



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.



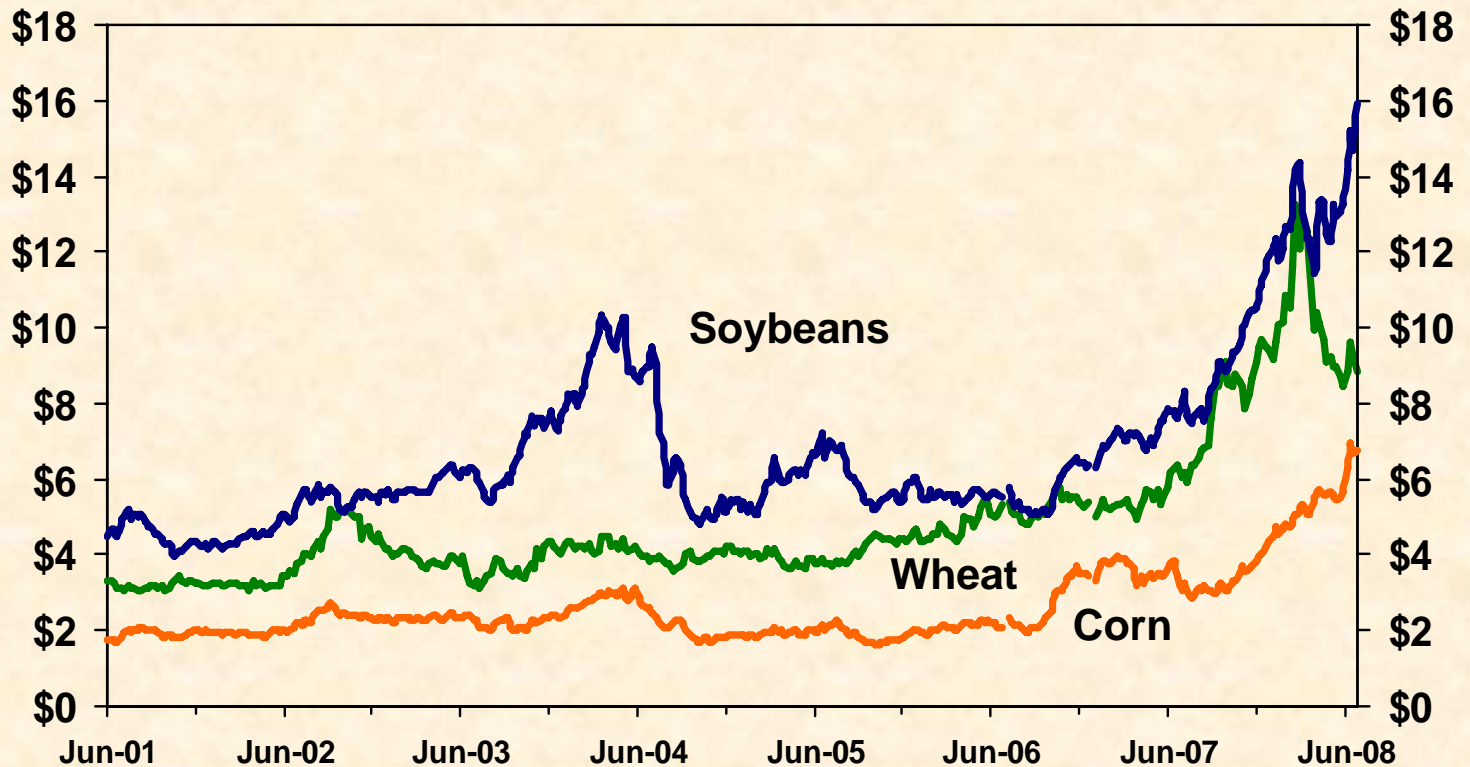
Risk Management Challenges

- 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

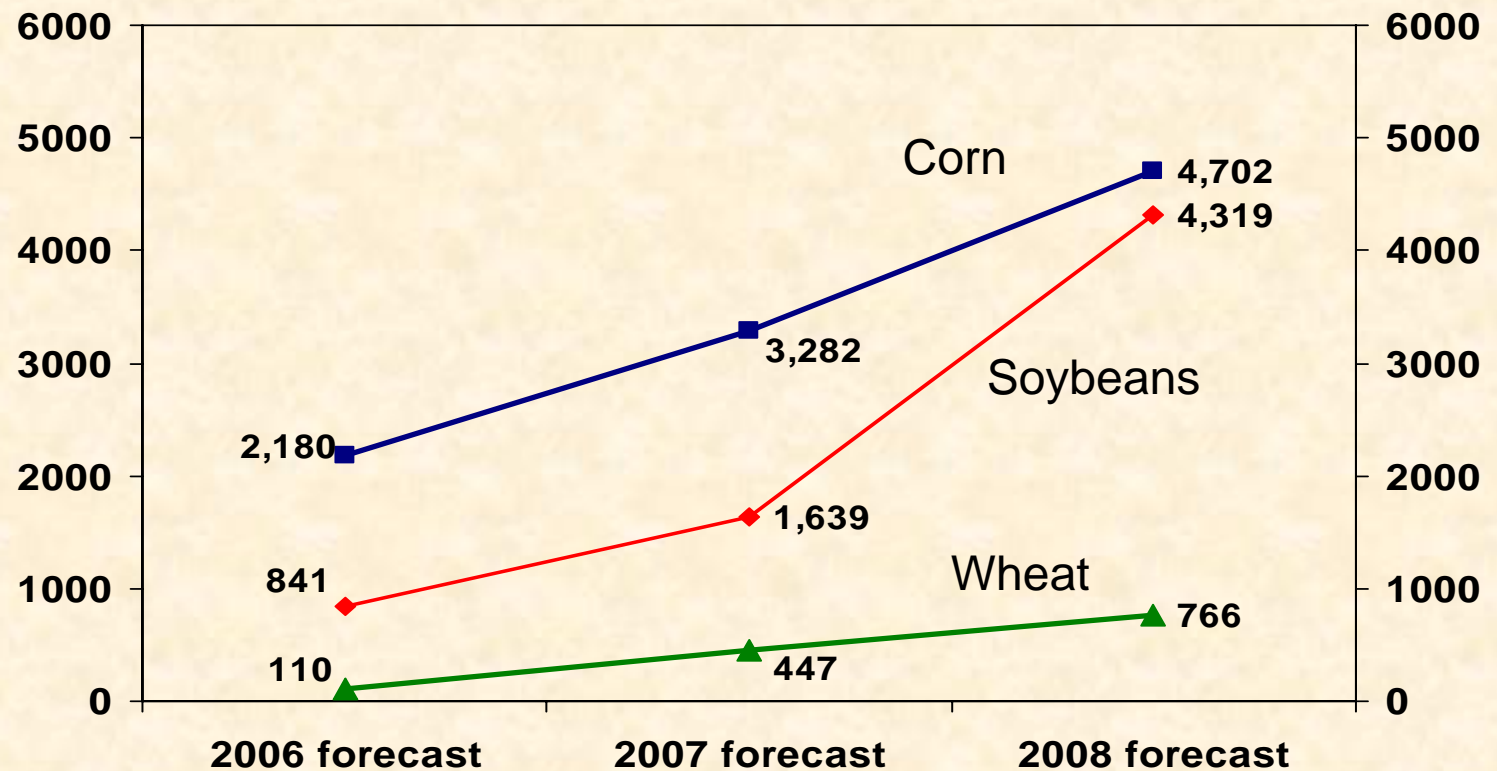


Source: Commodity Research Bureau

Boosting Returns to Crop Production.

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

Dollars per acre (average 2008 to 2015)



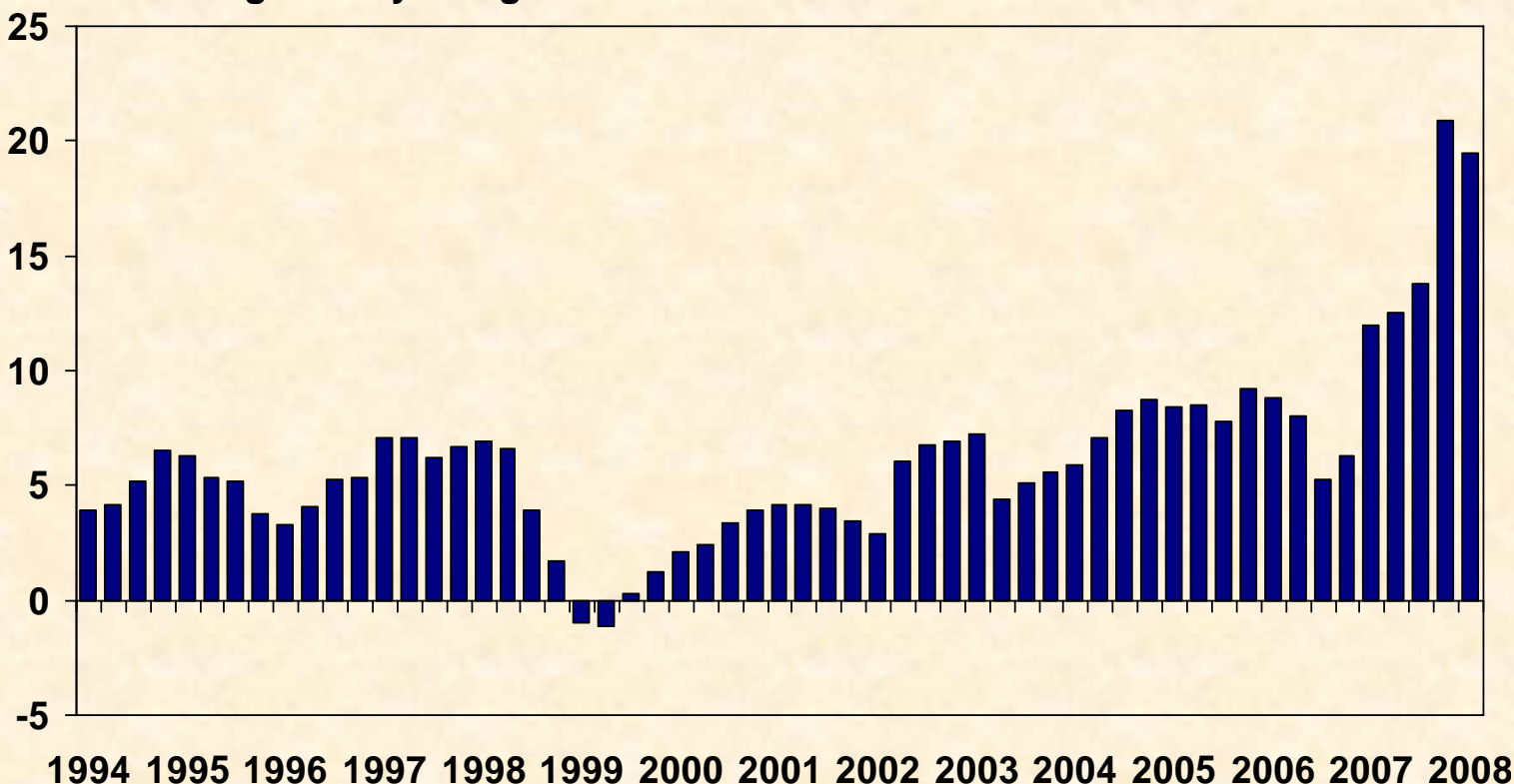
Calculations based on USDA cost and returns data and FAPRI forecasts of crop prices, yields and production costs.

Land Value Growth Has Surged In The Great Plains

Non-Irrigated Land Values

(Tenth Federal Reserve District)

Percent change from year ago



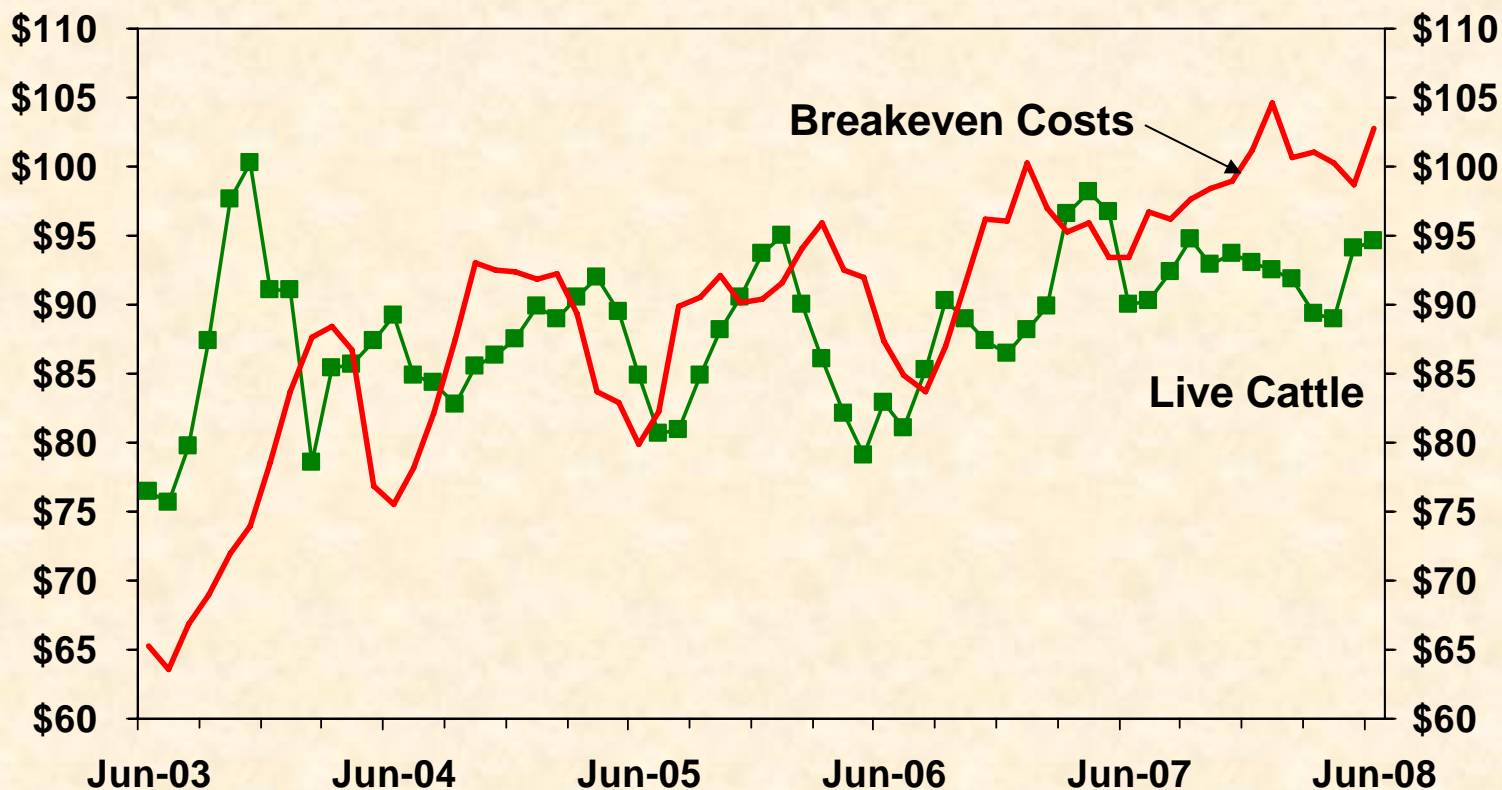
Source: Federal Reserve Bank of Kansas City

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

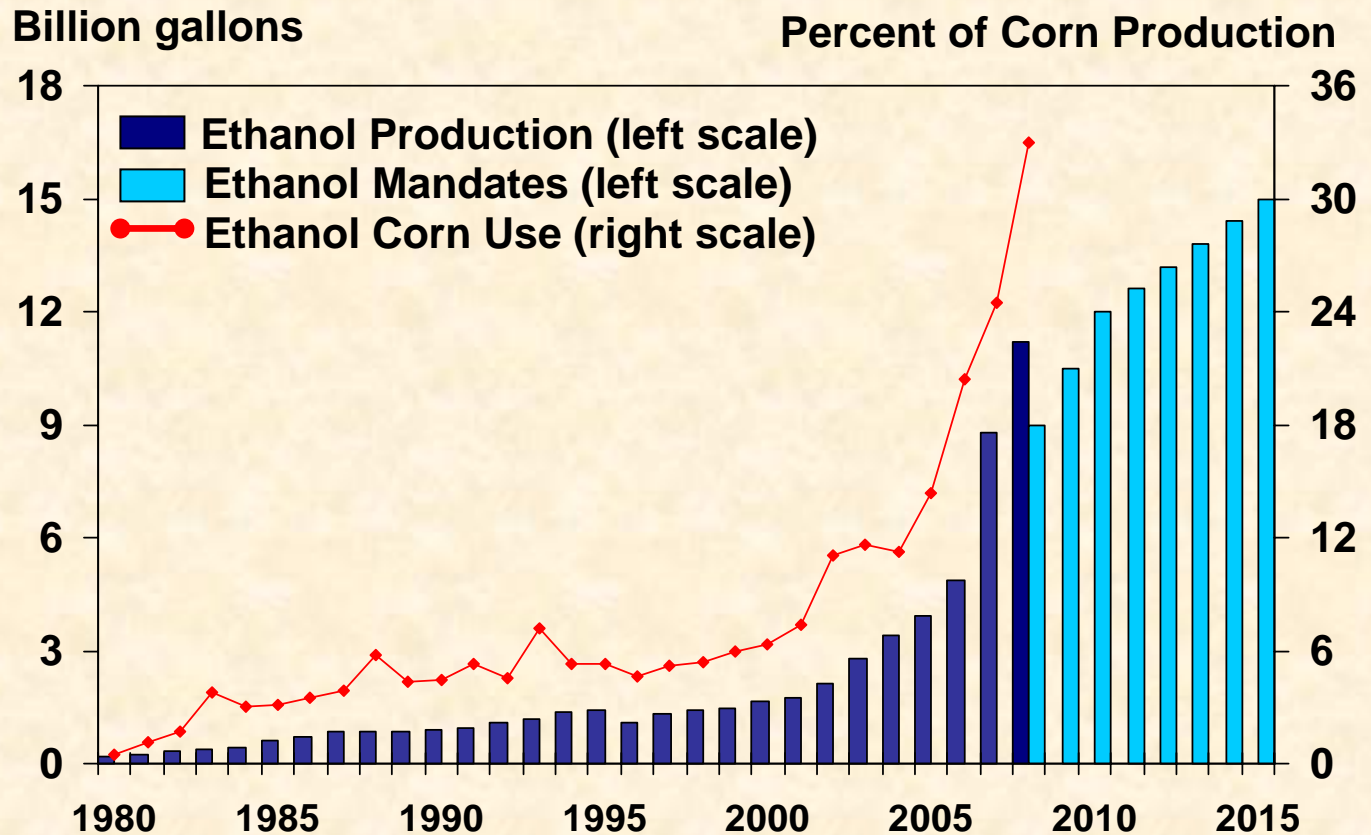
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A 15 Billion Gallon Wall?

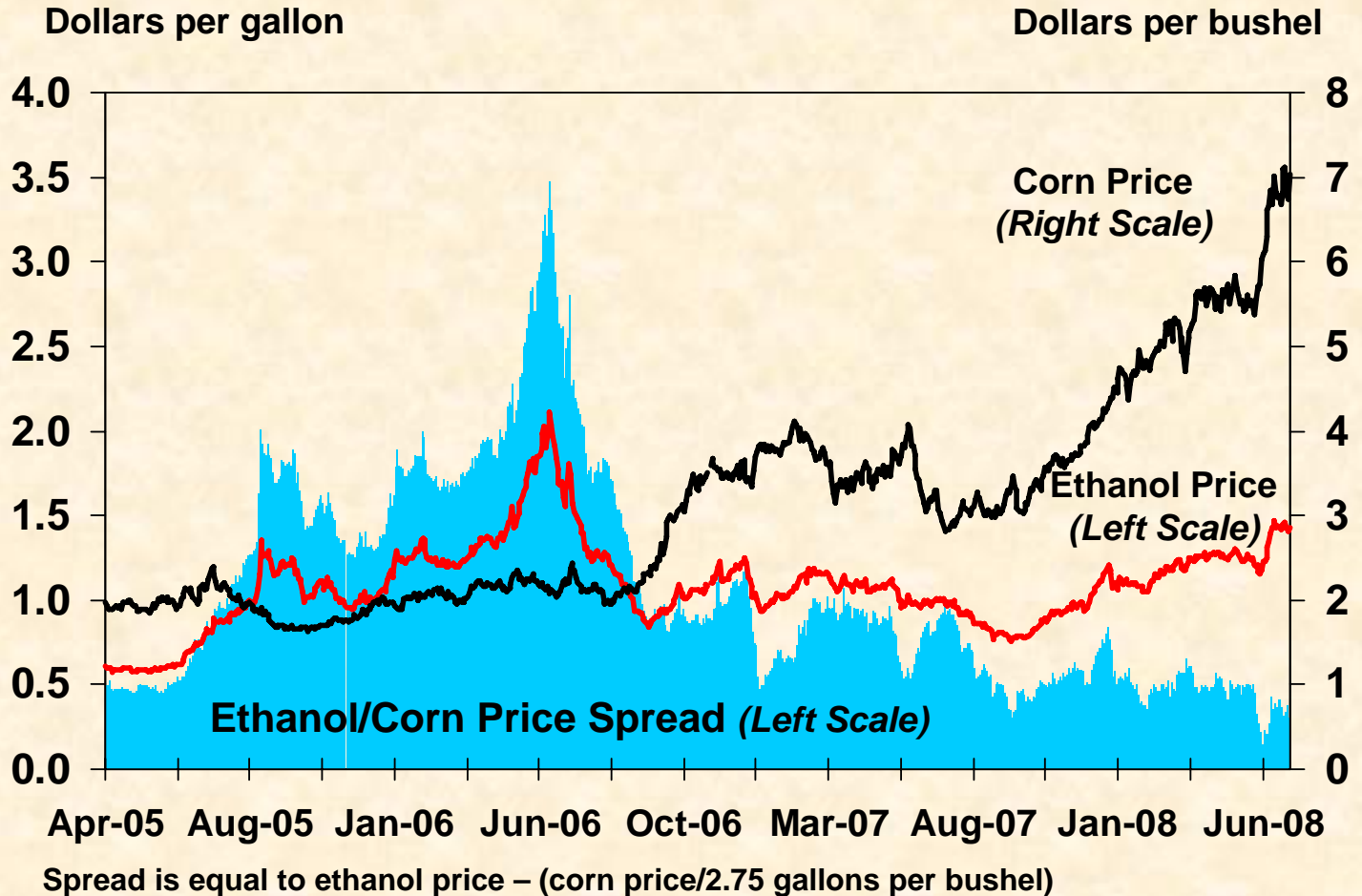
U.S. Ethanol Production, Mandates, and Corn Use



Source: USDA and Renewable Fuels Association

Ethanol: Is The Party Over?

Ethanol and Corn Prices



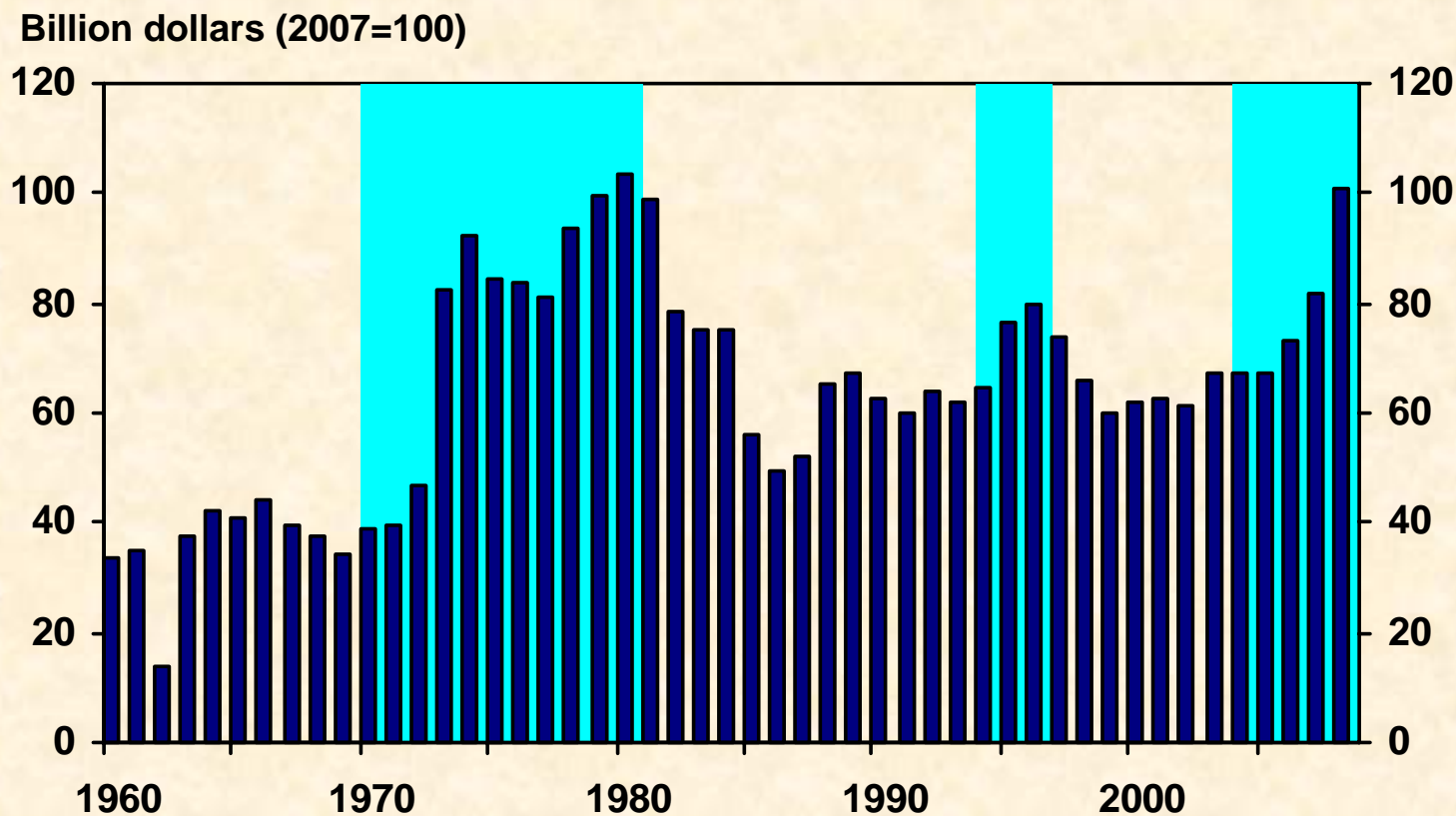
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U.S. Real Agricultural Exports Have Surged . . .

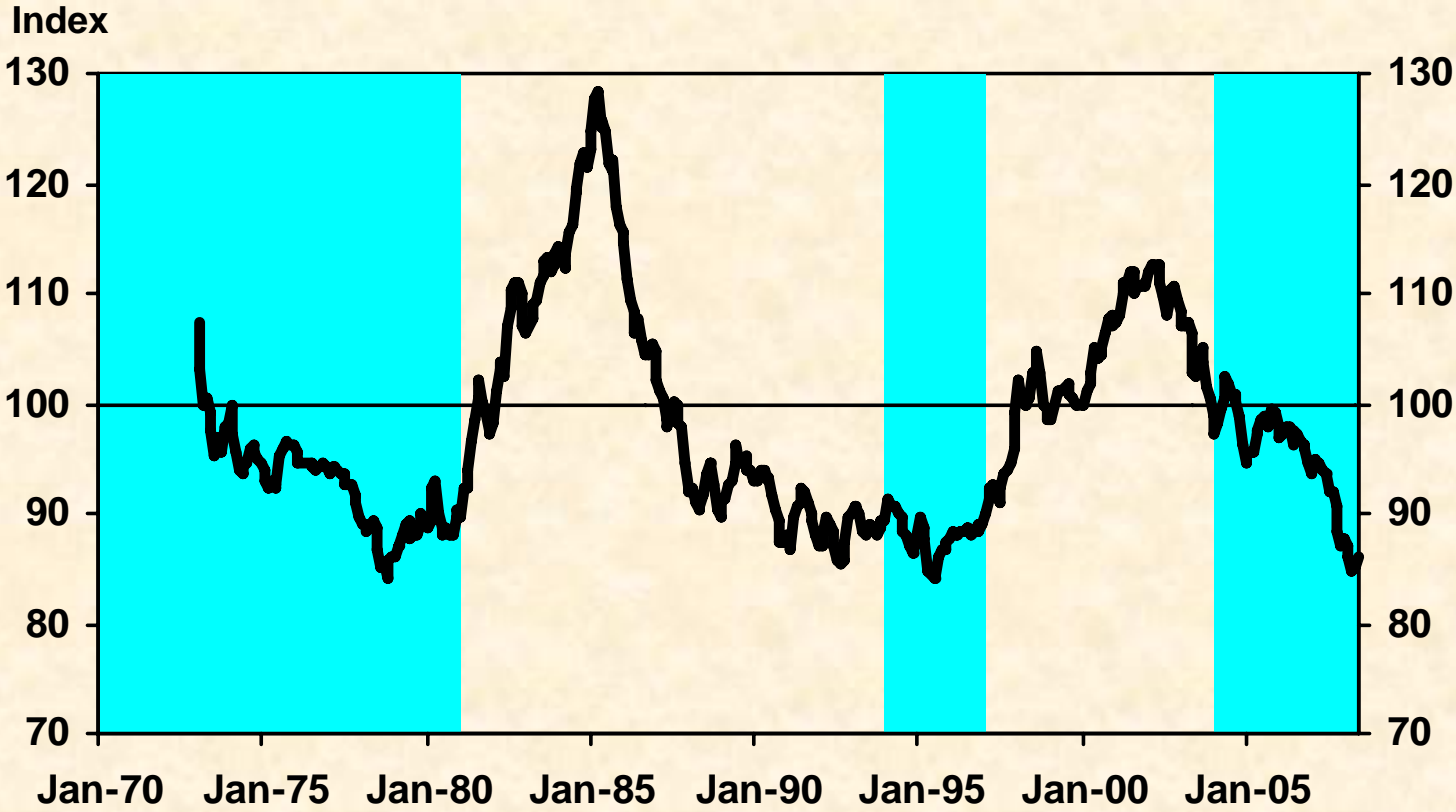
U.S. Agricultural Exports



Source: USDA

As the Value of the Dollar has Fallen.

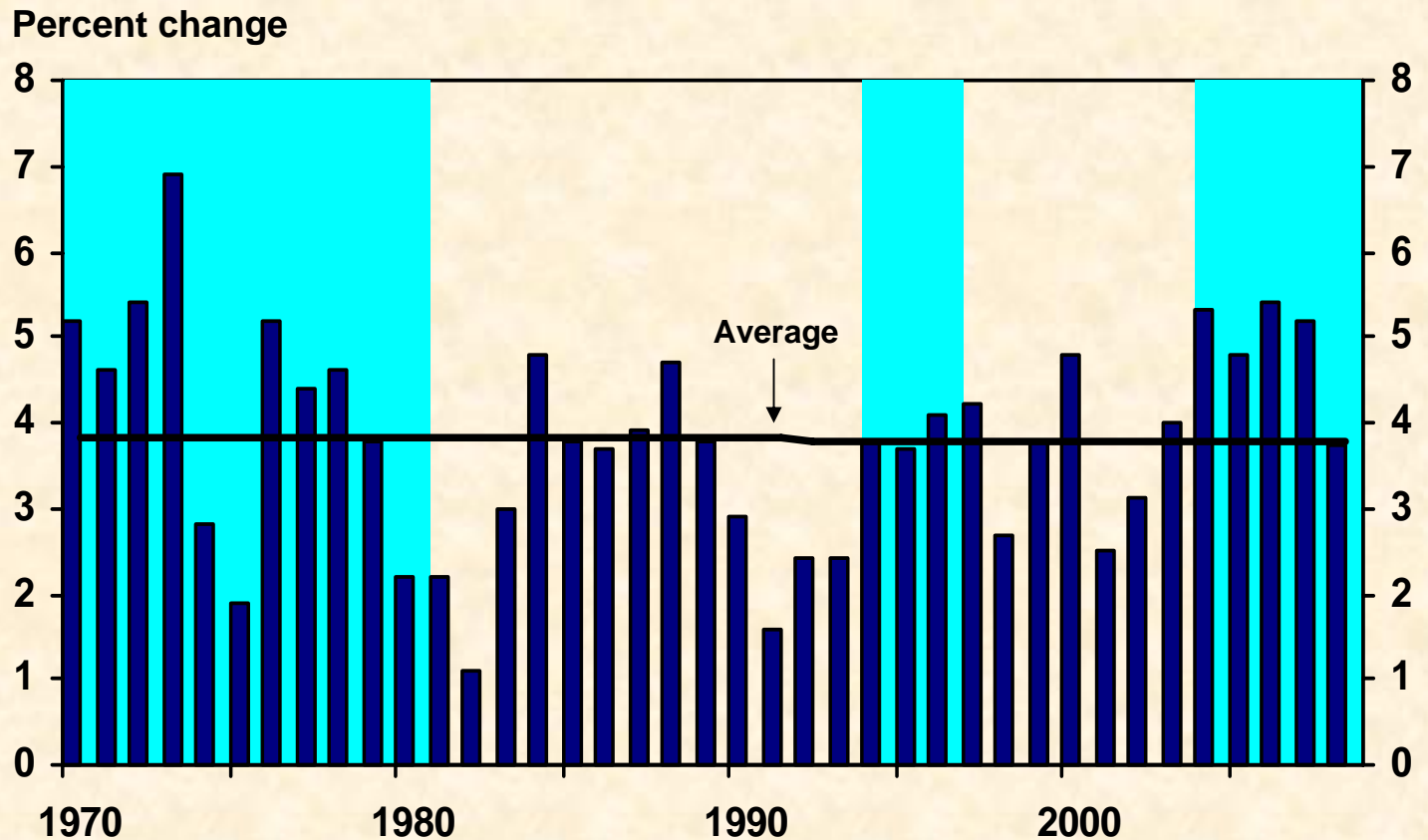
Value of U.S. Dollar



Source: Federal Reserve Board of Governors

World GDP Growth is Robust . . .

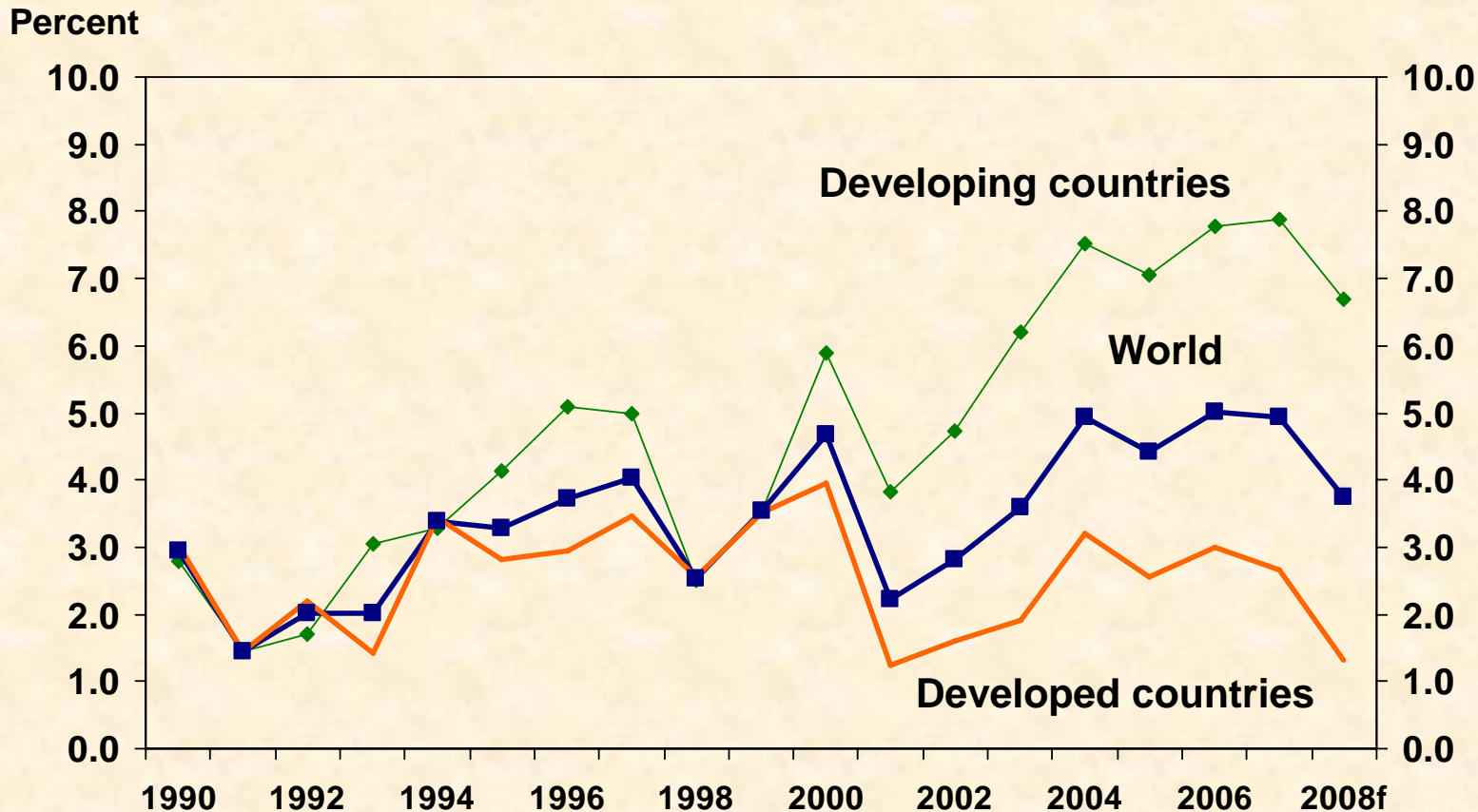
World GDP Growth



Source: International Monetary Fund

Fueled by Growth in Developing Countries.

World GDP Growth



Source: International Monetary Fund

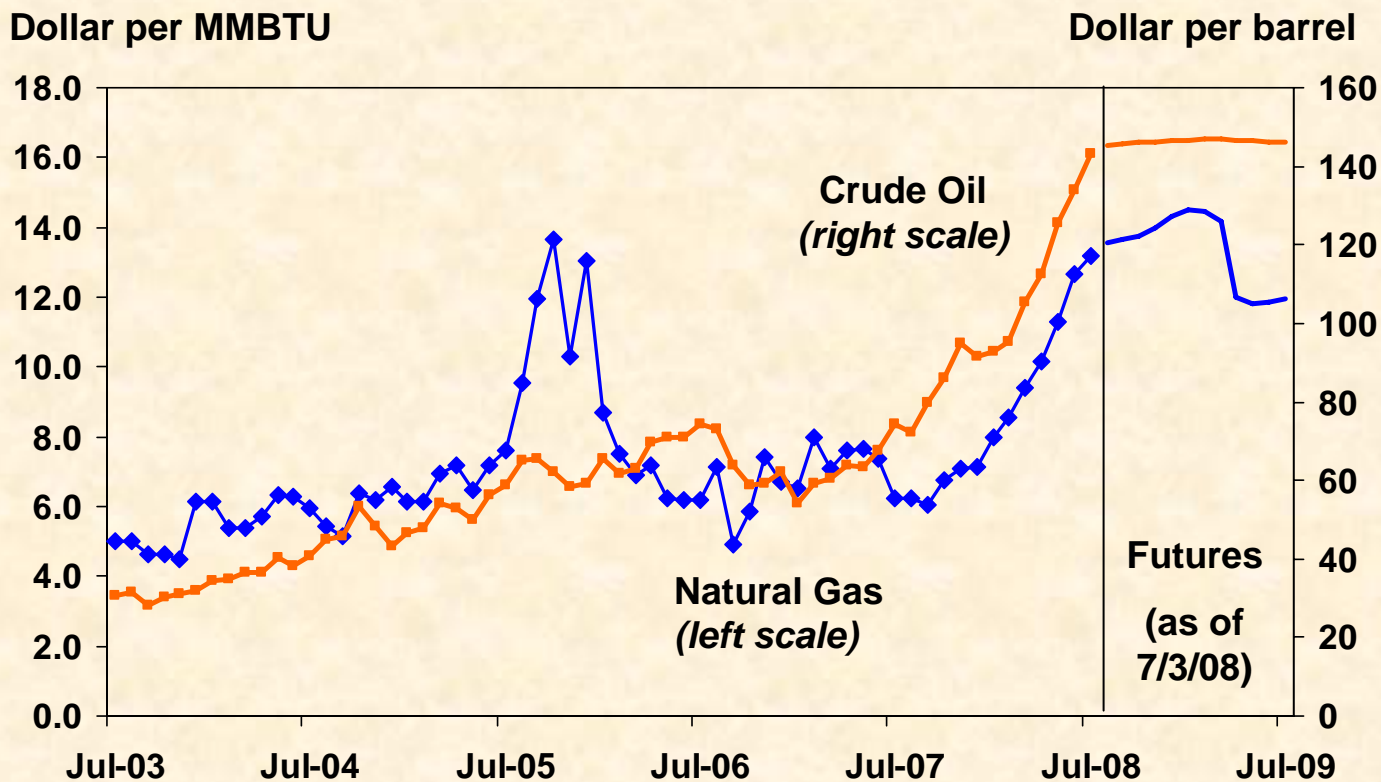


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Strong Global Demand and Supply Concerns Boost Energy Prices

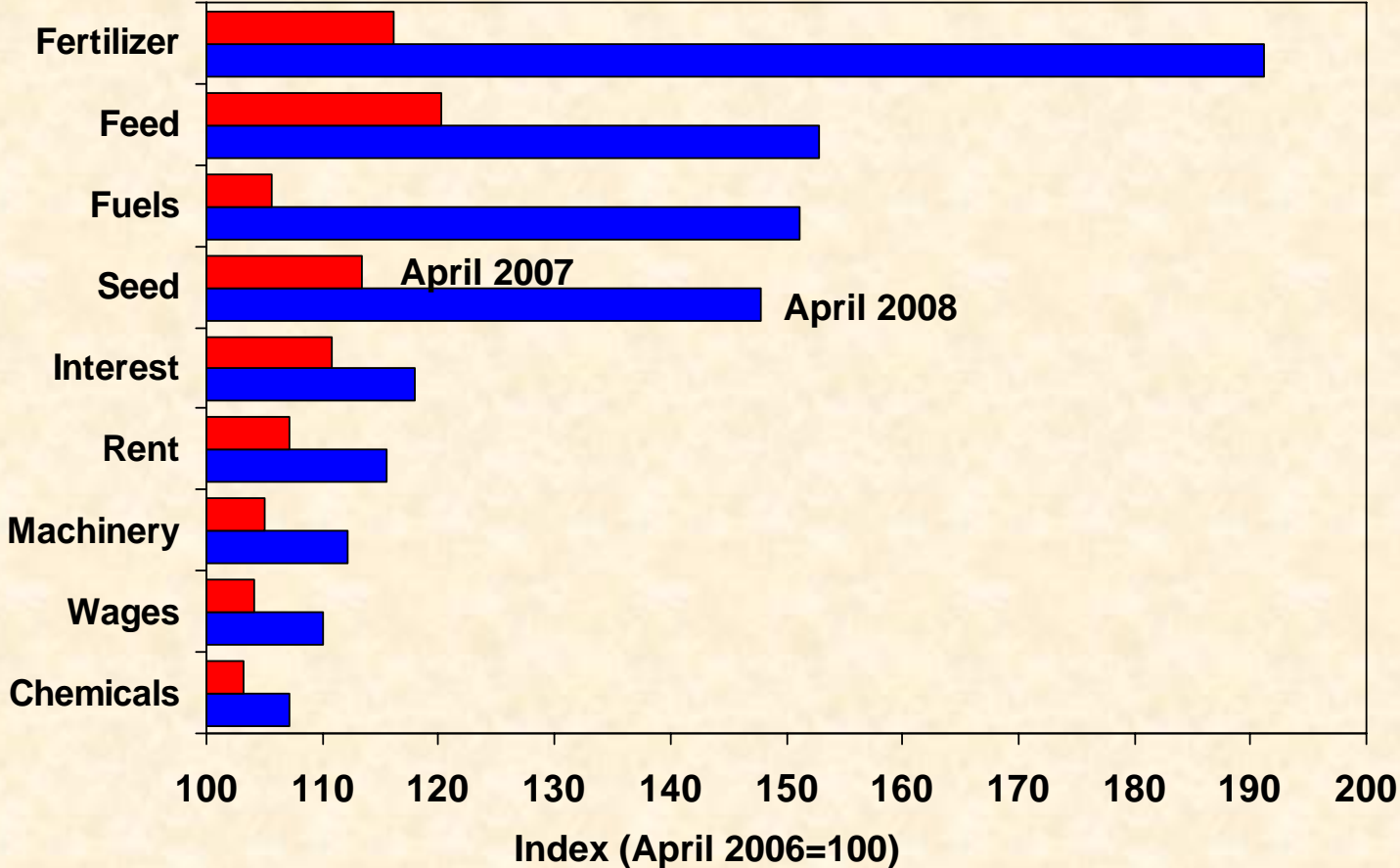
Energy Prices



Source: Bloomberg

Farm Input Costs Rise More than Expected

U.S. Farm Input Prices Paid Index




Source: USDA



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A New Economy is Built on Productivity

Productivity

$$\begin{array}{l} \text{Value} \\ \text{per} \\ \text{Input} \end{array} = \begin{array}{l} \text{Value} \\ \text{per} \\ \text{Output} \end{array} \times \begin{array}{l} \text{Output} \\ \text{Per} \\ \text{Input} \end{array}$$

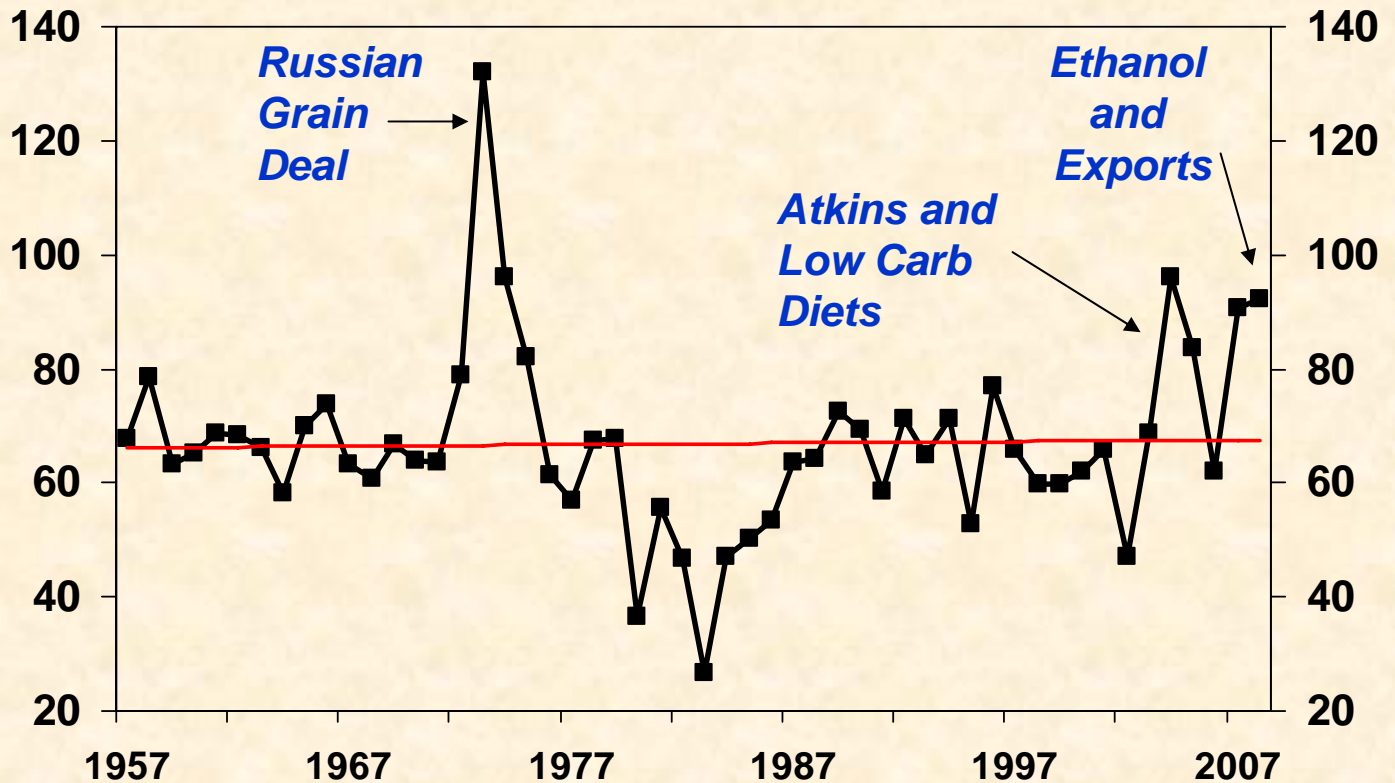
- **Efficiency: Output per Input**
The ability to create more things with fewer inputs.
(Bushels per acre)
- **Value: Value per Output**
The ability to create things of higher value.
(Dollars per bushel)

***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)

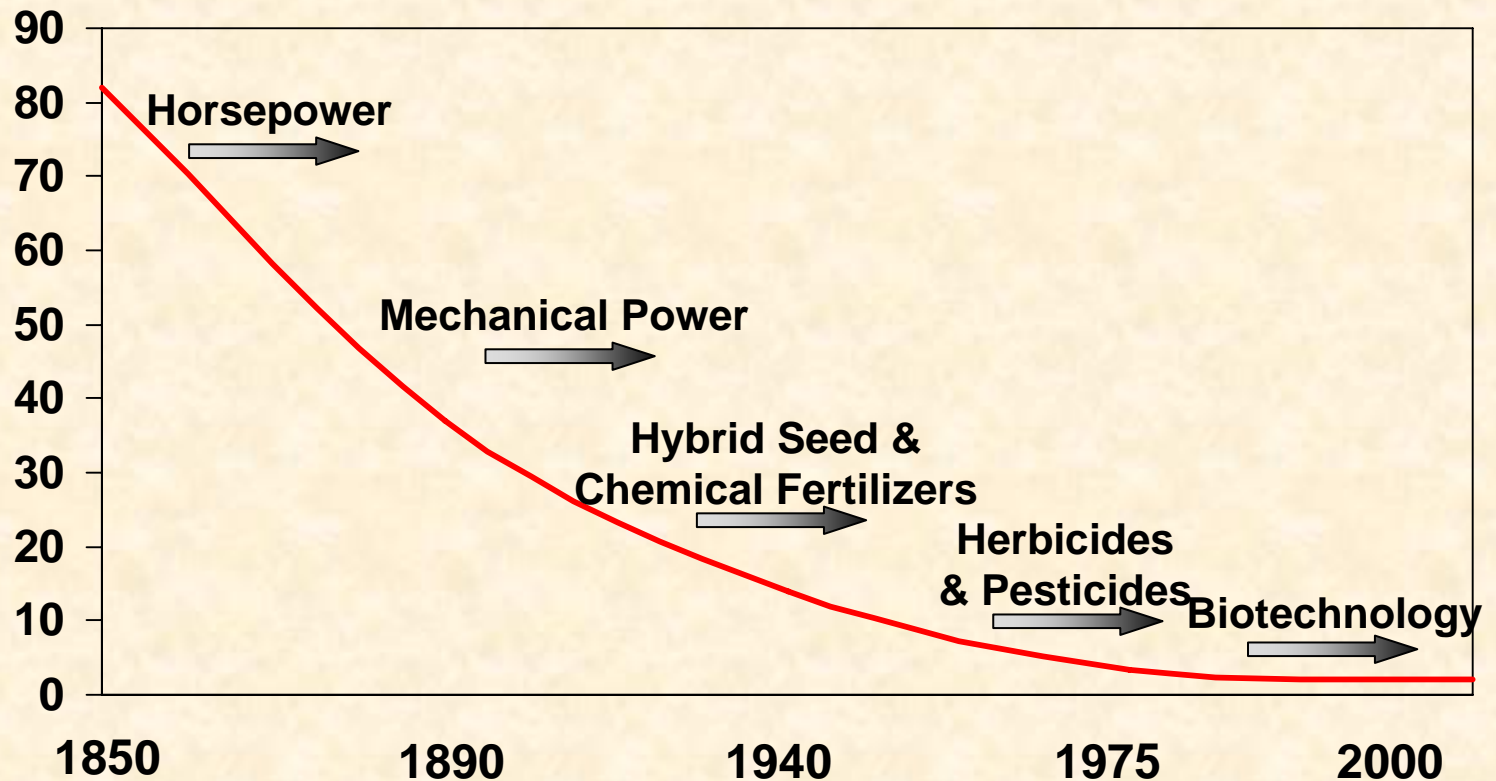


Source: USDA

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



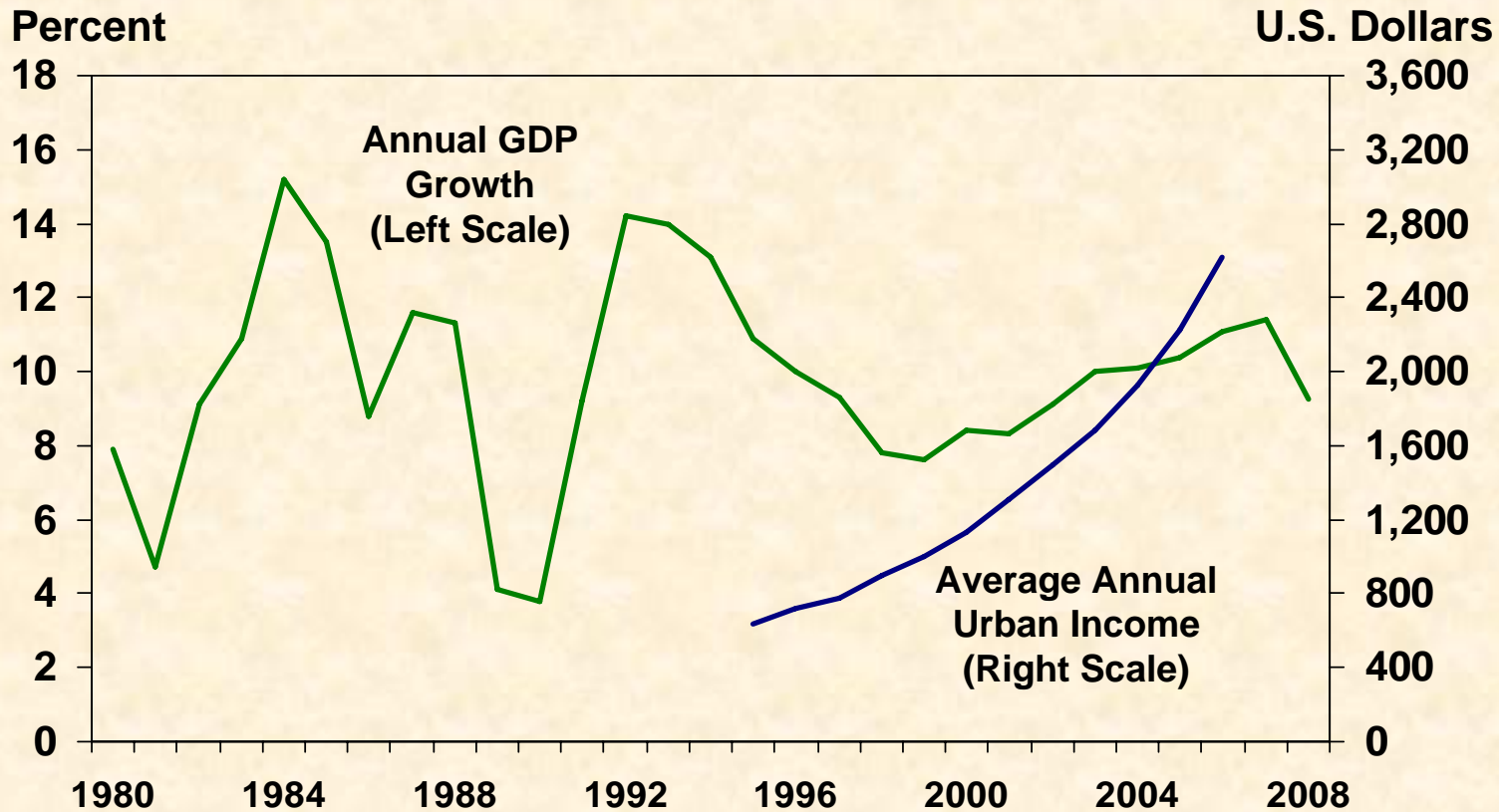


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A Rising Middle-Class in China Changes World Demographics.

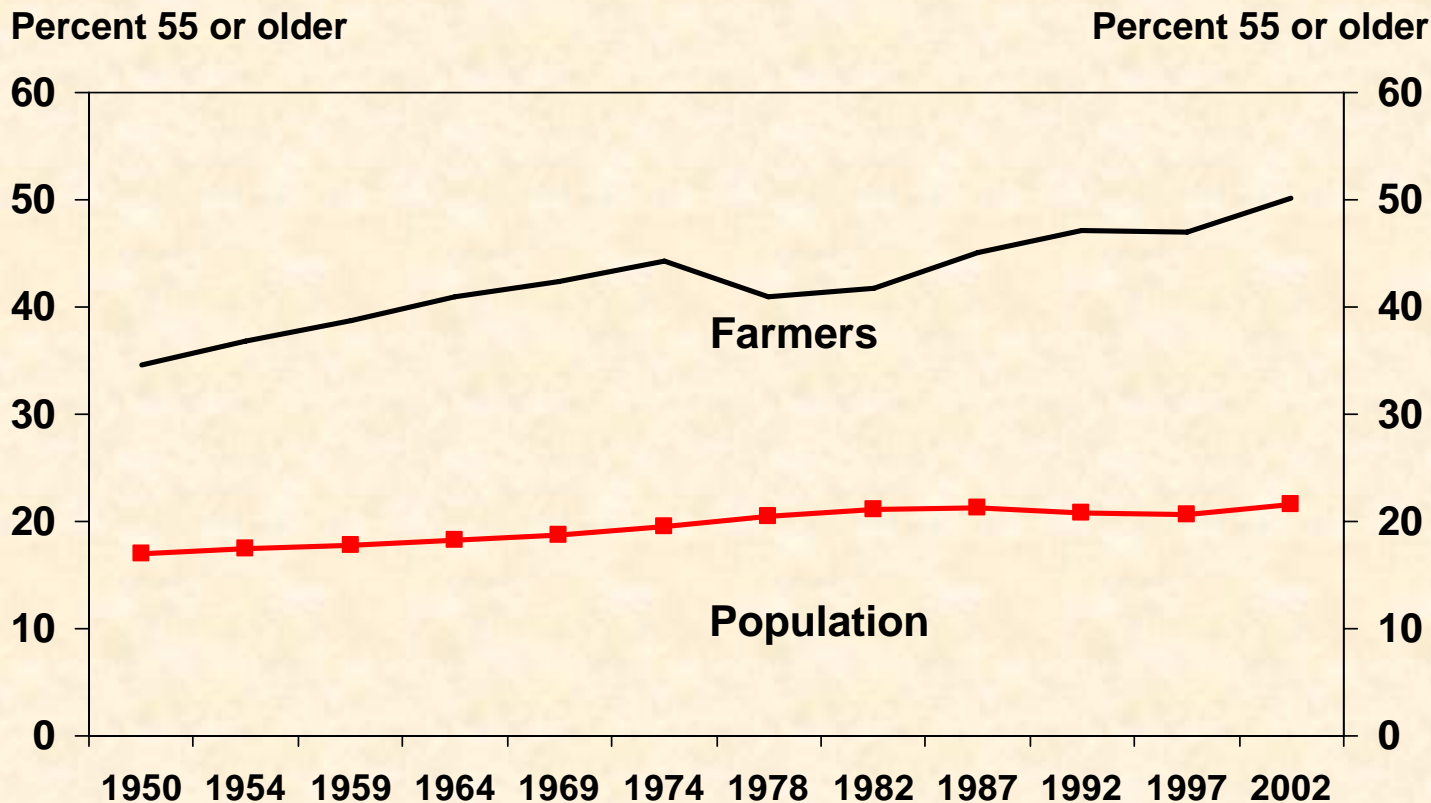
Economic Growth in China



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.**

