RISK MANAGEMENT CHALLENGES FOR AGRICULTURAL PRODUCERS

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The views expressed are those of the author and do not necessarily reflect the opinions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
Risk Management Challenges

• Today’s Outline
  – A booming farm economy
  – Near term risks
    • Ethanol
    • Exports
    • Energy
  – Long term risks
    • Productivity
    • Demographics
Crop Prices Surge to Record Highs

U.S. Crop Prices

Dollars per bushel

Source: Commodity Research Bureau
Boosting Returns to Crop Production.

Capitalized Net Returns to Land from U.S. Crop Production

Dollars per acre (average 2008 to 2015)

Calculations based on USDA cost and returns data and FAPRI forecasts of crop prices, yields and production costs.
Land Value Growth Has Surged In The Great Plains

Non-Irrigated Land Values
(Tenth Federal Reserve District)

Percent change from year ago

Source: Federal Reserve Bank of Kansas City
Note: the Tenth Federal Reserve District covers the states of Nebraska, Kansas, Oklahoma, Wyoming, Colorado, western Missouri, and Northern New Mexico.
Livestock Feeders are Operating in the Red.

U.S. Cattle Prices and Breakeven Costs

Dollars per hundredweight

Source: USDA
Risk Management Challenges

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A 15 Billion Gallon Wall?

U.S. Ethanol Production, Mandates, and Corn Use

Source: USDA and Renewable Fuels Association
Ethanol: Is The Party Over?

Ethanol and Corn Prices

Dollars per gallon

Dollars per bushel

Spread is equal to ethanol price – (corn price/2.75 gallons per bushel)
Risk Management Challenges

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    • Exports
U.S. Real Agricultural Exports Have Surged . . .

U.S. Agricultural Exports

Billion dollars (2007=100)

Source: USDA
As the Value of the Dollar has Fallen.

Value of U.S. Dollar

Source: Federal Reserve Board of Governors
World GDP Growth is Robust . . .

World GDP Growth

Percent change

Source: International Monetary Fund

Photos courtesy of USDA
Fueled by Growth in Developing Countries.

World GDP Growth

Source: International Monetary Fund
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Strong Global Demand and Supply Concerns Boost Energy Prices

Energy Prices

- **Dollar per MMBTU**
- **Dollar per barrel**

**Crude Oil**
(right scale)

**Natural Gas**
(left scale)

Futures (as of 7/3/08)

Source: Bloomberg
Farm Input Costs Rise More than Expected

U.S. Farm Input Prices Paid Index

- Fertilizer
- Feed
- Fuels
- Seed
- Interest
- Rent
- Machinery
- Wages
- Chemicals

Index (April 2006=100)

Source: USDA
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A New Economy is Built on Productivity

**Productivity**

\[
\text{Value per Input} \times \text{Output per Input} = \text{Value per Output}
\]

- **Efficiency**: Output per Input
  
  *The ability to create more things with fewer inputs.*
  
  *(Bushels per acre)*

- **Value**: Value per Output
  
  *The ability to create things of higher value.*
  
  *(Dollars per bushel)*

Which part of productivity does U.S. agriculture struggle with?
Lessons From The Past: What Boosts Real Farm Incomes?

U.S. Real Net Farm Income

Billion dollars (2000 = 100)

Source: USDA
Technological Innovations Boost Efficiency

Labor Needed for U.S. Corn Production

Hours to produce 100 bushels of corn

Source: USDA
New Opportunities For the Agricultural Economy

• Value-added Agriculture

Japanese Watermelon
Cost:
Square Watermelon $82
Regular Watermelon $15 to $25

Source: BBC
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    • Demographics
A Rising Middle-Class in China Changes World Demographics.

Economic Growth in China

Source: IMF, China Statistical Yearbook
Where Will Agriculture’s Next Generation of Leaders Emerge?

U.S. Age Demographics

Source: USDA, ERS
Conclusions

• Today’s farm boom is eerily similar to the 1970s.

• Ethanol, exports, and energy are near-term risks.

• Productivity and demographics are long-term risks.

• Risk management is key to surviving agriculture’s boom/bust cycles.