lower land values does not appear to be imminent.

Conclusions

The balance sheet for the U.S. farm sector continues to adjust to the relatively lower levels of net farm income experienced since 2014. Primarily due to land values, total asset values in 2017 are higher than they were in 2007 and 2012. Nonreal and real debt have increased 12.3% and 32.2% since 2012. Liquidity has dropped substantially since 2012. Due to relatively strong land values, solvency is only slightly higher than it was in 2012.

This article focused on the U.S. balance sheet for the farm sector. Regional changes in the balance sheet are likely quite different than changes at the national level. Differences in regional and the national balance sheet reflect differences in how land values have adjusted over the last several years, and regional differences in enterprise mix. While land values at the national level have not declined, land values for some states in the Great Plains and the Corn Belt have seen declines of 20% to 25%. A future article will examine common size balance sheets at the state level.

References

USDA-ERS. "Farm Income and Wealth Statistics." Updated August 30, 2017, and accessed September 22, 2017. www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/.