

Farm Income and Financial Outlook

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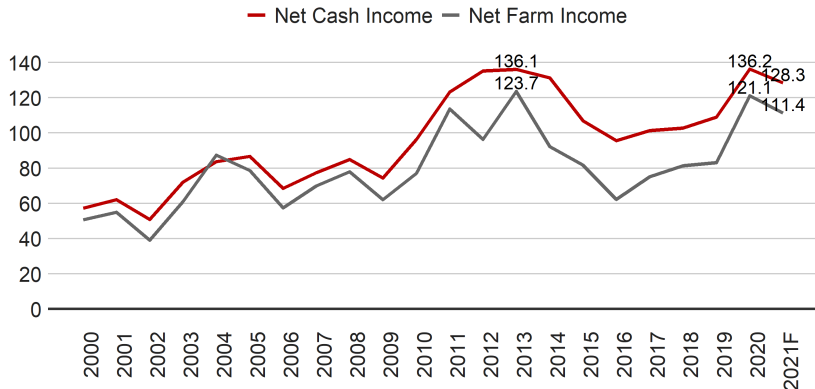
March 15, 2021

Farm income and finance outlook themes

- US net farm income and net cash income are forecast to decline in 2021 but still expected to be above their long-term average.
- The decline in farm income is mainly driven by lower expected government payments and crop inventory.
- Long-term farm income and commodity price projections show stability after 2-3 years.
- Land values and cash rent show small increases in 2020.
- Ag loan delinquency rates and bankruptcy rates have had recent upticks/downticks but have remained relatively low.

US farm income estimates and forecasts

US net farm income and net cash income, 2000-2021 (in billion \$)

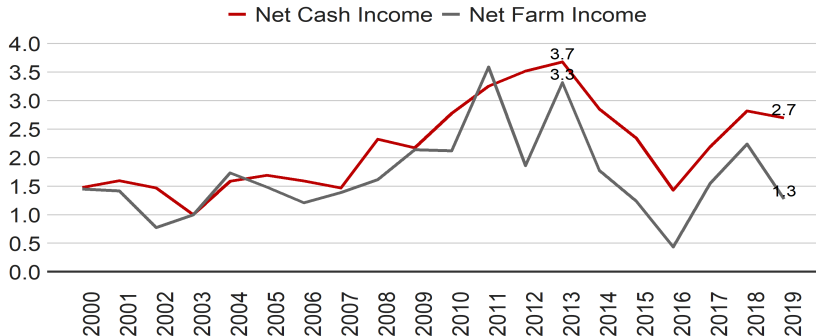


Source: USDA, ERS, Farm Income and Wealth Statistics, Data as of Feb 5, 2021

- US net cash income (\$128.3B) and net farm income (\$111.4B) are forecast to decrease by 5.8% and 8.1% respectively in 2021.

Ohio farm income estimates

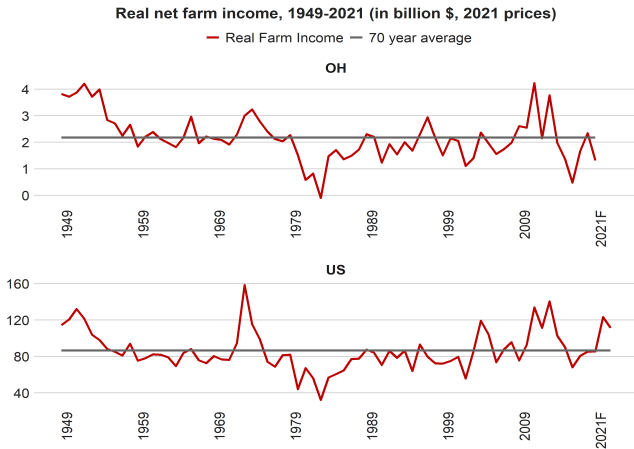
Ohio net farm income and net cash income, 2000-2020 (in billion \$)



Source: USDA, ERS, Farm Income and Wealth Statistics, Data as of Feb 5, 2021

- Ohio net cash income (\$2.7B) and Ohio net farm income (\$1.3B) experienced a decrease in 2019 after increasing for two consecutive years. Ohio farm income has been about 2.1% of US farm income but with higher volatility over the last decade.

Real net farm income

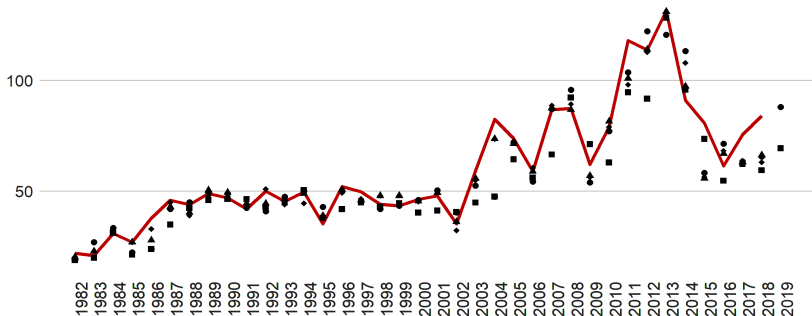


- US real net farm income is expected to still be above its long-term average in 2021, while Ohio real net farm income fell below its long-term average in 2019.

Accuracy of farm income forecasts

USDA net farm income forecasts, 1982-2021 (in Billion \$)

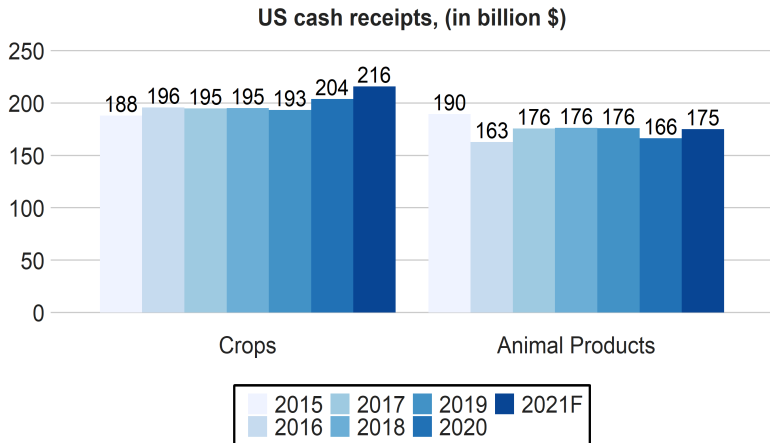
- February Forecast
- August Forecast
- ▲ November Forecast
- ◆ February (t+1) Forecast



Source: ERS Farm Income Forecasts and Estimates Data Archive

- Isengildina-Massa, Karali, Kueth, and Katchova (2020) find an underprediction bias in the USDA farm income forecasts.
- Bora, Katchova, and Kueth (2020) suggest that the bias is due to high costs associated with over-prediction yet the forecasts are still rational.

US crop and livestock receipts

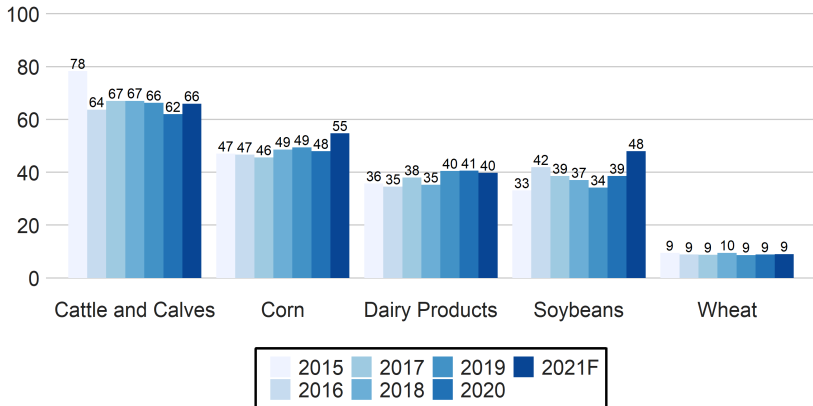


Source: USDA, ERS, Data as of Feb 5, 2021

- Crop receipts are expected to increase to \$216 billion, animal product receipts are also expected to increase to \$175 billion in 2021.

US cash receipts by commodity

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

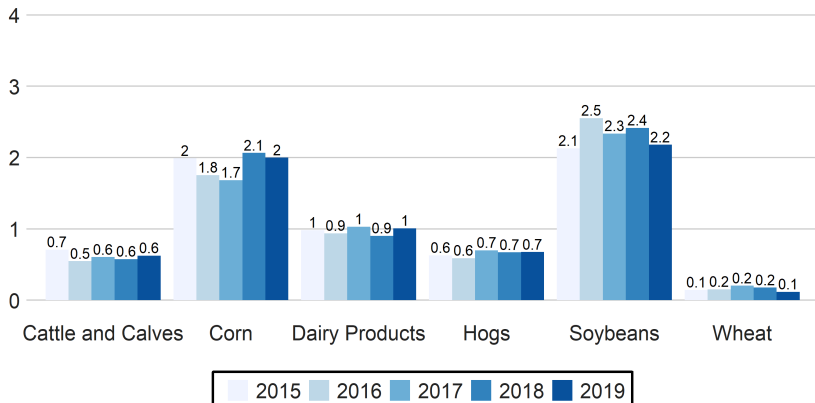


Source: USDA, ERS, Data as of Feb 5, 2021

- Expected increase in cash receipts across several commodities, including cattle and calves, corn, and soybeans in 2021.

Ohio cash receipts

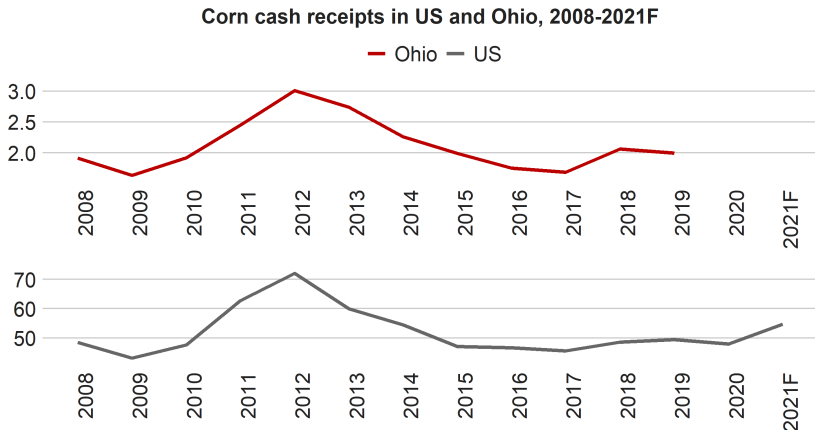
Ohio cash receipts for selected commodities, (in billion \$)



Source: USDA, ERS, Data as of Feb 5, 2021

- Ohio cash receipts for corn, soybeans, and wheat decreased in 2019.

US and Ohio corn cash receipts

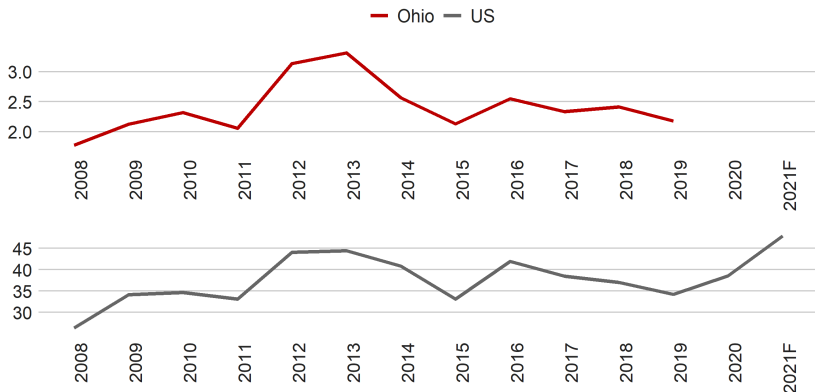


Source: USDA, ERS, Data as of Feb 5, 2021

- US corn cash receipts are expected to increase in 2021. Ohio corn cash receipts declined in 2019.

US and Ohio soybean cash receipts

Soybean cash receipts in US and Ohio, 2008-2021F

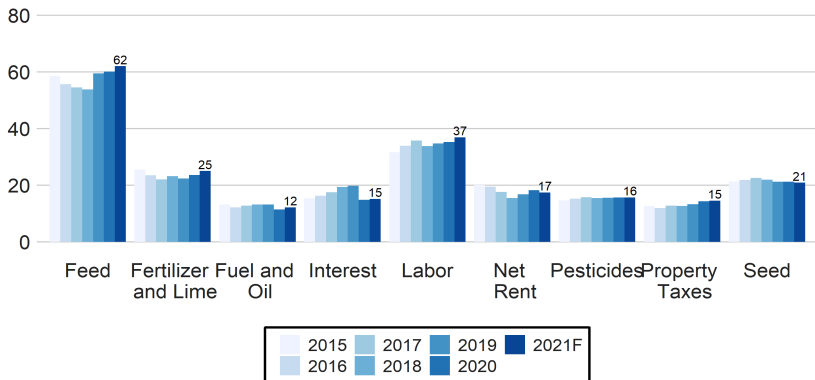


Source: USDA, ERS, Data as of Feb 5, 2021

- US soybean cash receipts are expected to increase in 2021. Ohio soybean cash receipts declined in 2019.

US farm expenses

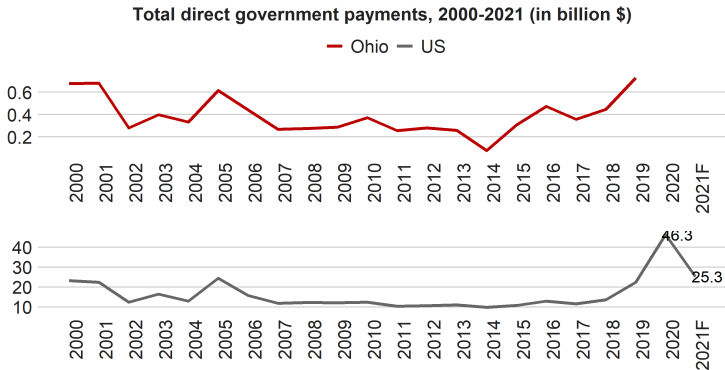
U.S. farm expenses, (in billion \$)



Source: USDA, ERS, Data as of Feb 5, 2021

- US farm expenses are forecast to increase slightly in 2021. Feed, fertilizer, fuel, interest, labor are expected to increase, while rent and seed expenses are expected to decline in 2021.

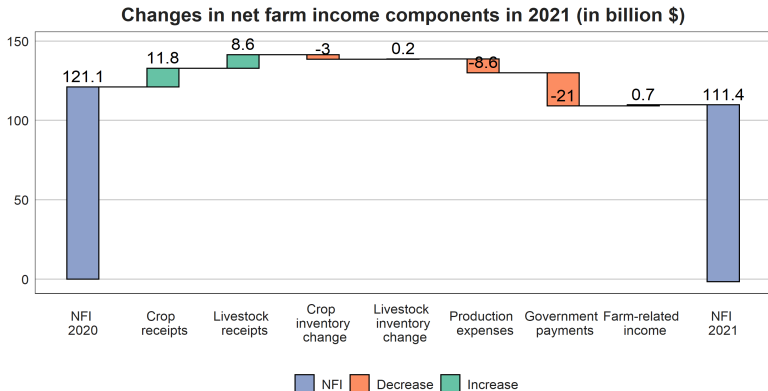
Government payments



Source: USDA, ERS, as of Feb 5, 2021

- Direct government farm payments are expected to decrease by 45.4% in 2021 to \$25.3 billion, from \$46.3 billion in 2020.

Changes in net farm income components

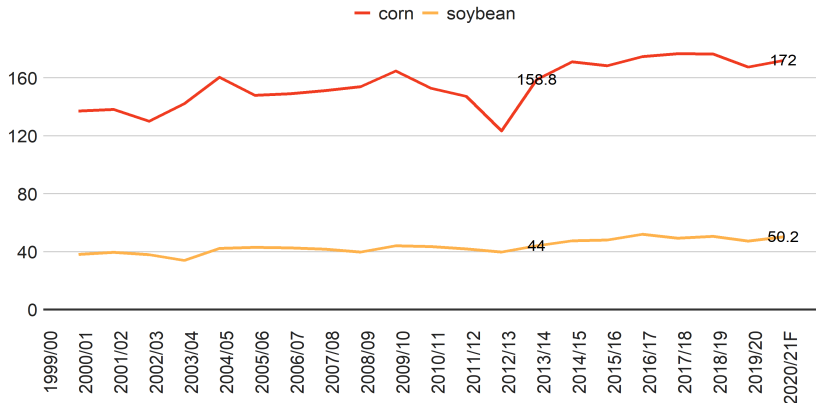


Source: USDA, ERS, Data as of Feb 5, 2021

- Decreases in government payments and crop inventory drive the overall declines in net farm income in 2021 offsetting higher crop and livestock receipts.

Crop yields

Yield per harvested acre for major crops, 2000-2021 (bushels)

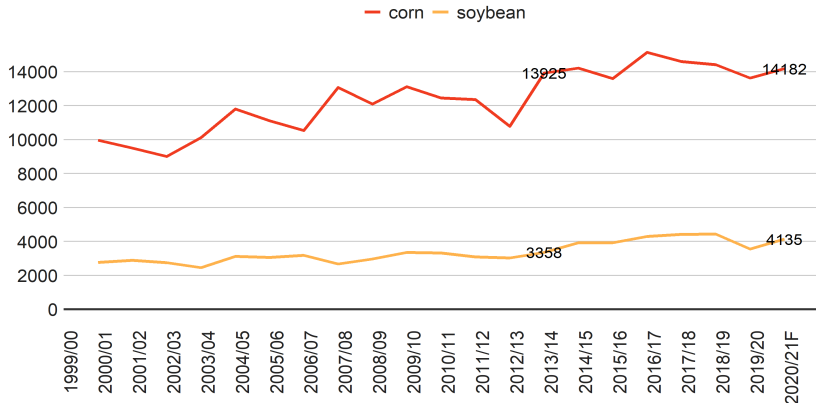


Source: WASDE Forecasts, Data as of March 9, 2021

- Corn yield is expected to increase to 172 bushels/acre for 2020/21. Soybean yield is expected increase slightly to 50.2 bushels per acre in 2020/21.

Production for crops

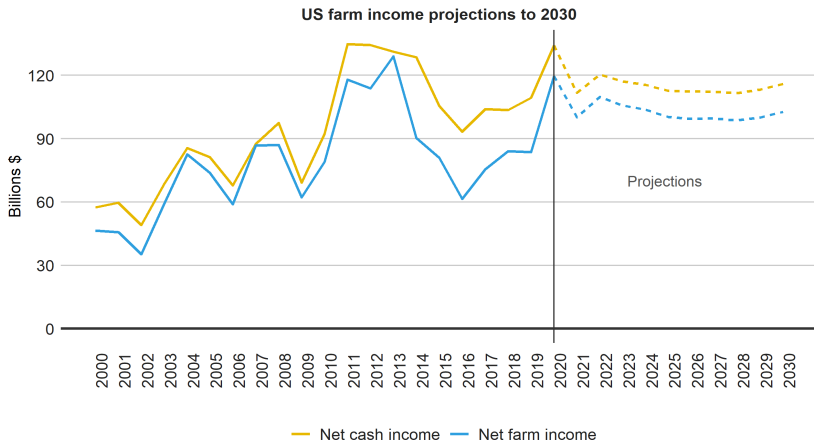
Production of major crops, 2000-2021 (million bushels)



Source: WASDE Forecasts, Data as of March 9, 2021

- Production for corn is expected to increase to 14,182 million bushels in 2020/21. Production for soybeans is expected to increase to 4,135 million bushels in 2020/21.

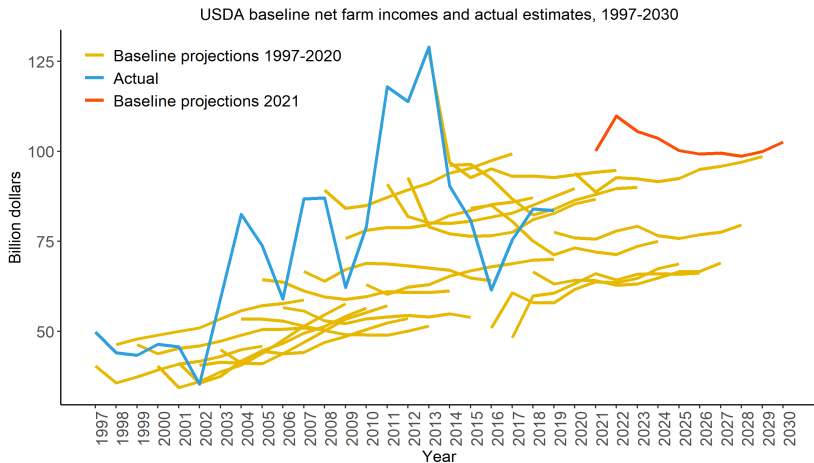
Long-term projections of farm income



Source: USDA long-term projections, Data as of February 16, 2021

- The USDA baseline projections show expected decrease in net cash income and net farm income in 2021 and then increase in 2022 but mostly flat after that.

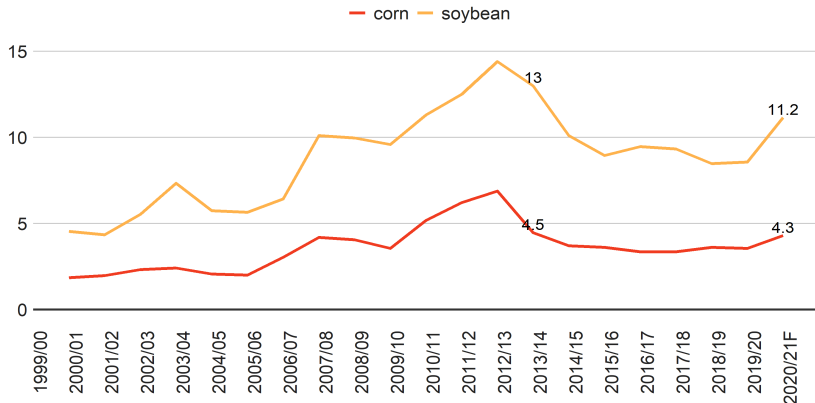
Historical baseline projections of farm income



- Bora, Katchova, and Kuethe (2021) show that projections remain informative for up to 2-3 years ahead and then become uninformative after that.

Commodity prices

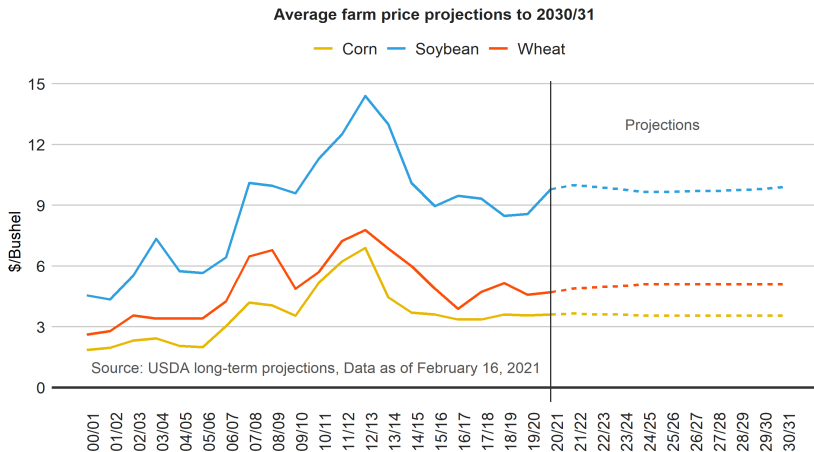
Average price for major crops, 2000-2021 (\$/bushel)



Source: WASDE Forecasts, Data as of March 9, 2021

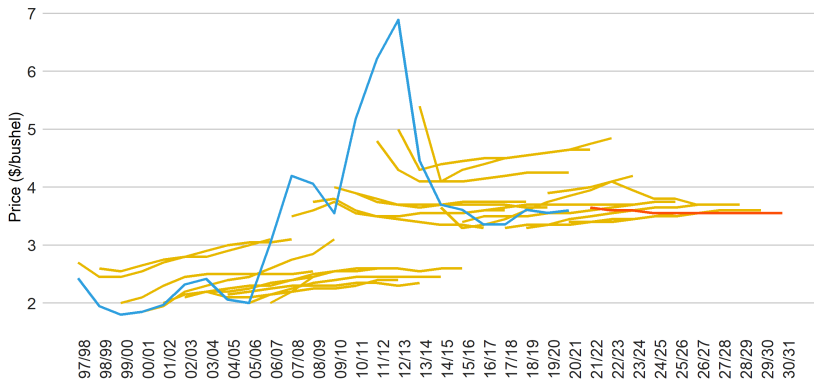
- Corn price is expected to increase to \$4.30 per bushel in 2020/21. The soybean price is expected to increase to \$11.2 per bushel in 2020/21.

Long-term projections of commodity prices



- The USDA Baseline show mostly flat projections of corn, soybeans, and wheat prices.

Historical baseline projections of corn price

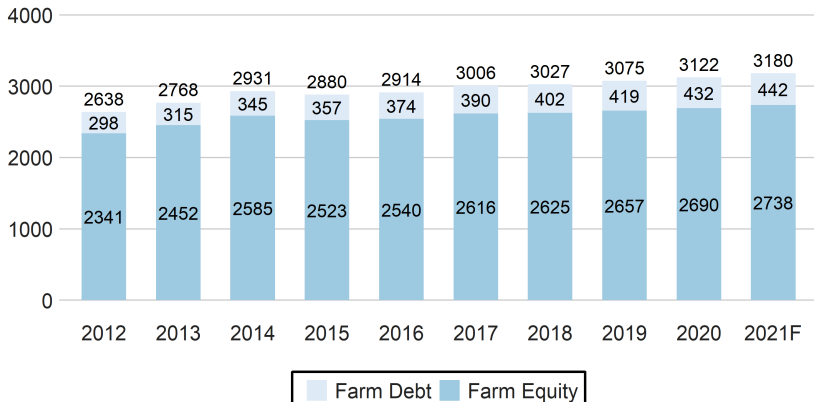


— Baseline projections 1997-2020 — Actual marketing year average — Baseline projections 2021

- Bora, Katchova, and Kuethe (2021) find that crop price projections beyond two years are not informative.

Farm assets, equity, and debt

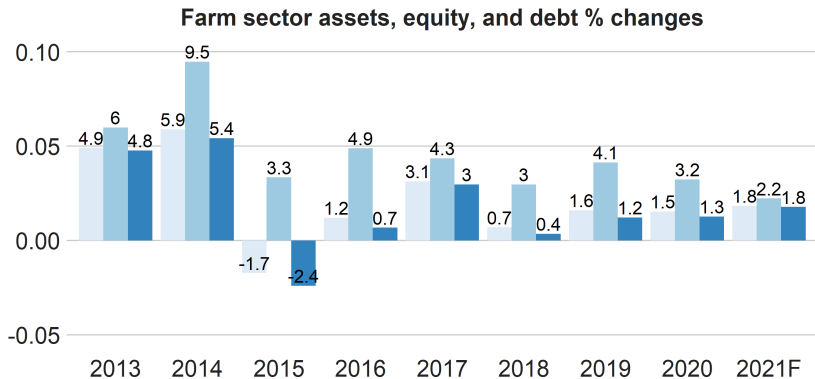
U.S. farm equity and debt (in billion \$)



Source: USDA, ERS, Data as of Feb 5, 2021

- Farm assets, equity, and debt are forecast to increase slightly in 2021.

Changes in farm assets, equity, and debt

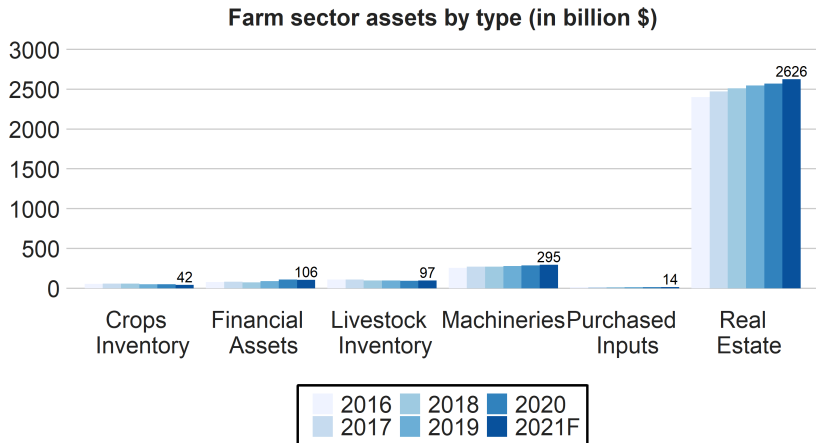


Farm Assets Farm Debt Farm Equity

Source: USDA, ERS, Data as of Feb 5, 2021

- Farm equity, debt, and assets are expected to increase in 2021.

Farm assets by type

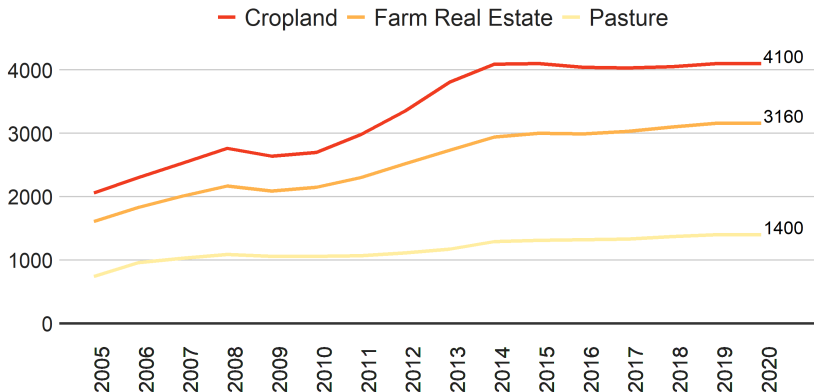


Source: USDA, ERS, Data as of Feb 5, 2021

- Farm real estate assets, representing 82.6% of farm assets, are expected to increase in 2021.

US cropland values

US cropland values, \$ per acre, 2005-2020

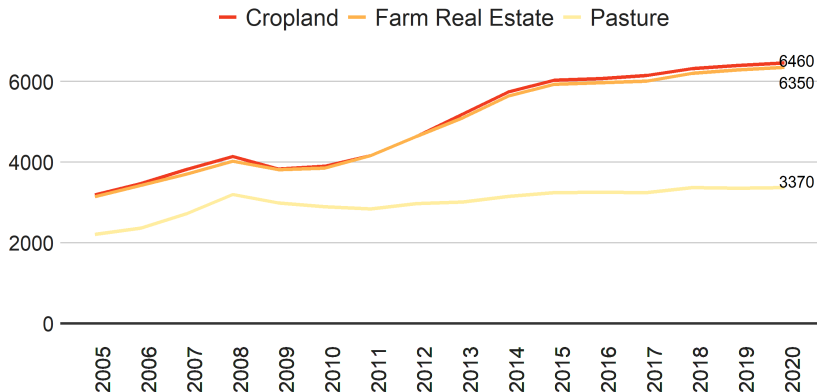


Source: USDA, NASS, Data as of September 2, 2020

- US cropland values remained at \$4,100/acre in 2020, as in 2019, showing stable land values in the U.S.

Ohio cropland values

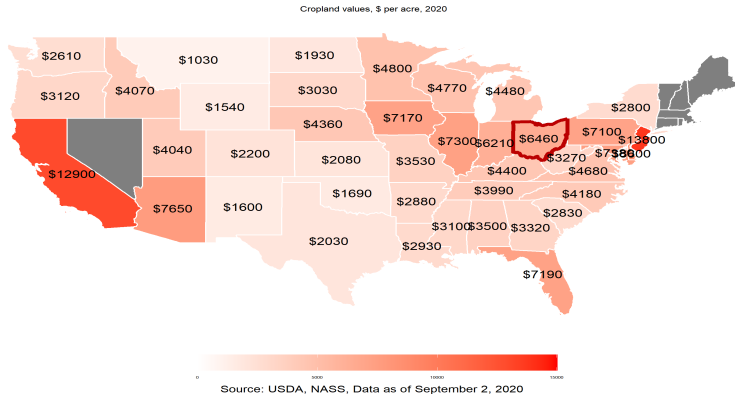
Ohio cropland values, \$ per acre, 2005-2020



Source: USDA, NASS, Data as of September 2, 2020

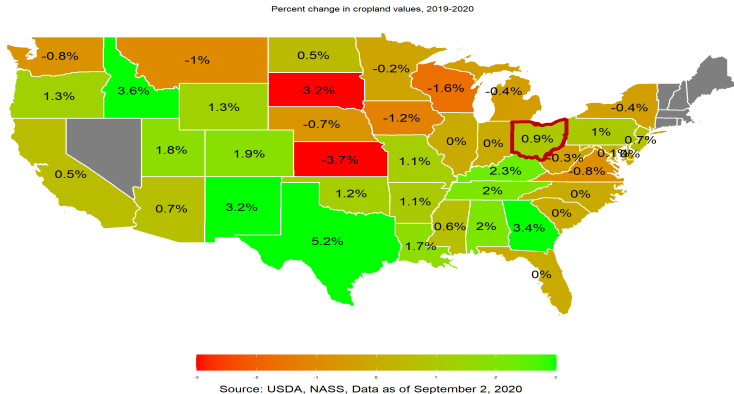
- Ohio cropland values increased by 0.9% from \$6400/acre in 2019 to \$6460/acre in 2020.

Cropland values by state



- Cropland values show major differences by state. Ohio land values remained above the national average.

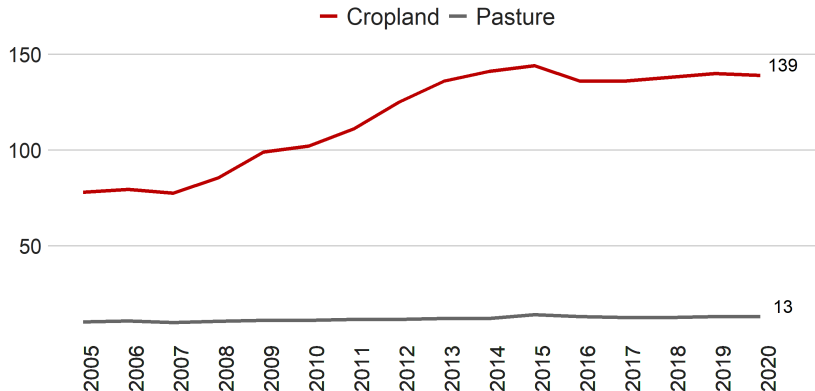
Changes in cropland values



- Many states in the Midwest reported either flat or small decline in cropland values. Ohio land values were slightly better than other states in the Midwest.

US cash rents

US cash rent, \$ per acre, 2005-2020

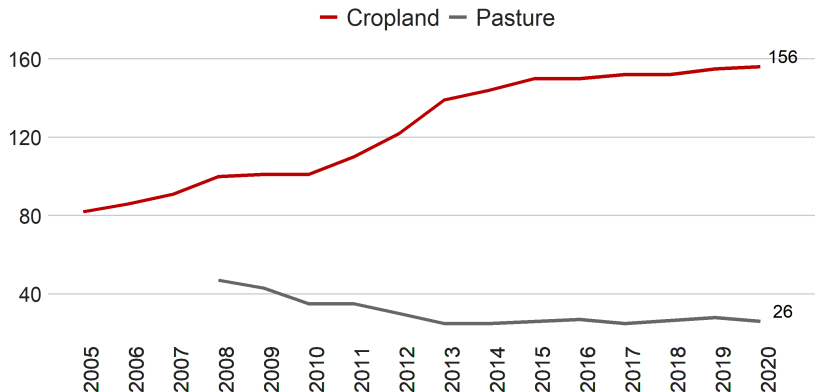


Source: USDA, NASS, Data as of September 2, 2020

- US cash rents for cropland decreased by 0.7% from \$140/acre to \$139/acre in 2020.

Ohio cash rents

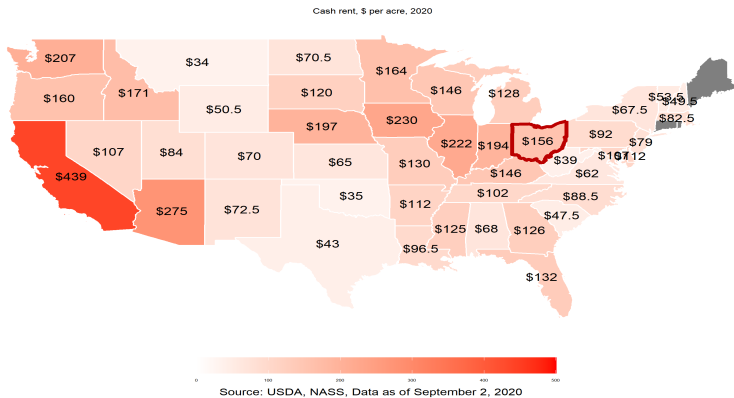
Ohio cash rent, \$ per acre, 2005-2020



Source: USDA, NASS, Data as of September 2, 2020

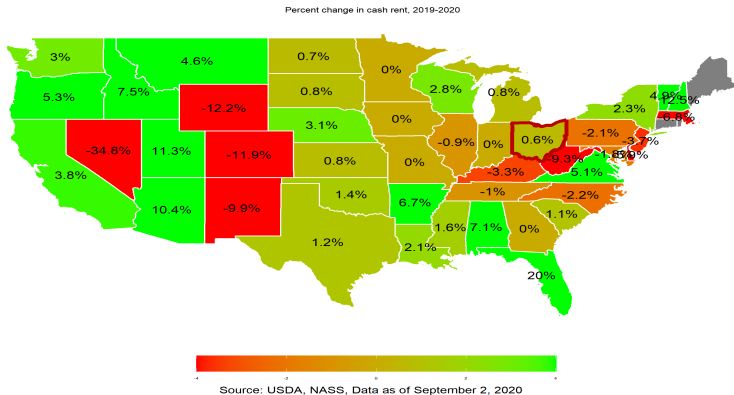
- Ohio cash rents increased by 0.6% from \$155/acre in 2019 to \$156/acre in 2020.

Cash rents by state



- Cash rents in the Midwest are among the highest in the U.S.

Changes in cash rents



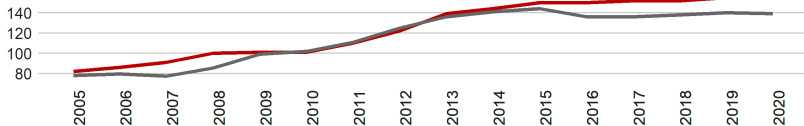
- Cash rents remained stagnant or declined in most states in the Midwest, while Ohio cash rents increased.

Land values and cash rent for Ohio and the U.S.

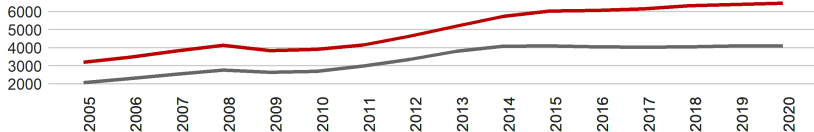
Land values and cash rent in US and Ohio

— OH — US

Cash Rent



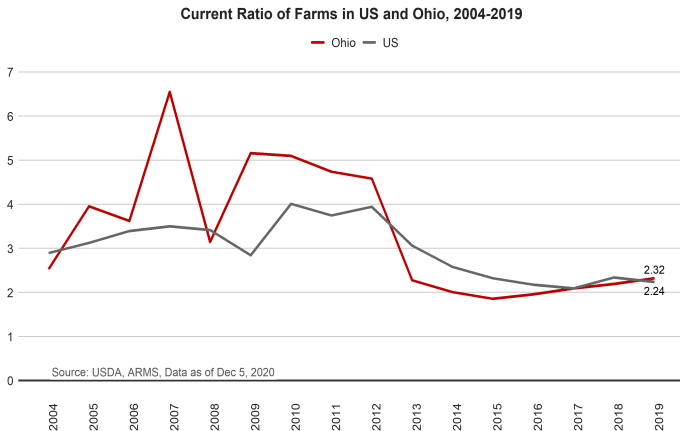
Crop Land Value



Source: USDA, NASS, Data as of September 2, 2020

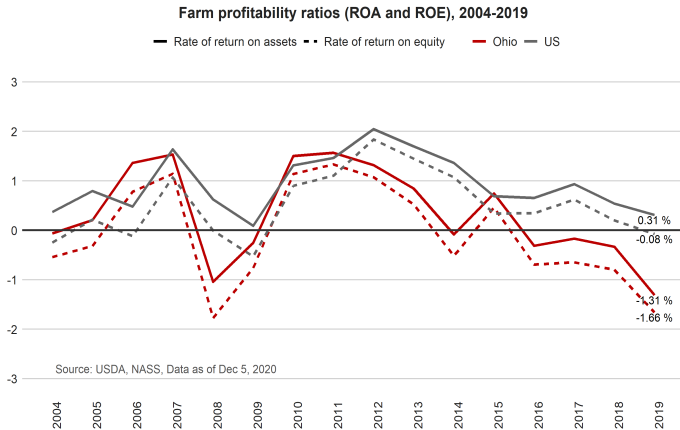
- Ohio cropland values and cash rents are above the national average.
- Ohio cash rents have been higher than the national levels since 2013.

Farm liquidity



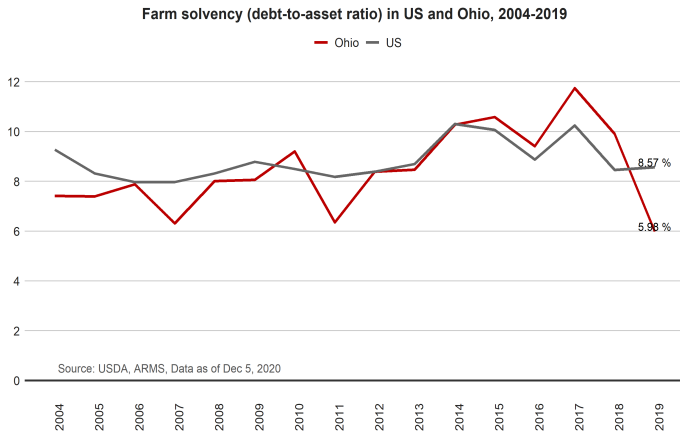
- The current ratio, which is current assets divided by current liabilities, was similar for US and Ohio farms in 2019. Most farms had sufficient liquidity.

Farm profitability



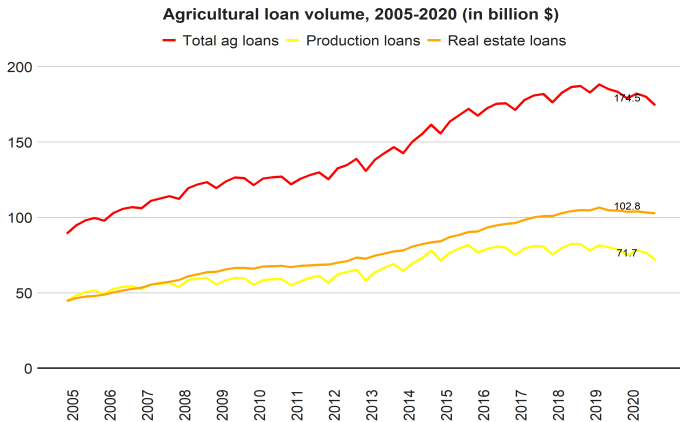
- Profitability (return on assets and equity) continued to decline for both US and Ohio farms, with negative profitability for Ohio farmers in 2019. Profitability is the most problematic ratio.

Farm solvency



- Debt-to-asset ratios decreased sharply for Ohio but slightly increased for US farms in 2019. These ratios are still historically low indicating good solvency.

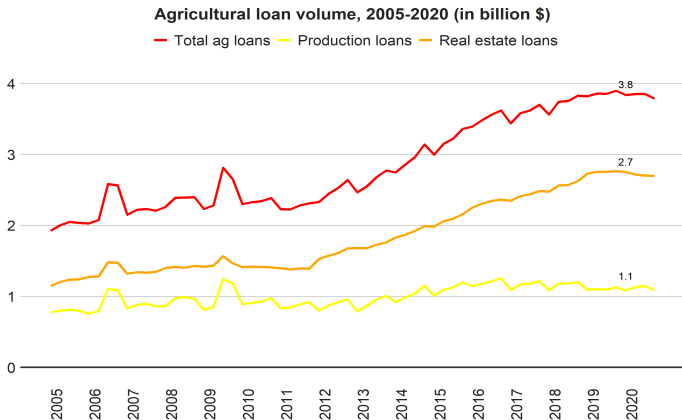
US agricultural loan volume



Source: FDIC Call Reports, Data as of December 31, 2020

- Agricultural loan volume declined slightly to \$174.5B in the US in 2020.

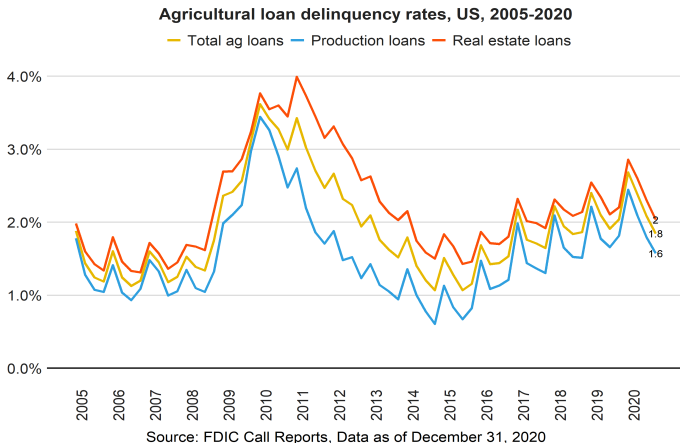
Ohio agricultural loan volume



Source: FDIC Call Reports, Data as of December 31, 2020

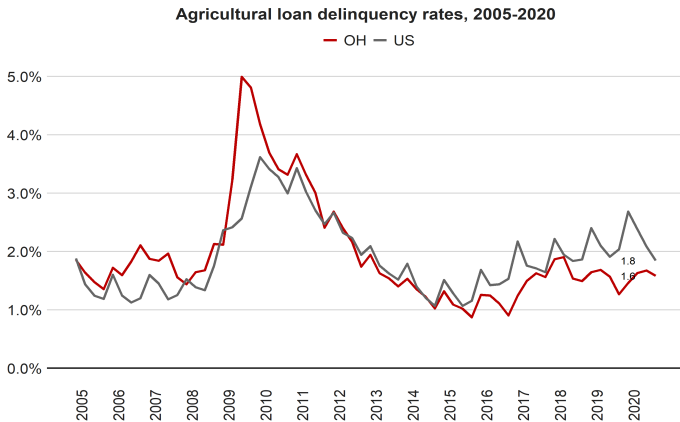
- Agricultural loan volume also declined slightly to \$3.8B in Ohio in 2020.
- Ohio farmers have proportionally more real estate loans than US farmers, indicating more farmland holdings.

Ag loan delinquency rates by loan type



- Ag loan delinquency rates have remained low at 1.8% in 2020.
- Real estate loans have had higher delinquency rates than production loans.

US and Ohio agricultural loan delinquency rates



Source: FDIC Call Reports, Data as of December 31, 2020

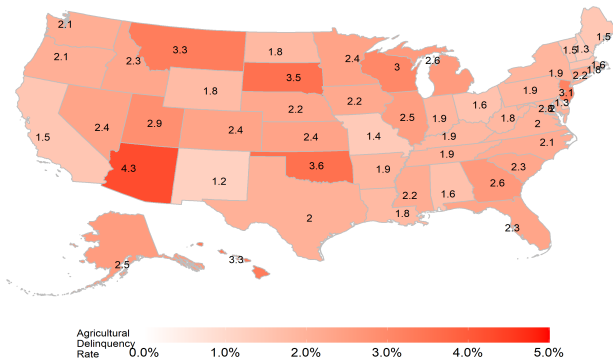
- Ohio ag loans have had lower delinquency rates than for US loans.

US agricultural loan delinquency rates

Ag loan delinquency rates for last four quarters ending on December 31, 2020

Avg Total Ag Loan Value of \$3,831,000,000

Delinquency Rate of 1.59%



Source: FDIC Call Reports, Data as of December 31, 2020

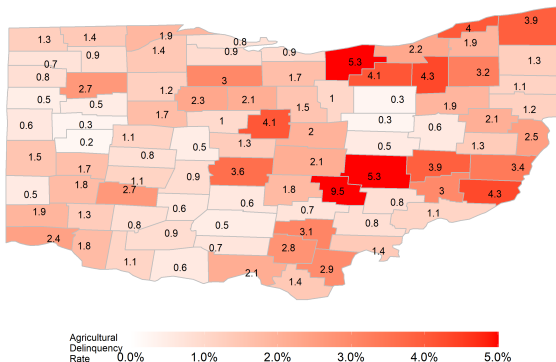
- US ag loan delinquency rate remained relatively low at 1.6% in 2020.
- Concentration of ag loans in the Midwest but with low delinquency rates.

Ohio agricultural loan delinquency rates

Ag loan delinquency rates for last four quarters ending on December 31, 2020

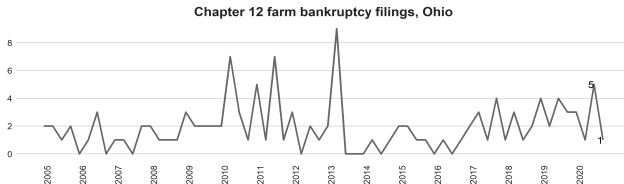
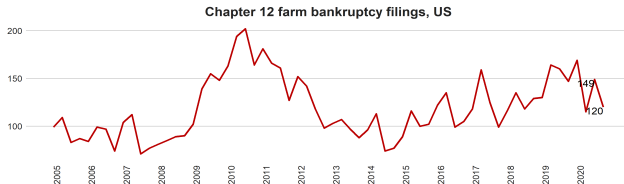
Avg Total Ag Loan Value of \$3,831,000,000

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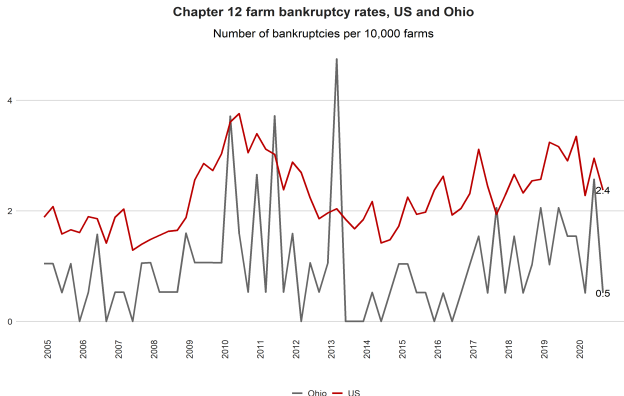
- Ohio ag loan delinquency rates were relatively low at 1.6% in 2020. Some Ohio counties had elevated ag loan delinquency rates.

US farm bankruptcy filings



- There were 120 Chapter 12 farm bankruptcy filings in the US in the last quarter of 2020. There was only 1 bankruptcy filing in Ohio in the same period.
- Chapter 12 bankruptcy filings have had some recent upticks and downticks but have remained stable in recent years.

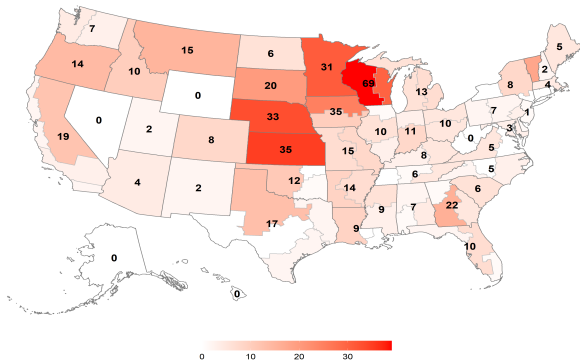
Farm bankruptcy rates



- Ohio farm bankruptcy rate of 0.5 bankruptcies per 10,000 farms was lower than the US bankruptcy rate of 2.4.
- Chapter 12 bankruptcy rates have also had some recent upticks and downticks but have remained stable in recent years.

Farm bankruptcy filings

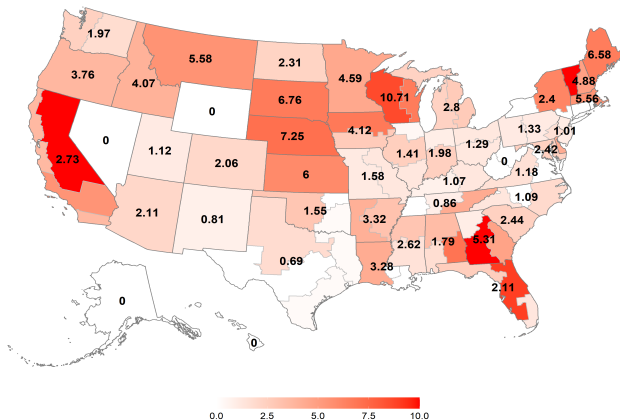
Chapter 12 farm bankruptcy filings
From January 2020 through December 2020: 553



- There were 553 chapter 12 farm bankruptcy filings in the US in 2020 with 10 bankruptcy filings in Ohio.

Farm bankruptcy rates

Chapter 12 farm bankruptcies filings per 10,000 farms
From January 2020 through December 2020: 2.65



- Ohio farm bankruptcy rate of 1.3 bankruptcy filings per 10,000 farms was half of the US bankruptcy rate of 2.6 in 2020.

Farm income and finance outlook

- Farm incomes are expected to decline in 2021 after four years of growth, indicating that the farm economy shows resiliency but still faces many challenges and uncertainty during the pandemic.
- Government payments from the Market Facilitation Program and CFAP 2 due to the trade wars and the pandemic significantly helped to boost and stabilize farm income in 2020 but they are expected to be lower in 2021.
- Long-term projections of farm income and crop prices show slight increases or decreases and then flatten or become uninformative after 2-3 years.
- Farmers are experiencing some financial stress with recent upticks/downticks but relatively low ag loan delinquency rates and bankruptcy rates.
- Long-term projections raise some concerns mostly regarding the continuation of ad hoc government aid to stabilize farm incomes and keep ag loan delinquencies and farm bankruptcies low.

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