THE FARM ECONOMY AND THE FUTURE OF AG LENDING

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August 6 - 8, 2018
The Farm Economy and the Future of Ag Lending

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The Agenda

1. The Future: An Economic Downturn
2. Financial Vulnerabilities
3. The Public Sector Safety Net
4. Credit Analysis In The New Business Climate
5. Conversations With Your Customer
World Population

- 2010 – 7 billion
- 2050 – 9 – 10 billion
Animal Protein as a Share of Total Protein

Source: Based on data through 2002 from FAO and World Bank.
Global GDP Growth, %

- Global economy grew 3.8% in 2017, expected to be 3.9% in 2018
- Growth expected to be broad-based across developed and developing economies
- Tightening global financing terms
- Continued geo-political risks
Growth Among World’s Largest 45 Economies

- Accelerating growth in largest economies in 2017
- All 45 of the world’s largest economies expected to experience growth in 2018
- Purchasing managers index (PMI) above 50 (indicating expansion) in 97% of those countries

U.S. Dollar Index

- U.S. dollar has been weak – but some strengthening recently
- Rising interest rates in the U.S., as well as in the EU and Japan
- Exports less expensive
- Uncertain trade policy
- Brazilian Real has been trending up
Ag Exports, Monthly (billion $)

- Exports expected to be $140 Billion in FY18, down slightly from FY17
- Increased competition from production elsewhere (South America)
- Stronger economic growth and lower dollar boost exports
- Uncertain trade policy
Index of World Meat Exports: 1995-1999 = 100

<table>
<thead>
<tr>
<th></th>
<th>World Annual Growth Rate</th>
<th>Domestic Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pork</td>
<td>5.9%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Chicken</td>
<td>5.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Beef</td>
<td>3.3%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>
Figure 2. U.S. Pork Exports, Carcass Weight Basis, January-August 2017, % of Total

Data Source: USDA-ERS.

*Pork Profits Fuel Expansion. Chad Hart and Lee Shuht, Iowa State University Farm Outlook October 2017.*
Exports Drive Growth

- NAFTA implications for pork?
- Port exports now 20% of total U.S. port production
- 48% goes to NAFTA partners (Mexico, Canada)
- Potential for China retaliation to Trump’s import tariffs (steel and aluminum)
- Exports drive income growth – and access to these markets
World Harvested ACRES 13 Major Crops Total: (Millions)

- 1972/73 = 1,872
- 1981/82 = 2,115
- 1996/07 = 2,104
- 2002/03 = 2,040
- 2005/06 = 2,144
- 2017/18 = 2,338

243 Million acres added in 9 years. U.S. Gov't released 60 million acres of Soil Bank Land

194 Million acres added in 12 years-8% (2005 to 2017)

U.S. Gov't: Released 12 million acres from CRP (36 down to 24 million)
Global Grains Stock-to-Use Ratio

- Global wheat supplies higher in 2017/2018 due to higher production
- Increase in wheat exports from Russia, Argentina and Ukraine (offsets lower exports from the US and EU)
- Heat and dryness in Argentina reduced yield forecasts – US exports expected to increase leading to lower global ending stocks
- More concern about build-up of soybean supplies from increased Brazilian production capacity
Crop Prices (New Crop Corn Futures Price, $/bu)

- Price risk is substantial
- Increased land in production throughout the world – 180 million additional acres in production
- Much depends on corn and soybean production in South America as well as feed gains/wheat in Russia/Ukraine
Price Projections

- Projections of Market Year Average Prices, U.S., 2017 to 2021

### Market Year Average Prices

<table>
<thead>
<tr>
<th>Corn, $/bu</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
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</thead>
<tbody>
<tr>
<td>USDA Agricultural Outlook</td>
<td>$3.30</td>
<td>$3.35</td>
<td>$3.35</td>
<td>$3.45</td>
<td>$3.50</td>
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<tr>
<td>CBO Baseline</td>
<td>$3.40</td>
<td>$3.59</td>
<td>$3.73</td>
<td>$3.96</td>
<td>$3.93</td>
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<tr>
<td>FAPRI</td>
<td>$3.48</td>
<td>$3.64</td>
<td>$3.80</td>
<td>$3.79</td>
<td>$3.75</td>
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<tr>
<td>WASDE</td>
<td>$3.20</td>
<td></td>
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<td></td>
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<tr>
<td>CME Futures</td>
<td>$3.35</td>
<td>$3.76</td>
<td>$3.89</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soybeans, $/bu</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBO Baseline</td>
<td>$9.30</td>
<td>$9.53</td>
<td>$9.67</td>
<td>$9.84</td>
<td>$9.87</td>
</tr>
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<tr>
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<td>$9.87</td>
<td>$9.76</td>
<td>$9.72</td>
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</tbody>
</table>
Input Prices
(Fertilizer price index, USDA Index for Price Paid, 2011)

- Fertilizer prices have been trending upwards
- John Deere expects an upward tick in sales in 2018
- Cash rent for land under pressure due to low margin expectations
- Future seed price concerns
Changes in Input Costs

- Fertilizer, Seed, Pesticide, and Cash Rent Costs for Rotation Corn in Indiana
The Public Sector Safety Net

- ARC-CO payments generally small in 2017
- ARC-CO payments likely to decline or even disappear by 2019
- Federal government direct farm program payments forecasted to account for 20% of Net Farm income in 2017 – likely to decline as a percentage going forward
- One year delay in receiving farm program payments
- RP insurance guarantee reduced by almost 50% in 2018 compared to 2012
Farm Bill Negotiations – Trump’s Budget Proposal

- Crop Insurance - cuts the premium discount, includes AGI requirements (<$500,000)
- CRP - makes $13 Billion in cuts to conservation programs
- SNAP – makes $213 Billion in cuts – includes provision that replaces monthly benefit for food with non-perishable food package
- Ag committee revisions to cotton and dairy made without typical necessary offset – due to President’s budget proposal this will result in an increase in the baseline
2018 Farm Bill Negotiations

- House Ag Committee approved their version of the Farm Bill
- Maintains crop insurance – no changes to eligibility or restrictions on revenue policies
- CRP – increases by 5 million acres (to 29 million) – but reduces rental rates to 80% of county average rental rate
- SNAP amendments – requires work-capable adults to find employment or get free training for 20 hours a week
Pork Outlook

- Pork production expected to increase 3% in the first part of 2018 due to breeding herd expansion and increasing production efficiency
- Strong economy and higher wages will lead to strong demand
- Net pork trade expected to increase 9%
- Packer demand will strengthen as new plants come on line
- Futures market suggest prices will remain strong even with more supply in the market
Farm Real Estate Interest, %

- Interest rates slightly increasing, still at historic lows
- Rates ticked up through 2017
Income (USDA Net farm income, billion $)

- Net Farm Income expected to decline 6.7% in 2018 to $59.5 billion
- Lowest level since 2006
- Net Cash Income expected to be down 5.1% to $91.9 billion
- Declines in both crop and livestock prices
- USDA ’17/18 projections for average farm price: $3.05-3.55/bu for corn and $8.90-9.70/bu for soybeans
Land Values
(USDA Ag real estate values, Illinois, $/acre)

- Chicago Fed survey shows land values increased 1% from year ago
- Iowa Realtors surveys – 2-3% increase over the last 6 months – potential bottoming out
- Higher quality land vs. low quality land
- Supply of land will be a primary driver of land values – expect little acquired property
Land Values

Value-to-Cash Rent Multiple for IA, IL, IN Cropland, 1967-2012

Sources: IL and IA compiled from NASS Reports, IN from Purdue Land Value Survey
Credit Analysis in the New Business Climate
Key Financial Vulnerabilities

1. Working capital (current assets less current liabilities)

- Goal – 30% of gross revenue/25% of total expenses
- Burn rate – reduction due to losses ($50 – 100 per acre)
- First line of defense against financial stress
2. Cash shortages

- Operating losses particularly for renters
- Increased tax burdens
- Capital expenditures?
3. Tight repayment capacity

- Short repayment schedules on equipment/land loans
- Reduced income/cash flow
4. Solvency – debt load

- Generally still strong
- Weakening for highly leveraged
- Few defaults/bankruptcies
- Mark to market?
  - Land
  - Machinery and equipment
### Table 4. Comparison of Farm Size with 50% Land Owned and 25% Debt-to-Asset Ratio

<table>
<thead>
<tr>
<th>Size of Farm (acres)</th>
<th>550</th>
<th>1200</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Net Farm Income (Mean)</strong></td>
<td>$49,800</td>
<td>$37,600</td>
<td>$166,200</td>
</tr>
<tr>
<td><strong>Change in Net Worth (3 year) – (Mean)</strong></td>
<td>$36,800</td>
<td>$114,900</td>
<td>$926,900</td>
</tr>
<tr>
<td><strong>Working Capital/Value of Farm Production</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>33.0%</td>
<td>45.5%</td>
<td>49.5%</td>
</tr>
<tr>
<td>Percent &lt; 35%</td>
<td>57.0%</td>
<td>3.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>Debt-to-Asset Ratio</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>21.5%</td>
<td>15.8%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Percent &gt; 55%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Term Debt Coverage Ratio</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
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<tr>
<td>Percent &lt; 1.1</td>
<td>73.1%</td>
<td>23.9%</td>
<td>2.1%</td>
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<tr>
<td><strong>Percent Positive Cash</strong></td>
<td>24.6%</td>
<td>83.8%</td>
<td>98.4%</td>
</tr>
<tr>
<td><strong>Percent ROE &gt; 10%</strong></td>
<td>0.4%</td>
<td>7.6%</td>
<td>20.1%</td>
</tr>
<tr>
<td></td>
<td>% of Land Owned</td>
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<tr>
<td>---------------------------------------</td>
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<td></td>
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<tr>
<td></td>
<td>85%</td>
<td>50%</td>
<td>15%</td>
</tr>
<tr>
<td>Annual Net Farm Income (Mean)</td>
<td>$98,900</td>
<td>$49,800</td>
<td>-$2,100</td>
</tr>
<tr>
<td>Change in Net Worth (3 year) (Mean)</td>
<td>$76,000</td>
<td>-$32,300</td>
<td>-$130,400</td>
</tr>
<tr>
<td>Working Capital/Value Of Farm Production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>49.6%</td>
<td>32.9%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Percent &lt; 35%</td>
<td>9.2%</td>
<td>56.9%</td>
<td>99.5%</td>
</tr>
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<tr>
<td>Term Debt Coverage Ratio</td>
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<td></td>
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<tr>
<td>Mean</td>
<td>1.7</td>
<td>0.9</td>
<td>0.6</td>
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<tr>
<td>Percent &lt; 1.1</td>
<td>16.2%</td>
<td>76.8%</td>
<td>99.5%</td>
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<tr>
<td>Percent Positive Cash</td>
<td>74.8%</td>
<td>24.3%</td>
<td>0.3%</td>
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<tr>
<td>Percent ROE &gt; than 10%</td>
<td>11.7%</td>
<td>0.5%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
How To Respond

1. Stress Test your Most Vulnerable Borrowers – the 10%
   - Lower commodity prices
   - Lower non-farm income

2. Emphasize Projection Analysis
   - History may not predict future
   - Look ahead 2-3 years
   - Cost of production - $4+- for corn
3. Focus Your Customer on Cost Reduction/Containment
   - More control
   - Limited potential price improvements

4. Emphasize Risk Management Capacity
   - Protecting margins
   - Crop insurance
   - Reduce Financial leverage
5. Protect/Manage Cash
   - Hold cash reserves
   - Apply proceeds to debt reduction

6. Reduce Capital Expenditures
   - Equipment purchases
   - Cap Ex budget
7. Pre-emptively Refinance
   - Position for the downside
   - A Win Win
8. Rebalance the Balance Sheet
   - Lengthen loan terms – maturity match
   - Leverage land equity
   - Debt structure is critical
9. Monitor Credit Elsewhere
   - Open accounts at suppliers
   - Leases
   - Credit card debt

10. Be Forthright With Your Borrower
    - Show them the numbers
    - Be understanding but direct
CONVERSATIONS WITH YOUR CUSTOMER
The Fundamental Premise

Be Best In Class!
Elements of Best in Class

1. Intense Cost Control
   - efficiency/productivity is critical
   - know your cost components per unit sold

2. Margin Management
   - know your costs of production
   - know your margins
     - contribution margin – revenue above operating costs
     - profit margin – revenue above all costs
   - protect positive margins
Elements of Best in Class

3. Execution

- Use SOP’s (standard operating procedures)
- Timely operations
- Details, details, details
Elements of Best in Class

4. **Buying Right**
   - Procurement mentality
   - Compare supplier offers
   - Use a bid sheet
   - Sets your cost structure
   - Don’t pay premiums for control
   - Consider repairing rather than replacing
Elements of Best in Class

5. Managing Operating Risk
   - Technology performance – pest control, fertility effectiveness/loss, seed selection
   - Marketing/pricing of inputs and products
   - Government program and crop insurance participation
   - Casualty and liability insurance
Elements of Best in Class

6. Debt/Capital Management
   - Maintain working capital
   - Sources of debt (dealer financing)
   - Buy vs. lease
   - Lengthen payment terms
   - Fix interest rates
   - Deleverage
   - Reduce capital expenditures
   - Don’t surprise your lender
Elements of Best in Class

7. Simplification/Automation
- Complexity creates confusion/mistakes
- Systemize work activities/processes
- Adopt user-friendly automation technology (people make mistakes)
Elements of Best in Class

8. **Do Fewer Things Better**
   - What is your hedge hog – what do you do better than anyone else?
   - Focus and intensify
   - Outsource
Elements of Best in Class

9. Data Management
   - Collect efficiently
   - Aggregate but share carefully
   - Capture the insights
   - Think carefully – false signals, confirmation bias
Best In Class Is Not New

- Return to the basics
- Dust off the old playbook
How Do We Win in Tough Times?

- Resiliency
  - absorptive capacity
  - protect your position
  - ”defense”

- Agility
  - capture the upside
  - ”offense”
Concluding Comments

1. Long Term Future of Ag is Very Bright
2. Short Term Agriculture Is In An Economic Downturn
3. The Downturn Is Not Likely To Be A “Bust”
4. BUT: The Recovery Is Likely To Be Sluggish
   - Short Peak, Long Trough
   - Improvement Comes Primarily From Cost Reductions
5. Vulnerabilities Are Primarily
   - Cash Shortfalls
   - Working Capital Burn Rate
   - Repayment Capacity

6. Most Vulnerable Are Renters
   - Rents/Costs Decline Slowly
   - Declining Machinery/Equipment Values (30+% down)

7. Public Sector Safety Net Is Weak and Has Holes