Ag Banks and Credit Risk: Where are They Now?
Historical and Forward Looking Perspectives

Farmer Mac Refresh
December 2019

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Regional Debt and Delinquencies
Data Series

• FFIEC Call Reports
  – Annual sample Q2 2002 through Q3 2019

• Summary of Deposits
  – 2002 through 2019
  – Over 86,000 unique branch locations

• Census of Agriculture
  – County level interest payments
Bank Farm Real Estate Debt by County

California #1 State for Farmland Debt

Concentration in Midwest

Darker Blue = More Debt

Southern States Also Have Pockets of Farmland Debt
Real Estate Delinquencies: 2019

Rising Delinquency Rates
Real Estate Charge-Offs: 2019

Lagged Charge-Offs

The map shows lagged charge-offs across different regions of the United States, with varying shades indicating different percentage ranges.
Real Estate Delinquencies: 2001
Real Estate Delinquencies: 2002
Real Estate Delinquencies: 2003
Real Estate Delinquencies: 2004
Real Estate Delinquencies: 2005
Real Estate Delinquencies: 2006
Real Estate Delinquencies: 2007
Real Estate Delinquencies: 2008
Real Estate Delinquencies: 2009
Real Estate Delinquencies: 2010
Real Estate Delinquencies: 2012
Real Estate Delinquencies: 2013
Real Estate Delinquencies: 2014
Real Estate Delinquencies: 2015
Real Estate Delinquencies: 2016
Real Estate Delinquencies: 2017
Real Estate Delinquencies: 2018
Real Estate Delinquencies: 2019
Changes in Delinquencies: 2007 - 2009
Changes in Delinquencies: 2010 - 2012
Changes in Delinquencies: 2013 - 2015

-5 percent or less
Between -5.0 and -3.0 percent
Between -3.0 and -1.0 percent
Between -1.0 and 1.0 percent
Between 1.0 and 3.0 percent
Between 3.0 and 5.0 percent
Greater than 5.0 percent
Changes in Delinquencies: 2016 - 2019
What is the Data Telling Us

• Farm debt is concentrated in ag-production regions
• Farm delinquencies are rising, but the stress is regional and not affecting all regions
• Biggest historical shocks in farm loan performance came from financial crisis, not low income periods in early-2000s
• Farm economy-only downturn pattern is very slow development
Segmenting Delinquencies and Charge-Offs
Bank Ag Portfolio Delinquency Rates

Average NPA Rate of Farmland Secured Loans

- Uptick in Tail-End since 2016
Data Series

- FFIEC Call Reports
  - Q1 2001 through Q3 2019

- Summary of Deposits
  - 2001 through 2019
  - Over 86,000 unique branch locations

- Banks with agricultural loans
  - Defined as “Ag Bank” by FDIC or more than $5 million in combined ag lending
  - Over 414,000 records
  - Nearly 7,500 institutions
Ag Portfolio Performance 2019

<table>
<thead>
<tr>
<th>Share of banks</th>
<th>R.E. NPR</th>
<th>R.E. COR</th>
<th>Prod. NPR</th>
<th>Prod. COR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Historic Average</td>
<td>79.7%</td>
<td>97.0%</td>
<td>88.8%</td>
<td>94.4%</td>
</tr>
<tr>
<td>Above Historic Average</td>
<td>20.3%</td>
<td>3.0%</td>
<td>11.2%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>
Ag Portfolio Performance 2019

<table>
<thead>
<tr>
<th></th>
<th>Stressed Banks</th>
<th>Non-Stressed Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>$218M</td>
<td>$254M</td>
</tr>
<tr>
<td>Ag. Real Estate</td>
<td>$11.5M</td>
<td>$19.1M</td>
</tr>
<tr>
<td>Ag. Production</td>
<td>$10.6M</td>
<td>$12.0M</td>
</tr>
<tr>
<td>Ag Concentration</td>
<td>22.9%</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

97.5% of all commercial banks
Banks with Stressed Ag Portfolios Have Not Performed Materially Different in the Past
Each blue dot represents a bank branch of the 97.5% non-stressed banks.
Ag Portfolio Performance 2019

Each orange dot represents a bank branch of the 2.5% of stressed banks.
Each orange dot represents a bank branch of the 2.5% of stressed banks.
**Ag Portfolio Performance 2015 - 2019**

<table>
<thead>
<tr>
<th>Class Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Share</td>
<td>1.7%</td>
<td>2.7%</td>
<td>3.1%</td>
<td>3.5%</td>
<td>5.1%</td>
<td>5.2%</td>
<td>7.2%</td>
<td>8.5%</td>
<td>13.1%</td>
<td>47.4%</td>
</tr>
<tr>
<td>RE Loans</td>
<td>1.6%</td>
<td>2.8%</td>
<td>3.4%</td>
<td>3.9%</td>
<td>5.7%</td>
<td>5.7%</td>
<td>7.7%</td>
<td>8.9%</td>
<td>13.6%</td>
<td>45.2%</td>
</tr>
<tr>
<td>Prod. Loans</td>
<td>1.7%</td>
<td>2.6%</td>
<td>2.9%</td>
<td>3.1%</td>
<td>4.5%</td>
<td>4.7%</td>
<td>6.7%</td>
<td>8.0%</td>
<td>12.7%</td>
<td>50.0%</td>
</tr>
</tbody>
</table>
Ag Portfolio Performance 2015 - 2019

- All sizes experiencing return to average
- Largest 10% materially worse experience
## Ag Portfolio Performance 2015 - 2019

<table>
<thead>
<tr>
<th></th>
<th>Broilers</th>
<th>Cattle and calves</th>
<th>Corn</th>
<th>Dairy products</th>
<th>Soybeans</th>
<th>Misc.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>799</td>
<td>1,875</td>
<td>1,121</td>
<td>506</td>
<td>1,076</td>
<td>114</td>
</tr>
<tr>
<td><strong>Share Assets</strong></td>
<td>30%</td>
<td>30%</td>
<td>4%</td>
<td>8%</td>
<td>26%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Share Ag. RE</strong></td>
<td>16%</td>
<td>31%</td>
<td>20%</td>
<td>15%</td>
<td>16%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Share Ag. Prod</strong></td>
<td>8%</td>
<td>42%</td>
<td>19%</td>
<td>15%</td>
<td>13%</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Diagram:
- **Non-performing Rate**
- **Charge-off Rate**
- Data points represent different commodities with their respective percentages.
Ag Portfolio Performance 2015 - 2019

- Dairy and Grain Banks Have More Movement in 2019
What is the Data Telling Us

- Strain is near averages, but portfolios are different
- Commercial banks with the largest agricultural portfolios have seen the largest increases in strain
- Commercial banks headquartered in states with heavy dairy and milk product concentrations have seen the most strain
Farm Bankruptcy Trends
Counts/Percentages Up But Measured

Source: U.S. Courts Caseload Statistics Data Tables, U.S. Ag Census
2014 Farm Bankruptcies

2014 Chapter 12 Bankruptcies per 10,000 Farms

Source: U.S. Courts Caseload Statistics Data Tables, U.S. Ag Census
2019 Farm Bankruptcies

2019 Chapter 12 Bankruptcies per 10,000 Farms

Source: U.S. Courts Caseload Statistics Data Tables, U.S. Ag Census
2019 Bankruptcies Deviation from 5-Year Avg.

Source: U.S. Courts Caseload Statistics Data Tables, U.S. Ag Census
In Summary...

• Ag loan portfolio performance is showing signs of stress but more than half of banks and FCS institutions are better than 10-year avg. default rates
• Regional patterns fit with recent economic pressure in dairies and grains
• Largest institutions feeling the most performance pain
• Banks are not alone; FCS seeing deterioration as well
• Farm bankruptcies are increasing but at a measured pace
Questions?
Thank You

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