

The Outlook for the Swine Industry and Its Relationship with the Global Economy

Allen D. Lemman Swine Conference
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How will agriculture and the swine industry fare in today's economic climate?

- Through the recession and financial crisis of 2008-2009, most of agriculture held up quite well.
 - Rural economies benefited, but slumping demand curtailed livestock profits
- The U.S. and global economy are recovering from a steep contraction in growth. Still, there are plenty of questions surrounding the sustainability of future growth.
- To address the question above, ten opportunities and corresponding challenges are identified.

Opportunities and Challenges for Agriculture

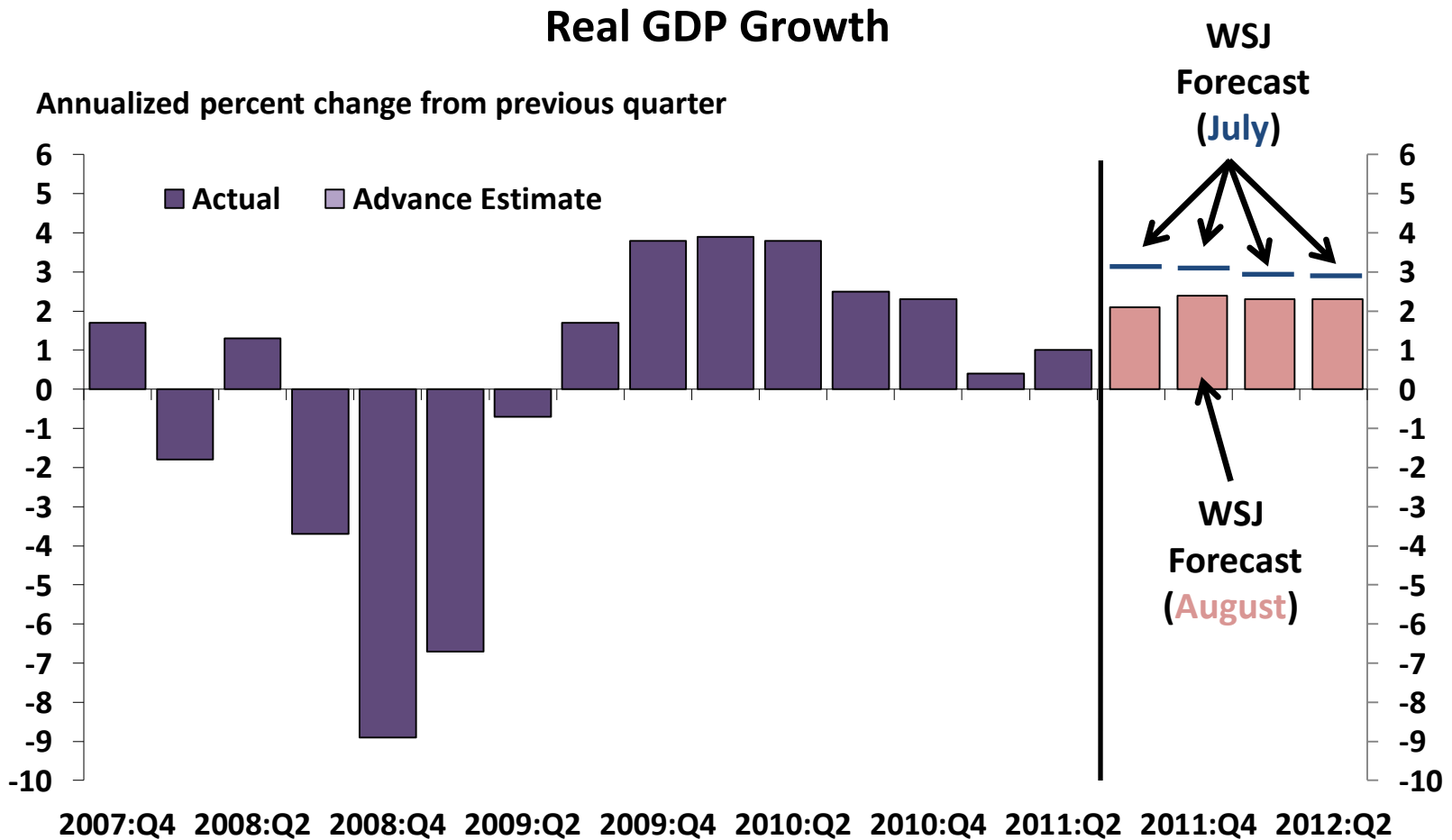
Opportunities

1) Economy is recovering

Challenges

1) Recovery is anemic

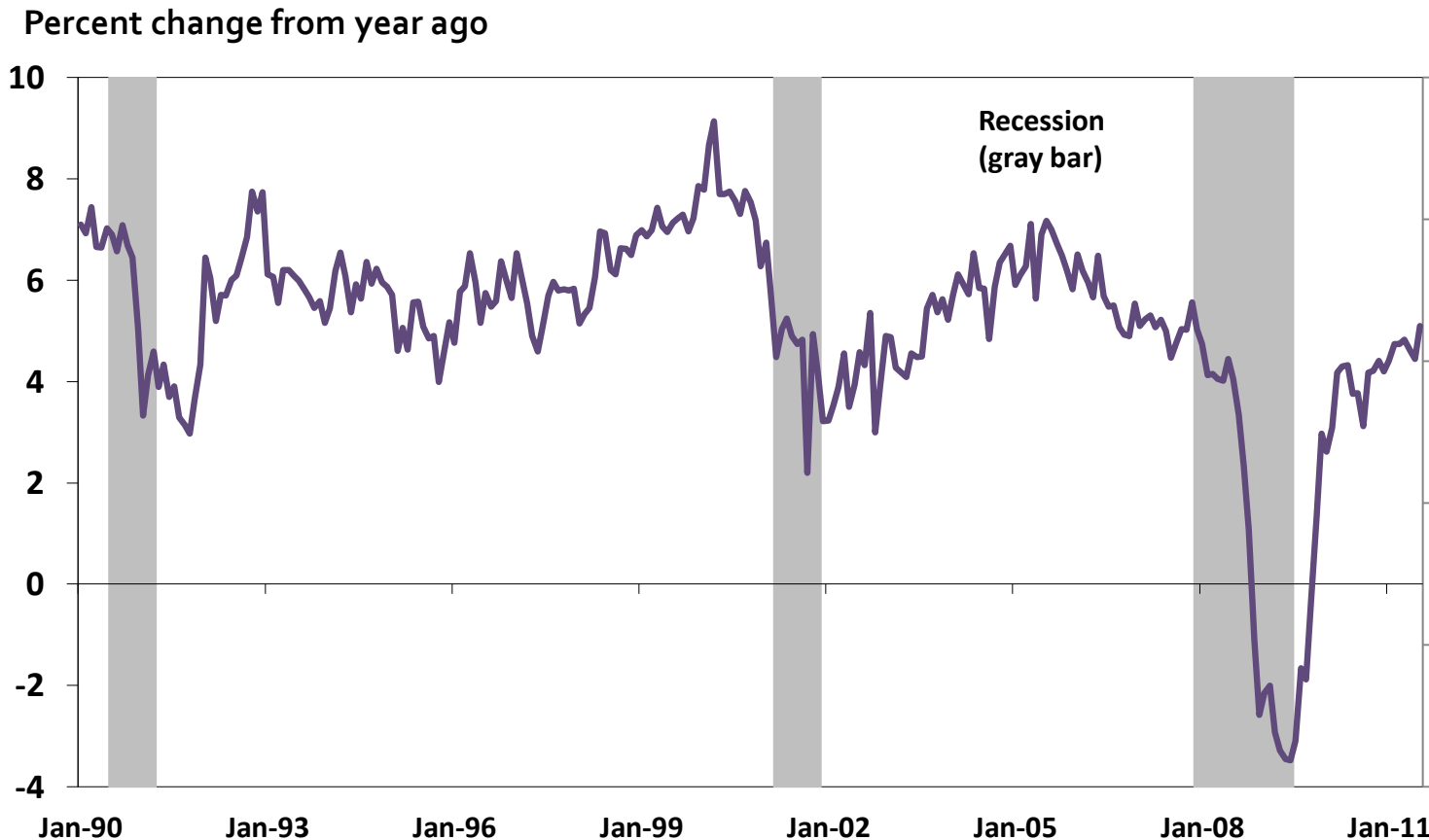
Soft data has curbed growth and dampened forecasts



Source: Bureau of Economic Analysis and Wall Street Journal July and August 2011 Forecast Survey (Average)

Consumption growth is key for the economic recovery in the U.S.

Personal Consumption Expenditures



Source: Bureau of Economic Analysis

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Opportunities

- 1) Economy is recovering
- 2) Food expenditures are rising

Challenges

- 1) Recovery is anemic
- 2) Elevated unemployment rate

After slumping in 2008-2009, food sales have rebounded.

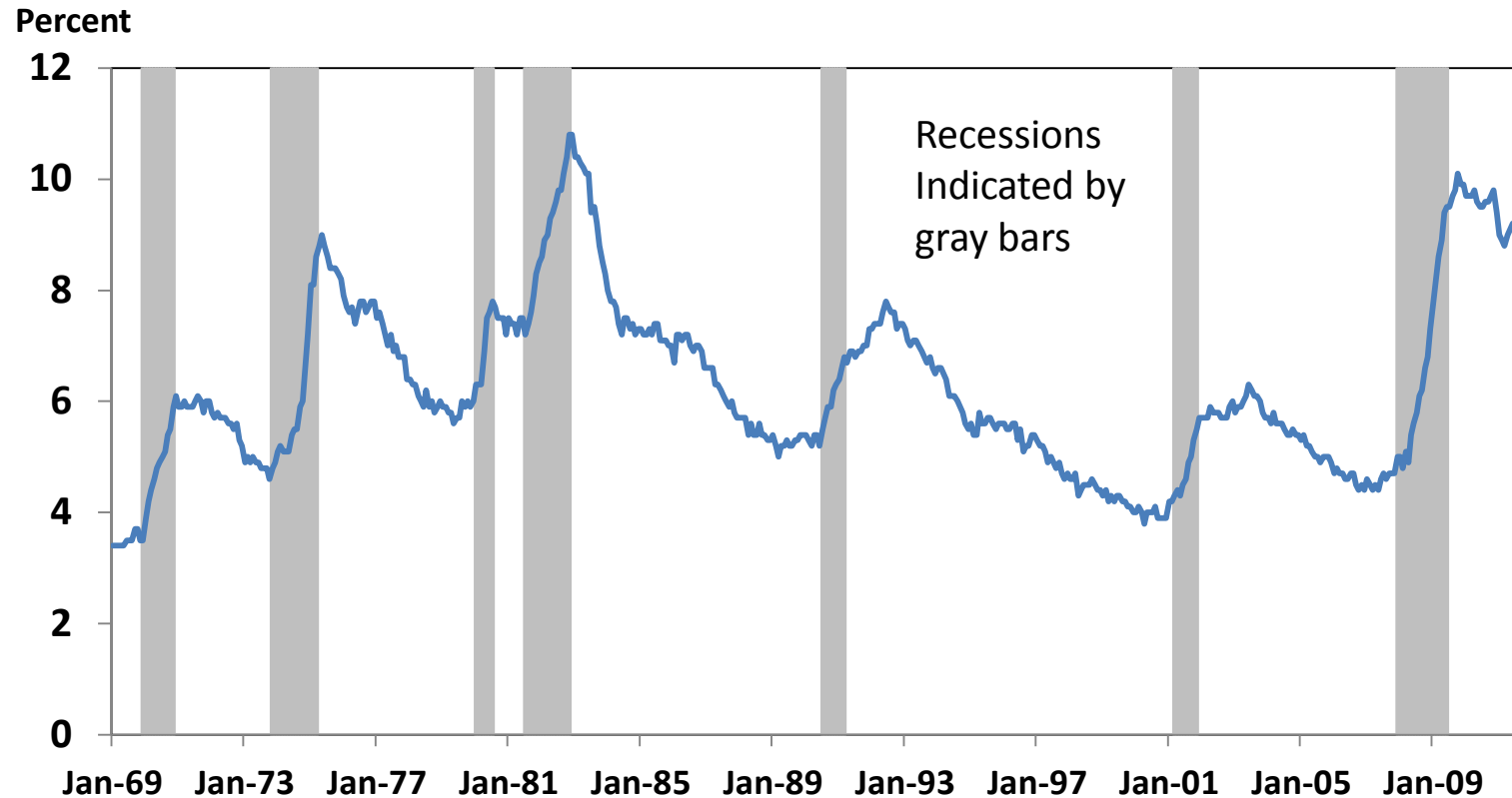
Food Retail Sales



Source: U.S. Census Bureau

An elevated unemployment rate weighs on consumption.

U.S. Unemployment Rate



Source: Bureau of Labor Statistics

Opportunities and Challenges for Agriculture

Opportunities

- 1) Economy is recovering
- 2) Food expenditures are rising
- 3) Business and financial markets have improved

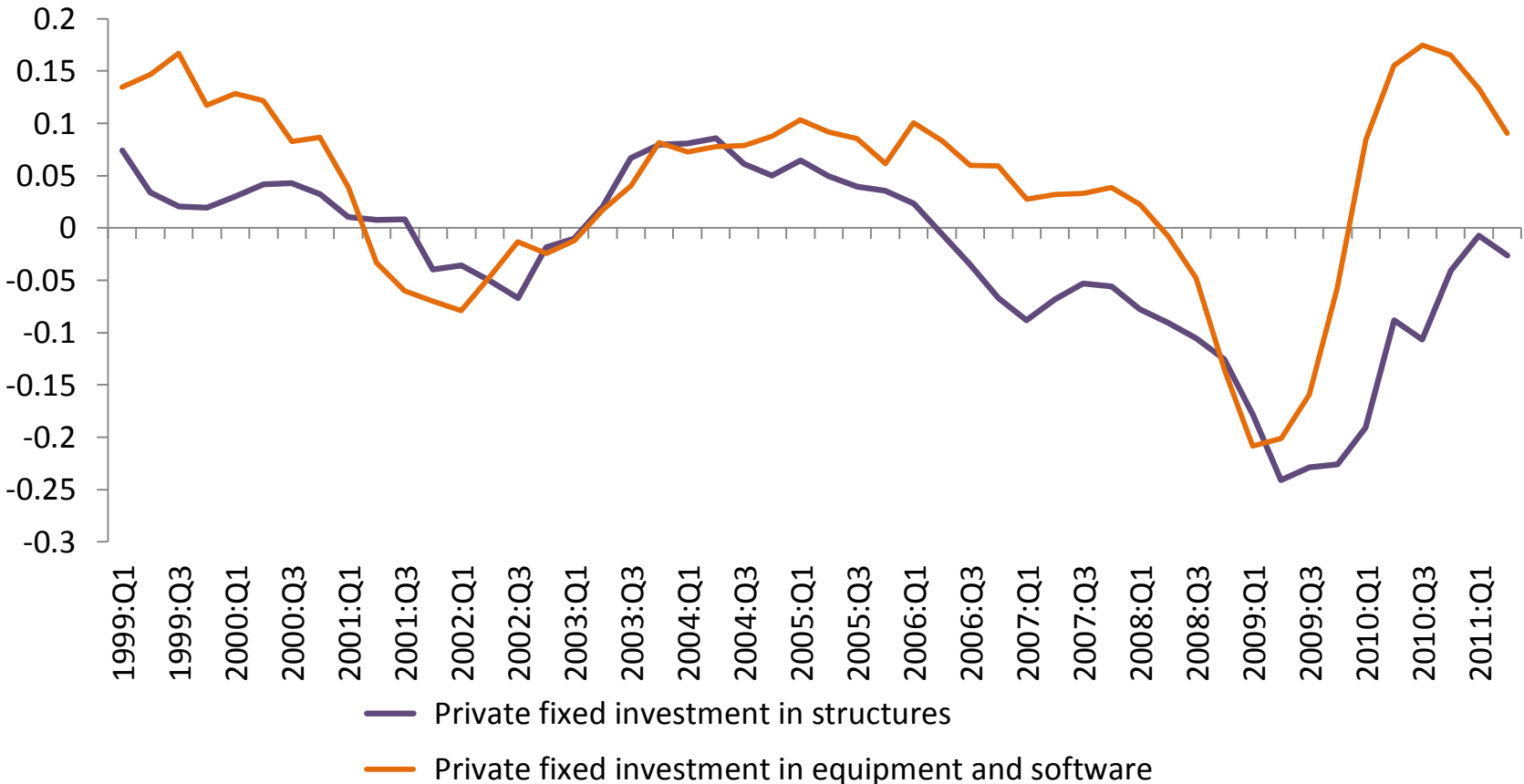
Challenges

- 1) Recovery is anemic
- 2) Elevated unemployment rate
- 3) Uncertainty abounds

Since 2008, business investment has improved, but will it continue?

Nonresidential Private Fixed Investment

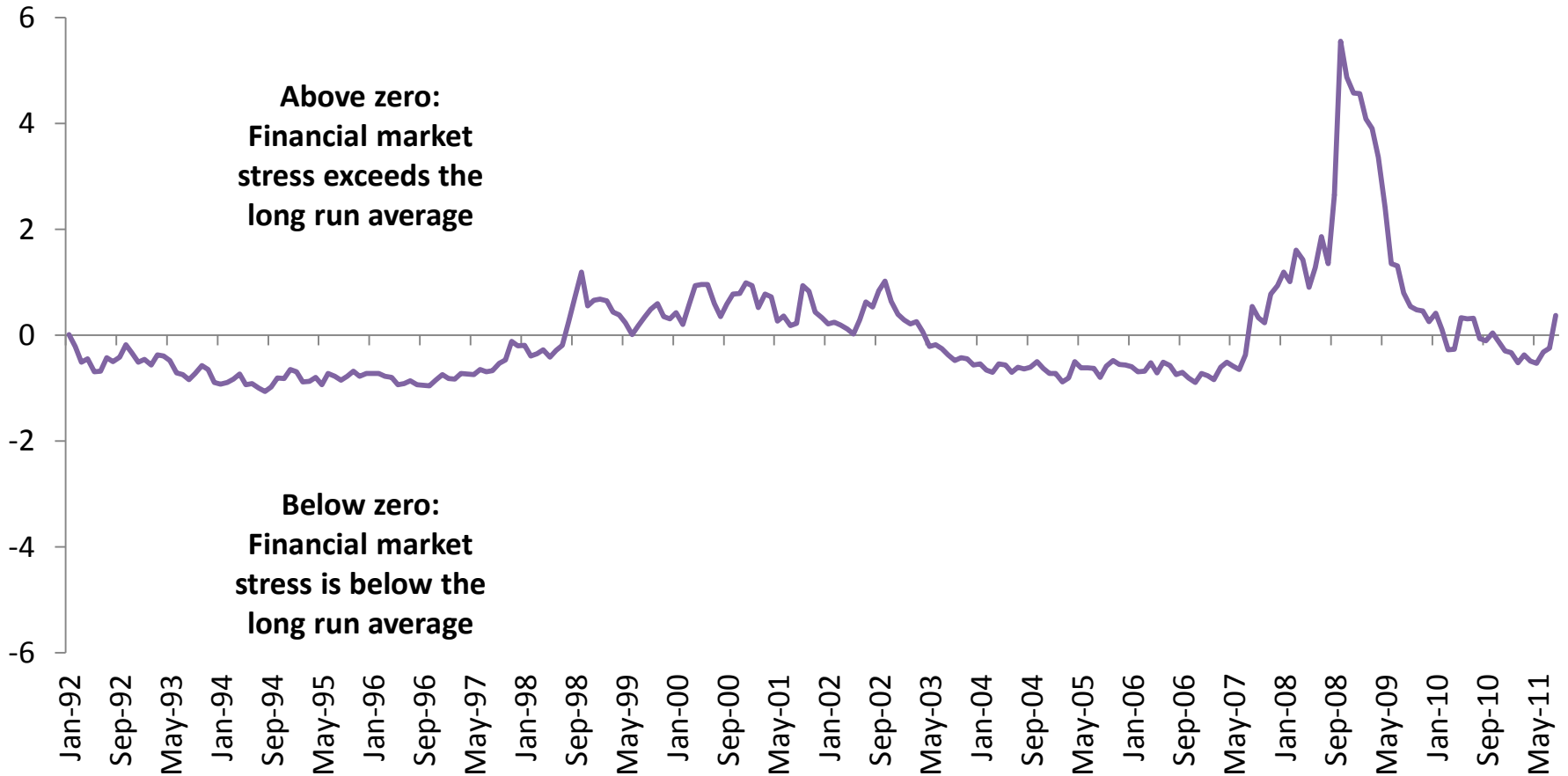
Percent change from year ago



Source: U.S. Census Bureau

Since the financial crisis of 2008, financial stress has eased considerably.

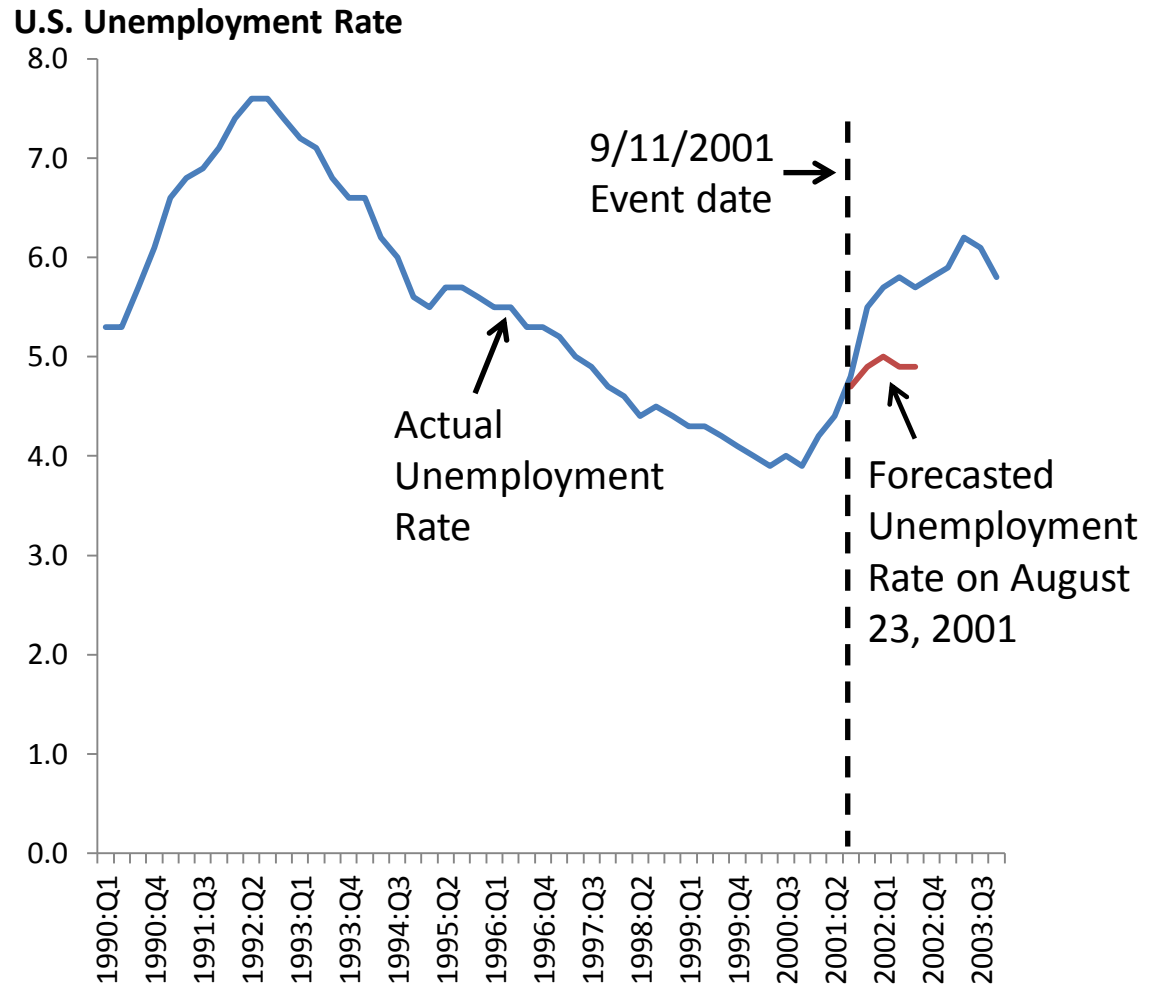
Financial Stress Index (FRBKC)



Source: Federal Reserve Bank of Kansas City

In general, uncertainty hinders household and business decision making.

- According to economic theory, uncertainty will cause households and firms to take a 'wait-and-see' approach when making decisions.
- In a number of articles, Nicholas Bloom supports theory through empirical findings.
 - Unemployment rate following 9/11/2001



Source: Bureau of Labor and Statistics, Survey of Professional Forecasters

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Opportunities

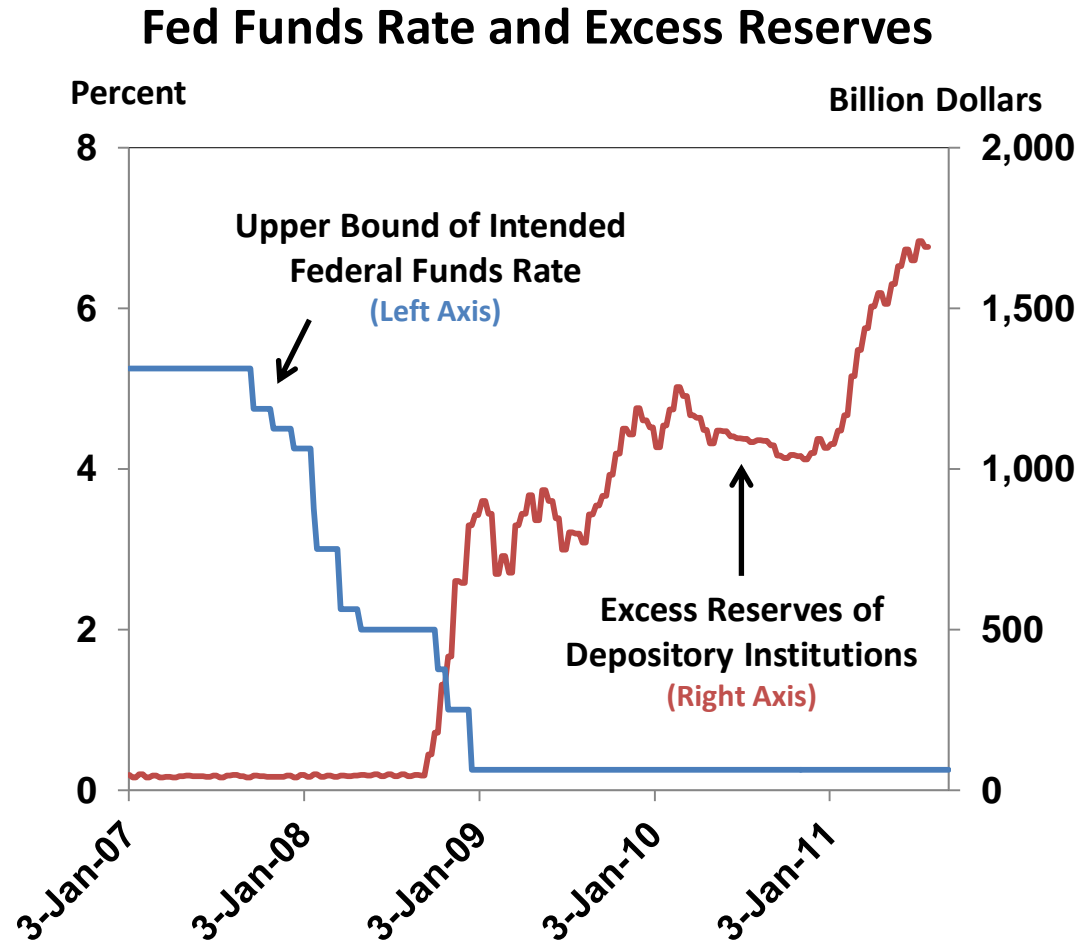
- 1) Economy is recovering
- 2) Food expenditures are rising
- 3) Business and financial markets have improved
- 4) Low cost of borrowing

Challenges

- 1) Recovery is anemic
- 2) Elevated unemployment rate
- 3) Uncertainty abounds
- 4) Inflation risk

With interest rates at historically low levels, bank liquidity has surged.

- To stimulate the economy, the Federal Open Market Committee (FOMC) dropped the Fed funds rate to the zero bound and pumped liquidity into the market (QE and QE2).
- With low interest rates, large amounts of liquidity and limited to no borrowing activity, excess reserves of depository institutions held at the Fed surged.
- Could this set the stage for a rapid rise in future inflation?



Source: Federal Reserve Board of Governors

To understand the current environment for inflation, it is helpful to pull a page from Econ 101.

A rapid rise in inflation occurs when **too much money is chasing too few goods.**

Quantity Theory of Money

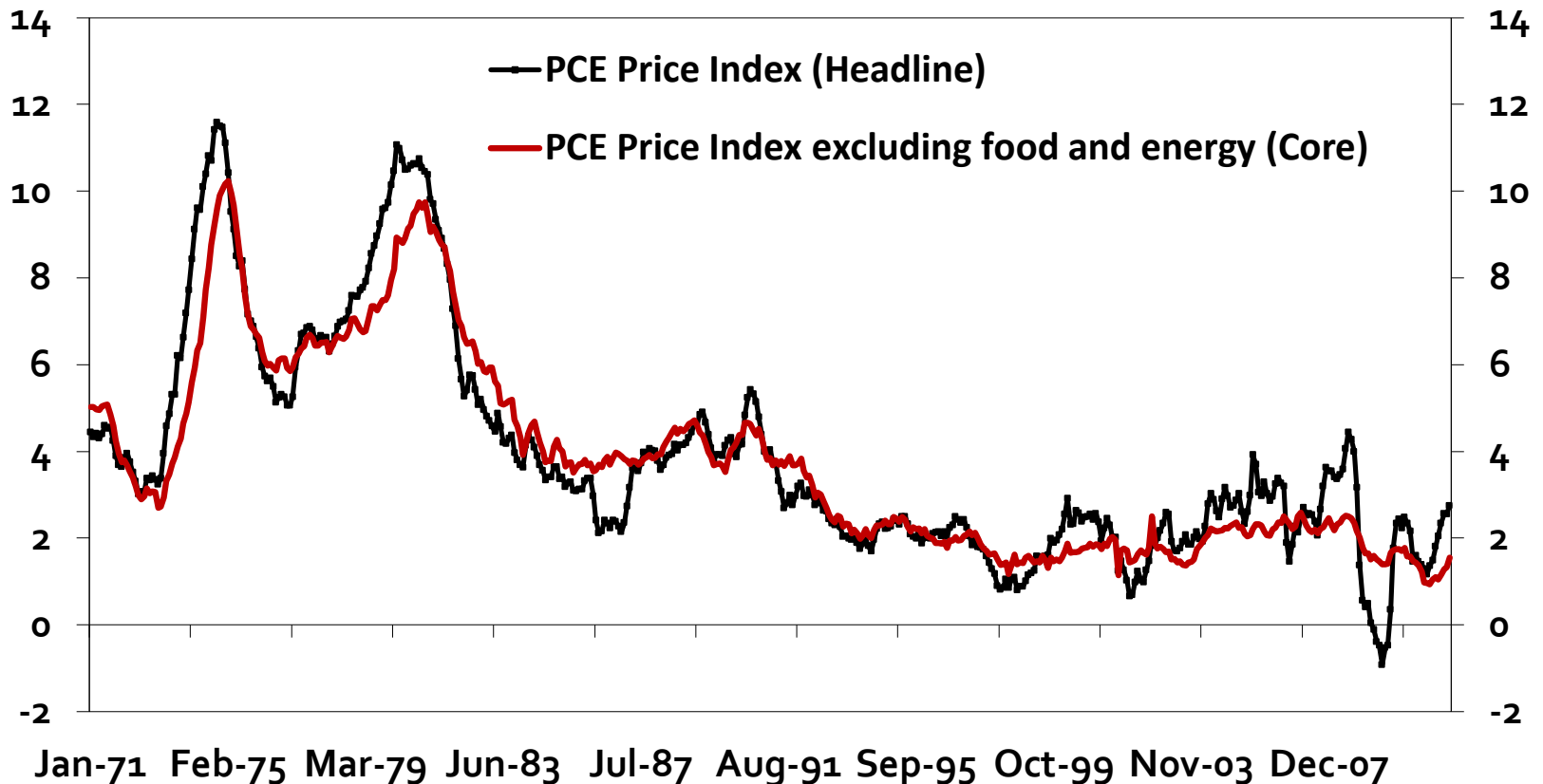
$$Price = \frac{Money * Velocity}{Quantity\ of\ Goods} = \frac{M * V}{Q}$$

So, for rapid price inflation: $\frac{M \uparrow * V \uparrow}{Q \downarrow}$

Today, headline and core inflation remain well below levels experienced during the 1970s and 1980s.

Personal Consumption Expenditures Price Index

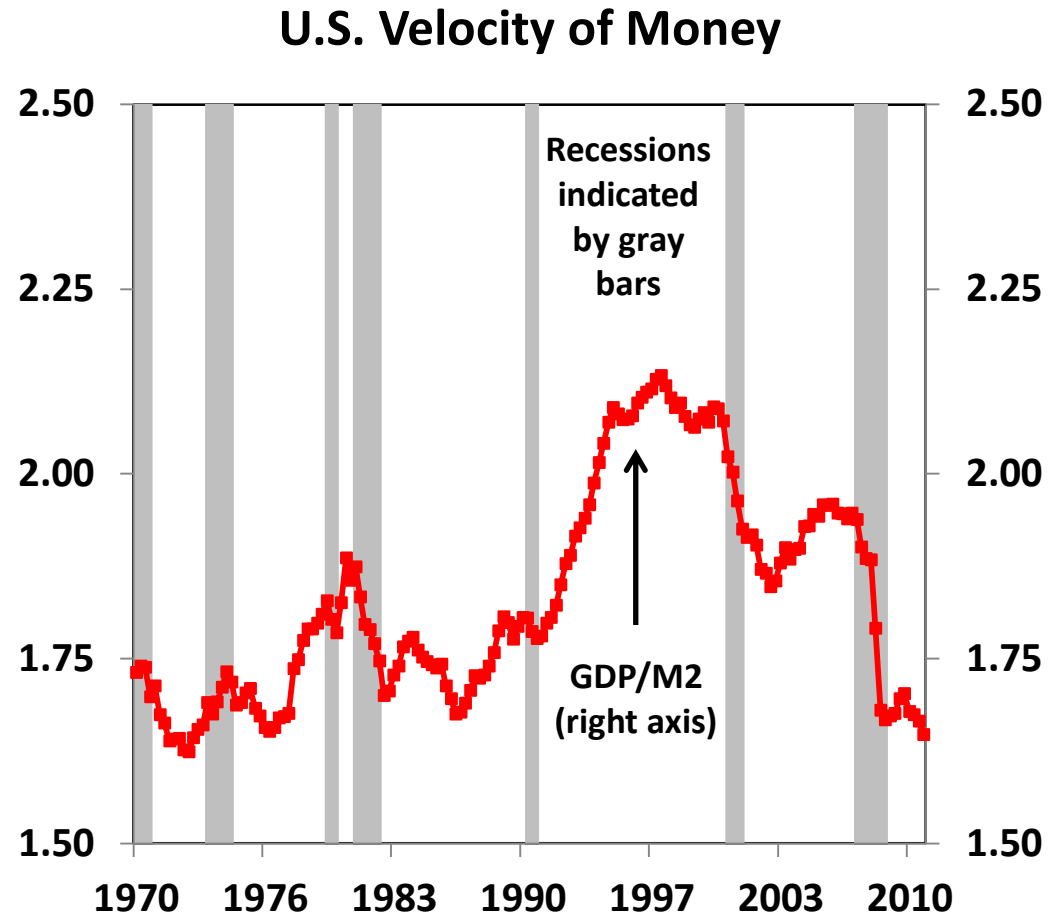
Percent change from previous year



Source: Bureau of Economic Analysis

Why is inflation low? Velocity has plummeted.

- One way to measure velocity is by calculating the ratio of gross domestic product (GDP) to money (M2).
- This ratio is essentially a turnover ratio of how quickly money is turned into output.
- Today, velocity is very low. So, what will it take to raise velocity, and when might this happen?



Source: BEA and Federal Reserve Board of Governors

Opportunities and Challenges for Agriculture

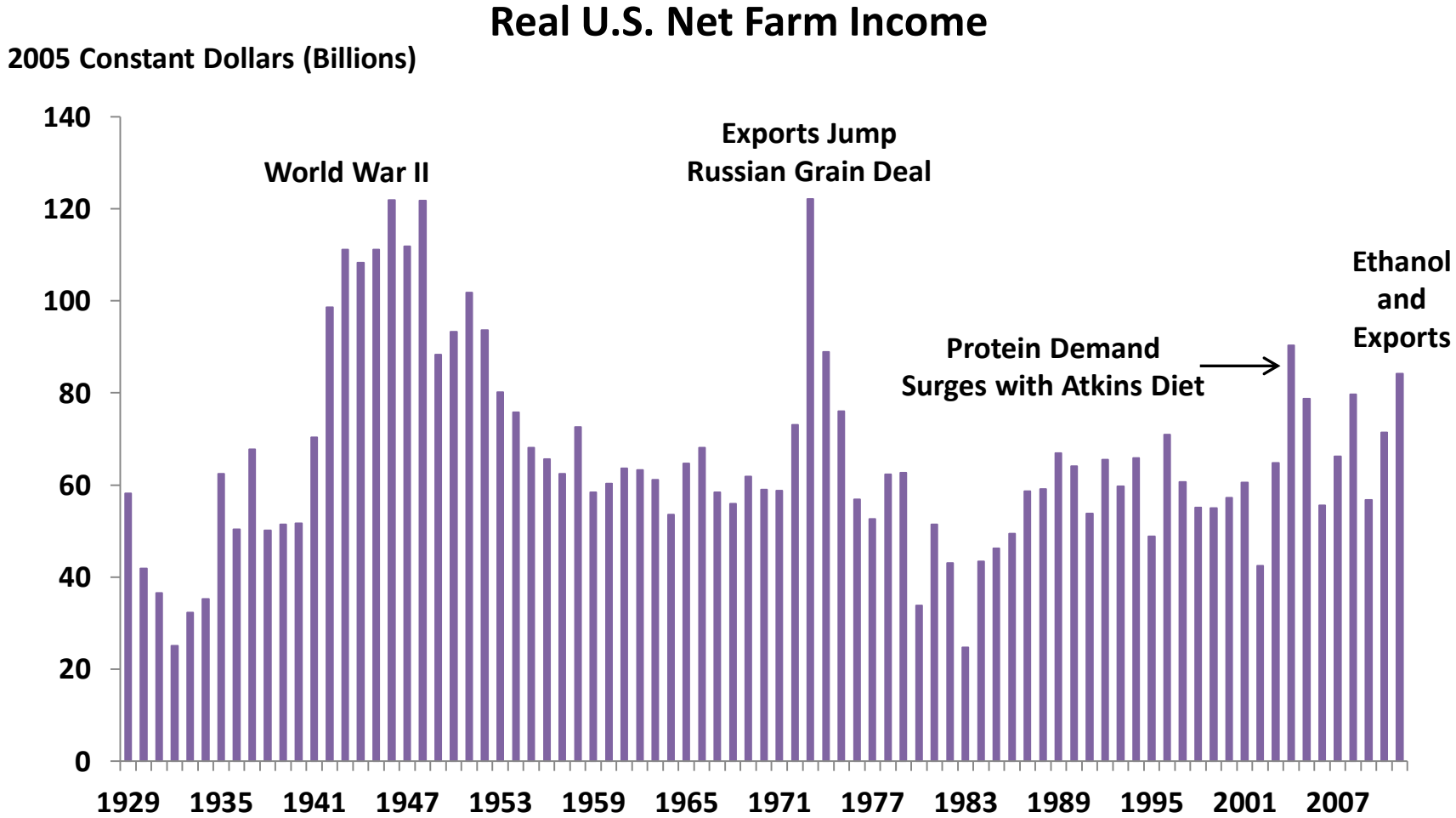
Opportunities

- 1) Economy is recovering
- 2) Food expenditures are rising
- 3) Business and financial markets have improved
- 4) Low cost of borrowing
- 5) Farm income is very positive

Challenges

- 1) Recovery is anemic
- 2) Elevated unemployment rate
- 3) Uncertainty abounds
- 4) Inflation risk
- 5) Will expected profits falter?

Net farm income is subject to booms and busts.



Source: USDA

Opportunities and Challenges for Agriculture

Opportunities

- 6) Agricultural exports have surged

Challenges

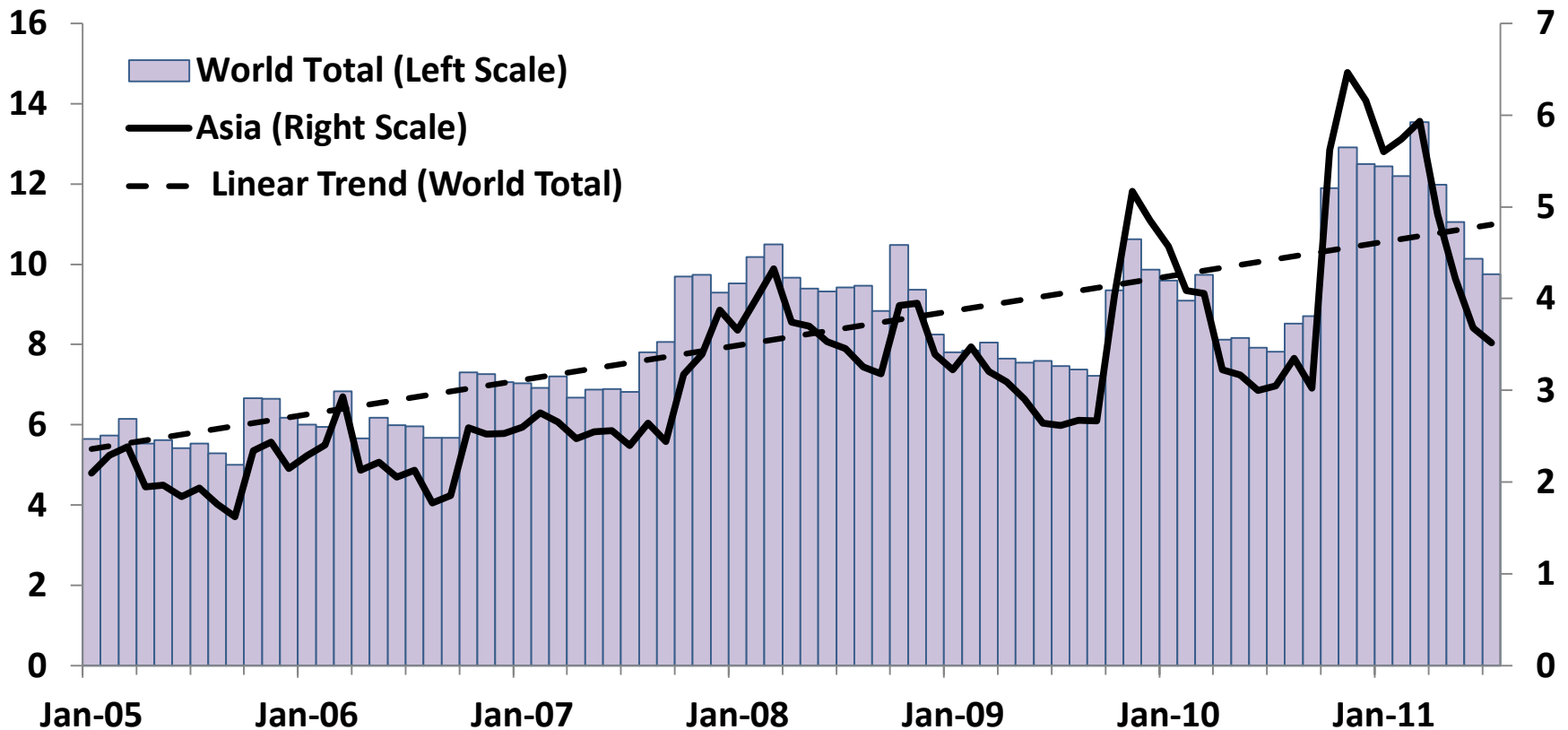
- 6) Risks facing global growth

Agricultural exports have surged led by Asia.

Real U.S. Agricultural Exports

2010 Constant Dollars (Billions)

2010 Constant Dollars (Billions)

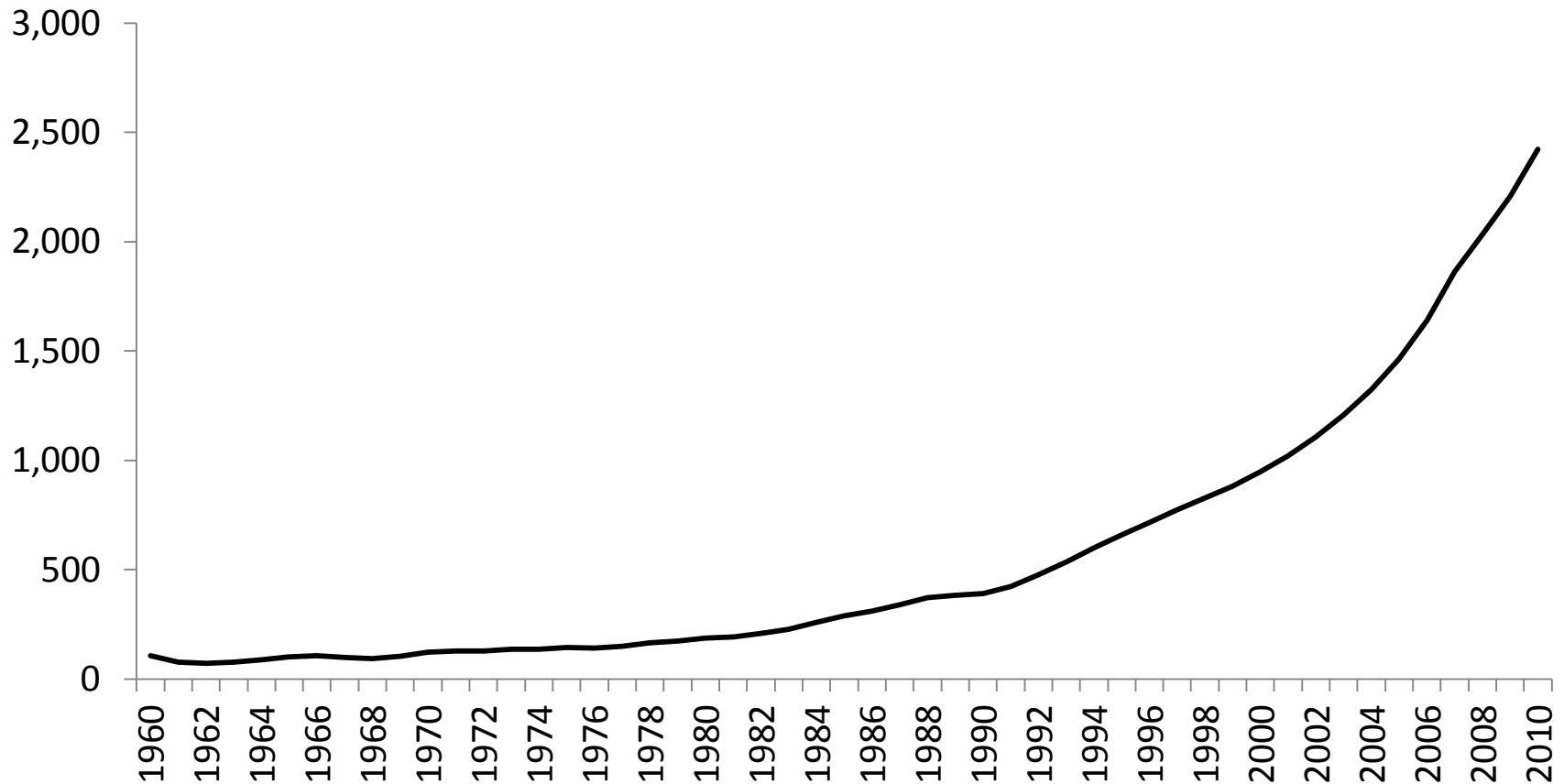


Source: USDA

Will China's exponential income growth continue?

China's Per Capita Gross Domestic Product

2000 Constant U.S. Dollars



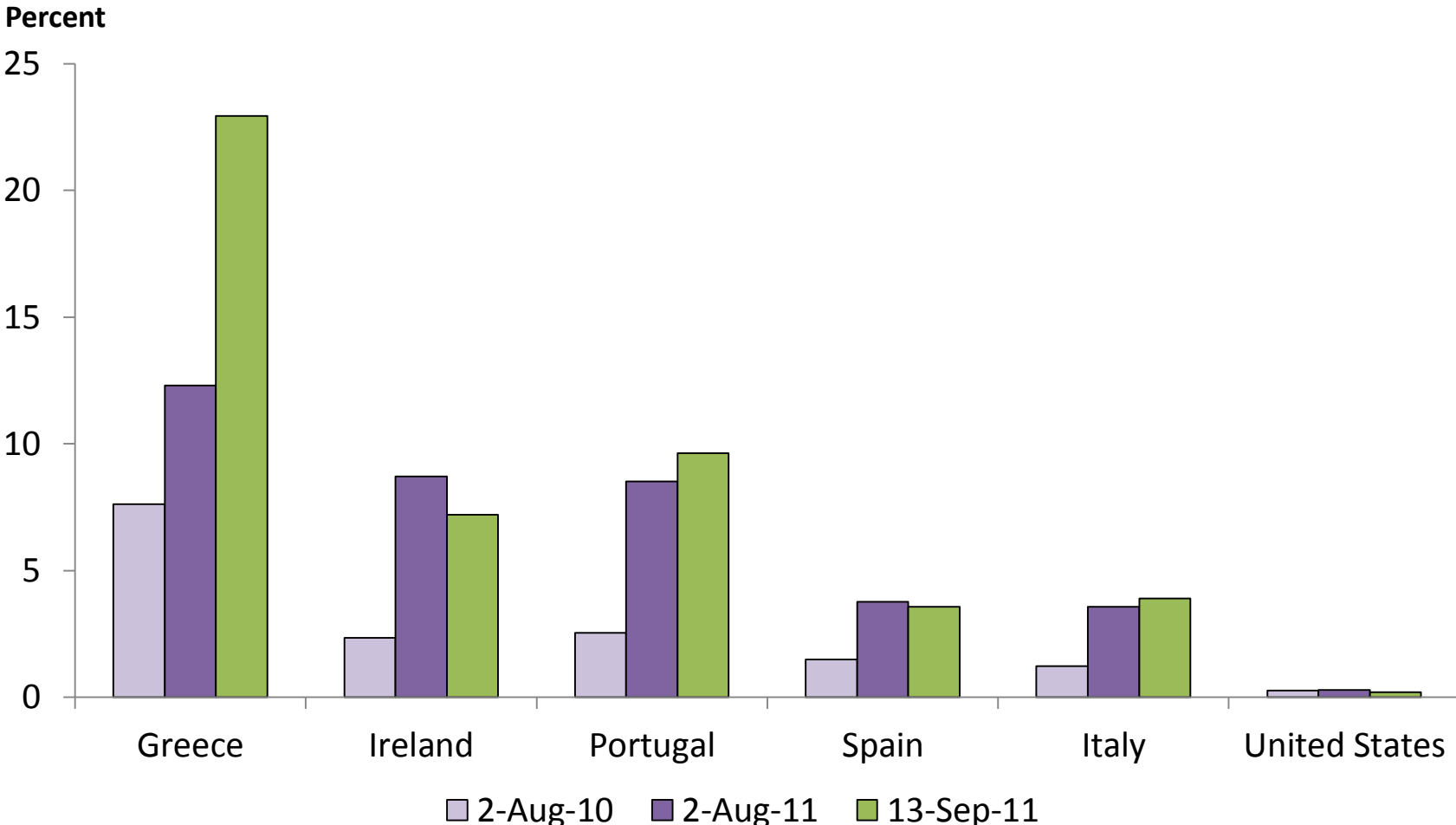
Source: World Bank

What happens if the Chinese economy slows?

- Since dipping into negative territory in 2009, China's inflation rate has surged to over 6%.
- To cool rising inflation and very rapid growth, China's central bank has:
 - raised the one-year deposit interest rate from 2 to 3.5 percent
 - raised reserve requirements for Chinese banks
- China's substantial growth has been led by a robust real estate sector. Some economists and investors fear this growth has led to a bubble.

Another risk to the global economy is the Eurozone sovereign debt crisis.

Spread between Ten Year Government Bond and German Bund



Source: Thomson Reuters

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Opportunities

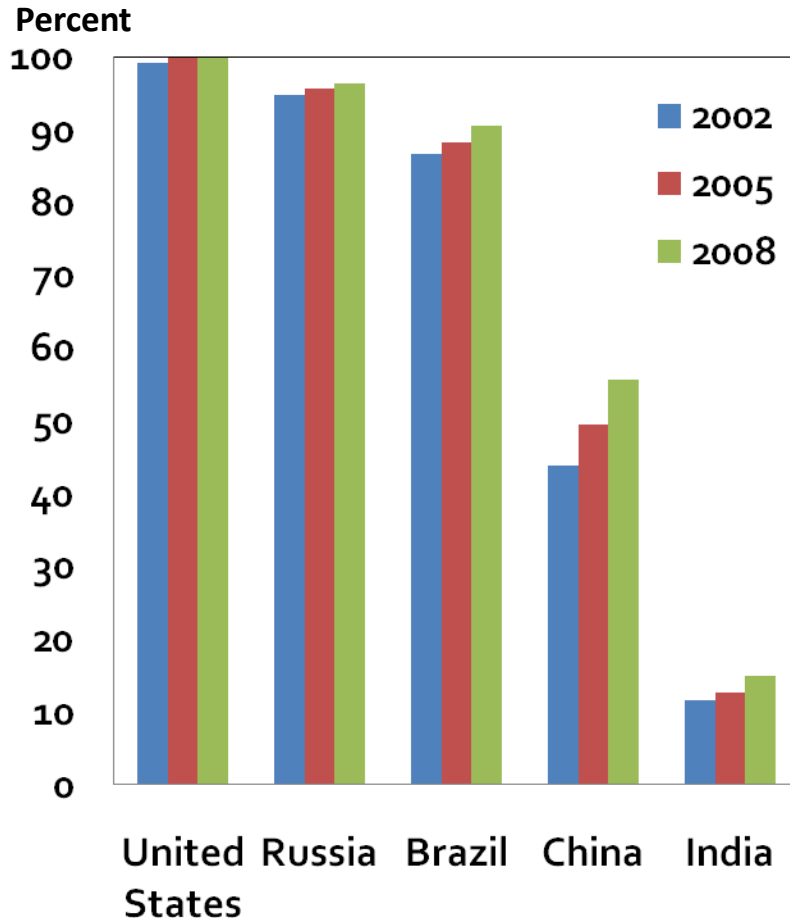
- 6) Agricultural exports have surged
- 7) Global food demand is changing

Challenges

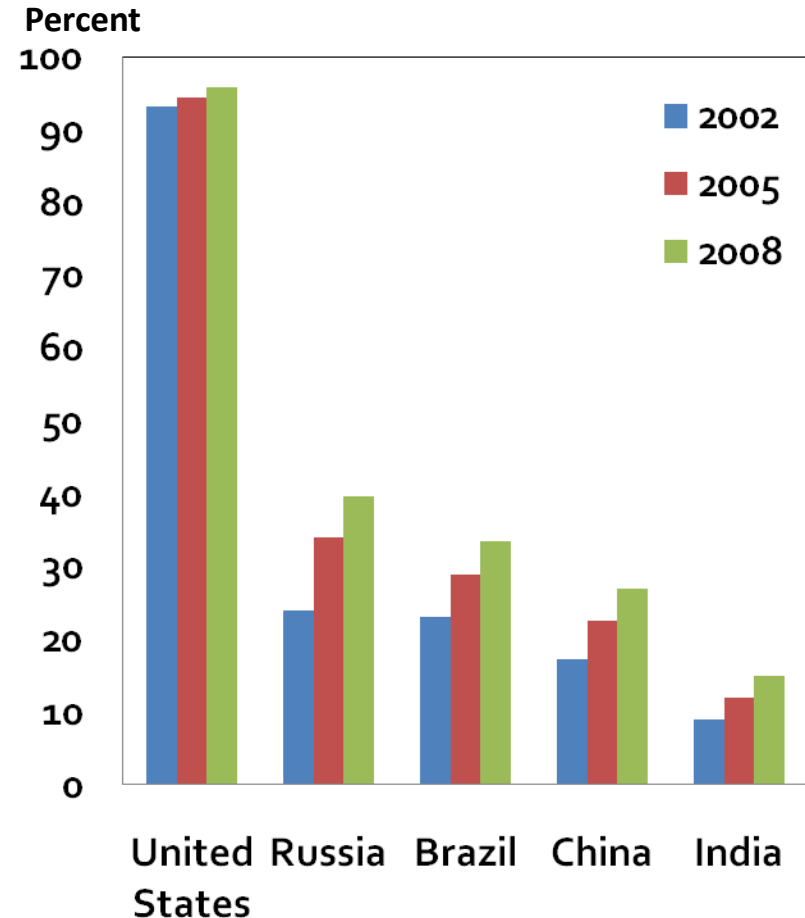
- 6) Risks facing global growth
- 7) Who will meet this changing food demand?

A growing world population boosts international food demand, but what will they eat?

Households Owning a Refrigerator



Households Owning a Microwave Oven

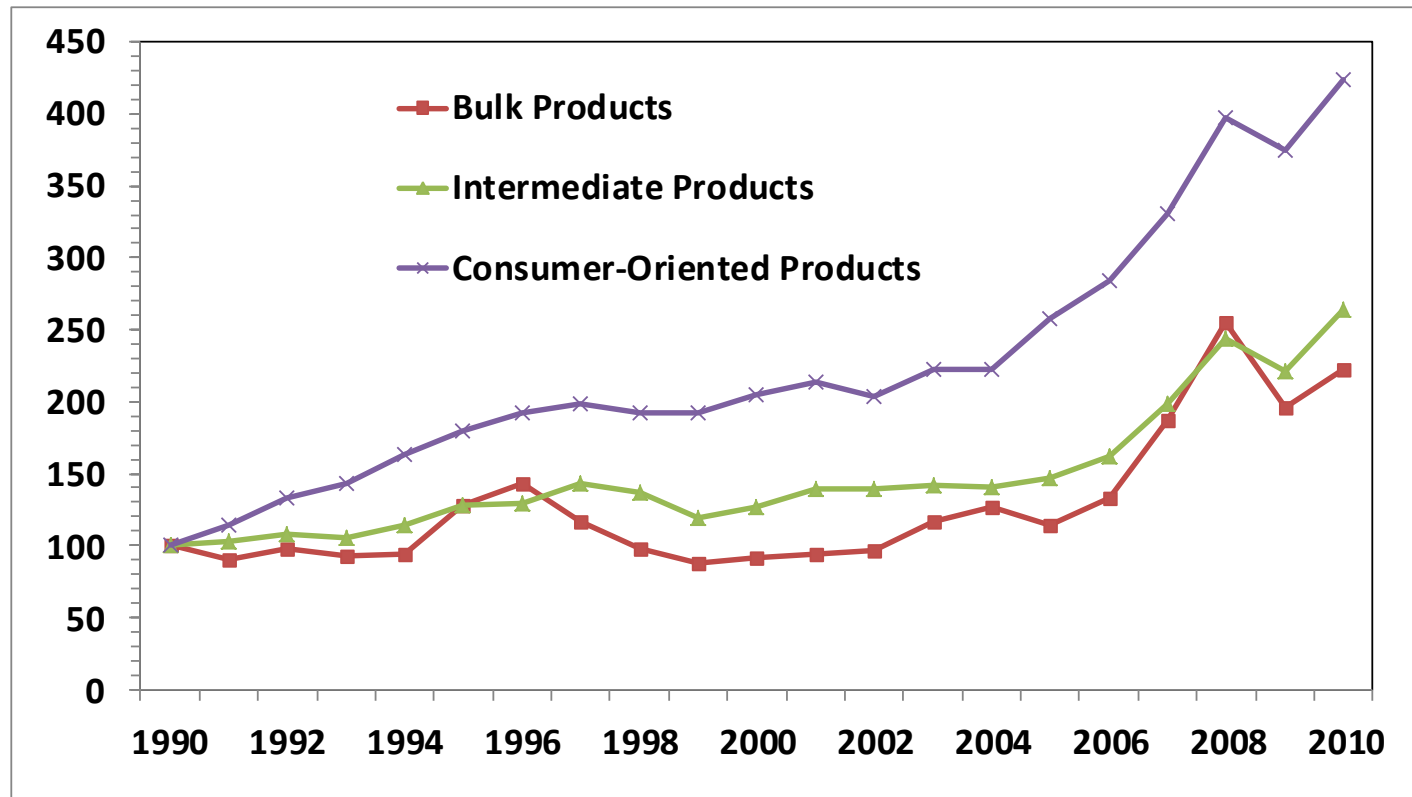


Source: USDA, Euromonitor

Will consumer-oriented products continue to lead agricultural exports?

Value of U.S. Agricultural Exports

Indexed (1990 = 100)



Source: USDA Foreign Agricultural Service

Opportunities and Challenges for Agriculture

Opportunities

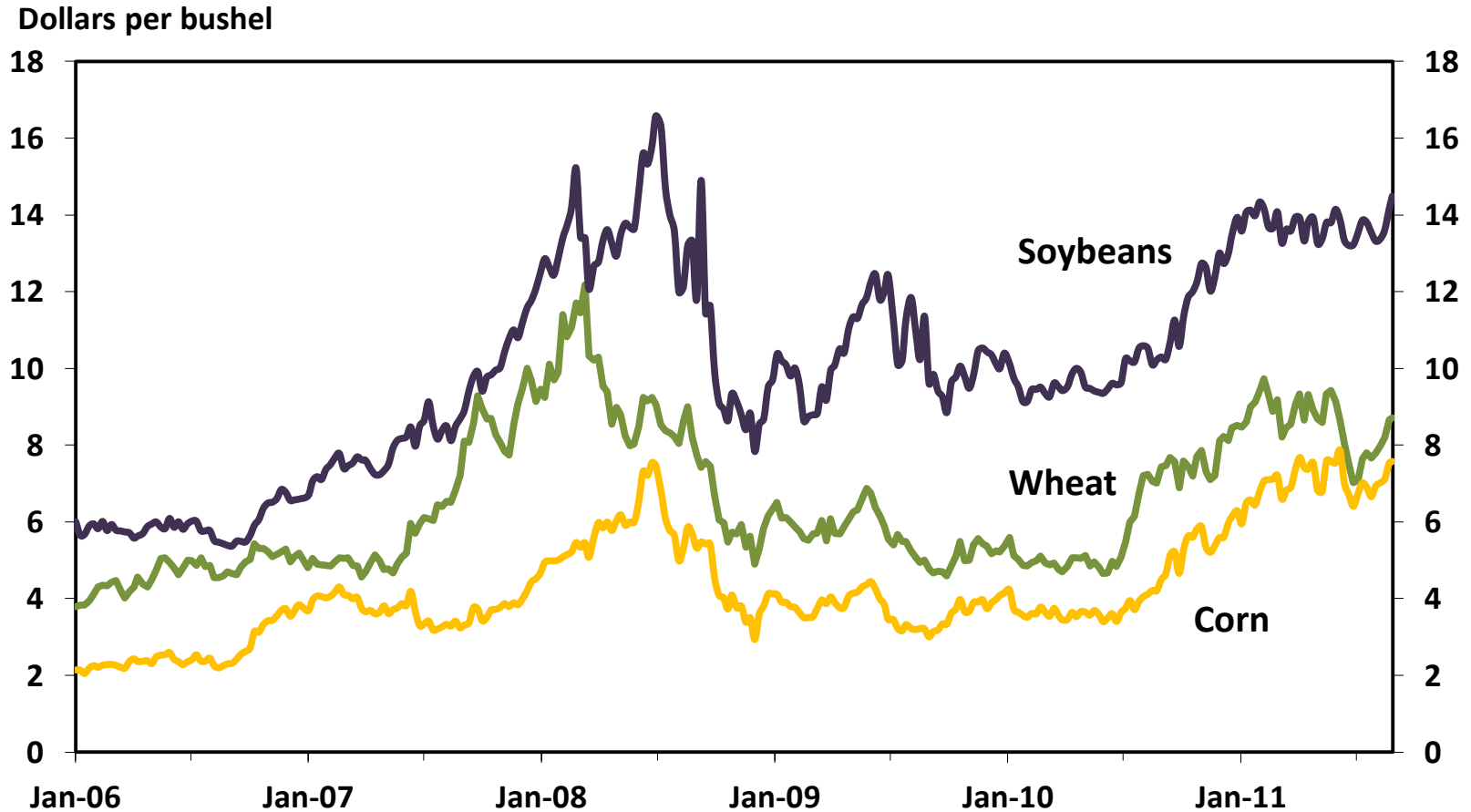
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U.S. crop prices have surged, boosting crop incomes.

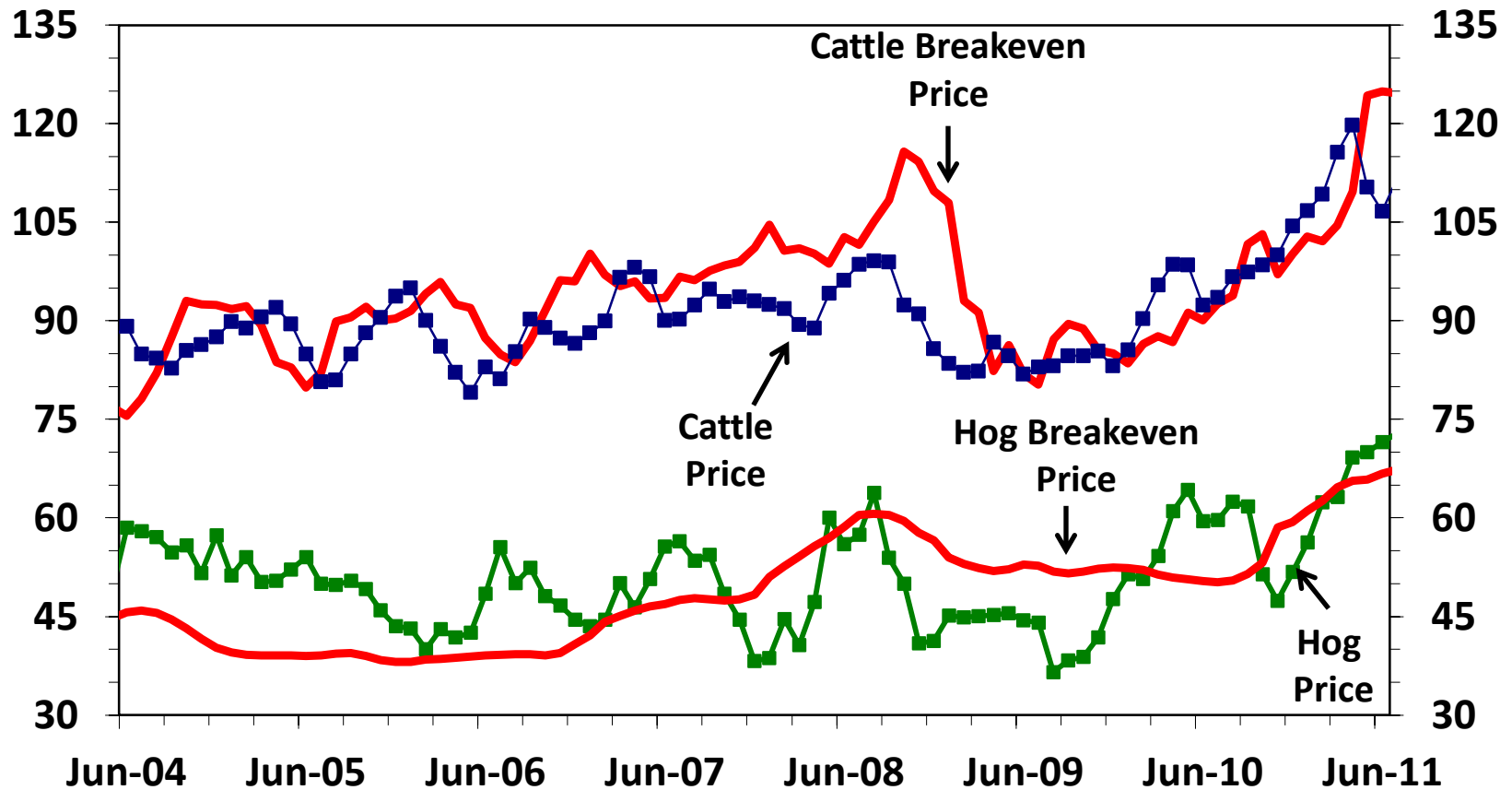
U.S. Crop Prices



Source: Commodity Research Bureau

Higher crop prices continue to pressure livestock profit margins.

Dollars per hundredweight

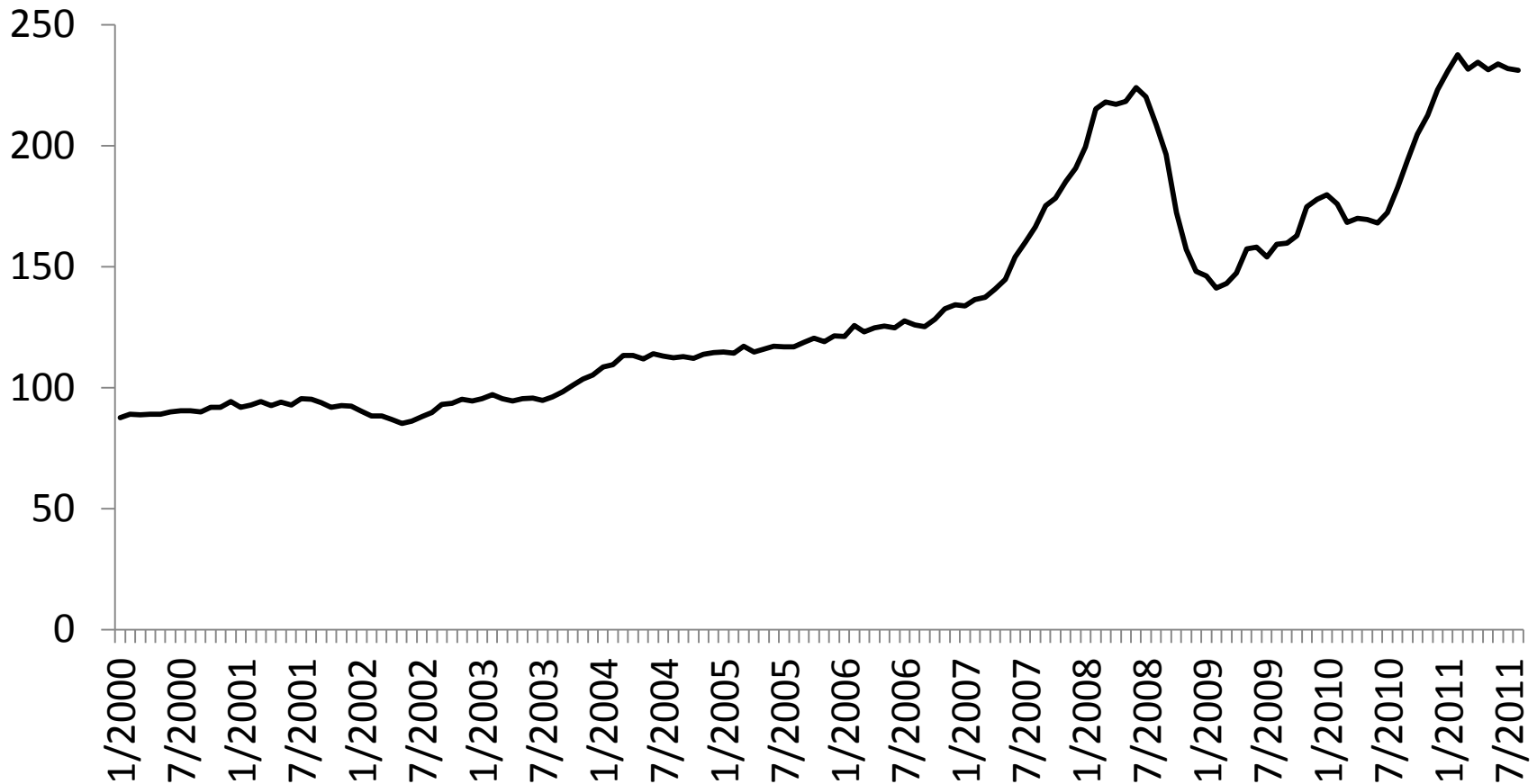


Source: USDA and Iowa State University

Rising commodity prices have pushed world food prices above 2008 highs.

World Food Price Index

Index 2002-2004 = 100



Source: Food and Agriculture Organization

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- 6) Agricultural exports have surged
- 7) Global food demand is changing
- 8) High commodity prices
- 9) Farmland values boom

Challenges

- 6) Risks facing global growth
- 7) Who will meet this changing food demand?
- 8) High commodity prices
- 9) Will they bust?

Crop Surge Lifts Farmland

Article

Comments (11)

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By SCOTT KILMAN

Farmland values in much of the Midwest are climbing

In Price of Farmland, Echoes of Another Boom



Dale P. Wegner for The New York Times

Le Mars, Iowa, that he purchased for \$10,000 an acre at a land auction.

The Economist

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American farmland

Sowing bubbles

Regulators grow increasingly worried about steep cropland prices

Apr 20th 2011 | NEW YORK | from the print edition

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Jeff Freking and his brother

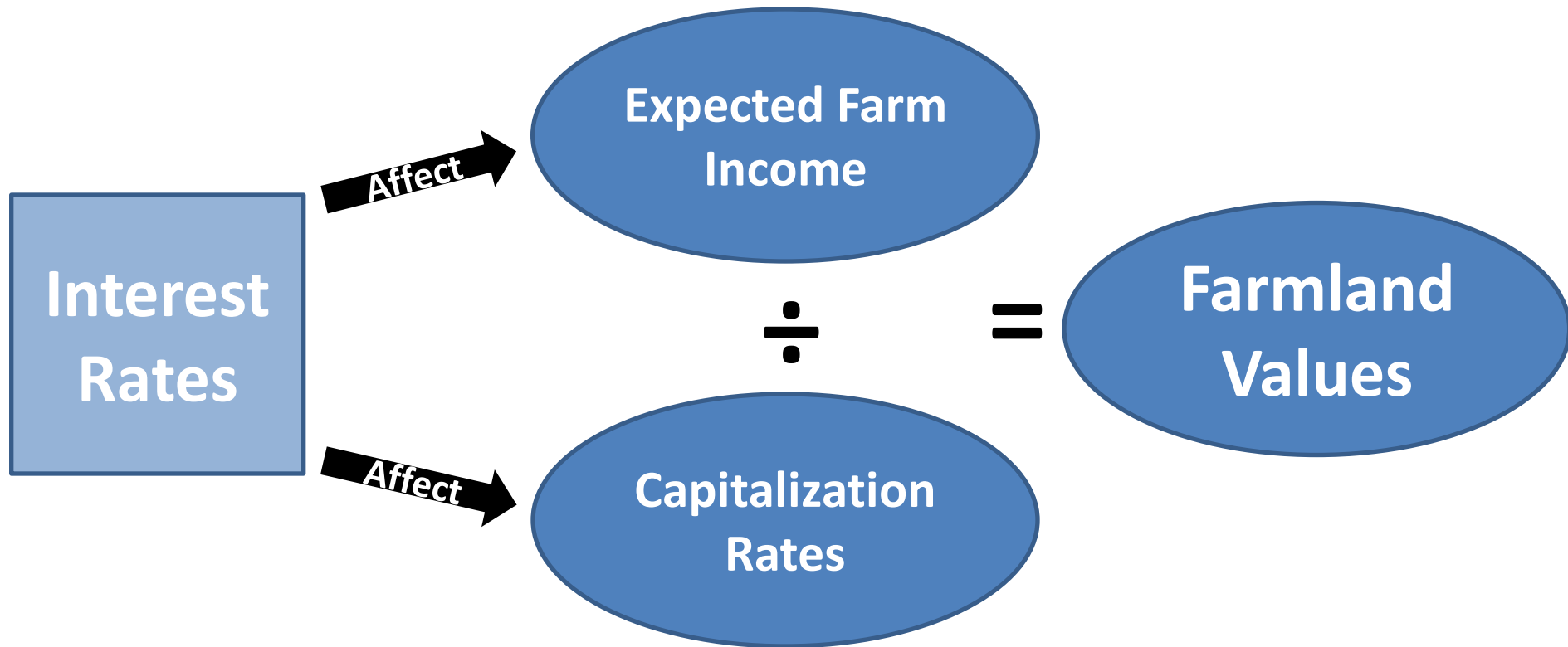
FINANCIAL regulators in America were criticised for doing too little about the country's on Monday for \$10,000 an acre would seem to have nothing in common with a condo in Miami or a house in Las Vegas.

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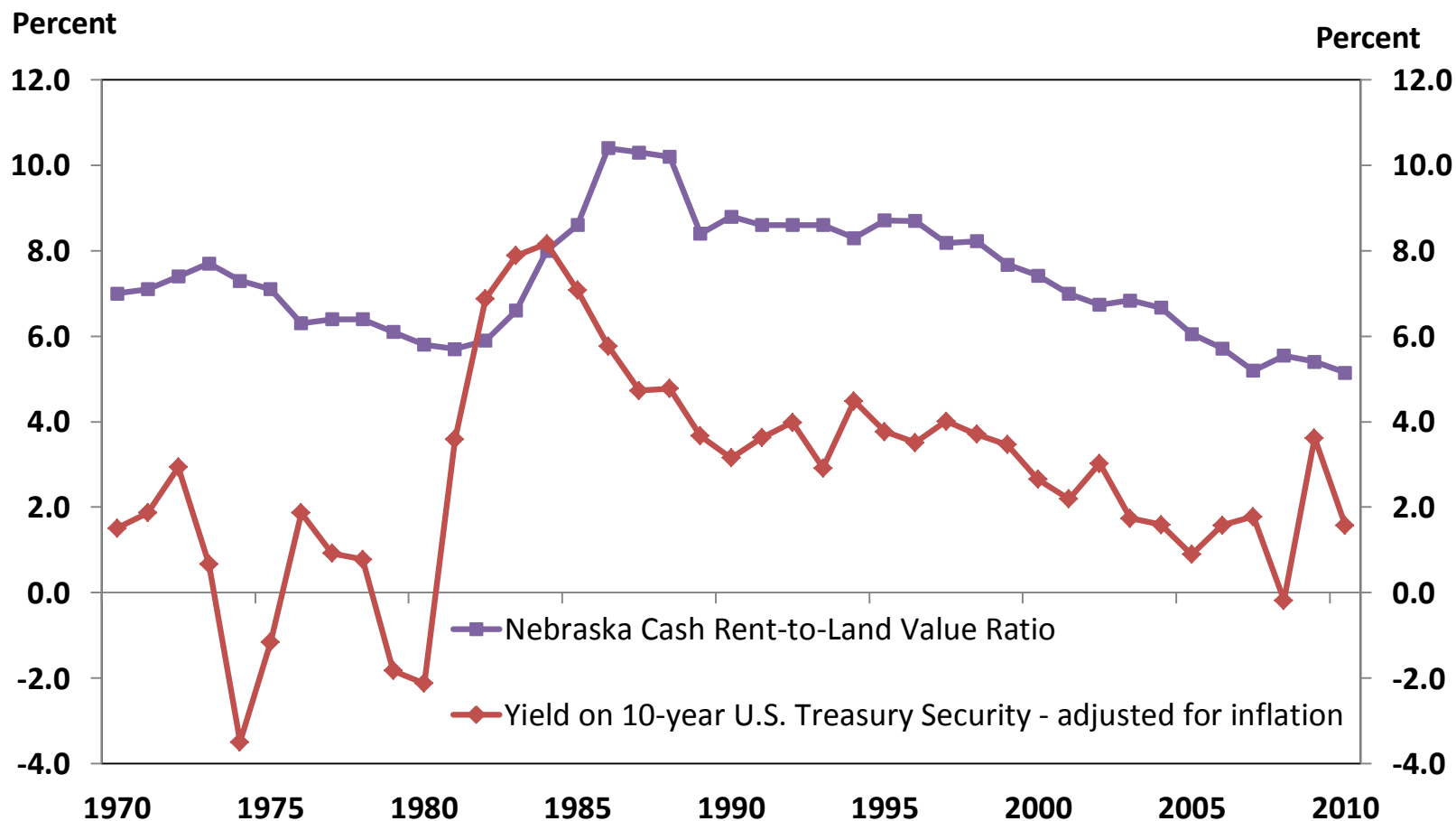
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Interest rates can affect farmland values through two avenues.

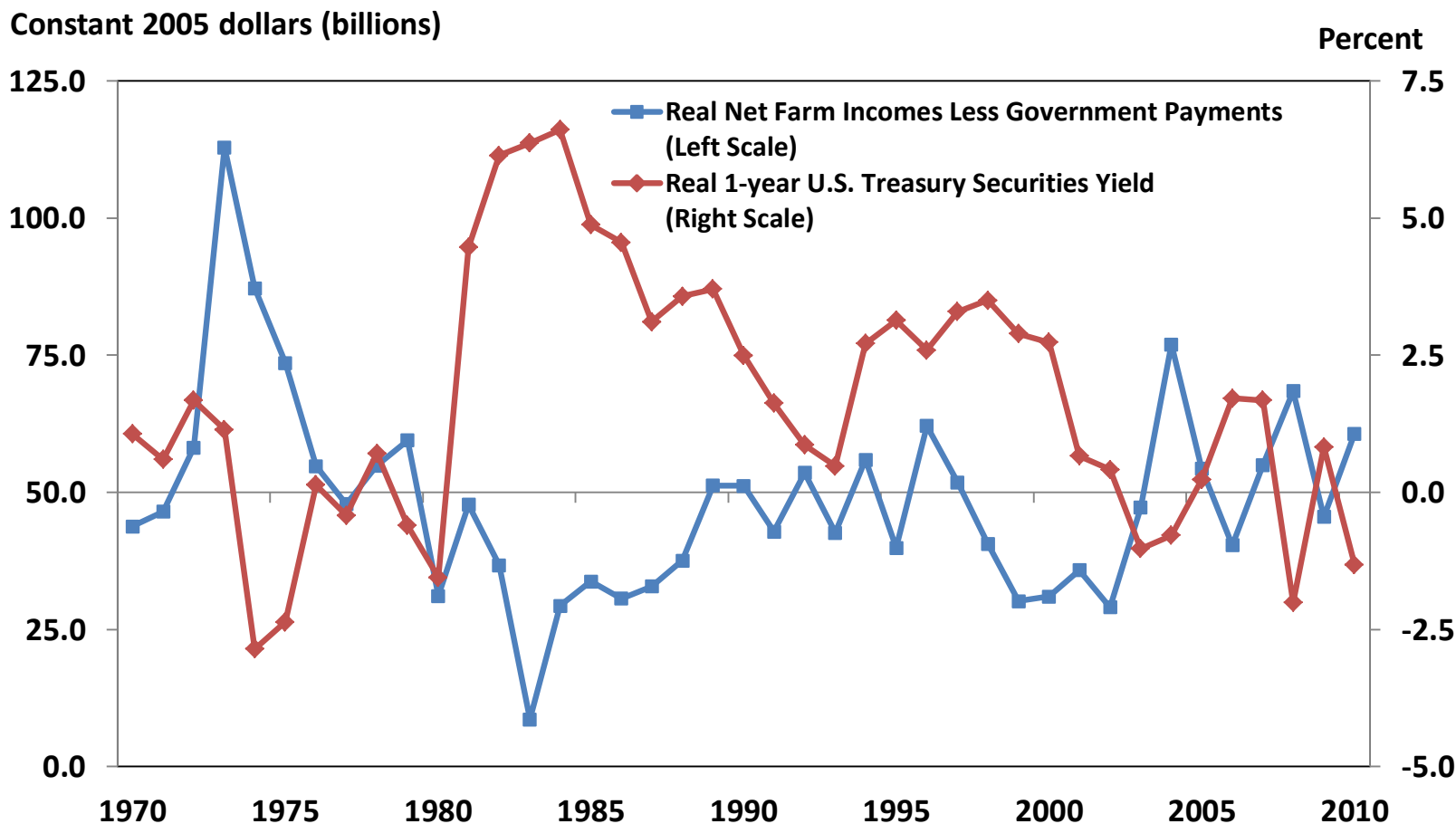


Over time, real interest rates and capitalization rates tend to move together.



Sources: USDA, Federal Reserve and BLS

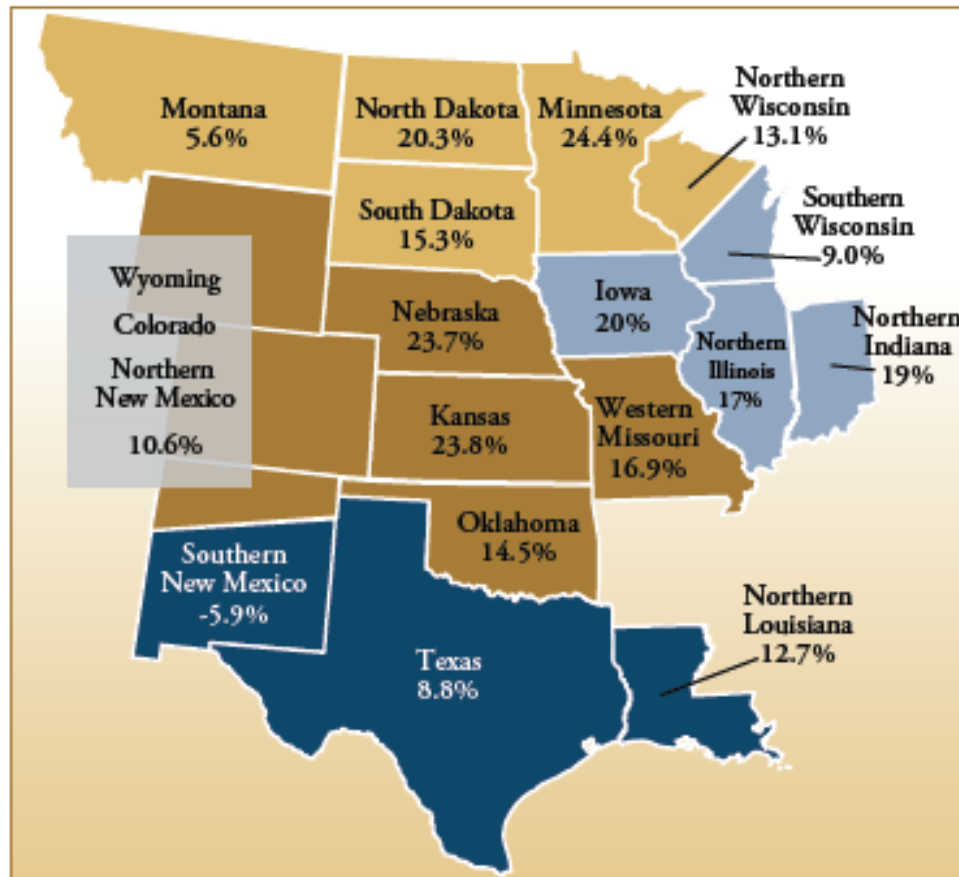
Over time, real interest rates and real net farm income tend to move in opposite directions.



Sources: USDA, Federal Reserve, BLS

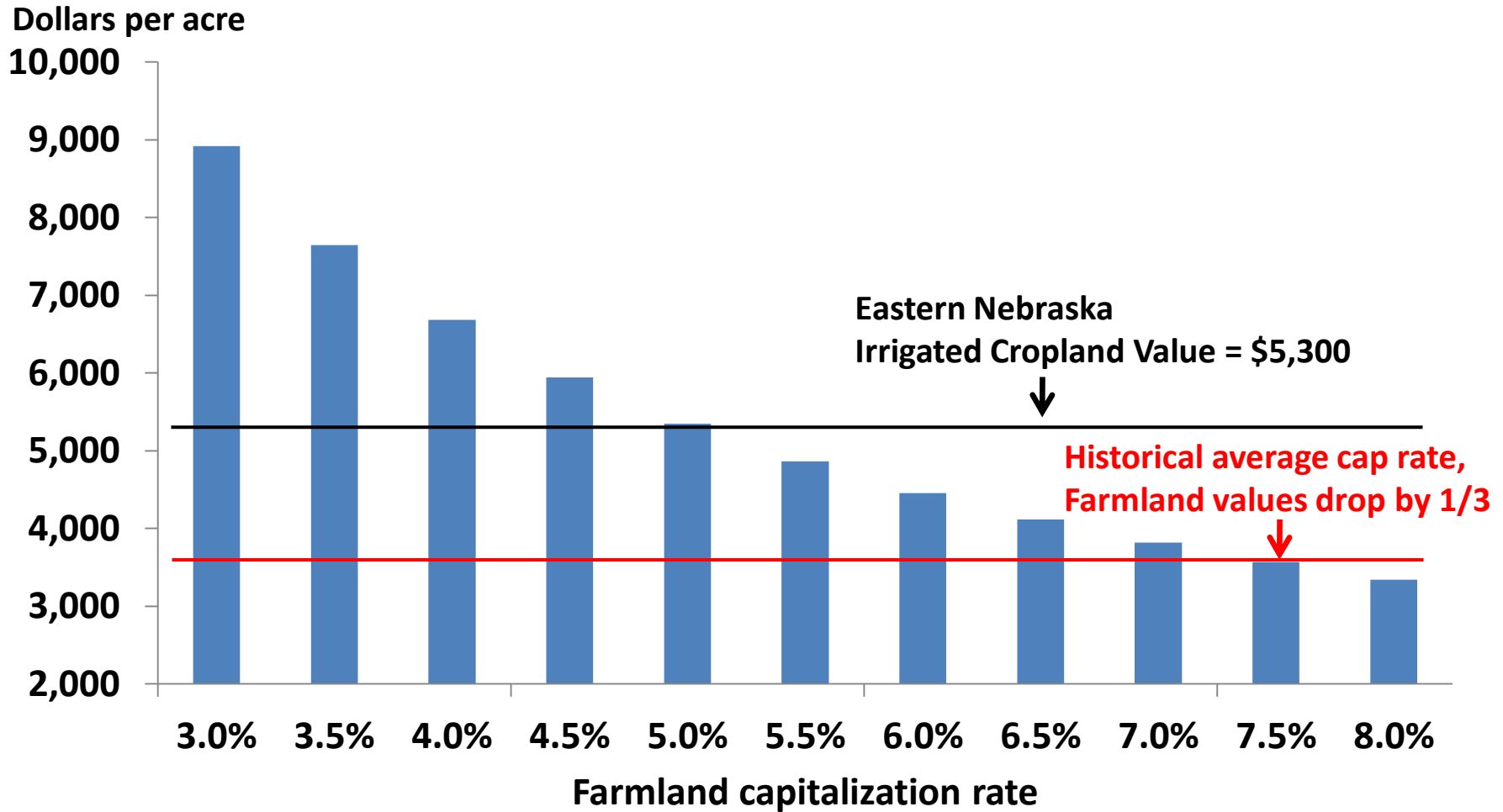
With low capitalization rates and elevated farm income, farmland values have surged.

Non-irrigated Cropland Values (Percent change from 2010:Q1 to 2011:Q1)



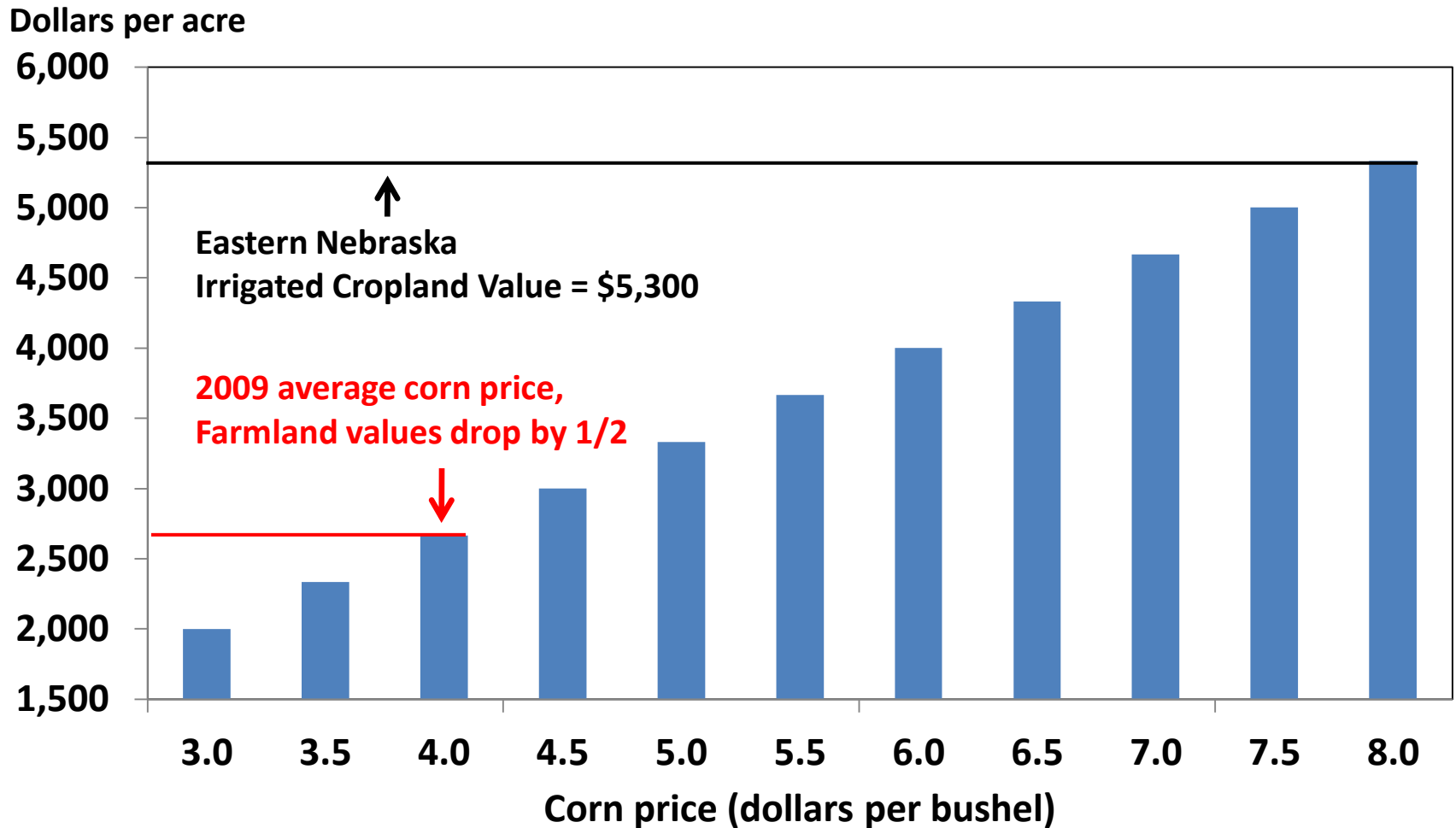
Source: Agricultural Finance Databook, Federal Reserve Bank of Kansas City

Historically low capitalization rates help support current cropland values.



Authors' calculations assuming 200 bushels per acre, a corn price of \$5.35 per bushel, and 25% of gross revenues capitalized into land.

If capitalization rates return to their historical average, then record high corn prices could support current cropland values.



Authors' calculations assuming 200 bushels per acre, the historical average capitalization rate of 7.5%, and 25% of gross revenues capitalized into land.

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Thank you.

Questions?

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