Disclaimer

• The views expressed herein are those of the author and presenter and do not necessarily reflect official positions of the Federal Deposit Insurance Corporation.

• Some of the information used was obtained from publicly available sources that are considered reliable.

• However, the use of this information does not constitute an endorsement of its accuracy by the Federal Deposit Insurance Corporation.
Primary Takeaways

• Coming off a decade of high returns, the U.S. agricultural sector has been weak since 2014, and conditions are expected to remain that way for the next few years.

• Farm bank asset quality is starting to weaken from historically strong levels, but the transmission mechanism can be slow.

• Persistently weak agricultural conditions may result in problems for some farm banks, but a repeat of the agricultural crisis of the 1980s is unlikely.
FARM INCOME
Steep Decline in Farm Income Follows Most Prosperous Period Since 1970s

Dollars (Billions)

Source: USDA (Haver Analytics).
Note: South Dakota net farm income, inflation-adjusted values.
Commodity Prices Tumble But Expenses Remain Stubbornly High

Index (2011=100)

Source: USDA (Haver Analytics), South Dakota data.
COMMODITY FUNDAMENTALS
Crop Fundamentals Snapshot

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply-Demand</td>
<td>S &gt; D</td>
<td>Generally Long-term</td>
<td></td>
</tr>
<tr>
<td>Equilibrium</td>
<td>3 of 4 Ys Equal Glut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stocks-to-Use</td>
<td>Decade U.S. Decades</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High High High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>30% Trend High-side</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>China South Am. Policy Growth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Potential Shift in Supply-Demand Dynamic Sends Feeder Cattle Prices Tumbling

Source: USDA (Haver Analytics).

Note: Monthly prices received by farmers.
FARM REAL ESTATE
Multiples of Farm Real Estate Values: 2004 to 2016

Source: USDA (Haver Analytics).
Note: Inflation adjusted values, 2016 dollars.
South Dakota Cropland Values Have Declined Nearly 10 Percent

<table>
<thead>
<tr>
<th>Dollars Per Acre</th>
<th>Nonirrigated Cropland</th>
<th>Rangeland (native)</th>
<th>Pasture (tame, improved)</th>
<th>Hayland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual % change 16/15</td>
<td>-4.00%</td>
<td>2.90%</td>
<td>-6.40%</td>
<td>-2.60%</td>
</tr>
<tr>
<td>Average value, 2016</td>
<td>4,094</td>
<td>1,222</td>
<td>1,704</td>
<td>2,469</td>
</tr>
<tr>
<td>Average value, 2015</td>
<td>4,265</td>
<td>1,187</td>
<td>1,820</td>
<td>2,535</td>
</tr>
<tr>
<td>Average value, 2014</td>
<td>4,478</td>
<td>987</td>
<td>1,603</td>
<td>2,458</td>
</tr>
<tr>
<td>Average value, 2013</td>
<td>4,249</td>
<td>909</td>
<td>1,542</td>
<td>2,285</td>
</tr>
<tr>
<td>Average value, 2012</td>
<td>3,084</td>
<td>737</td>
<td>1,218</td>
<td>1,758</td>
</tr>
<tr>
<td>Average value, 2011</td>
<td>2,389</td>
<td>611</td>
<td>1,011</td>
<td>1,377</td>
</tr>
<tr>
<td>Average value, 2010</td>
<td>2,030</td>
<td>540</td>
<td>854</td>
<td>1,195</td>
</tr>
<tr>
<td>Average value, 2009</td>
<td>1,900</td>
<td>530</td>
<td>857</td>
<td>1,142</td>
</tr>
<tr>
<td>Average value, 2008</td>
<td>1,733</td>
<td>508</td>
<td>809</td>
<td>1,079</td>
</tr>
<tr>
<td>Average value, 2007</td>
<td>1,375</td>
<td>448</td>
<td>684</td>
<td>875</td>
</tr>
<tr>
<td>Average value, 2006</td>
<td>1,211</td>
<td>386</td>
<td>596</td>
<td>758</td>
</tr>
</tbody>
</table>

Source: 2016 South Dakota Farm Real Estate Market Survey, SDSU.
## Cash Rents on Cropland Declined Again in 2016

<table>
<thead>
<tr>
<th>Dollars Per Acre</th>
<th>Nonirrigated Cropland</th>
<th>Pasture/Rangeland</th>
<th>Hayland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average 2016 rate</td>
<td>141.00</td>
<td>31.13</td>
<td>84.00</td>
</tr>
<tr>
<td>Average 2015 rate</td>
<td>145.10</td>
<td>31.40</td>
<td>82.15</td>
</tr>
<tr>
<td>Average 2014 rate</td>
<td>150.10</td>
<td>28.40</td>
<td>84.40</td>
</tr>
<tr>
<td>Average 2013 rate</td>
<td>144.30</td>
<td>26.65</td>
<td>79.30</td>
</tr>
<tr>
<td>Average 2012 rate</td>
<td>121.50</td>
<td>22.60</td>
<td>65.85</td>
</tr>
<tr>
<td>Average 2011 rate</td>
<td>98.90</td>
<td>20.70</td>
<td>57.10</td>
</tr>
<tr>
<td>Average 2010 rate</td>
<td>86.65</td>
<td>18.60</td>
<td>51.50</td>
</tr>
<tr>
<td>Average 2009 rate</td>
<td>83.90</td>
<td>19.80</td>
<td>50.15</td>
</tr>
<tr>
<td>Average 2008 rate</td>
<td>74.70</td>
<td>18.50</td>
<td>47.40</td>
</tr>
<tr>
<td>Average 2007 rate</td>
<td>64.80</td>
<td>17.10</td>
<td>41.60</td>
</tr>
<tr>
<td>Average 2006 rate</td>
<td>60.95</td>
<td>16.50</td>
<td>39.80</td>
</tr>
</tbody>
</table>

Source: 2016 South Dakota Farm Real Estate Market Survey, SDSU.
EXPORTS
Exports Are an Important Piece of Demand for U.S. Crops

**Corn Exports**
- Percent of Production
- Source: USDA (Haver Analytics).
- Note: U.S. corn.

**Soybean Exports**
- Percent of Production
- Source: USDA (Haver Analytics).
- Note: U.S. soybeans.

**Wheat Exports**
- Percent of Production
- Source: USDA (Haver Analytics).
- Note: U.S. wheat.

Source: USDA (Haver Analytics).
Exchange Rates: Asian Trade Markets

Foreign Currency to U.S. Dollar Exchange Rates
Index (2012=100)

Source: Federal Reserve Board (Haver Analytics).
Exchange Rates: U.S. Ag Trade Competitors

Foreign Currency to U.S. Dollar Exchange Rates
Index (2012=100)

- Venezuela
- S. Africa
- India
- Euro
- Canada
- Brazil
- Australia
- Argentina

Source: Federal Reserve Board (Haver Analytics).
AGRICULTURAL BORROWER AND FARM BANK CONDITIONS
Risk appears manageable at this point – several mitigating factors temper the immediate threat of losses in the sector.

- Agricultural borrower strength and support
- Farm bank conditions
- Conservative underwriting
Unlike recent years, profitability will depend on farmers' ability to operate efficiently, market strategically, and manage their debt.

Iowa Corn: Average Price and Production Costs
Dollars per bushel

Sources: Iowa State University, USDA.
2015 - Crop Corn Revenue without ARC-CO Safety Net

(Actual Revenue as Percent of ARC-CO Revenue Guarantee)
2015 - Crop Corn Revenue with ARC-CO Safety Net

(Actual Revenue as Percent of ARC-CO Revenue Guarantee)

Map includes all and non-irrigated yields. Map is intended for Farm Service Agency (FSA) business purposes only. Map depicted serves only as a general reference map.
2015 - Crop Soybeans Revenue without ARC-CO Safety Net
(Actual Revenue as Percent of ARC-CO Revenue Guarantee)

Map includes all and non-irrigated yields. Map is intended for Farm Service Agency (FSA) business purposes only. Map depicted serves only as a general reference map.
2015 - Crop Soybeans Revenue with ARC-CO Safety Net
(Actual Revenue as Percent of ARC-CO Revenue Guarantee)

Map includes all and non-irrigated yields. Map is intended for Farm Service Agency (FSA) business purposes only. Map depicted serves only as a general reference map.
Farm Credit Delinquencies Have Inched Up From Historically Low Levels

Share of South Dakota Farm Banks Reporting Past-Due and Nonaccrual Agricultural Loans

Past-Due and Nonaccrual Agricultural Loans Percent (Median)

Source: FDIC, 3Q data.
Poorer Profit Margins Have Brought Farmers Back to Borrowing

![Graph showing median LTA ratio (left) and median ag concentration ratio (right). Peak net farm income years indicated with a shaded area. Source: FDIC, South Dakota farm banks, 3Q data.](image)

Source: FDIC, South Dakota farm banks, 3Q data.
Chart 9: Agricultural Banks’ “Watch” and “Classified” Lists

Change from a Year Ago

Watch List

Percent of respondents

<table>
<thead>
<tr>
<th>Change</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant decline</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Modest decline</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>No change</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Modest increase</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Significant increase</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

Classified List

Percent of respondents

<table>
<thead>
<tr>
<th>Change</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant decline</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Modest decline</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>No change</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Modest increase</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Significant increase</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

* For purposes of this article, a “Watch List” loan is interpreted as a qualifying credit but is being closely monitored for potential problems (deterioration in borrower financial conditions, management changes, etc.). A “Classified List” loan is a loan with a defined weakness (inadequate debt service, insolvent collateral position, etc.) that requires specific documentation and potential bank reserve adjustments.
TODAY VERSUS 1980’S
When the agricultural economy inevitably turns downward, there are two things we keep in mind.

• The lag between economic effects and banking impacts can be long.

• If a farmland bubble were to exist, it would magnify the adverse banking results.
Bubble conditions were evident leading up to the 1980s’ agricultural crisis, and led to large losses at farm banks.

Indexed Value (1972=100)

Average Value of U.S. Farm Real Estate (Left Axis)

Net Farm Income (Left Axis)

Median Net Charge-Off Rate of Total Loans at Farm Banks (Right Axis)

Note: There were 297 farm bank failures between 1977-1993. The peak years were 1984-1986.

Source: FDIC, 4Q farm banks; USDA (Haver Analytics).

Note: Farm real estate values and net farm incomes are inflation-adjusted.
Today, farmland values appear to be more closely aligned with agricultural fundamentals.

Source: FDIC, 4Q farm banks; USDA (Haver Analytics).

Note: Farm real estate values and net farm incomes are inflation-adjusted.
RURAL NONFARM ECONOMY
Chart 2: Tenth District Farm Income and Spending

*Diffusion Index *


Farm Income
Capital Spending
Household Spending

Expected in three months

*Bankers responded to each item by indicating whether conditions during the current quarter were higher than, lower than, or the same as in the year-earlier period. The index numbers are computed by subtracting the percentage of bankers who responded "lower" from the percentage who responded "higher" and adding 100.

Rural Mainstreet Index – Contraction
15 Consecutive Months

Source: Creighton University College of Business (Haver Analytics).
Note: Monthly survey data.
The Agricultural Slowdown Has Begun to Affect Nonfarm Employment

Source: Creighton University College of Business (Haver Analytics).
Note: Monthly survey data.
Several potential destabilizers could quickly inflate agricultural risk.

- Rapid appreciation in the dollar
- Sharp increase in interest rates
- Chinese or Asian economic slump
- Repeal of renewable fuels standards
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