

Ohio Farm Income Outlook

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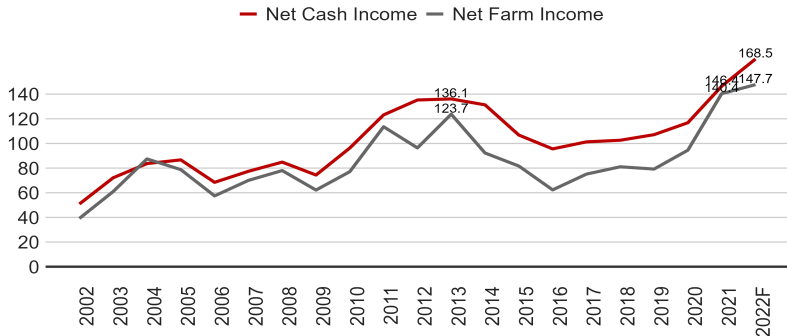
November 15, 2022

Farm Income and Finance Outlook Themes

- US net farm income and net cash income are forecast to increase in 2022.
- The increase in farm income is mainly driven by higher cash receipts and lower production expenses, which are offset by lower expected government payments and lower crop inventory.
- US farm income is expected to decline in 2023 and 2024 and then hold steady through 2027.
- Farm solvency and financial performance are expected to improve in 2022.
- Ag credit conditions have improved but with slowing pace due to increasing interest rates and inflation concerns, with ag loan delinquency rates remaining low.

US Farm Income Estimates and Forecasts

US net farm income and net cash income, 2002-2022 (in billion \$)



Source: USDA, ERS, Farm Income and Wealth Statistics, Data as of September 1, 2022

- US net farm income (\$147.7B) in 2022 is expected to be up 15.1% from last year and more than 50% higher than 2020.
- US net cash income (\$168.5B) is expected to increase by 5.2% in 2022.

Ohio Farm Income Estimates

Ohio net farm income and net cash income, 2002-2021 (in billion \$)

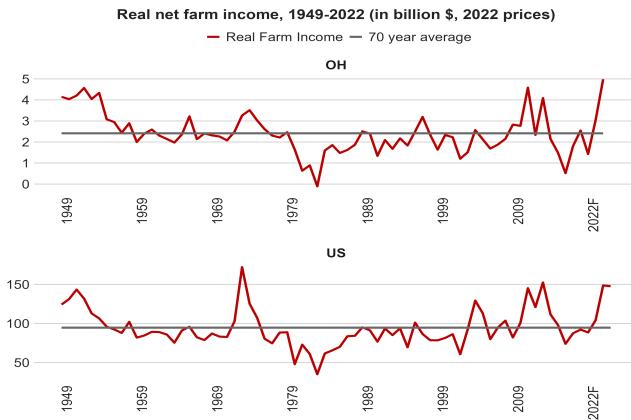
— Net Cash Income — Net Farm Income



Source: USDA, ERS, Farm Income and Wealth Statistics, Data as of September 1, 2022

- Ohio net cash income (\$4.4B) and Ohio net farm income (\$4.7B) experienced an increase in 2021. Ohio farm income has been about 3.2% of US farm income but has had higher volatility over the last decade.

Real Net Farm Income



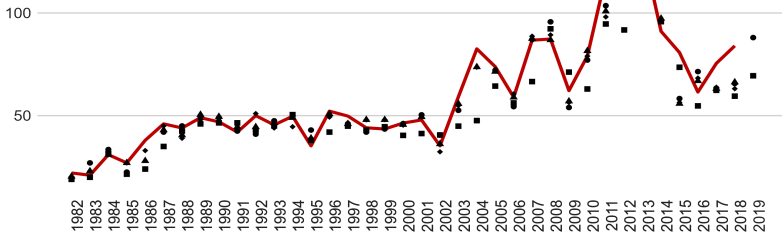
Source: USDA, ERS, Data as of September 1, 2022

- US real net farm incomes is expected to be above its long-term average in 2022. Ohio is expected to follow a similar trend.

Accuracy of Farm Income Forecasts

USDA net farm income forecasts, 1982-2019 (in billion \$)

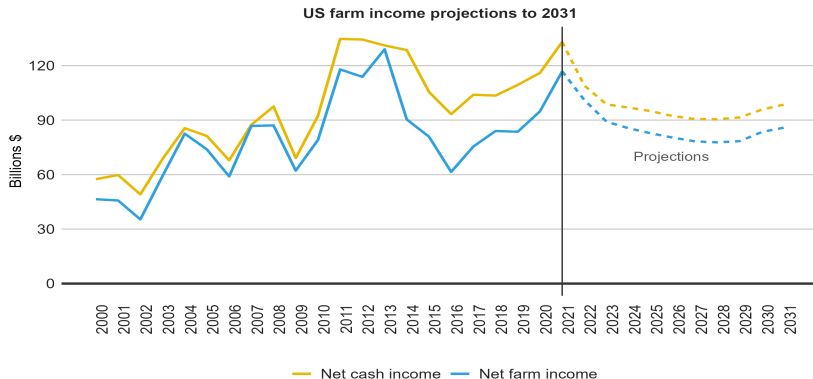
■ February Forecast • August Forecast ▲ November Forecast ♦ February (t+1) Forecast



Source: ERS Farm Income Forecasts and Estimates Data Archive

- Isengildina-Massa, Karali, Kuethe, and Katchova (2021) find an underprediction bias in the USDA farm income forecasts.
- Bora, Katchova, and Kuethe (2021) suggest that the bias is due to high costs associated with over-prediction yet the forecasts are still rational.

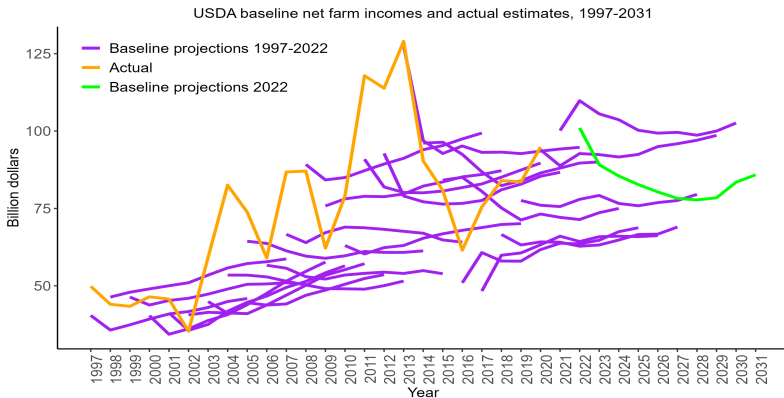
Long-term Projections of Farm Income



Source: USDA long-term projections, Data as of February 16, 2022

- USDA baseline projections show expected increase in net cash income and net farm income in 2022 and then decrease in 2023 and 2024, but mostly flat after that.

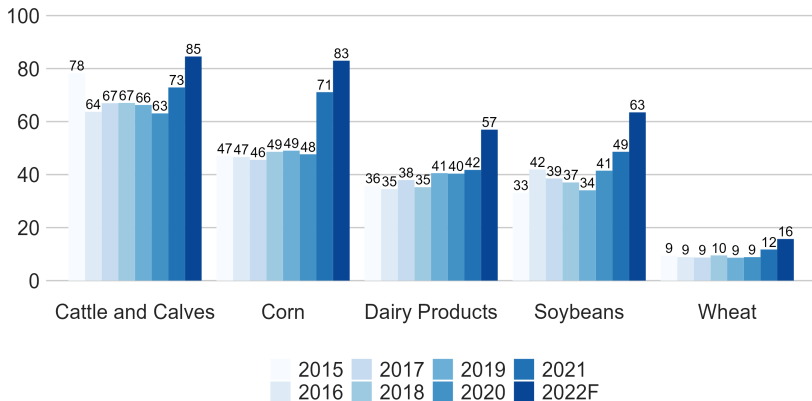
Historical Baseline Projections of Farm Income



- Bora, Katchova, and Kuethe (2022) show that projections remain informative for up to 2-3 years ahead and then become uninformative after that.

US Cash Receipts by Commodity

Cash receipts for selected commodities, 2015-2022 (in billion \$)

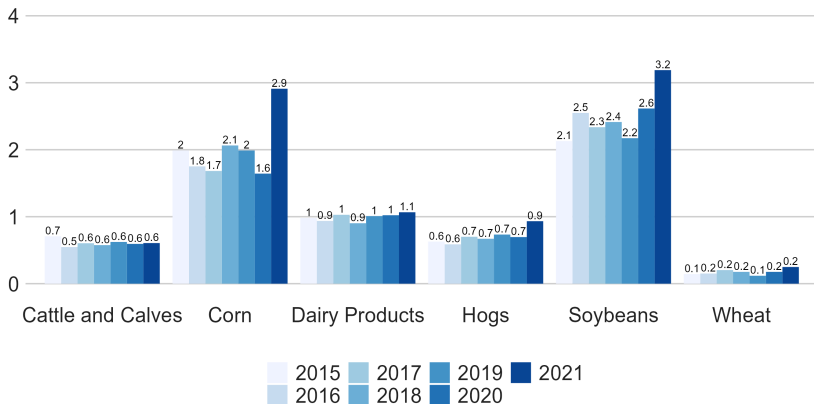


Source: USDA, ERS, Data as of September 1, 2022

- Total crop receipts are expected to increase to \$274 billion in 2022.
- Total animal product receipts are expected to increase to \$251 billion in 2022.
- Expected increase in cash receipts across all commodities this year.

Ohio Cash Receipts

Ohio cash receipts for selected commodities, 2015-2021 (in billion \$)

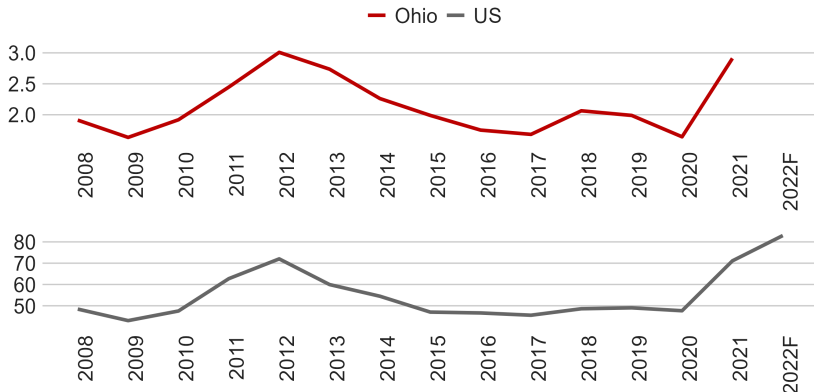


Source: USDA, ERS, Data as of September 1, 2022

- Ohio cash receipts for corn, soybeans, and hogs increased in 2021.

US and Ohio Corn Cash Receipts

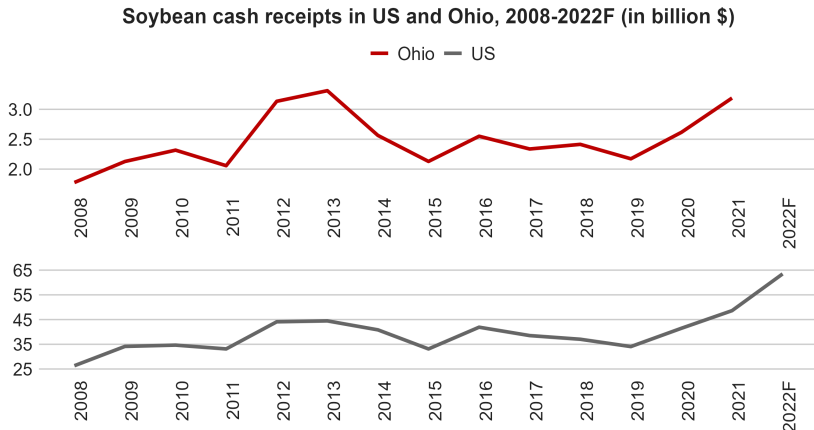
Corn cash receipts in US and Ohio, 2008-2022F (in billion \$)



Source: USDA, ERS, Data as of September 1, 2022

- US corn cash receipts are expected to increase in 2022. Ohio corn cash receipts increased in 2021.

US and Ohio Soybean Cash Receipts

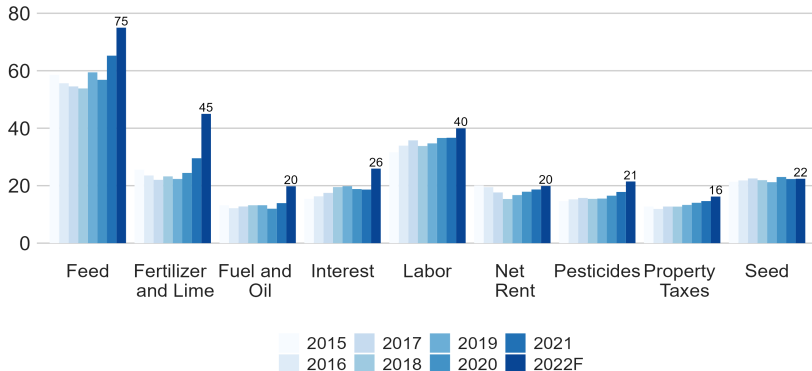


Source: USDA, ERS, Data as of September 1, 2022

- US soybean cash receipts are expected to increase in 2022. Ohio soybean cash receipts increased in 2021.

US Farm Expenses

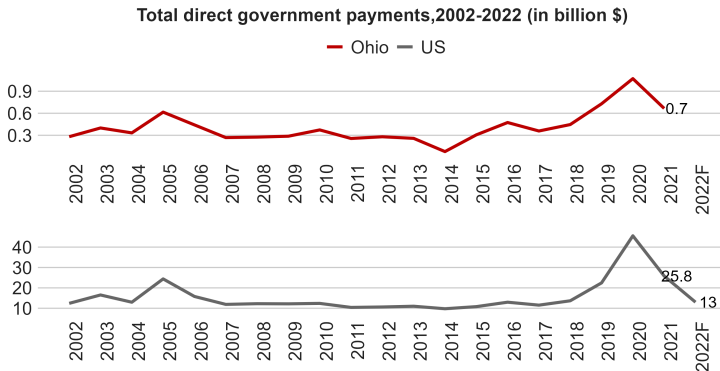
U.S. farm expenses, 2015-2022 (in billion \$)



Source: USDA, ERS, Data as of September 1, 2022

- US farm expenses are forecast to increase in 2022 for most items.

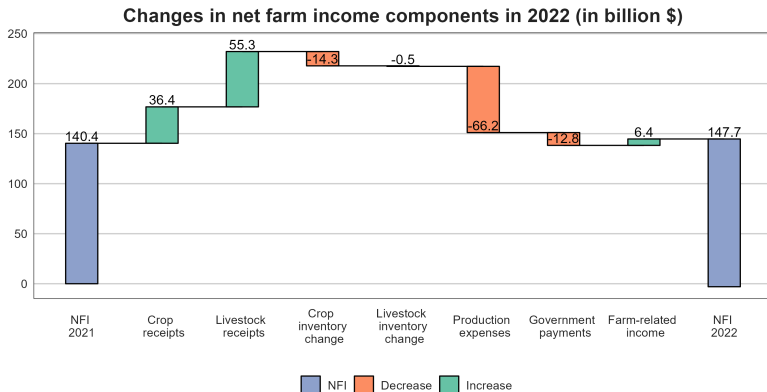
Government Payments



Source: USDA, ERS, as of September 1, 2022

- Direct government payments are expected to decrease by 49.6% in 2022 to \$13 billion, from \$25.8 billion in 2021.

Changes in Net Farm Income Components



Source: USDA, ERS, Data as of September 1, 2022

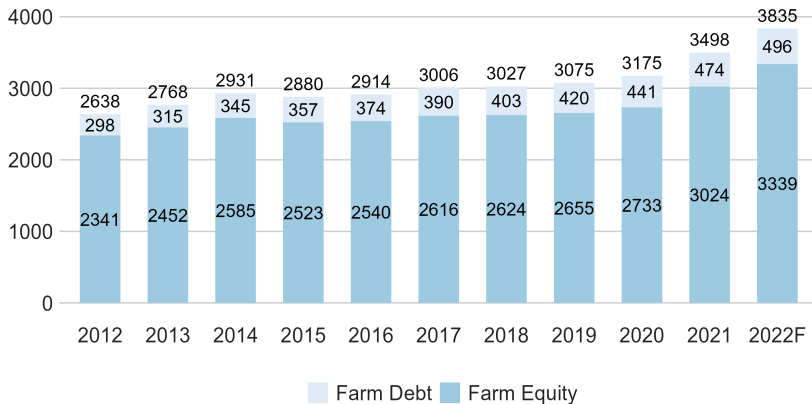
- Increases in crop and livestock receipts, and decreases in production expenses drive the overall increase in net farm income in 2022, offsetting lower government payments and crop inventory.

Outlook for US and Ohio Farm Income

- USDA has more optimistic outlook for 2022. Net farm income and net cash income are expected to increase in 2022, after expected decrease in the February forecast.
- Farm income in 2022 is expected to be 50% higher than in 2020 and about twice as high as five years ago.
- Most farm income is from the market this year - higher cash receipts for both crops and livestock due to higher commodity prices.
- The increase in farm income is partially offset by higher production expenses and lower government payments in 2022.
- Longer-term outlook for farm income is pessimistic - shows expected decrease in the next couple of years which would likely come from higher production costs and lower government payments.

Farm Assets, Equity, and Debt

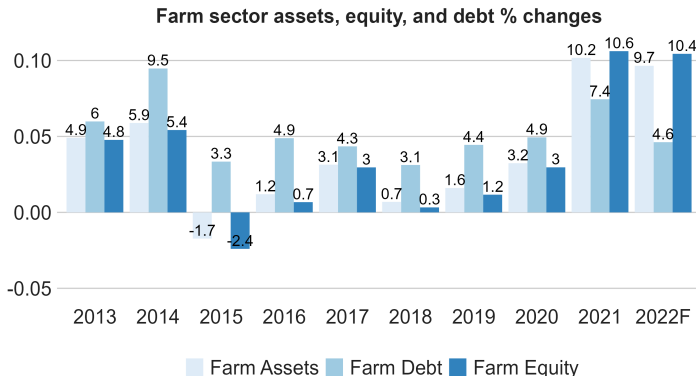
U.S. farm equity and debt, 2012-2022 (in billion \$)



Source: USDA, ERS, Data as of September 1, 2022

- Farm equity, debt, and assets are all expected to increase in 2022.

Changes in Farm Assets, Equity, and Debt

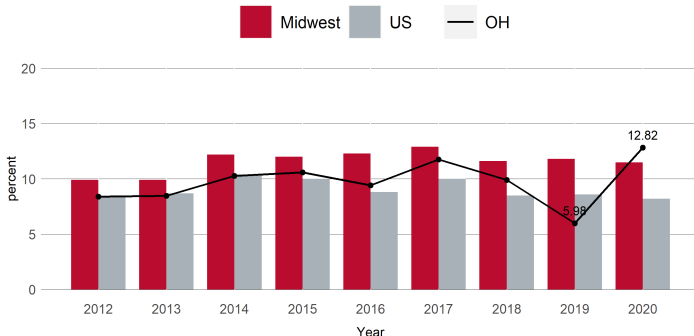


Source: USDA, ERS, Data as of September 1, 2022

- Farm assets and equity are expected to outpace the growth in farm debt.
- After the inflation adjustment, the debt is forecast to decline by 1.2%.
- Overall, farm balance sheets are expected to improve in 2022 compared to last year.

Farm Solvency

Debt-to-Asset Ratio in US, Midwest and Ohio

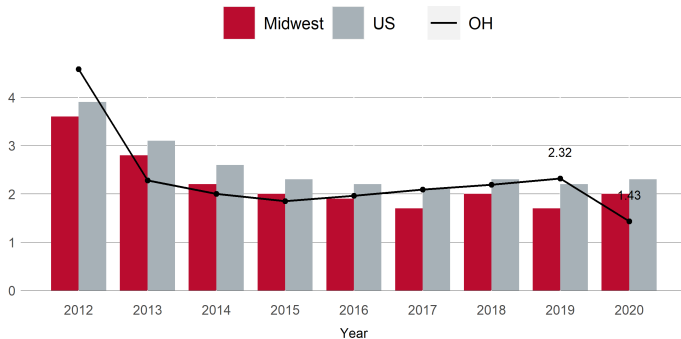


Source: USDA, ARMS, Data as of December 16, 2021

- Debt-to-asset ratios increased sharply for Ohio in 2020. These ratios are still historically low, indicating good solvency.
- Solvency for Ohio farms has remained slightly better than for Midwest farms, but solvency for US farms has remained best.
- Stronger balance sheets suggest improved solvency.

Farm Liquidity

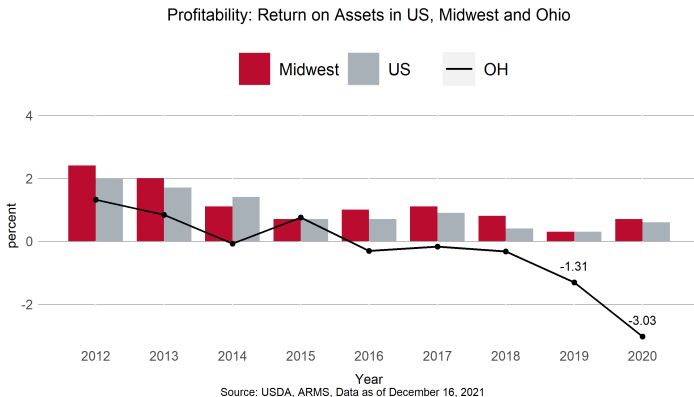
Current Ratio in US, Midwest and Ohio



Source: USDA, ARMS, Data as of December 16, 2021

- Stronger current ratios for farmers imply higher liquidity.
- Liquidity for Ohio farmers was lower than the Midwest and the national average in 2020, but still acceptable.

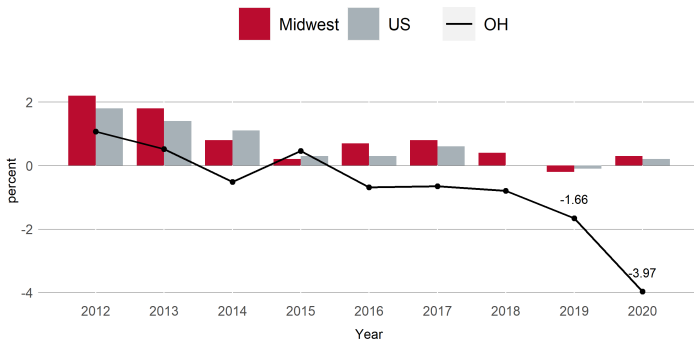
Farm Profitability: Return on Assets



- Profitability continued to decline for Ohio farms with worsening and negative profitability in 2020.
- Profitability for Midwest and US farmers improved in 2020.

Farm Profitability: Return on Equity

Profitability: Return on Equity in US, Midwest and Ohio



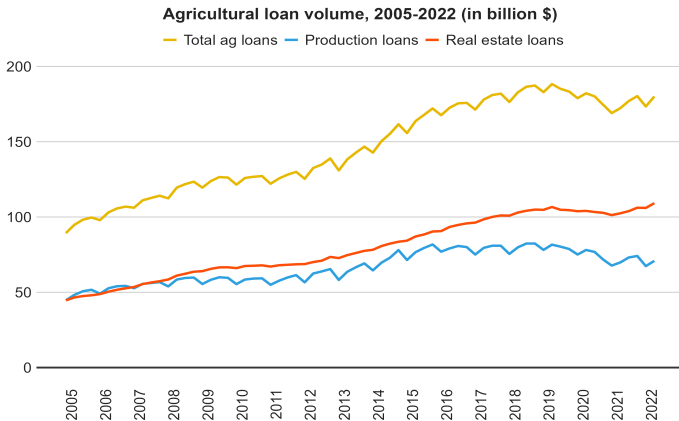
Source: USDA, ARMS, Data as of December 16, 2021

- Return on equity showed similar trends as return on assets.
- Profitability has remained problematic for Ohio farmers in recent years, with negative return on assets.
- Expected increases in profitability for 2022 due to higher farm incomes.

Outlook for US and Ohio Farm Financial Stress

- Farm debt growth is outpaced by assets and equity growth, leading to improved solvency in 2022.
- Farm debt growth is expected to be negative in real terms in 2022, showing stronger balance sheets in 2022.
- Farm liquidity and ability to repay debt is acceptable.
- Ohio farms have struggled with lower (even negative) profitability during the pandemic.
- Stronger farm incomes in 2022 are expected to improve profitability.

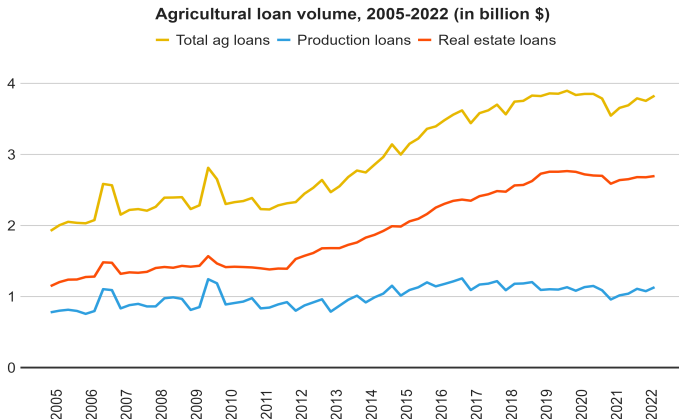
US Agricultural Loan Volume



Source: FDIC Call Reports, Data as of June 30, 2022

- Agricultural loan volume increased slightly in the US in 2022, with increases in real estate loans.
- Production loan volume decreased corresponding to stronger farm incomes in 2021 and 2022.

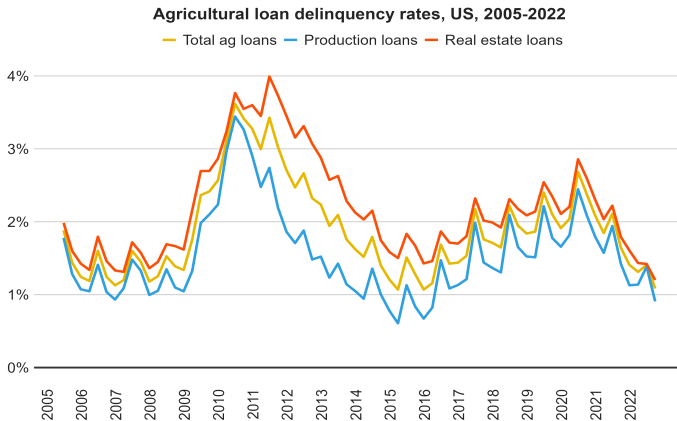
Ohio Agricultural Loan Volume



Source: FDIC Call Reports, Data as of June 30, 2022

- Agricultural loan volume also increased slightly to \$3.9B in Ohio in 2022.
- Ohio farmers have proportionally more real estate loans than US farmers, indicating more farmland holdings.

Ag Loan Delinquency Rates by Loan Type



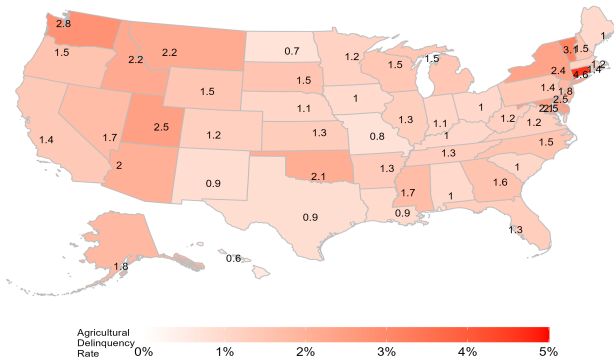
- Ag loan delinquency rates have remained low at 1.08% in 2022.
- Real estate loans have had slightly higher delinquency rates than production loans.

US Agricultural Loan Delinquency Rates

Ag loan delinquency rates for last four quarters ending on June 30, 2022

Avg Total Ag Loan Value of \$175,339,000,000

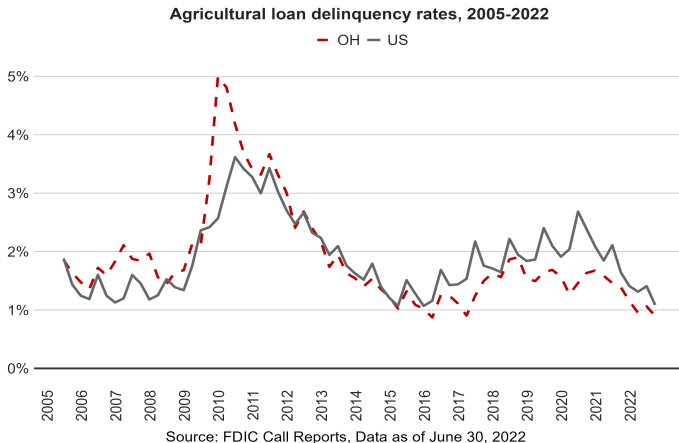
Delinquency Rate of 1.27%



Source: FDIC Call Reports, Data as of June 30, 2022

- US ag loan delinquency rate remained relatively low at 1.27% for the past four quarters.
- Concentration of ag loans in the Midwest but with low delinquency rates

US and Ohio Agricultural Loan Delinquency Rates



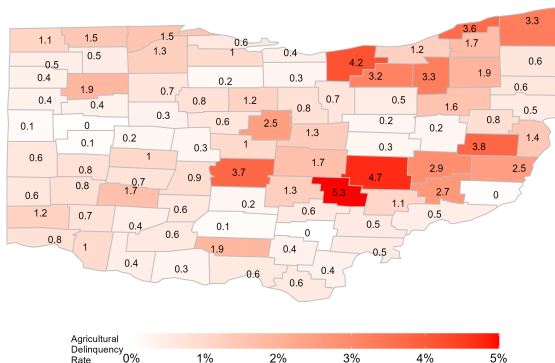
- Ohio ag loans have had slightly lower delinquency rates than for US loans in the recent past.

Ohio Agricultural Loan Delinquency Rates

Ag loan delinquency rates for last four quarters ending on June 30, 2022

Avg Total Ag Loan Value of \$3,806,000,000

Delinquency Rate of 1.01%



Source: FDIC Call Reports, Data as of June 30, 2022

- Ohio ag loan delinquency rates were relatively low at 1.01% in 2022. Some Ohio counties had elevated ag loan delinquency rates.

Outlook for US and Ohio Ag Loans and Delinquency

- According to the Federal Reserve Bank of Kansas City, ag credit conditions remain strong but the pace of improvement is slowing.
- Agricultural loan volume increased for the US and Ohio in 2022, but rising interest rates will slow demand for ag loans.
- Loan delinquency rates remained very low nationally due to high farm income in the last few years.
- Midwest and Ohio loan delinquency rates remained lower than the national rates.
- With increasing interest rates, ag delinquency rates are expected to increase slightly.

Farm Income and Financial Outlook

- Farm incomes are expected to increase in 2022 after several years of continued growth, indicating that the farm economy shows resiliency but still faces many challenges and uncertainty.
- Strong cash receipts due to higher commodity prices have helped boost farm incomes in 2022 with less reliance on government payments.
- Long-term projections of farm income show slight decreases and then flatten or become uninformative after 2-3 years.
- Farmers are experiencing some financial stress but with improved solvency and relatively low ag loan delinquency rates.
- Concern about rising interest rates and high inflation, though ag credit conditions are still strong.
- Long-term projections raise some concerns mostly regarding the continuation of government aid to stabilize farm incomes and keep ag loan delinquencies low.

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Farm Income Enhancement Program
<http://aede.osu.edu/programs/farm-income-enhancement-program>