farmdoc DAILY

Agricultural, Consumer & Environmental Sciences | University of Illinois Urbana-Champaign

The Financial Position of the Farm Economy Heading into a Higher Interest Rate Macroeconomic Condition

Anil K. Giri, Dipak Subedi, Monika Ghimire

Agricultural Economist, Farm Economy Branch,
Economic Research Service (ERS)-USDA

Gary Schnitkey, Nick Paulson

Department of Agricultural and Consumer Economics
University of Illinois

October 4, 2023

***farmdoc daily* (13): 181**

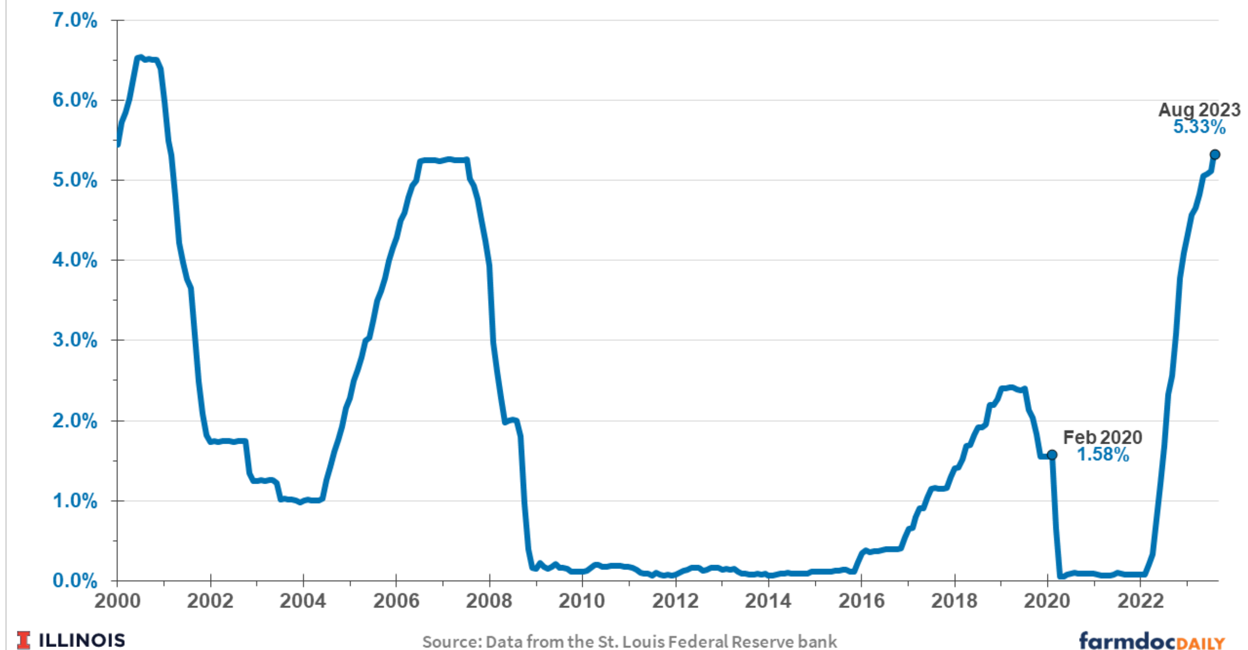
Recommended citation format: Giri, A., D. Subedi, M. Ghimire, G. Schnitkey, and N. Paulson. "The Financial Position of the Farm Economy Heading into a Higher Interest Rate Macroeconomic Condition." *farmdoc daily* (13): 181, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, October 4, 2023.

Permalink: https://farmdocdaily.illinois.edu/2023/10/the-financial-position-of-the-farm-economy-heading-into-a-higher-interest-rate-macroeconomic-condition.html

The latest meeting of the Federal Open Market Committee (FOMC) on September 9, 2023, decided to hold the federal funds target rate at the range of 5.25 to 5.50 percent. However, they left a possibility of increase in the future. This was after rapid increases in its short-term federal funds rate since March of 2022 were implemented to tame down high and persistent inflation. The federal funds rate is the interest rate at which depository institutions trade federal funds (balances held at Federal Reserve Banks) with each other overnight (Federal Reserve Bank, 2023). There has been a total of 11 increases in the short-term federal funds rate since the first increase in March 2022. This has resulted in the current target funds rate of 5.25 to 5.50 percent, the highest in 22 years (Giri and Subedi, 2023).

Figure 1 shows the monthly seasonally unadjusted short-term federal funds rate from January 2000 through August 2023. The effective federal funds rate on August 1, 2023, was 5.33 percent, significantly higher than during the pandemic. On March 13, 2020, the U.S. Federal government declared a nationwide emergency due to COVID-19. The federal funds effective rate was 0.5 percent on April 1, 2020. The Federal Open Market Committee (FOMC) had been decreasing the short-term federal funds rate before the pandemic. However, it decreased the rate significantly to record low levels, near zero percent, throughout the pandemic until its first increase in March 2022. The short-term federal funds rate was 1.58 percent on February 1, 2020, and was above 2 percent for most of 2019.

We request all readers, electronic media and others follow our citation guidelines when re-posting articles from farmdoc daily. Guidelines are available here. The farmdoc daily website falls under University of Illinois copyright and intellectual property rights. For a detailed statement, please see the University of Illinois Copyright Information and Policies here.



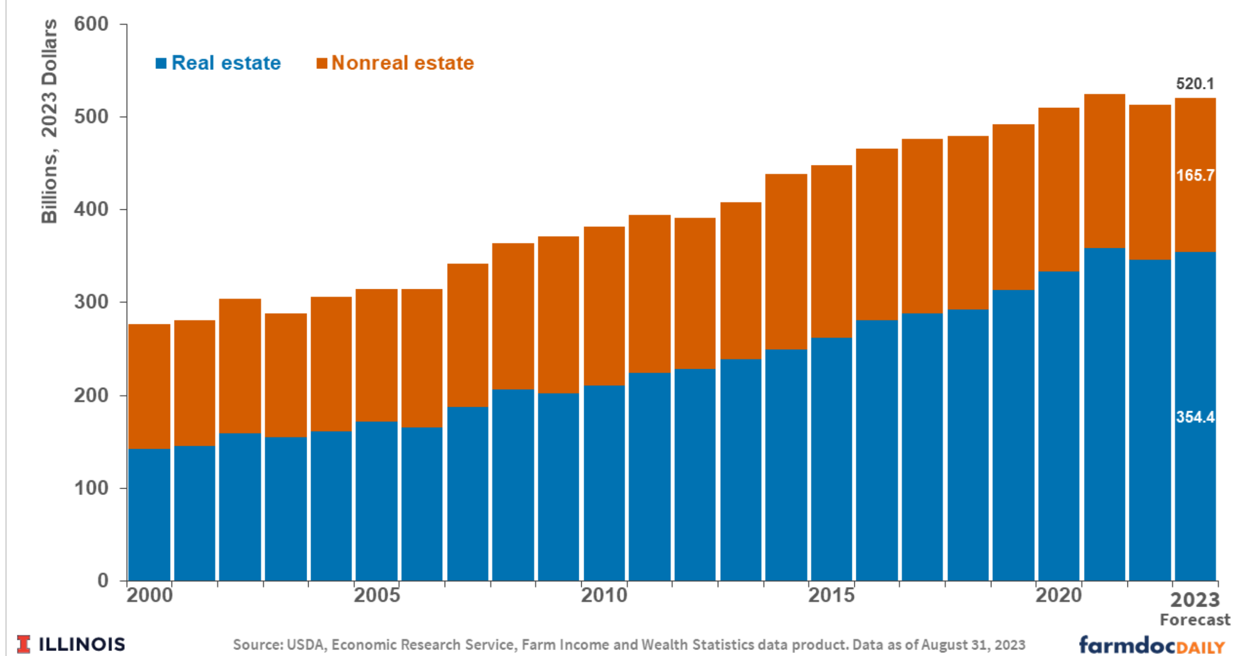
The Federal funds rate is the interest rate banks charge each other for short-term lending. However, the short-term Federal funds rate also directly influences interest rates, such as the prime rate that banks charge customers, and indirectly influences longer-term rates, such as those for mortgages and savings accounts. This affects all sectors of the economy, including the farm sector. More specifically, new loans and loans with variable interest rates will incur higher interest expenses.

The Economic Research Service (ERS) of the USDA releases its Farm Income and Wealth Statistics data product three times each year, usually in early February, late August/early September, and late November/early December. The data product includes historical U.S. and State farm income and wealth estimates, U.S. forecasts for the current calendar year, and financial ratios, along with the data underlying those ratios. The most recent release (August 31, 2023) forecasted interest expenses to be the fastest growing agricultural production cost because of the increase in the short-term Federal funds rate by the Fed.

Debt and interest expense increases have implications for liquidity and solvency of the farm sector. Liquidity refers to the ability of farms and ranches to meet short-term debt obligations. Solvency refers to the ability of a farm or ranch to satisfy its long-term debt obligations. In this study, we examine the total debt level for the sector and some of the key ratios used to measure liquidity and solvency, especially those that use interest expenses or debt in the calculation, to examine the financial position of the farm sector heading into a higher interest rate macroeconomic condition.

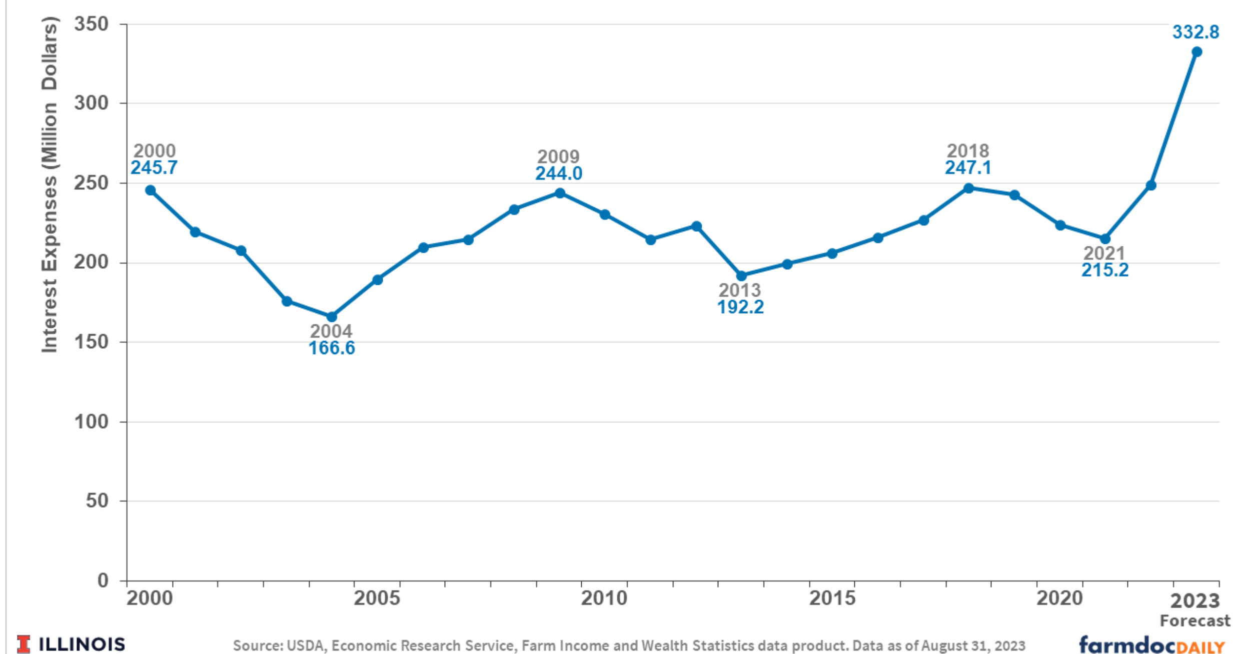
Total Farm Sector Debt

Total farm sector debt is forecast at $520.1 billion for 2023, which would be an increase of $7.1 billion, or 1.4 percent compared with 2022 in inflation adjusted dollars. Farm debt can be broadly classified into real estate debt and nonreal estate debt (debt not secured by a mortgage). Farm real estate debt is expected to reach $354.4 billion in 2023, a 2.3 percent increase in inflation-adjusted dollars. The farm non-real estate debt is expected to reach $165.7 billion in 2023, a 0.6 percent decline from 2022 when adjusted for inflation.



Interest Expense of the Farm Sector

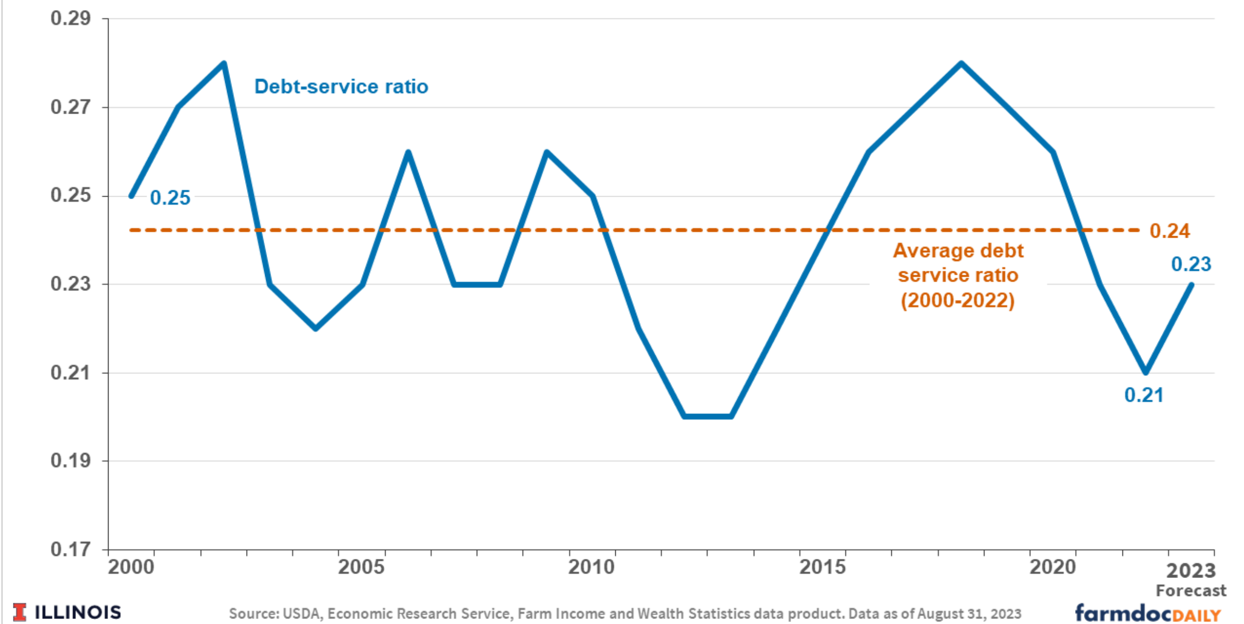
About one-fourth of farm operations carry some debt (Giri and Subedi, 2023) and these operations, especially with those that rely on new operating loans and those without fixed loan rate, are the ones to be impacted the most by the higher interest rates. There was a steep increase in interest expenses since 2021 as the interest rate began to rise. The most recent (August 31, 2023) farm income release from the Economic Research Service (ERS) of the USDA estimated the record high interest expenses for 2022 at $24.9 billion and is forecast to increase further by 33.6 percent in 2023. Interest expenses are the fastest growing production cost in 2023 compared to 2022 and are projected to be $33.3 billion in 2023 in inflation adjusted dollars.



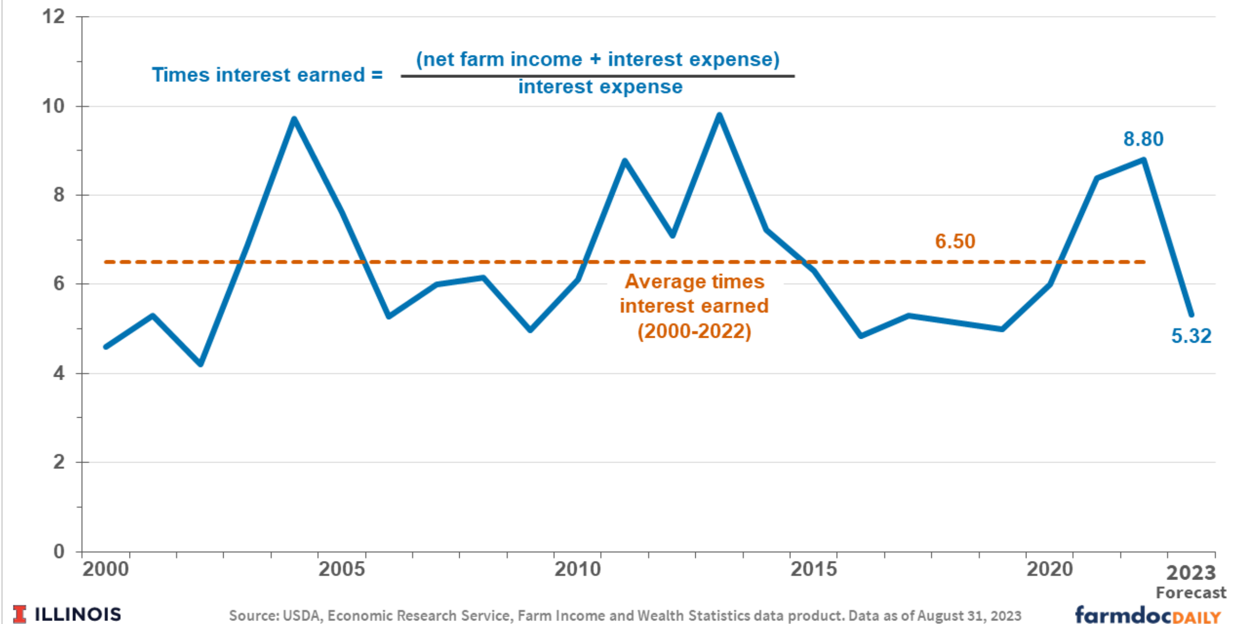
Liquidity and Solvency of the Farm Sector

Liquidity and solvency measures, in the form of ratios, provide insight into the effect of higher interest rates and higher values of debt and assets. ERS provides data and 19 ratios in the Farm Income and Wealth Statistics data product. Liquidity ratios are ratios of liquid assets and liabilities and are a way to assess the farm sector's ability to make scheduled financial payments. They can be early indicators of elevated stress. Solvency ratios compare the amount of debt relative to equity or assets invested in the farm sector.

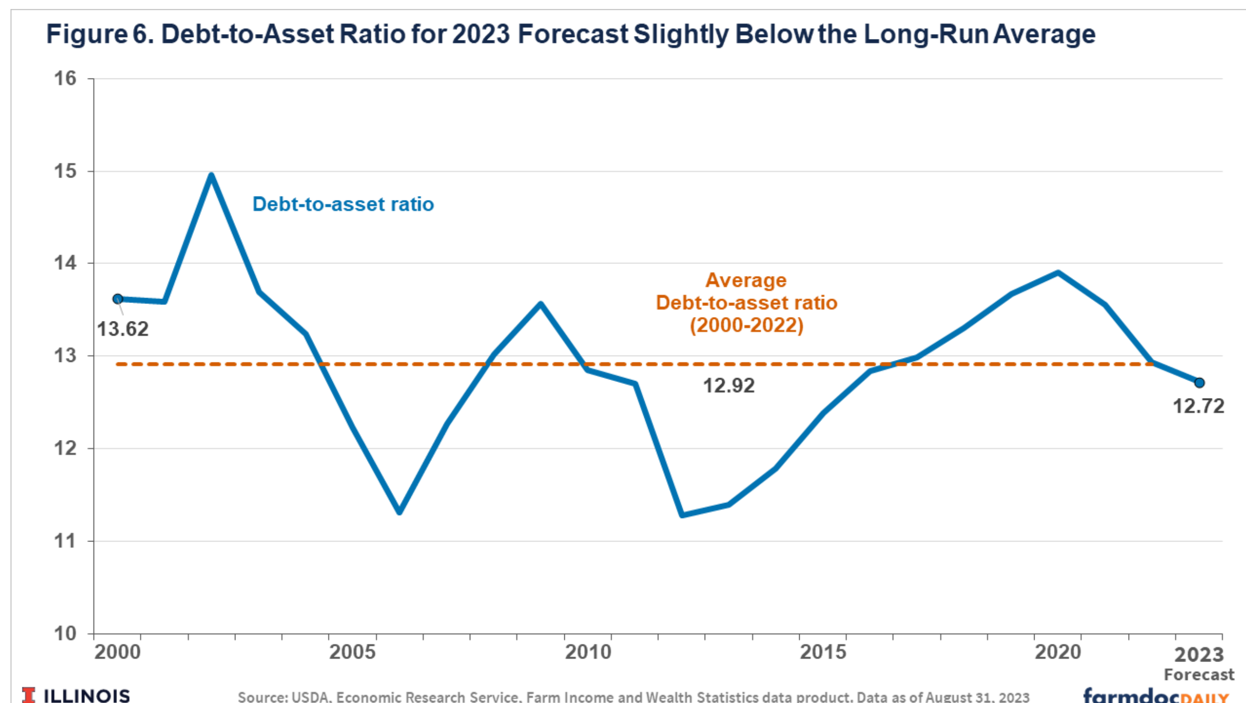
Debt-service ratio: a liquidity ratio that measures the share of production revenue plus direct Government payments used for debt payments. It is calculated by dividing the value of the principal payments and interest expenses by the sum of Government payments and value of production. Lower values indicate better financial position and performance (Giri et al., 2023). In 2000, the debt service ratio was 0.25; it is forecast at 0.23 for 2023, which is also lower than the 23-year average (2000 through 2022) of 0.24. The 2023 forecast is however slightly higher than the 2022 value of 0.21. This shows that even though interest rate payments are expected to increase, they remain near long-run benchmarks.



Times-interest-earned ratio: a liquidity ratio that measures the ability to cover debt payments, specifically interest payments. It is calculated by dividing the sum of net farm income and interest expense by interest expense. For this ratio, a higher value is preferred. The 2023 forecast value for this ratio is 5.32, which would be higher than the 2000 level (of 4.59) and below the 2022 level of 8.8. The ratio is within the range seen from 2000 through 2020, but it is lower than the 22-year average (2000 through 2022) of 6.50, indicating greater financial stress in 2023 than the average.



Debt-to-asset ratio: a solvency ratio that measures the proportion of assets owed to creditors to cover outstanding debt obligations. This ratio is calculated by dividing debt by assets for a given year, and a lower value is preferred. The 2023 forecasted value of this ratio is 12.72, lower than the 2000 level of 13.62 and the 23-year average of 12.92. This suggests that, at least in recent years, increases in asset values mostly are offsetting increases in debt.



For 2023, ERS forecasts total farm sector assets to reach a historic high of more than $4 trillion. This would be more than double the 2000 levels, after adjusting for inflation. Real estate assets account for more than four-fifths of total farm sector assets, and their value is forecast to grow to $3.42 trillion in 2023.

Conclusion

In sum, total farm sector debt is forecast to increase to a record high $ 520.1 billion in 2023. The Fed has increased the short-term federal funds rate rapidly since March 2022 to tame down persistent inflation. This will result in higher interest rates for producers, especially those who take new loans and those with existing loans at variable interest rates. For 2023, interest expenses for the sector are forecast at $ 33.3 billion, an increase of $8.4 billion, or 33.6 percent, compared with 2022. On an annual percentage basis this would be a record high increase (over the period 2000-2023). However, examination of key solvency and liquidity ratios shows that the potential impact of higher interest expenses, at least in the short term, is minimal.

References

Giri, A.K. and Subedi, D. Increases in U.S. Farm Debt and Interest Expenses Minimally Affect Sector's Financial Position in the Short-Term, as Measured by Liquidity and Solvency Ratios. In *Amber Waves: The Economics of Food, Farming, Natural Resources, and Rural America*; 2023. Available online: https://www.ers.usda.gov/amber-waves/2023/august/increases-in-u-s-farm-debt-and-interest-expenses-minimally-affect-sector-s-financial-position-in-the-short-term-as-measured-by-liquidity-and-solvency-ratios/

Giri, A. K., Litkowski, C., Subedi, D., & McDonald, T. (2022). COVID-19 Working Paper: Farm Sector Financial Ratios: Pre-COVID Forecasts and Pandemic Performance for 2020. Available online: https://www.ers.usda.gov/publications/pub-details/?pubid=104535

U.S. Department of Agriculture. 2023. "Data Files: US and State-Level Farm Income and Wealth Statistics." Washington, DC: USDA Economic Research Service. Available online: https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics/