

Full Credit: A Comprehensive View of Farm-Sector Credit Conditions

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Partnership with RaFF

- Rural and Farm Finance Policy Analysis Center (RaFF)
 - Congressionally funded center providing objective policy analysis on issues affecting farm and rural finances
 - Focus on regional and state-level farm financial measures
 - Farm Income
 - Released twice annually
 - Historical farm income and 10-year forward-looking estimates



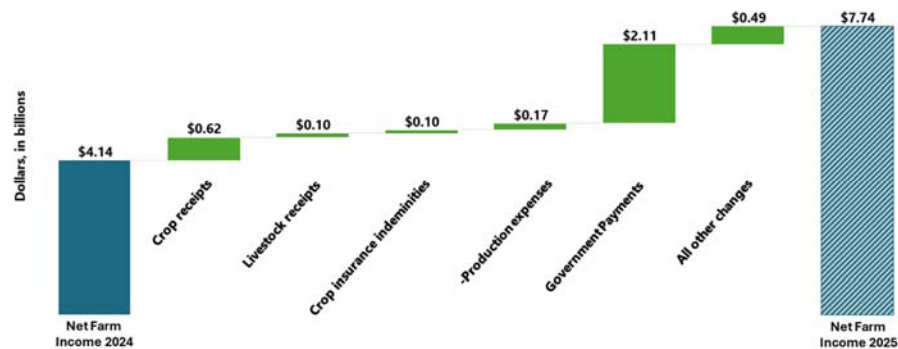
KSU team contributes on Kansas farm income and ag credit research and outreach

KSU Ag Credit Highlights

- Kansas state farm income outlook
- Underestimated debt analysis
- At-risk loan estimations
- Probability of loan default (Kansas farms)
- Leading indicators of farm financial stress

Spring 2025 Kansas Farm Income Highlights

- Government payments drive projected increase in net farm income



Farm Earnings Explorer

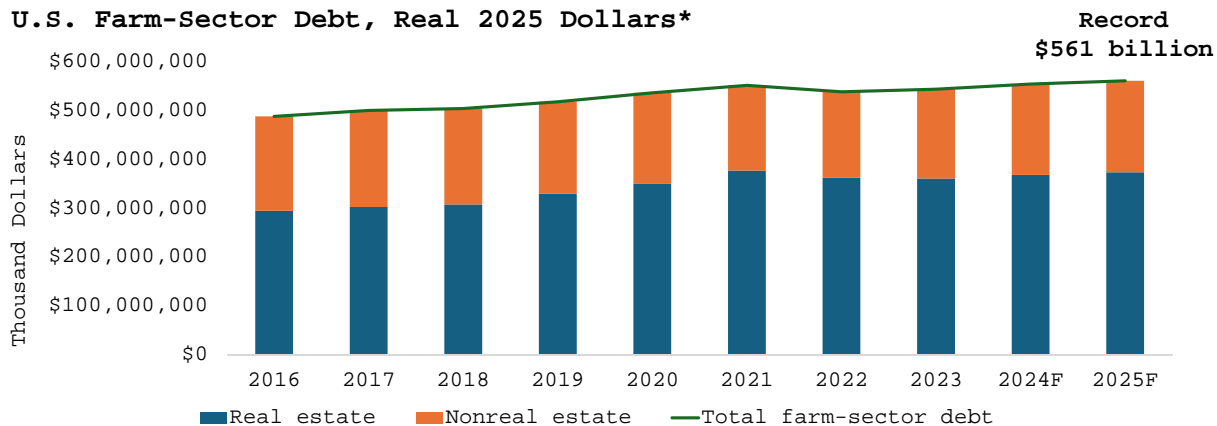
- Farm Earnings Explorer helps you visualize key information historically and projected.

- Look to raff.missouri.edu for the updated report following fall and spring updates.



Underestimated Farm Debt

U.S. Farm-Sector Debt, Real 2025 Dollars*

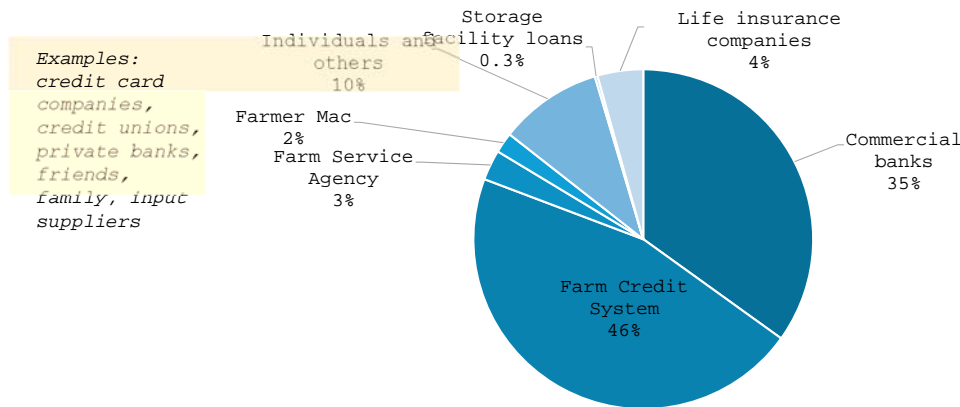


* Data from February farm income forecast
Source: USDA Economic Research Service



Underestimated Farm Debt

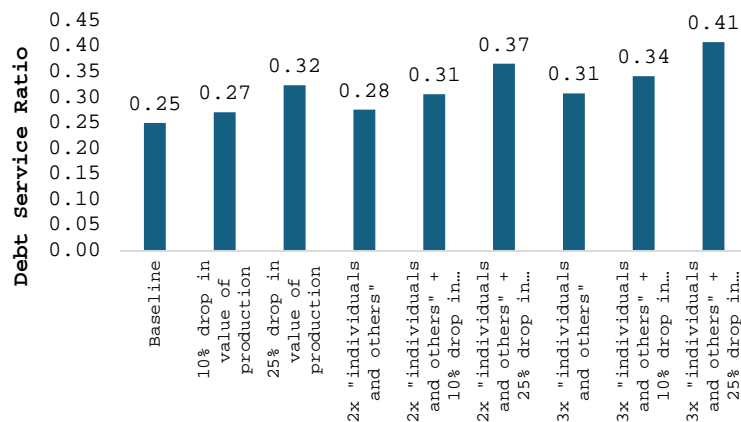
2023 U.S. Farm-Sector Debt by Lender Type, Real 2025 Dollars*



* Data from February farm income forecast
Source: USDA Economic Research Service

Underestimated Farm Debt

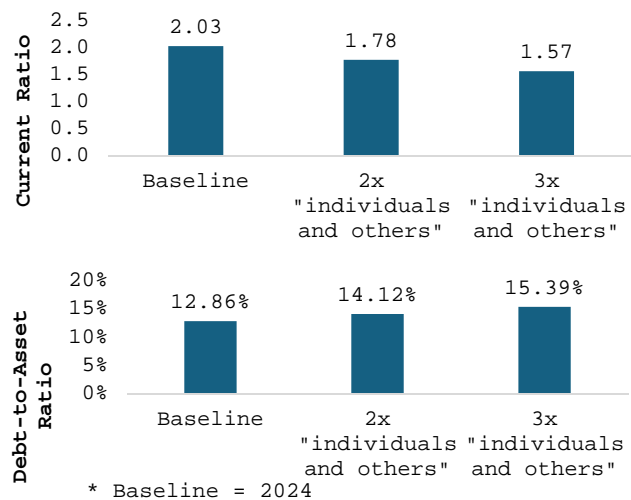
- Assumptions
 - "Individuals and others" hold two to three times as much nonreal estate debt as what USDA ERS reports.
 - "Individuals and others" hold two times as much real estate debt.



Underestimated Farm Debt

- Conclusions

- Current ratio declines but suggests moderate financial risk.
- Debt-to-asset ratio higher but does not suggest financial vulnerability.

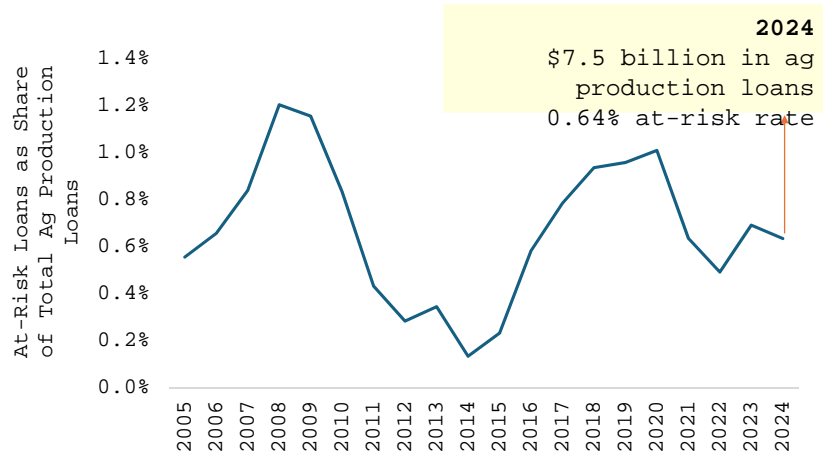


KSU Analysis of "At-Risk" Loan Estimations

- "At-risk" loans: a measure of financial stress
 - Past due, nonaccrual and charge-offs
 - Ag production loans and loans secured by farmland
- Historical "at-risk" estimates
 - Sum past due, nonaccrual and charge-off values reported by commercial banks and Farm Credit lenders
- Forward-looking estimates
 - Use RaFF outcomes from state farm income models to correlate with historical at-risk loan volumes.

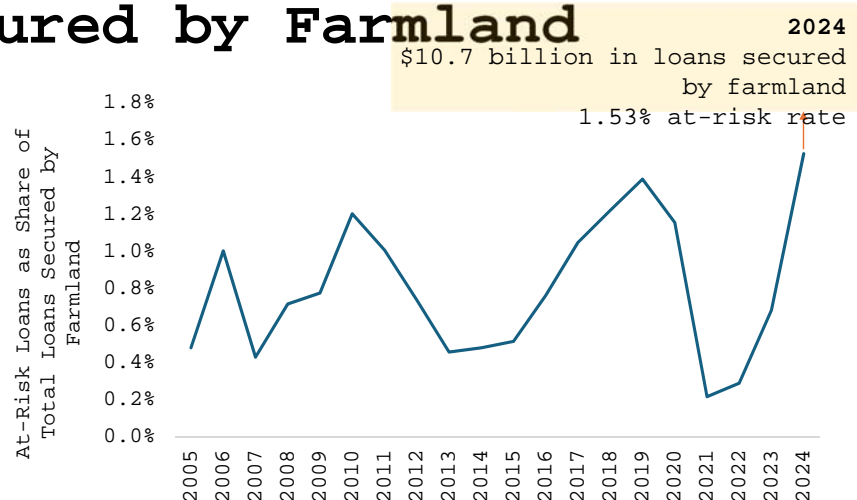
Kansas "At-Risk" Estimates: Production Ag Loans

- Highest at-risk rates in 2008 and 2020
- Uptick since 2022



Kansas "At-Risk" Estimates: Loans Secured by Farmland

- Spike in at-risk rates during 2024 likely due to interest rate pressure
- Also, high rates in 2019 and 2010



Probability of Kansas Loan Default

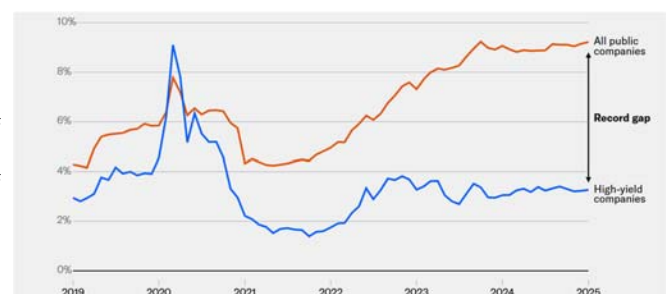
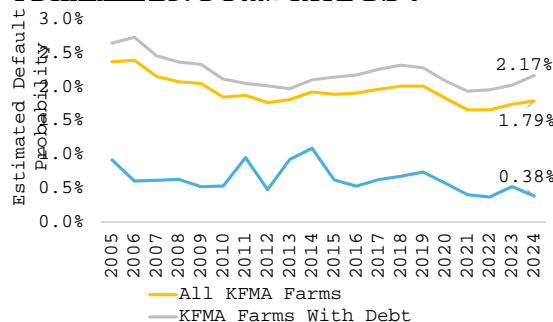
- Probability of default: percentage chance that farms will not have the capacity to repay loans
- Accounts for multiple farm-level financial indicators (e.g., debt volume, net farm income, working capital)
- Therefore, it's a comprehensive measure of farm financial health.
- KFMA offers a source of farm-level data to estimate probability of Kansas loan default across farm types and characteristics.



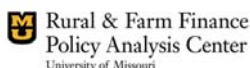
Probability of Kansas Loan Default

- Default probability for KFMA farms on average has trended down.

- Farms had lower recent default probability than public companies.



Source: Moody's



Probability of Kansas Loan Default

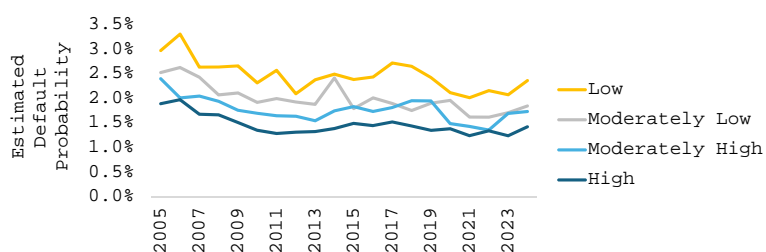
- Higher averages suggest more farms on the higher end of default risk.
- Due to strong cattle prices, crop-cow herd farms had low recent risk. They've averaged lower risk than crop farms.
- Crop farms had greatest default risk in the mid-2000s, but their risk has increased in recent years

	Crop, cow herd	Crop
2005	1.89%	2.44%
2006	1.85%	2.46%
2007	1.75%	2.19%
2008	1.87%	2.07%
2009	2.01%	2.00%
2010	1.64%	1.81%
2011	1.46%	1.87%
2012	1.63%	1.74%
2013	1.87%	1.78%
2014	1.41%	2.00%
2015	1.68%	1.87%
2016	1.78%	1.90%
2017	1.58%	1.98%
2018	1.99%	1.94%
2019	1.91%	1.90%
2020	1.81%	1.73%
2021	1.75%	1.57%
2022	1.50%	1.61%
2023	1.31%	1.68%
2024	1.22%	1.84%

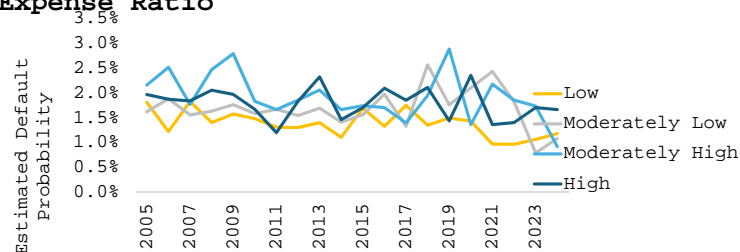
Probability of Kansas Loan Default

- Greater default risk
 - Farms with younger operators
 - Farms with lower net farm income
 - Farms with higher operating expense ratios

Crop Farm Default Risk by Net Farm Income

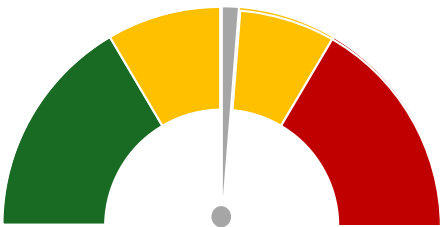


Crop-Cow Herd Farm Default Risk by Operating Expense Ratio



Leading Indicators of Farm Financial Stress

- Part of RaFF effort to form a financial stress early-warning system
- Publication released quarterly
 - Key datasets that summarize state of the farm economy
 - Economists' views about extent of concern and period-over-period change
- Combine these datasets and economists' perspective with other stakeholder



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Policy Analysis Center
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KANSAS STATE
Agricultural Economics



Leading Indicators of Farm Financial Stress

- Sharing multiple indicators means no single indicator risks misrepresenting the farm sector.
- Some indicators hint at sector-level performance, but predominantly, they offer an overall view of the farm economy

Indicator
Farmer and Banker Sentiment Credit Conditions (Kansas City Federal Reserve Bank) Ag Economy Barometer (Purdue-CME Group)
Farm Income and Balance Sheet Health Net Farm Income (Food and Agricultural Policy Research Institute) Net Cash Farm Business Income (USDA Economic Research Service) Liquidity and Solvency Ratios (USDA Economic Research Service) Farmland Prices (Rural Mainstreet Index, Creighton University)
Farm Machinery Market Dynamics Equipment Sales (Association of Equipment Manufacturers) Farm Equipment Sales (Rural Mainstreet Index, Creighton University) Ag and Turf Loan Performance (John Deere Capital) Receivables Performance (CNH Industrial Capital)
Credit Quality Commercial Bank Loan Delinquencies (Federal Reserve Board of Governors) Nonperforming Assets (Farm Credit Administration) Ag Mortgage Credit Quality (MetLife)



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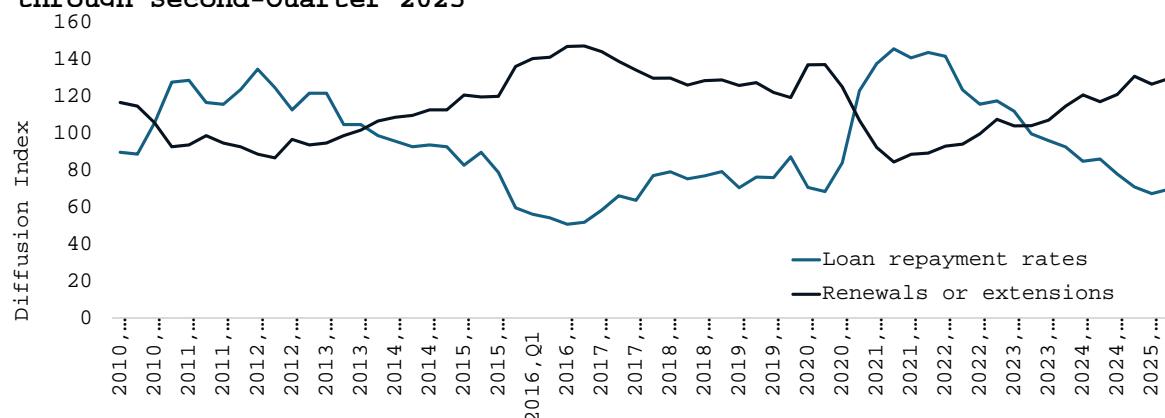
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Leading Indicators: Banker

Sentiment

U.S. Federal Reserve District Agricultural Credit Conditions through Second-Quarter 2025



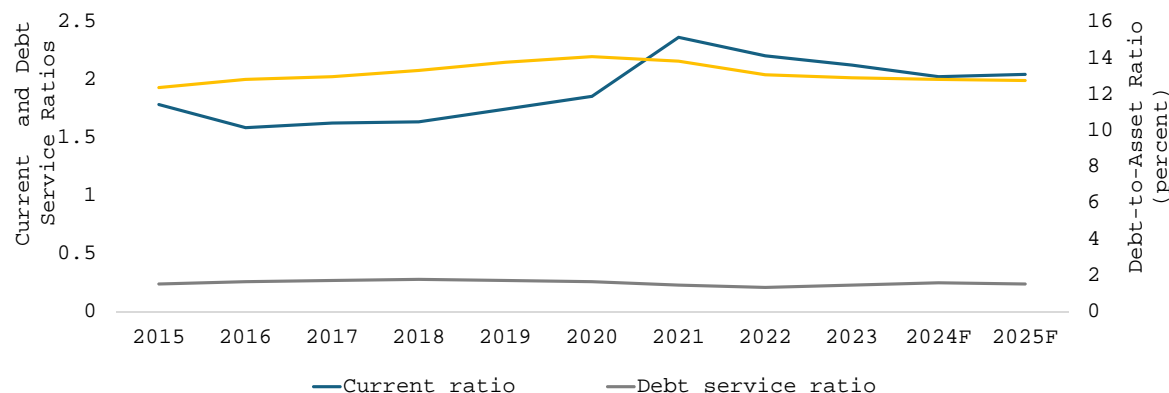
Source: Federal Reserve Bank of Kansas City



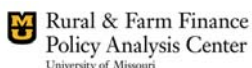
Leading Indicators: Farm

Income

U.S. Farm Sector Liquidity and Solvency Ratios

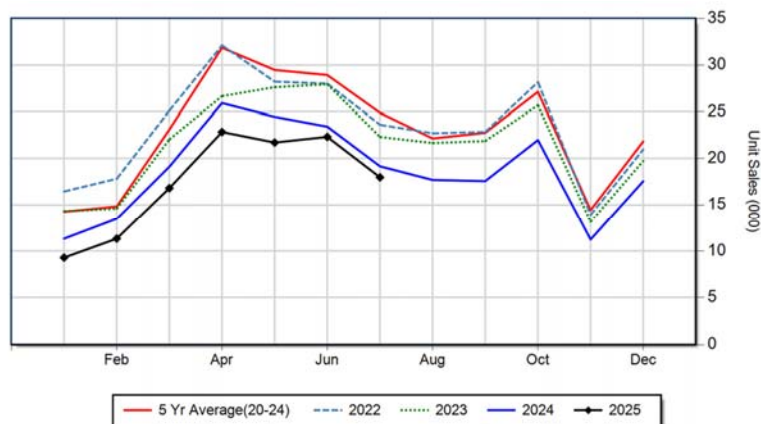


Source: USDA Economic Research Service



Leading Indicators: Farm Machinery

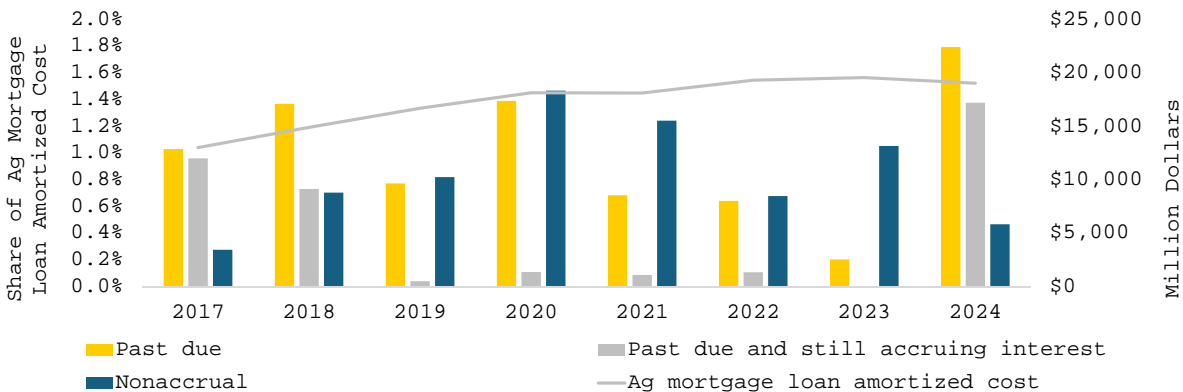
U.S. Unit Retail Sales, 2-4WD Tractors and Combines



Source: Association of Equipment Manufacturers

Leading Indicators: Credit Quality

Credit Quality of MetLife Agricultural Mortgage Loans



Source: U.S. Securities and Exchange Commission

Questions?

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