An Update on the Farm Economy

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June 14, 2023
Approximately 45% of corn production is within an area experiencing drought.
District yield indexes up a lot over time, with new record corn yield in 2022

*(1964=100)*

Source: USDA, National Agricultural Statistics Service
U.S. agricultural productivity growth accounts for most of output growth between 1948 and 2011

Index, 1948=1

- Total output
- Total factor productivity (TFP)
- Total farm input

Distribution of farms, value of production, and farm assets, 2020

Percent of U.S. farms, value of production, and assets

Note: Details may not add up to 100 percent due to rounding. Small family farms have annual gross cash farm income (GCFI) less than $350,000, measured before deducting expenses. Midsize family farms have GCFI of $350,000–$999,999. Large-scale family farms have GCFI of $1,000,000 or more. Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2020 Agricultural Resource Management Survey (data as of December 2021).
Share of Personal Consumption Expenditures spent on food & beverages and food services

Sources: Bureau of Economic Analysis
Food Dollar Shares for 2020

Farm share 15.5%
Marketing share 84.5%

Source: USDA, Economic Research Service
Farm Share of Food Dollar moving lower

Source: USDA, Economic Research Service
Pandemic impacts on the food economy

- Disruptions to food distribution networks
- Loss of demand for food services, including schools
- Milk dumped even as grocery shelves empty out
- Food production hurt by Covid-19 cases and logistics
- Jump in food eaten at home and food prices
- Divergence in employment outcomes

Change in unemployment in agriculture (Feb-Aug 2020)

<table>
<thead>
<tr>
<th>Service</th>
<th>Feb-Apr</th>
<th>May-Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food services</td>
<td>+29.7%</td>
<td>-13.5%</td>
</tr>
<tr>
<td>Food processing</td>
<td>+4.4%</td>
<td>-4.4%</td>
</tr>
<tr>
<td>Food production</td>
<td>-1.4%</td>
<td>-0.9%</td>
</tr>
</tbody>
</table>
Food services overtook grocery sales again
(retail sales in billion $ adjusted by PCE for Dec. 2020)

Data Sources: U.S. Census Bureau and Bureau of Economic Analysis
Value of U.S. agricultural exports and imports
(Fiscal Year, adjusted for inflation)

Source: USDA, Economic Research Service

*USDA forecast
Agricultural exports to China expected to remain higher than to NAFTA partners in FY 2023

(Fiscal Year in billion $)

Source: USDA, Economic Research Service
U.S. Farm Production Value
(billion dollars, 2023$)

Crop

Livestock

Source: USDA, Economic Research Service

*USDA forecast
Real net farm income is expected decline in 2023

*USDA forecast

Source: USDA, Economic Research Service
Net Farm Income and Capital Purchases on Grain Farms in $1,000
Enrolled in Illinois Farm Business Farm Management

ILILLINOIS
Capital Purchases
Net Farm Income

$0
$50
$100
$150
$200
$250
$300
$350
$400
$450
$500

2022 Projected
$81
$229
$446
$350
FBFM Records Summary

Debt to Asset Ratio by Age

- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021

Farmer’s Age

- <30
- 30 to 39
- 40 to 49
- 50 to 59
- 60+

ILLINOIS
Farms by operating profit margin and type, 2020

U.S. farm sector solvency ratios, 1970–2023F

Notes: Due to rounding, sums may not add to 100 percent. Operating profit margin (OPM)=100 times (net farm income plus interest paid minus charges for unpaid labor and management)/gross farm income. OPM ratios are not calculated for operations with zero or negative gross farm income.


Note: F = Forecast. Data for 2022 and 2023 are forecasts.
Data as of February 7, 2023.
Real farm sector assets, equity, and debt seen setting new peaks in 2023

Source: USDA, Economic Research Service

*USDA forecast
USDA Farmland Values for Michigan and Wisconsin
(2010 dollars)

Source: USDA, National Agricultural Statistics Service
Chicago Fed survey results for Q1 of 2023

Percent change in dollar value of “good” farmland

Top: January 1, 2023 to April 1, 2023
Bottom: April 1, 2022 to April 1, 2023

<table>
<thead>
<tr>
<th>Region</th>
<th>January 1, 2023 to April 1, 2023</th>
<th>April 1, 2022 to April 1, 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>+2</td>
<td>+11</td>
</tr>
<tr>
<td>Indiana</td>
<td>+8</td>
<td>+22</td>
</tr>
<tr>
<td>Iowa</td>
<td>+1</td>
<td>+7</td>
</tr>
<tr>
<td>Michigan</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>+2</td>
<td>+15</td>
</tr>
<tr>
<td>Seventh District</td>
<td>+2</td>
<td>+10</td>
</tr>
</tbody>
</table>

*Insufficient response.
Annual change in farmland values in Seventh Federal Reserve District

Source: Federal Reserve Bank of Chicago
Year-over-year Changes in Farmland Values in the Seventh District (AG LV)
Index of Seventh District farmland values
(1981=100, adjustment by PCE)

Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis
Farmland Value Indexes for 7th District States

Source: Federal Reserve Bank of Chicago
Annual change in real farmland cash rents in 7th Federal Reserve District

Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis
Index of Seventh District Cash Rents
Nominal vs. Inflation Adjusted

(1981=100)

Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis
7th District Earnings to Price Ratio \((\text{left axis, } 1981=1.0)\) vs. Real Return on 10-Year Treasury Bonds

Source: Calculated from Federal Reserve data
District real crop revenue more volatile than yields, with sharp increases in 2021-22
($/per acre, adj. by PCE for 2010)

Source: Calculations using NASS and BEA data
Index of non-real-estate farm loan demand for the 7th Federal Reserve District

Source: Federal Reserve Bank of Chicago
Index of funds availability for the 7th Federal Reserve District

Source: Federal Reserve Bank of Chicago
7th District average loan-to-deposit ratio

Source: Federal Reserve Bank of Chicago
Indexes of non-real-estate farm loan repayment and renewals & extensions for the 7th District

Source: Federal Reserve Bank of Chicago
Farm loan volume with “major” or “severe” repayment problems in 7th Federal Reserve District

Source: Federal Reserve Bank of Chicago
Interest rates charged on new farm loans in the 7th Federal Reserve District

Source: Federal Reserve Bank of Chicago
Interest rates charged on new farm operating loans in the 7th Federal Reserve District

Source: Federal Reserve Bank of Chicago and Bureau of Economic Analysis
Interest expenses as share of agricultural value of production (% of total)

Source: Calculations based on data from USDA, Economic Research Service

*USDA forecast
Primary agricultural lenders by market share

![Graph showing market share of different types of lenders over time.]

- **Commercial Banks**
- **Farm Credit**
- **Farm Service**
- **Individuals + others**
- **Insurance**

Source: USDA, Economic Research Service
Federal crop insurance participants, harvested cropland, and indemnities, 2020

Note: The bars of the same color add to 100 percent.

Financial indicators for the farm sector

- Net farm income for 2023 will be down, yet should be decent
- Smaller boost from government spending
- Farm balance sheet improved
- Higher farm interest rates eating into cash flows
- Loan demand lagging as funds to lend about the same
- Credit conditions strengthened
  - Only 1.2% of loans with “major” or “severe” repayment problems
  - Loan renewals & extensions declined