



The Financial Health of the US Farm Sector

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October 2022

Key Points

- After a relatively short period when the agricultural sector experienced close-to-average farm incomes, net farm incomes increased well above their 20-year inflation-adjusted averages in 2020 and 2021 because of federal emergency relief payments and relatively high agricultural commodity prices.
- Farm incomes are forecasted to remain well above average levels in 2022, despite the rollback of pandemic-related subsidies and rising costs for major farm inputs, because prices received by farmers for many commodities have been exceptionally high.
- While trade wars, widespread drought, high input prices, and volatile international markets have created challenges for US agriculture, the farm sector as a whole, and the vast majority of farms, is in an exceptionally healthy financial position as Congress begins to consider the provisions of the 2023 Farm Bill.

The US Department of Agriculture's (USDA) Economic Research Service (ERS) projects that net farm income is forecasted to be \$147.7 billion in 2022, 42 percent higher than the inflation-adjusted average since 2000 (\$104.1 billion) but slightly lower than the inflation-adjusted figure for 2021.¹ The ERS projects that net cash income, a more accurate indicator of cash flow, will be \$168.5 billion in 2022, 35 percent higher than the inflation-adjusted average since 2000 (\$124.5 billion) and the highest level since 2012.²

The strong levels of income in 2022 are particularly striking given the recent large increases in total production expenses (11.3 percent over 2021) and, in particular, fertilizer expenses (43.8 percent over 2021). Farm debt is projected to decrease by 1.2 percent from the historically high levels in 2021 but remains less than 13 percent of the total value

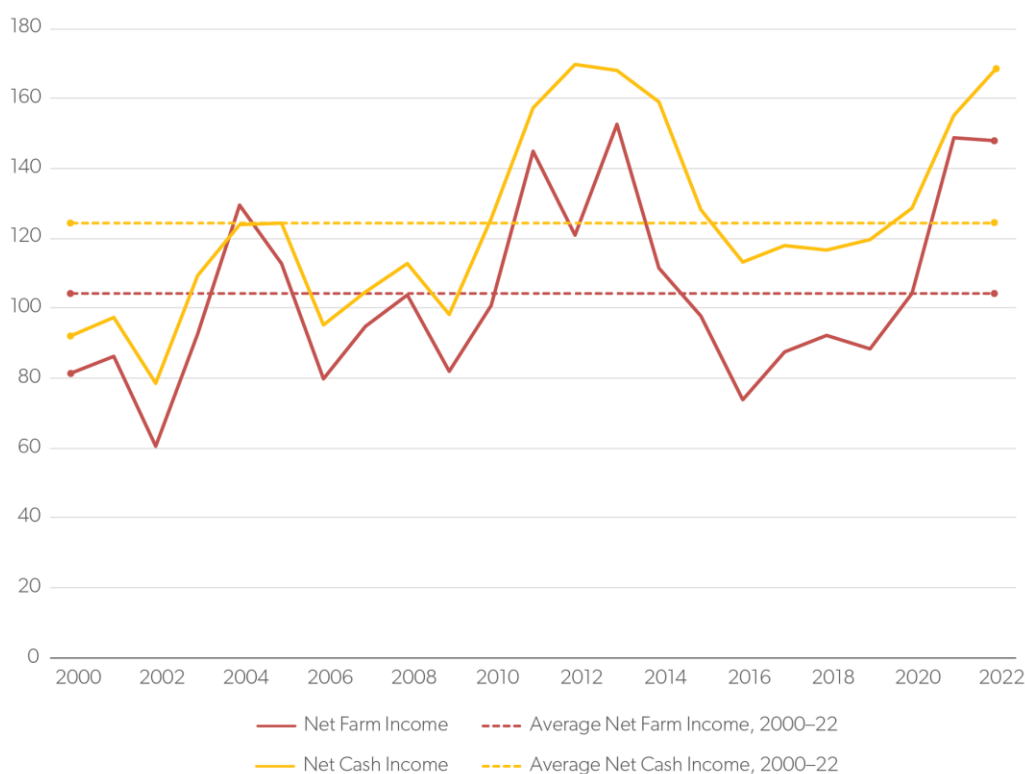
of farm assets, which are also estimated to increase by 3.6 percent over 2021.³

In this report, we update an earlier assessment from February 2021⁴ and provide an overview of the general agricultural economy's financial shape using a range of indicators. Overall, these sector-wide indicators demonstrate that as of August 2022, the farm economy looks to be in strong financial shape.

Farm Income Remains Strong

The USDA uses two broad annual (calendar year) measures of farm income: net cash income and net farm income. Net cash income is the difference between gross cash income, which includes gross cash receipts from sales of crops and animal and animal products, plus other farm-related income

Figure 1. Farm Income (2022 US Dollars, Billions)



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

(e.g., sale of forest products and machine hire or custom work), plus any government payments, minus cash expenses. Net cash income is thus a measure of cash flow in the sector during each calendar year.⁵

Net cash income and net farm income, measured in constant 2022 dollars, are highly correlated and have generally kept pace with inflation since 2000. In 2012, net cash income peaked at more than 36 percent above its average from 2000 to 2022, and in 2013, net farm income was 46 percent above its 22-year average. As prices moderated in 2014, farm income levels began to fall. By 2015, in real terms, net cash and net farm income returned to their 22-year averages. From 2016 to 2019, net cash income remained at roughly its long-term average, while net farm income was 10 to 15 percent lower than its long-term average (Figure 1).

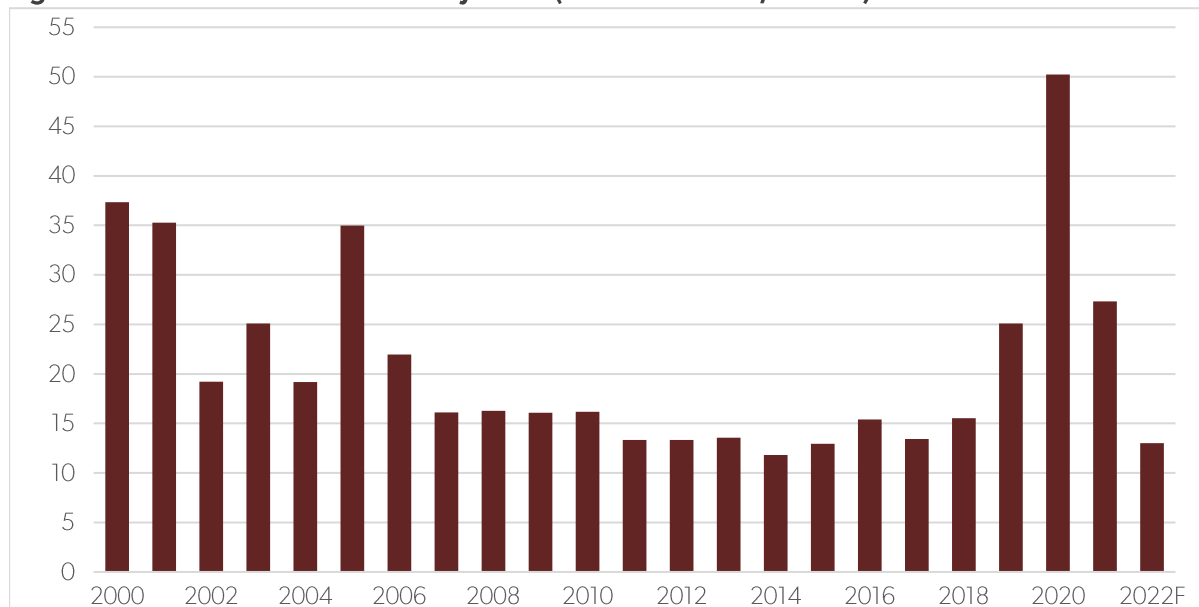
However, in 2020, driven by record levels of government payments, net cash income and net farm income began to outperform their long-run averages. This pattern has continued into 2022, in

which net income measures are forecasted to be fairly close to their previous highs in 2012 and 2013.

Federal subsidies have been an important component of farm-sector incomes since the 1930s. More recently, the increases in net farm income and net cash income during 2020 and 2021 are largely attributed to substantial increases in direct government payments, as shown in Figures 2 and 3. Figure 2 shows farm payments since 2000 and the over \$50 billion in payments in 2020, which fell to a still relatively high amount of \$27.3 billion in 2021. These payment levels are largely attributed to payments under the Market Facilitation Program and the Coronavirus Food Assistance Program. When these programs largely ended in the spring of 2022, federal subsidy payments fell below their 50-year average of \$18 billion to \$13 billion.

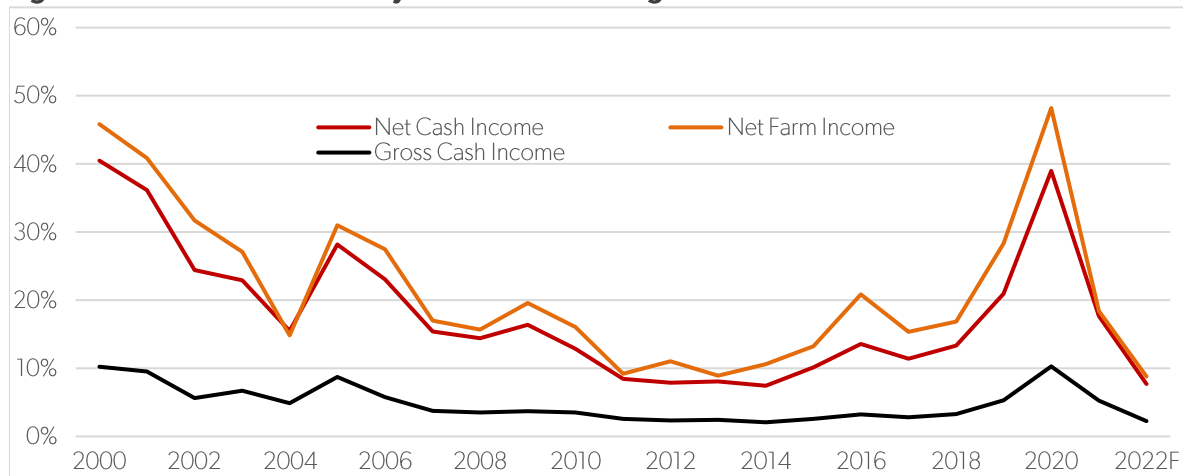
In Figure 3, government payments are reported as shares of farm income and farm revenue. Since 2007, payments have averaged less than 5 percent of total farm revenues. However, in 2020, direct government payments accounted for 10 percent of

Figure 2. Total Direct Government Payments (2022 US Dollars, Billions)



Source: Authors' calculations using US Department of Agriculture, Economic Research Service, "Data Files: U.S. and State-Level Farm Income and Wealth Statistics," <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics>.

Figure 3. Direct Government Payments as a Percentage of Income



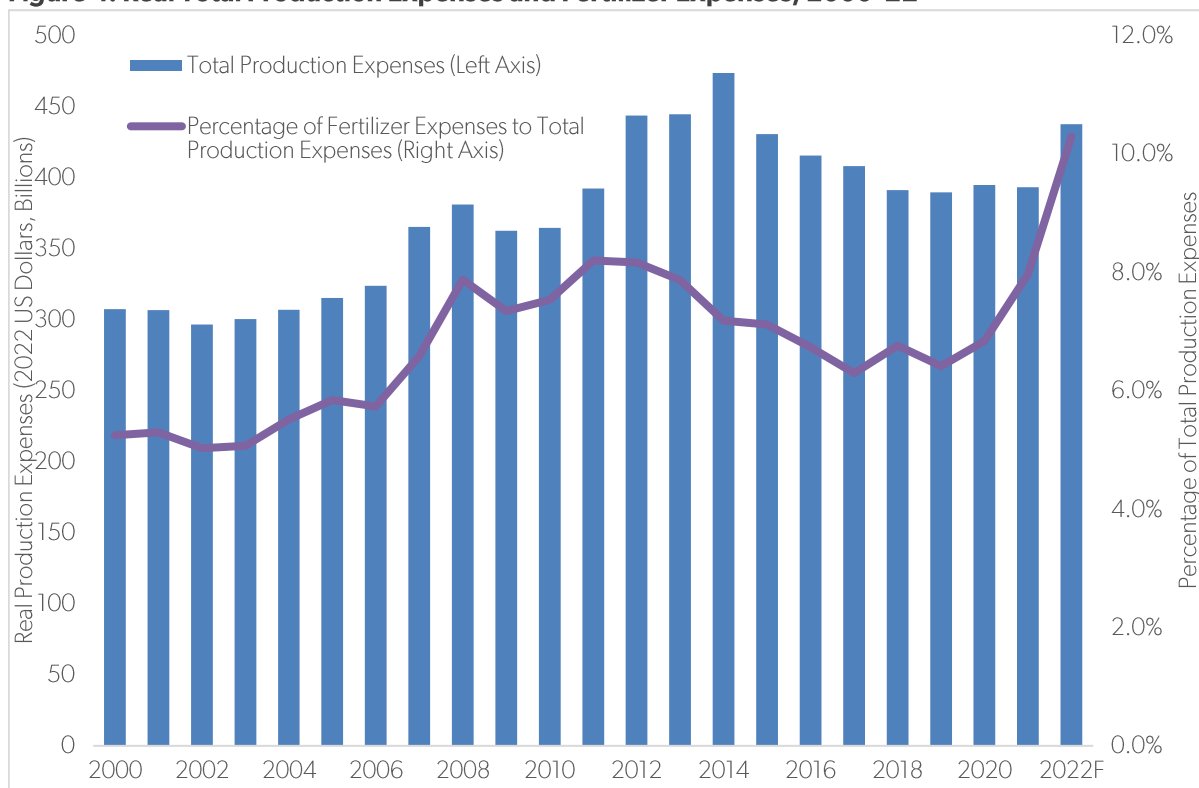
Source: Authors' calculations using US Department of Agriculture, Economic Research Service, "Data Files: U.S. and State-Level Farm Income and Wealth Statistics," <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics>.

gross cash income, 39 percent of net cash income, and 48 percent of net farm income. These shares have fallen from their 2020 highs to more normal levels in 2022.

Another important determinant of farm incomes in 2022 has been the dramatic increase in fertilizer and other input costs that have been linked to across-the-board price increases and Russia's invasion of

Ukraine. As discussed above, net farm and cash income estimates for 2022 are at near-record levels, despite a substantial reduction in government payments and higher input costs. To illustrate the rise in production expenses, Figure 4 shows the increase in total production expenses to be \$437 billion in 2022, an increase of 11.3 percent over 2021. Ferti-

Figure 4. Real Total Production Expenses and Fertilizer Expenses, 2000–22



Source: Authors' calculations using US Department of Agriculture, Economic Research Service, "Data Files: U.S. and State-Level Farm Income and Wealth Statistics," <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics>.

lizer costs comprised 10.3 percent of total production expenses, the highest-recorded share. The surge is largely due to a 43.8 percent annual increase in expenses related to fertilizer in 2022, estimated to be \$45 billion.

Rates of Return on Farm Equity Rebound

The total rate of return on farm equity is a measure of sector profitability that is more comparable to returns on other forms of investment such as stocks and bonds. The total rate of return includes the rate of return on both current income and any capital gains. Current income is measured as net farm income minus imputed returns to unpaid labor and management. Capital gains are calculated as the change in the value of farm assets from the previous year. Equity is measured as total farm assets minus total farm debt.

Typically, a higher rate of return on farm equity from income signals increased profitability, while lower values suggest lower profits. However, the ratio is also sensitive to the sector's reliance on debt. Increases in farm-sector debt-financed assets would reduce equity for a given level of assets, increasing the return on farm equity from current income.

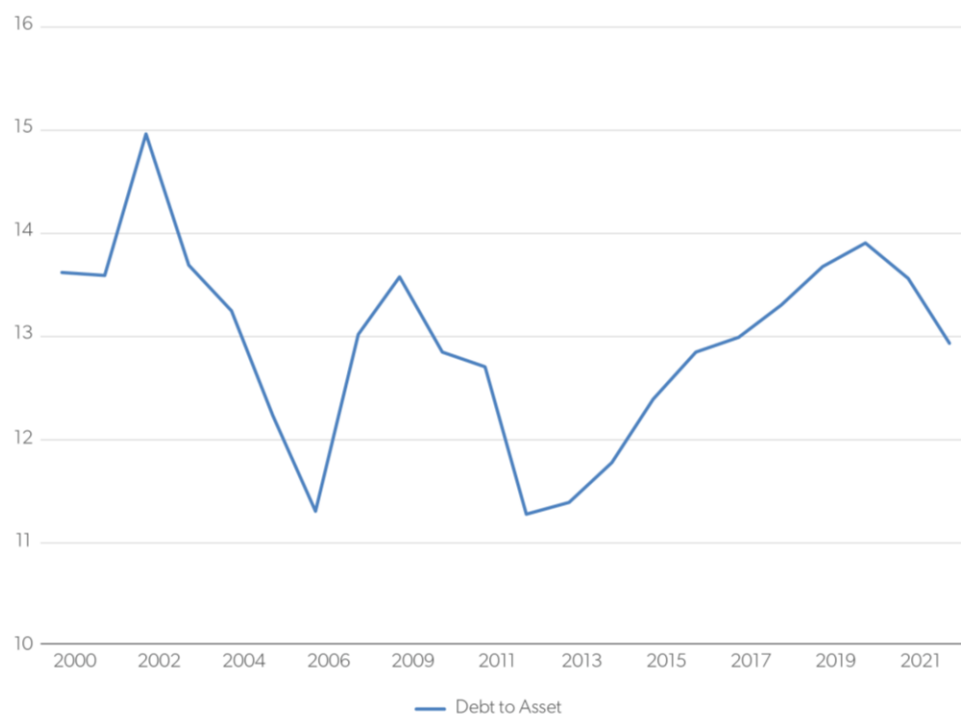
Overall rates of return to farm equity are reported in Figure 5, which shows that the annual rate of return on farm equity has averaged 7.7 percent since 2000, although there has been considerable variability from year to year, largely because of changes in capital gains. The USDA estimates the total rate of return on farm equity for 2022 at 13.2 percent, which is slightly lower than the 13.9 percent estimate for 2021, the highest rate of return since 2012.

Figure 5. Total Rate of Return on Farm Equity (Percentage)



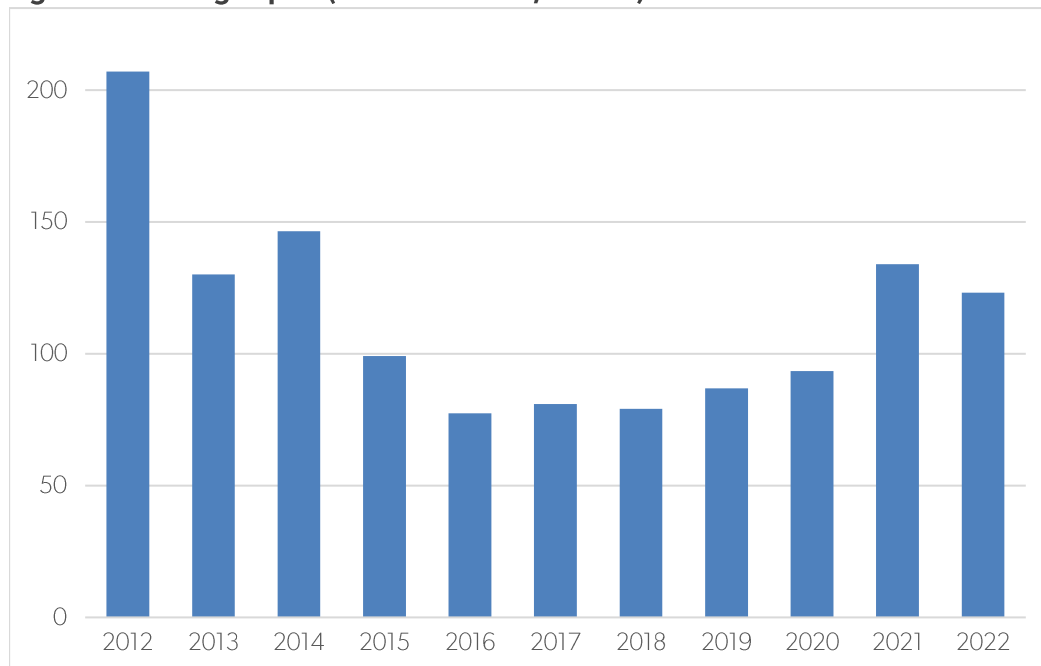
Source: US Department of Agriculture, Economic Research Service, "Data Files: U.S. and State-Level Farm Income and Wealth Statistics," <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics>.

Figure 6. Farm Debt as Percentage of Farm Assets (Percentage)



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

Figure 7. Working Capital (2022 US Dollars, Billions)



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

Farm Debt Remains Low Relative to Assets

Debt-to-asset and debt-to-equity measures are widely used as indicators of the agricultural sector's financial solvency. Sector-wide farm debt is forecasted at \$496 billion in 2022, a slight decrease from the record-high inflation-adjusted (real) terms that debt levels carried in 2020. However, farm assets are projected at \$3.835 trillion in 2022, the highest recorded level in inflation-adjusted (real) terms. In real terms, farm equity, forecasted at \$3.339 trillion in 2022, is also its highest inflation-adjusted recorded level.⁶

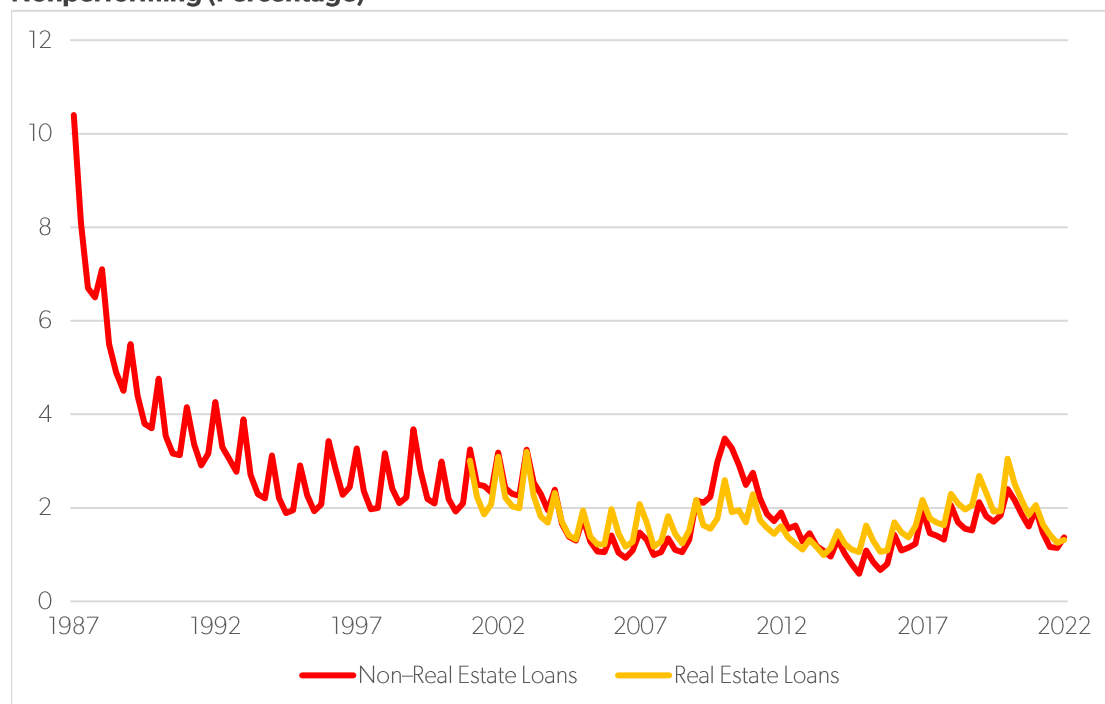
Given the high levels of debt, equity, and assets being recorded in 2022, it is useful to examine key financial ratios to assess the agricultural sector's financial strength. As shown in Figure 6, the debt-to-asset ratio in 2022 is forecasted to be 12.9 percent, the lowest level since 2016. The debt-to-equity ratio is forecasted to be 14.9 percent in 2022, also the lowest level since 2016. For context, both measures remain far below the levels that existed during the farm financial crisis of the mid-1980s,

when debt-to-asset ratios exceeded 20 percent and debt-to-equity ratios exceeded 27 percent.⁷

Working capital is a liquidity measure that reports the amount of cash potentially available to fund operating expenses after paying off current debt. The USDA ERS has published estimates of sector-wide working capital since only 2012. In 2012, net cash income for the sector was at a near-record level, and therefore working capital was almost certainly atypically high. The USDA ERS data (shown in Figure 7) indicate that, in inflation-adjusted (real) terms, working capital declined by 52 percent between 2012 and 2015 (from \$207 billion to \$99 billion), as net cash income (also adjusted for inflation) returned to levels close to its long-run average. Since 2015, the level of working capital as a percentage of gross revenues has averaged about 16 percent and increased to over 20 percent in 2021 and 2022, levels only previously observed between 2012 and 2014.

A farm's capacity to repay loans is another measure of financial solvency. The Federal Reserve surveys commercial banks every quarter and reports on the share of farm loans that are nonperforming. Such loans include non-accruing loans or

Figure 8. Shares of Commercial Bank Farm-Operating and Real Estate Loans That Are Nonperforming (Percentage)



Source: Federal Reserve Bank of Kansas City, "Ag Finance Updates," <https://www.kansascityfed.org/agriculture/agfinance-updates>.

accruing loans that are over 90 days delinquent. At the start of 1987, the share of farm-operating loans that were nonperforming was almost 8 percent, reflecting the impacts of the early and mid-1980s farm financial crisis. Improved farm incomes and tighter banking standards subsequently resulted in better-performing loans. By the early 1990s, nonperforming farm-operating loans and farm real estate loans had declined to less than 2 percent of total farm loans, and in 2008, nonperforming loans accounted for less than 1 percent of total operating and real estate loans.⁸

In 2009 and 2010, with the onset of the global financial crisis and the economy-wide Great Recession in the United States, the share of total farm loans defined as nonperforming increased briefly. However, as agricultural commodity prices increased in 2010–14, loan performance again improved. Current nonperforming loans in 2022 accounted for

almost 1.3 percent of farm-operating and farm real estate loans (Figure 8).

Conclusion

The US farm sector has faced some recent challenges, including input price inflation, a two-year drought that has affected much of the US, a global pandemic, the Russian invasion of Ukraine, and trade wars with major trading partners. Nevertheless, the farm sector is in an exceptionally strong financial position compared to the rest of the US economy.

The reason is that historically high commodity prices have lifted current farm revenues and income levels to historically high levels, despite substantial reductions in direct government payments. Thus, the US farm economy's strong financial position will enable the farm sector to continue to compete successfully in the global economy.

About the Authors

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Notes

1. US Department of Agriculture, Economic Research Service, *Farm Sector Income & Finances: Highlights from the Farm Income Forecast*, September 1, 2022, <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast>.
2. US Department of Agriculture, Economic Research Service, “Data Files: U.S. and State-Level Farm Income and Wealth Statistics,” <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/data-files-u-s-and-state-level-farm-income-and-wealth-statistics>.
3. US Department of Agriculture, Economic Research Service, “Data Files.”
4. Eric J. Belasco, Joseph W. Glauber, and Vincent H. Smith, *Whither Agricultural Policy in 2021 and Beyond*, American Enterprise Institute, February 2, 2021, <https://www.aei.org/research-products/report/whither-agricultural-policy-in-2021-and-beyond>.
5. Although net cash income is measured per calendar year, it is likely to include revenues, payments, and costs associated with crop production in other crop years. For example, in the current year, a farmer may receive a crop insurance indemnity payment for last year’s crop but pay premiums for the current or next year’s crop.
6. Forecasts are from the US Department of Agriculture’s Economic Research Service 2022 data. Historical figures are authors’ calculations using data from US Department of Agriculture, Economic Research Service, “Data Files.”
7. Forecasts are from the US Department of Agriculture’s Economic Research Service 2022 data. Historical figures are authors’ calculations using data from US Department of Agriculture, Economic Research Service, “Data Files.”
8. Federal Reserve Bank of Kansas City, “Ag Finance Updates,” <https://www.kansascityfed.org/agriculture/agfinance-updates>.

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