Higher Production Costs Facing Agriculture

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Agenda

- Inflation environment for 2022
- Cost inflation in agriculture
- Impact on FCS borrowers and portfolios
- Examination & oversight
Price “inflation” dominates economic concerns

- Disrupted supply chains hinder ability to meet strong demand:
  - Government stimulus continues
  - Pandemic still impacting worldwide production
  - Distribution bottlenecks slow to resolve
  - Global energy supply not meeting demand
  - Tight labor markets

### Broad Price Rise

<table>
<thead>
<tr>
<th>Month</th>
<th>PPI - All Commodities</th>
<th>PPI - Farm Products, Foods, Feeds</th>
<th>CPI - All City</th>
<th>CPI - Less Food &amp; Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-21</td>
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<td>Feb-21</td>
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<td>Mar-21</td>
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<td>Apr-21</td>
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<td>May-21</td>
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<td>Jun-21</td>
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<td>Jul-21</td>
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<td>Aug-21</td>
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<td>Sep-21</td>
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<td>Oct-21</td>
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<tr>
<td>Nov-21</td>
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<tr>
<td>Dec-21</td>
<td>22.6%</td>
<td>15.7%</td>
<td>7.1%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

Data source: St. Louis Federal Reserve.

### Yearly Price Increases - December 2021*

- Medical: 2.6%
- Wages: 4.7%
- Food at Home: 6.5%
- New Cars: 13.0%
- Housing: 17.4%
- Gasoline: 41.0%

* CPI-U.S. Medical Care Services, BLS-Average Hourly Private Wages, CPI-At Home Food Prices, JD Powers-Average New Car Price, FHFA House Price Index, USIA-Regular All Formulations Gas.
Rising production costs in agriculture

- Prices paid for farm inputs increased 10% from mid-2020 to December 2021
- Prices received by farmers jumped 24% during the same period
- Prices paid by farmers are sticky, prices received by farmers are volatile

Data source: USDA/NASS.
Broad rise in farm input costs

- Historically high fertilizer costs are a big challenge for crop producers
- Certain chemicals and seeds are higher this year
- Higher labor, feed, and capital costs are challenges for livestock

**Broad Rise in Farm Input Costs**

![Bar chart showing prices paid increases from June 2020 to December 2021.](chart)

**Prices Paid: Increases From June 2020 to December 2021**

- Potash and Phosphate: 54.7%
- Nitrogen: 41.6%
- Feed: 16.7%
- Machinery: 15.4%
- Fuels: 12.0%
- Labor: 6.3%
- Chemicals: 2.9%
- Seeds & Plants: 0.2%
- Ag Production Items*: 10.3%

*Includes interest, taxes, wages.
Data source: USDA/NAASS.

**Illinois Average Cost Per Ton**

- Anhydrous Ammonia: $1,486
- Potash: $367
- Diammonium Phosphate: $854

<table>
<thead>
<tr>
<th></th>
<th>1/14/2021</th>
<th>1/13/2022</th>
<th>1/14/2022</th>
<th>1/13/2022</th>
<th>1/14/2021</th>
<th>1/13/2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anhydrous Ammonia</td>
<td>$501</td>
<td></td>
<td>$1,486</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potash</td>
<td></td>
<td></td>
<td>$367</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diammonium Phosphate</td>
<td>$514</td>
<td></td>
<td>$806</td>
<td></td>
<td></td>
<td>$854</td>
</tr>
</tbody>
</table>

Data source: USDA/AMS.
Higher capital costs: farmland

- Strong farm profits, particularly in cash grains, have translated into higher farm real estate values
- Higher rental rates in 2022
- Land rents are stickier than land prices

**Average Sale Price Increase per Acre for High Quality Land, 2020 to 2022**

<table>
<thead>
<tr>
<th>State</th>
<th>Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Dakota</td>
<td>36%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>21%</td>
</tr>
<tr>
<td>S. Dakota</td>
<td>31%</td>
</tr>
<tr>
<td>Illinois</td>
<td>26%</td>
</tr>
<tr>
<td>Iowa</td>
<td>49%</td>
</tr>
<tr>
<td>Indiana</td>
<td>22%</td>
</tr>
<tr>
<td>Ohio</td>
<td>17%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>10%</td>
</tr>
<tr>
<td>Kansas</td>
<td>23%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>12%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>10%</td>
</tr>
<tr>
<td>Texas</td>
<td>11%</td>
</tr>
</tbody>
</table>


**Land Prices Take Off Again**

Data Source: Iowa State University, December 2021.

Average Sale Price Increase per Acre for High Quality Land, 2020 to 2022
Higher capital costs: machinery and improvements

- New and used farm machinery values are higher on strong demand, lean inventories, and supply chain issues.

- Higher material and labor costs are increasing building costs across the food system.

### Tractor and Combine Prices Rise

<table>
<thead>
<tr>
<th>Units sold</th>
<th>2020</th>
<th>2021</th>
<th>Yearly Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Propelled Combines</td>
<td>5,030</td>
<td>6,272</td>
<td>24.7%</td>
</tr>
<tr>
<td>Four Wheel Drive Tractors</td>
<td>2,988</td>
<td>3,536</td>
<td>18.3%</td>
</tr>
<tr>
<td>100+ Horsepower Tractors</td>
<td>19,144</td>
<td>23,762</td>
<td>24.1%</td>
</tr>
</tbody>
</table>

Source: Association of Equipment Manufactures.
Higher capital costs: interest rates

- Rising borrowing costs are ahead for the $450 billion in total farm debt.

- More System loan rates are now locked in for longer time periods but still about half of System loans carry floating rates.

The Expected Future Path of the Three-Month Average Fed Funds Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>0 to 6 Months</th>
<th>6 Months to 1 Year</th>
<th>1 to 5 Years</th>
<th>Over 5 Years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/30/21</td>
<td>46.9%</td>
<td>6.8%</td>
<td>26.3%</td>
<td>20.1%</td>
<td>100%</td>
</tr>
<tr>
<td>12/31/20</td>
<td>54.0%</td>
<td>8.3%</td>
<td>23.1%</td>
<td>14.5%</td>
<td>100%</td>
</tr>
<tr>
<td>12/31/19</td>
<td>51.9%</td>
<td>7.1%</td>
<td>24.3%</td>
<td>16.8%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Total Gross Loans (millions): $325,784

Share of total

Sources: Atlanta Federal Reserve Bank (accessed 2/1/22) and FCS Funding Corporation Information Statements.
Farm finances are strong going into 2022

- Farmers, and the food industry in general, have the financial health to weather higher costs - at least initially
- Near-term outlook is encouraging
- Longer-term concern: Risk of a “Cost-Price Squeeze” for some parts of the ag industry

Source: USDA/ERS, December 1, 2021.

Lender outreach

Surveyed System lenders to gain additional insight on how the current environment is impacting customers/ portfolios

Questions focused on:

- Most significant cost pressures faced by customers
- Estimated impact on borrowers and portfolio in 2022 and beyond
- Growth and volume implications
- Underwriting considerations
Lender responses: most significant cost pressures

- Inputs – particularly fertilizer, substantially higher
- Labor – cost and availability will encourage automation
- Land – prices and cash rents at/near record levels
- Infrastructure/Equipment – increasing construction costs for facilities and machinery in short supply
- Transportation – trucking availability and shipping rates
- Water – cost and availability
Lender responses: key takeaways

- Margins projected favorable in 2022, yet lower than 2021
- Input prices will likely cycle down based on supply/demand
- Higher fixed cost structure may be more permanent
- Borrowers can absorb expected increases in interest rates from the current low levels
- Pricing, risk management, and contract discipline necessary
FCS portfolio impact: credit quality

- Most institutions have included high-cost scenarios as part of existing stress-testing efforts
- Lenders do not expect significant adversity in 2022 as projected margins remain generally favorable, but lower than 2021
- Possible decline in credit quality is “down the road” as both borrowers and portfolios are starting from a position of strength
- Deterioration could occur sooner in Agribusiness portfolio versus producers as more sensitivity to interest rates, labor and supply chain issues
- FCS portfolios are diversified which provides some risk mitigation
FCS portfolio impact: growth/volume

- Operating loan usage is generally down from historical levels as profitability is more than offsetting higher costs
- Mortgage loan volume has increased as rising land values and higher sales activity have largely offset lower demand from capital improvement projects
- Moderate overall growth is expected for 2022
FCS underwriting considerations

- Front-end guidance and projections have been updated to account for the current environment
- No material underwriting adjustments were reported given:
  - Underwriting standards and practices are designed to be “through the cycle”
  - Near-term and long-term repayment analysis is typically completed
  - Higher costs but also higher revenues thus far – margins are projected to be narrower, yet remain favorable
- Lenders believe underwriting and risk rating systems are designed to account for various cyclical factors, including higher costs
FCA examination & oversight

- Fiscal 2022 National Oversight Plan includes risk topic of “Loan Underwriting in a Period of Significant Volatility”
- Examination work to evaluate:
  - Analyzing, underwriting and servicing of accounts in 2022, with a focus on the cash grains sector
  - Sources and quality of new loans/growth
  - Cost increases and related volatility
- Will continue to focus management discussions and monitoring activities on impacts of the current high-cost environment
Questions

Thank You