Pressures on Farm Repayment and Spending: Roles of Cooperative Extension

Jason Henderson, Ph.D.
Associate Dean and Director of Purdue Extension
February 13, 2017
Ag Downturns have Two Components

- Liquidity Crisis (Cash Crunch)
  Demand, Exports, and Exchange Rates

- Solvency Crisis (Bankruptcy)
  Debt, Inflation, and Interest Rates
Agriculture Cycles

U.S. Agriculture Value-Added and Net Farm Income
(Three-Year Moving Average)

Billions (2016 constant dollars)

Calculations based on USDA data deflated with Consumer Price Index
History Never Repeats Itself, but ...

U.S. Farm Income
(Three-Year Moving Average)

Billions of dollars (2009 constant dollars)

Late 1970s 38% drop

Early 1980s 35% drop

Today 40% drop

Calculations based on USDA data
Indiana farm profits remain elusive through 2019

Estimated Revenue and Costs Per Acre on a 50/50 Corn/Soybean Farm on Average Quality Indiana Land

Farmland Values are Expected to Fall Further

Indiana Farmland Values

**1910s/1920s U.S. Foodstuff Exports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>$9.5 billion</td>
</tr>
<tr>
<td>1920</td>
<td>$24.3 billion</td>
</tr>
<tr>
<td>1936</td>
<td>$3.5 billion</td>
</tr>
</tbody>
</table>

Note: Export value data presented in 2016 constant dollars  
Source: Census Bureau, Historical Statistics of the United States

**1940s/1950s U.S. Ag Exports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>$8.9 billion</td>
</tr>
<tr>
<td>1947</td>
<td>$42.4 billion</td>
</tr>
<tr>
<td>1953</td>
<td>$25.5 billion</td>
</tr>
</tbody>
</table>

Note: Export value data presented in 2016 constant dollars  
Source: USDA

**1970s/1980s U.S. Ag Exports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>$53.9 billion</td>
</tr>
<tr>
<td>1981</td>
<td>$114.1 billion</td>
</tr>
<tr>
<td>1986</td>
<td>$57.3 billion</td>
</tr>
</tbody>
</table>

Note: Export value data presented in 2016 constant dollars  
Source: USDA

**2000s/2010s U.S. Ag Exports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$77.5 billion</td>
</tr>
<tr>
<td>2014</td>
<td>$151.8 billion</td>
</tr>
<tr>
<td>2016</td>
<td>$133.7 billion</td>
</tr>
</tbody>
</table>

Note: Export value data presented in 2016 constant dollars  
Source: USDA
Farm Debt was the 1980s Challenge

Distribution of Value-Added to Stakeholders

Percent of Value-added from US agriculture

Calculations based on USDA data
What Will Trigger a Solvency Crisis?

U.S. Farm Debt Ratios

Source: USDA
## What Will Trigger a Solvency Crisis?

### U.S. Farm Debt to Asset Ratios Under Alternative Scenarios

<table>
<thead>
<tr>
<th>Change in Farm Real Estate Assets</th>
<th>+10%</th>
<th>+15%</th>
<th>+20%</th>
<th>+25%</th>
<th>+30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10%</td>
<td>15.8</td>
<td>16.5</td>
<td>17.3</td>
<td>18.0</td>
<td>18.7</td>
</tr>
<tr>
<td>-20%</td>
<td>17.4</td>
<td>18.2</td>
<td>19.0</td>
<td>19.8</td>
<td>20.6</td>
</tr>
<tr>
<td>-30%</td>
<td>19.4</td>
<td>20.2</td>
<td>21.1</td>
<td>22.0</td>
<td>22.9</td>
</tr>
<tr>
<td>-40%</td>
<td>21.8</td>
<td>22.8</td>
<td>23.8</td>
<td>24.8</td>
<td>25.7</td>
</tr>
<tr>
<td>-50%</td>
<td>24.9</td>
<td>26.1</td>
<td>27.2</td>
<td>28.3</td>
<td>29.5</td>
</tr>
</tbody>
</table>

Note: Calculations based on USDA data from 2016
How Many Interest Rate Moves in 2017?

Fed Funds Rates

Source: Federal Reserve Board of Governors
What Drives Interest Rates Higher?

Too much money chasing too few goods
The strong dollar is a headwind for agriculture, but it limits inflation
2017 Forecasts are counting on fiscal stimulus.

How will the federal government pay for infrastructure?

Source: Federal Reserve Bank of St. Louis, U.S. Office of Management and Budget
fred.stlouisfed.org
Will Demographics be the Trigger?

- Millennial spending: Homes, cars, families ...
- Boomer spending: Retirement, health care ...

U.S. Population Growth

Calculations based on U.S. Census data
# Slower Labor Force Growth is Expected to Trim Potential GDP

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential GDP</td>
<td>4.0</td>
<td>3.3</td>
<td>3.2</td>
<td>3.2</td>
<td>2.8</td>
<td>1.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Potential Labor Force</td>
<td>1.6</td>
<td>2.5</td>
<td>1.6</td>
<td>1.3</td>
<td>0.9</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Potential Labor Force Productivity</td>
<td>2.4</td>
<td>0.8</td>
<td>1.6</td>
<td>1.9</td>
<td>1.9</td>
<td>0.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Source: Congressional Budget Office

Lower Potential GDP Suggests Inflation Rises at Lower Growth Rates.
What Can Land Grant Universities Do?

Assist Agriculture in Boosting Productivity

\[
\text{Productivity} = \frac{\text{Value}}{\text{Efficiency}}
\]

Enhancing Value
- Risk Management Tools
- New Markets
- Product Development

Enhancing Efficiency
- Feed Efficiency
- Boosting Yields
- Input Management
What Can Land Grant Universities and Extension Do?

Enhance productivity to enhance lives and livelihoods.

Through 4-H, Extension Helps:

Raise the Next Generation of Leaders
Develop Skills for the 21st Century
What Can Land Grant Universities and Extension Do?

Enhance productivity to enhance lives and livelihoods.

Through Agriculture and Natural Resources, Extension Helps:

Enhance the productivity of our food, fuel, and fiber systems in sustainable ways.
What Can Land Grant Universities and Extension Do?

Enhance productivity to enhance lives and livelihoods.

Through Health and Human Sciences, Extension Helps:

Strengthen Families and Improve Family Health

Less Family Conflict Reduces Substance Abuse in Teens
What Can Land Grant Universities and Extension Do?

Enhance productivity to enhance lives and livelihoods.

Hometown Collaboration Initiative

Through Community Development, Extension Helps:

Spur the Economic Vitality of Indiana’s Rural Communities

Stronger Economies Together (SET)
Conclusions

• Today: A Liquidity Crisis in U.S. Agriculture
• Tomorrow: Will a Solvency Crisis Emerge? Debt, Trade, Inflation and Interest Rates

• Slow and Steady Wins the Race.
• Boosting Productivity is the Key to Sustainable Growth