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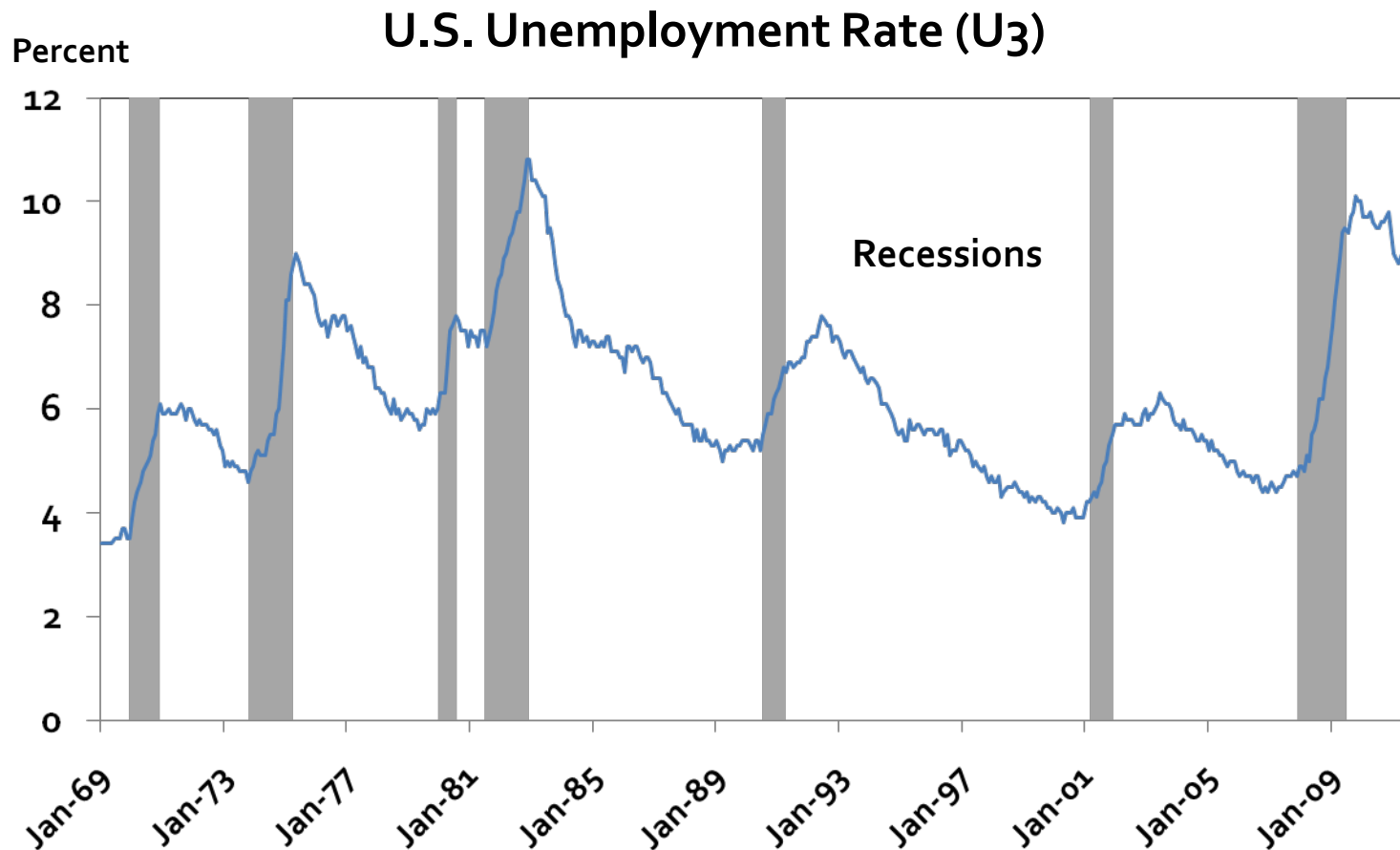
June 9, 2011

Agricultural Risks in a Recovering Global Economy



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.

An elevated unemployment rate slows the recovery...



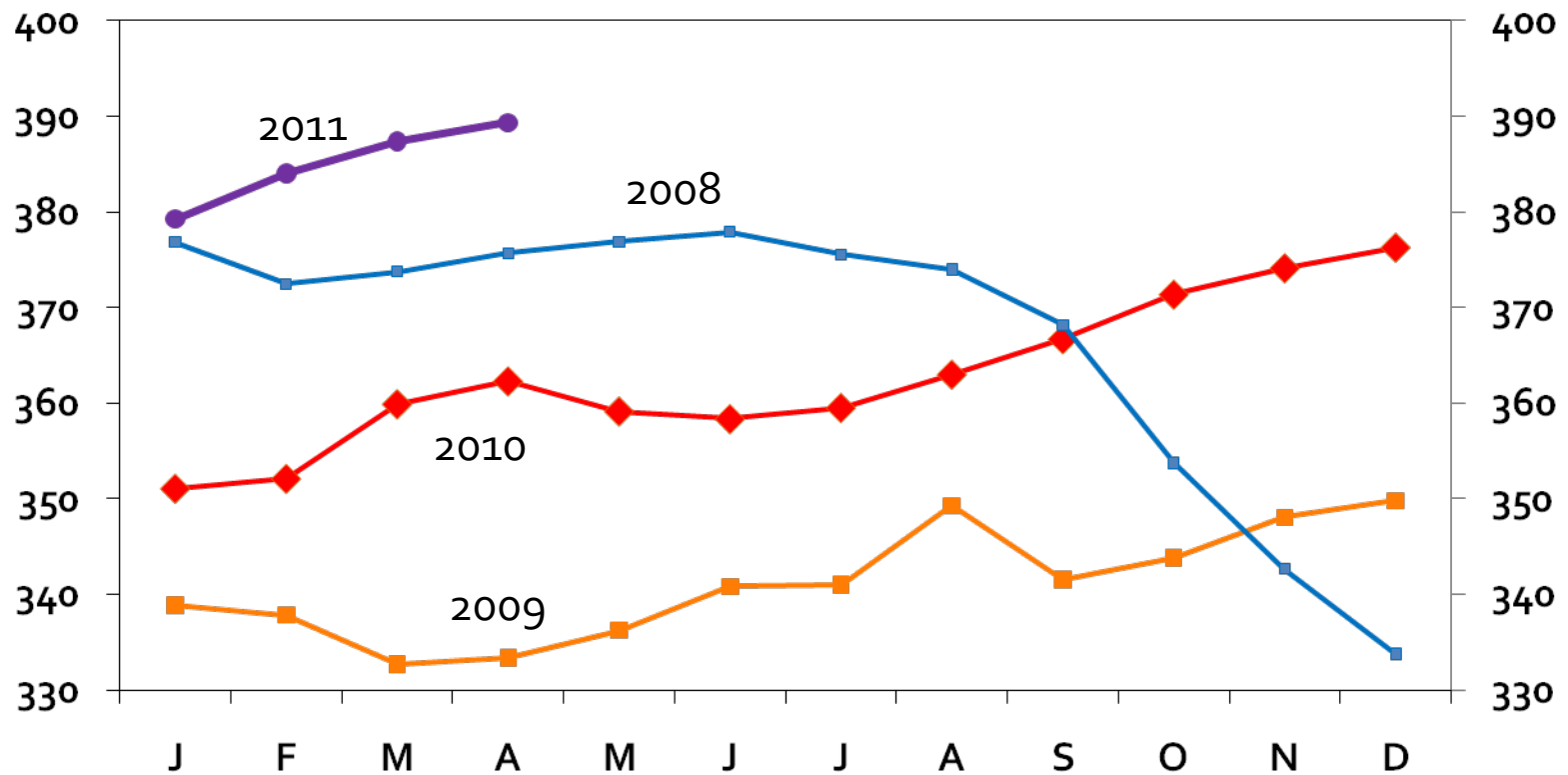
Source: Bureau of Economic Analysis and Bureau of Labor Statistics



...but consumer spending is rising...

U.S. Monthly Retail and Food Sales

Billion dollars

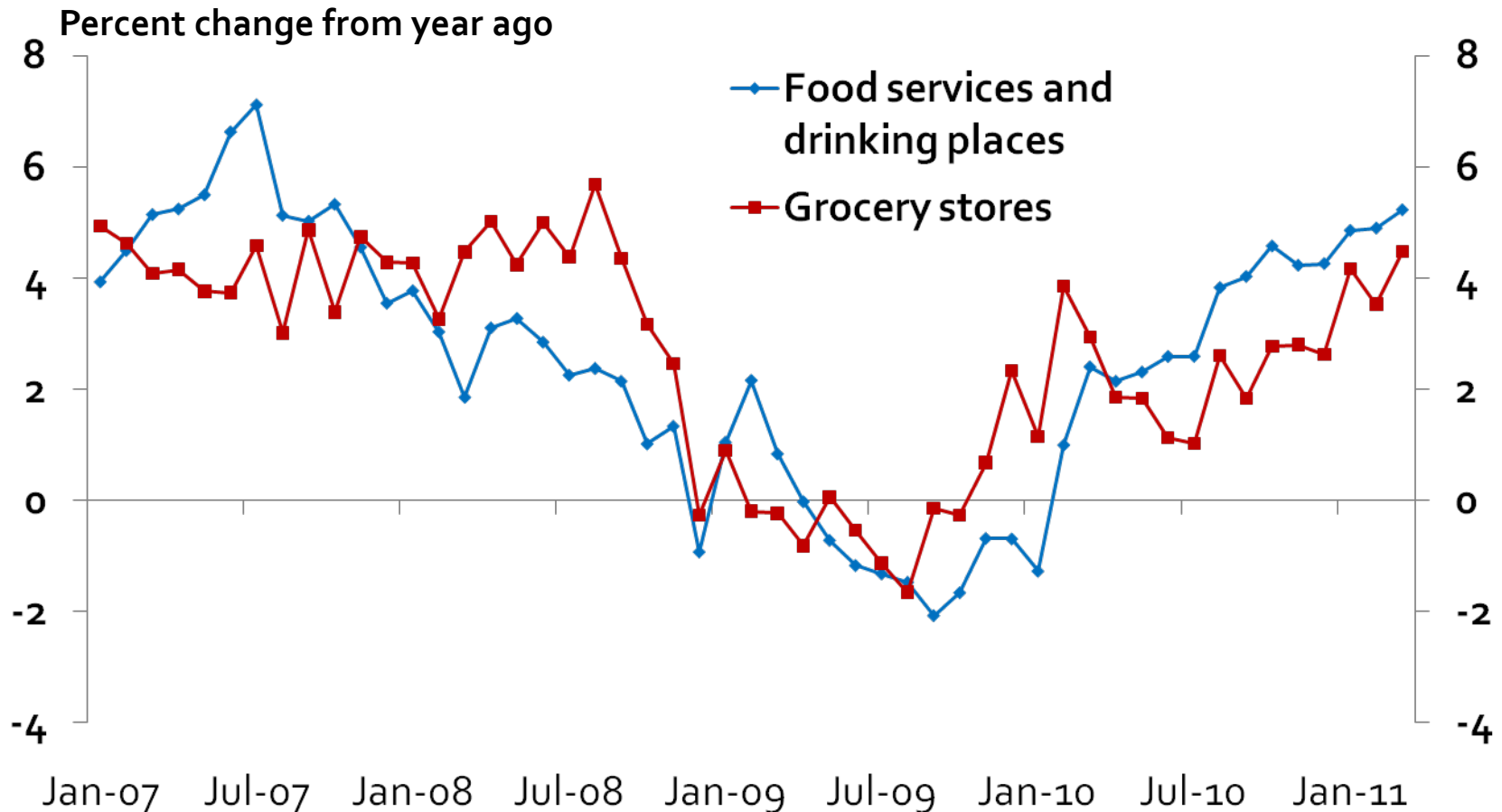


Source: U.S. Census Bureau



...and food sales have improved.

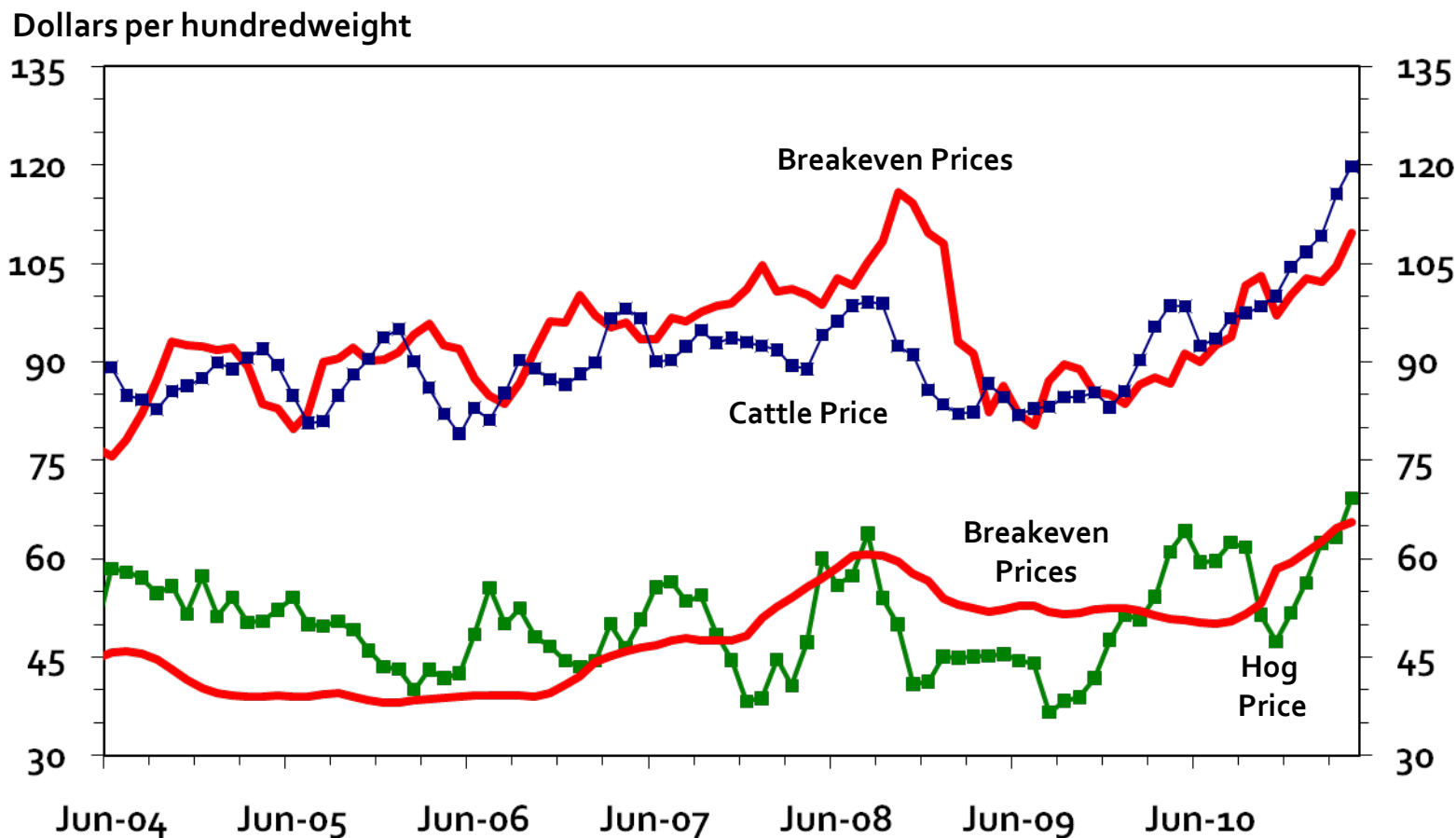
U.S. Retail Sales at Grocery Stores and Restaurants



Source: Census Bureau



Livestock profits have improved.

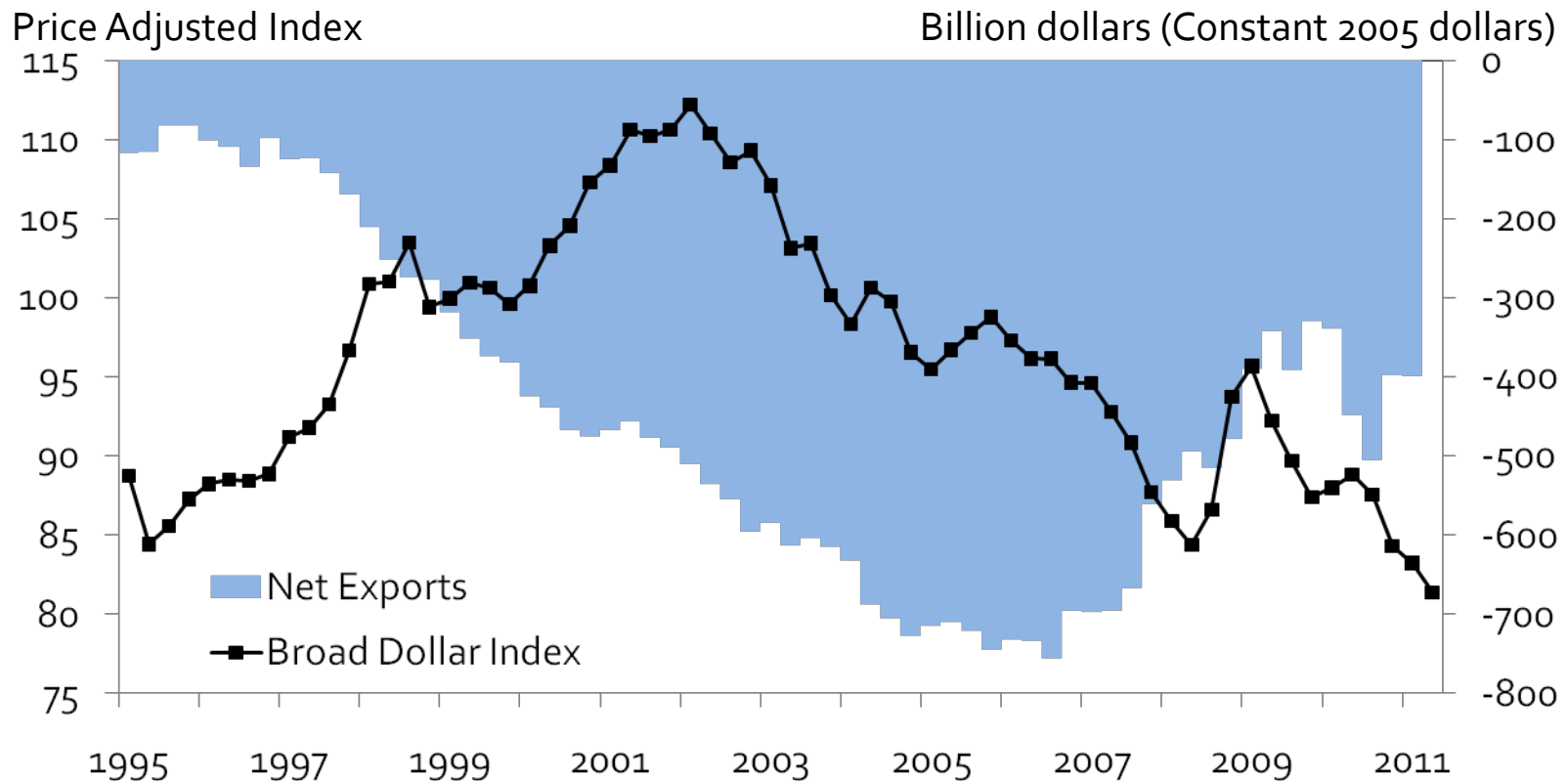


Source: USDA, Iowa State University, and California Department of Food and Agriculture



U.S. exports have strengthened and the dollar has weakened.

U.S. Net Exports and Value of the Dollar

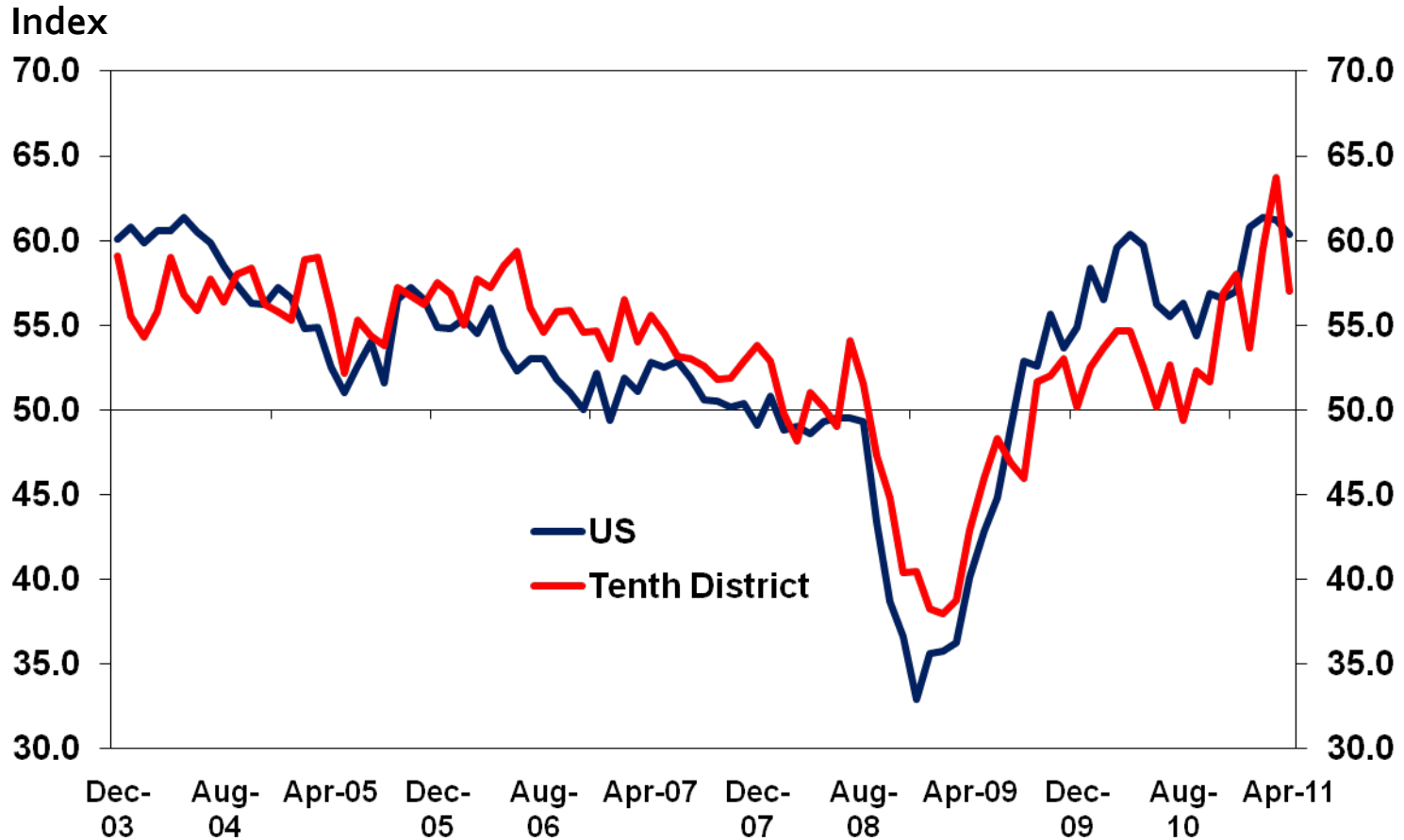


Source: Bureau of Economic Analysis and Federal Reserve Board of Governors



Manufacturing activity has strengthened.

U.S. and Tenth District Manufacturing Production Indices

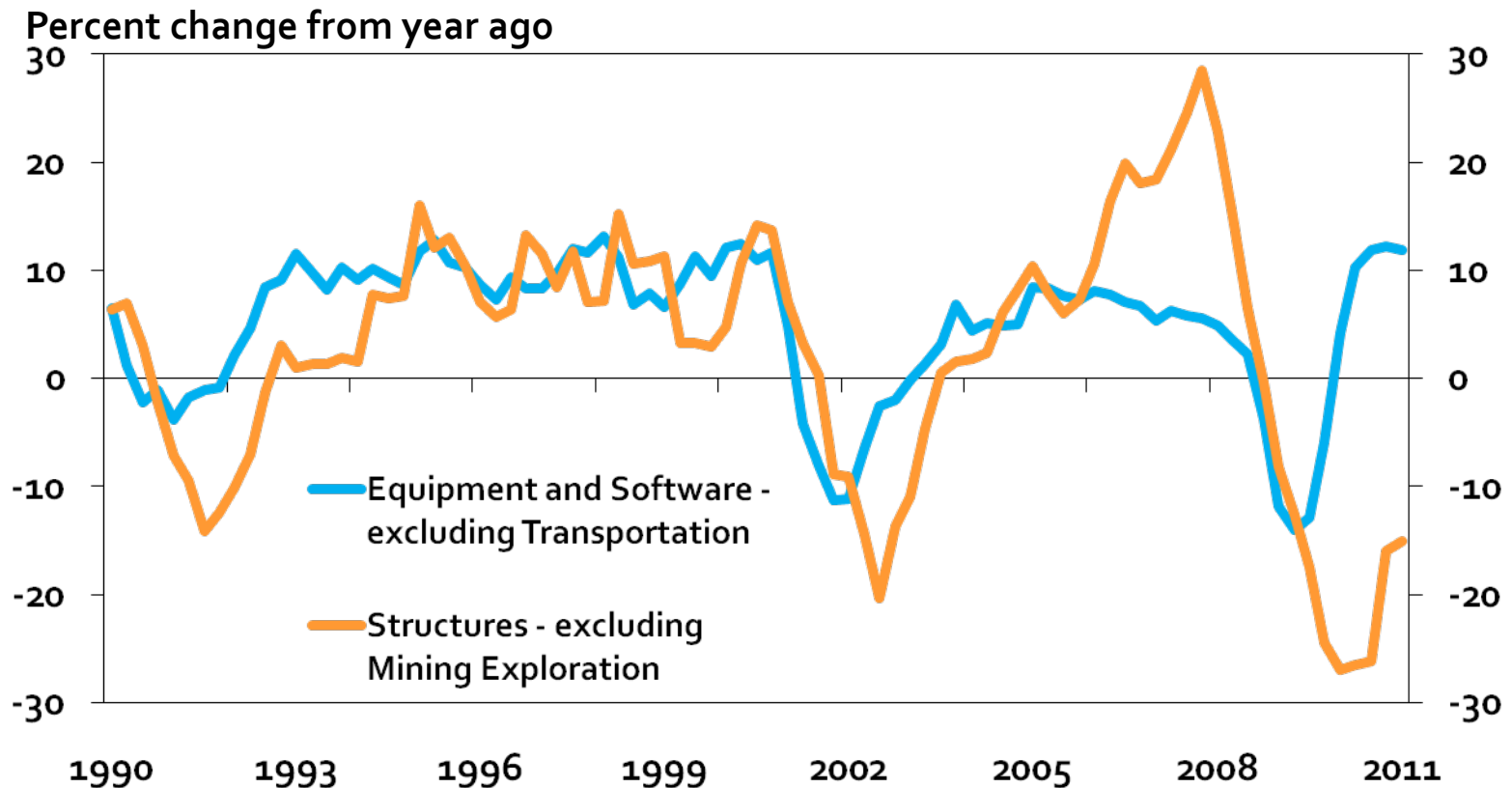


Source: Institute of Supply Management and Federal Reserve Bank of Kansas City



Business investment strengthens for equipment and software.

U.S. Non-residential Investment

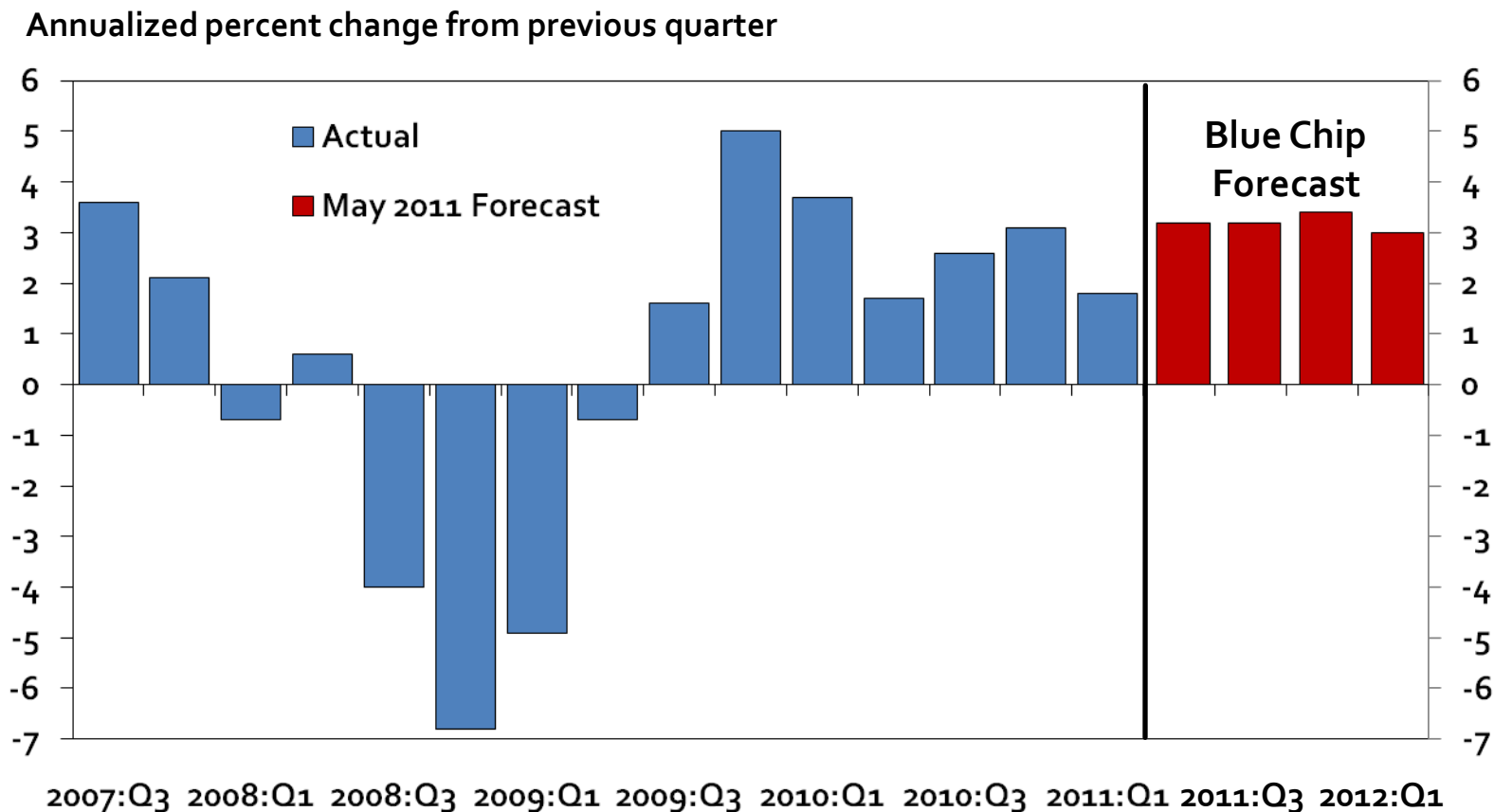


Source: Census Bureau



The economy is recovering from a very steep recession with stronger gains expected in 2011.

Real GDP Growth



Source: Bureau of Economic Analysis and Blue Chip Economic Indicators



What are the Risks for Agriculture?



Risk #1: The Best Cure for High Prices is High Prices

Farmers Always Produce Themselves Out of Prosperity

- 2011: U.S. Acres Planted to Corn Up 4.3%
- 2020: U.S. Corn Yields Up 17 Percent

How Quickly Could Farm Incomes Fall?

- 2013: Average Annual Corn Price is \$4.10
- 2013: Net returns above variable costs for corn fall 40% below today's levels.

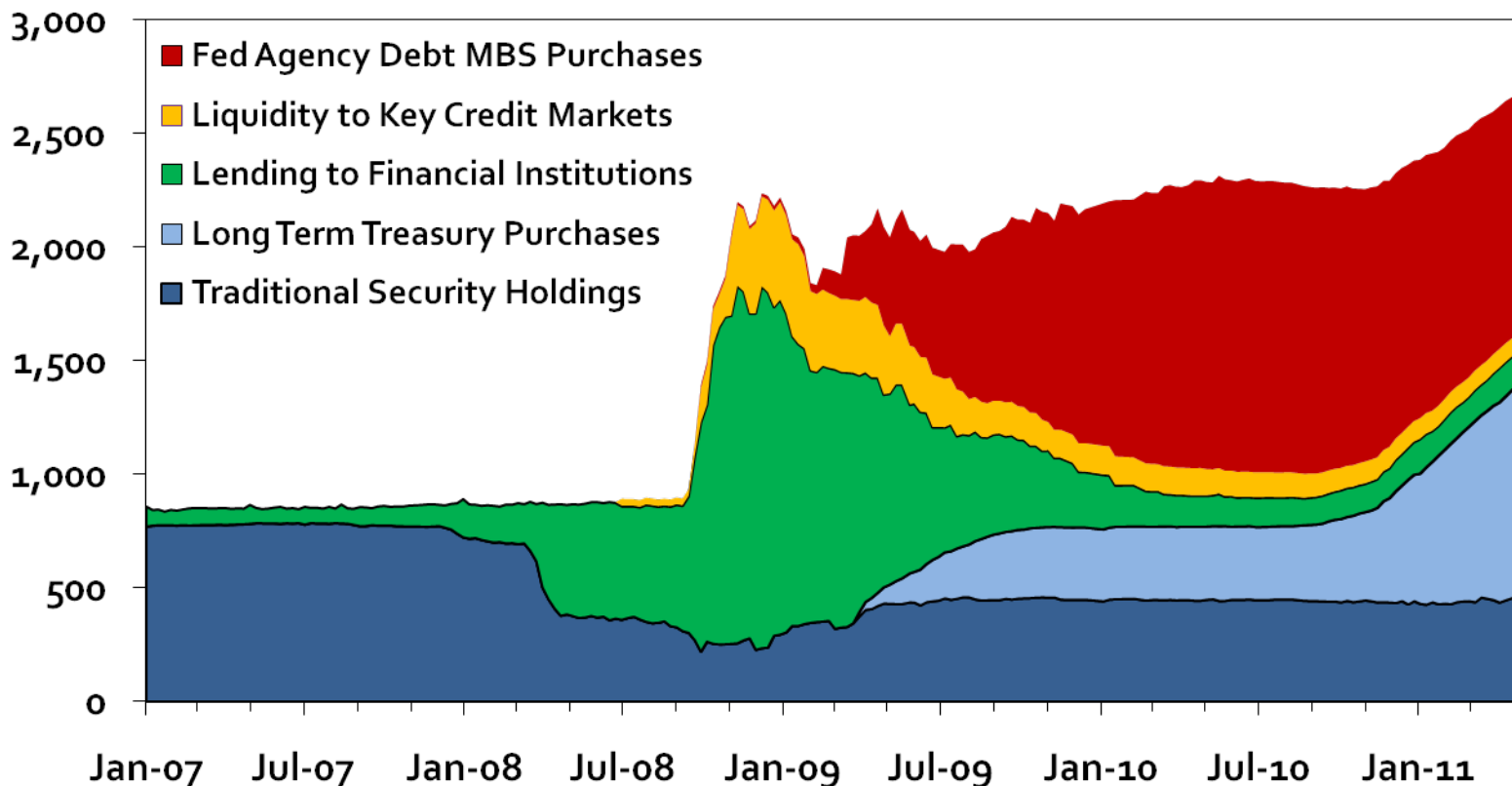
Source: USDA



Risk #2: Have inflation risks changed?

Federal Reserve Balance Sheet: Assets

Billion Dollars



Source: Federal Reserve Bank of Cleveland



Inflation is based on money and velocity.

Quantity Theory of Money

$$\text{Price} = \frac{\text{Money} * \text{Velocity}}{\text{Quantity}}$$

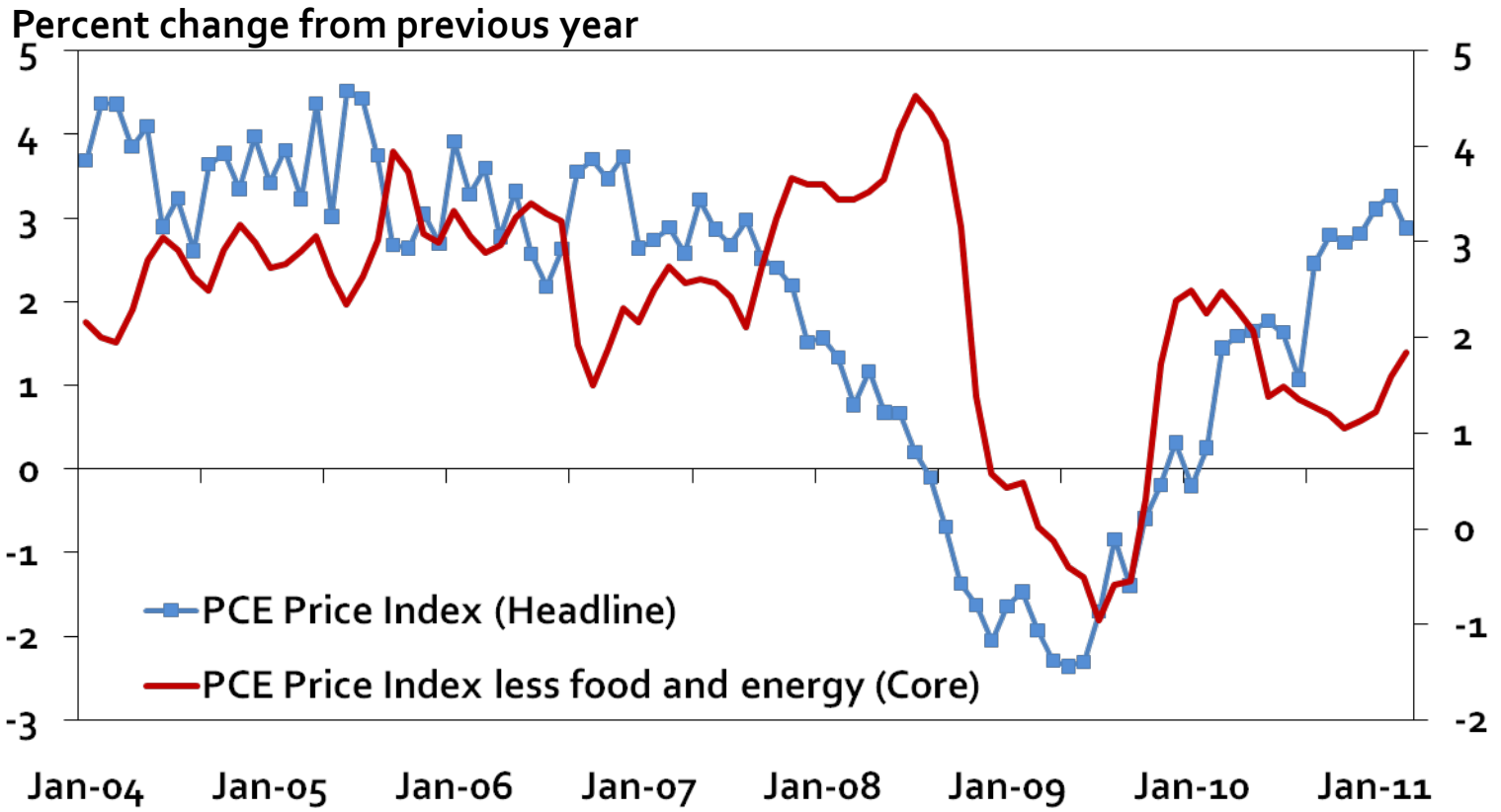
Definition of Inflation:

Too much money $M \uparrow$
chasing $V \uparrow$
too few goods $Q \downarrow$



Consumers prices are rising, especially for food and energy.

Personal Consumption Expenditures Price Index

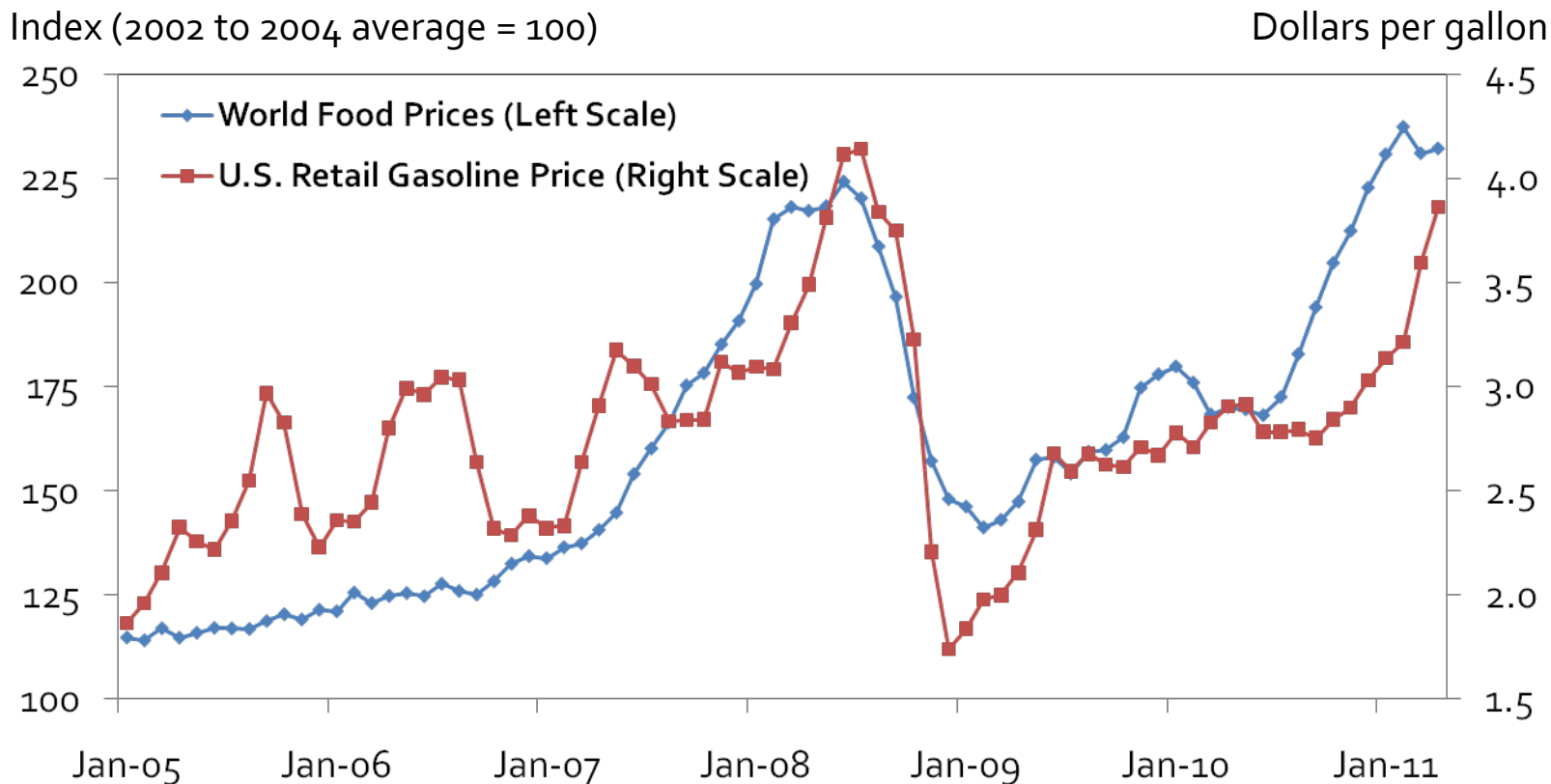


Source: Bureau of Economic Analysis



Risk #3: Soaring Global Food and Energy Prices

World Food Prices and U.S. Gasoline Prices

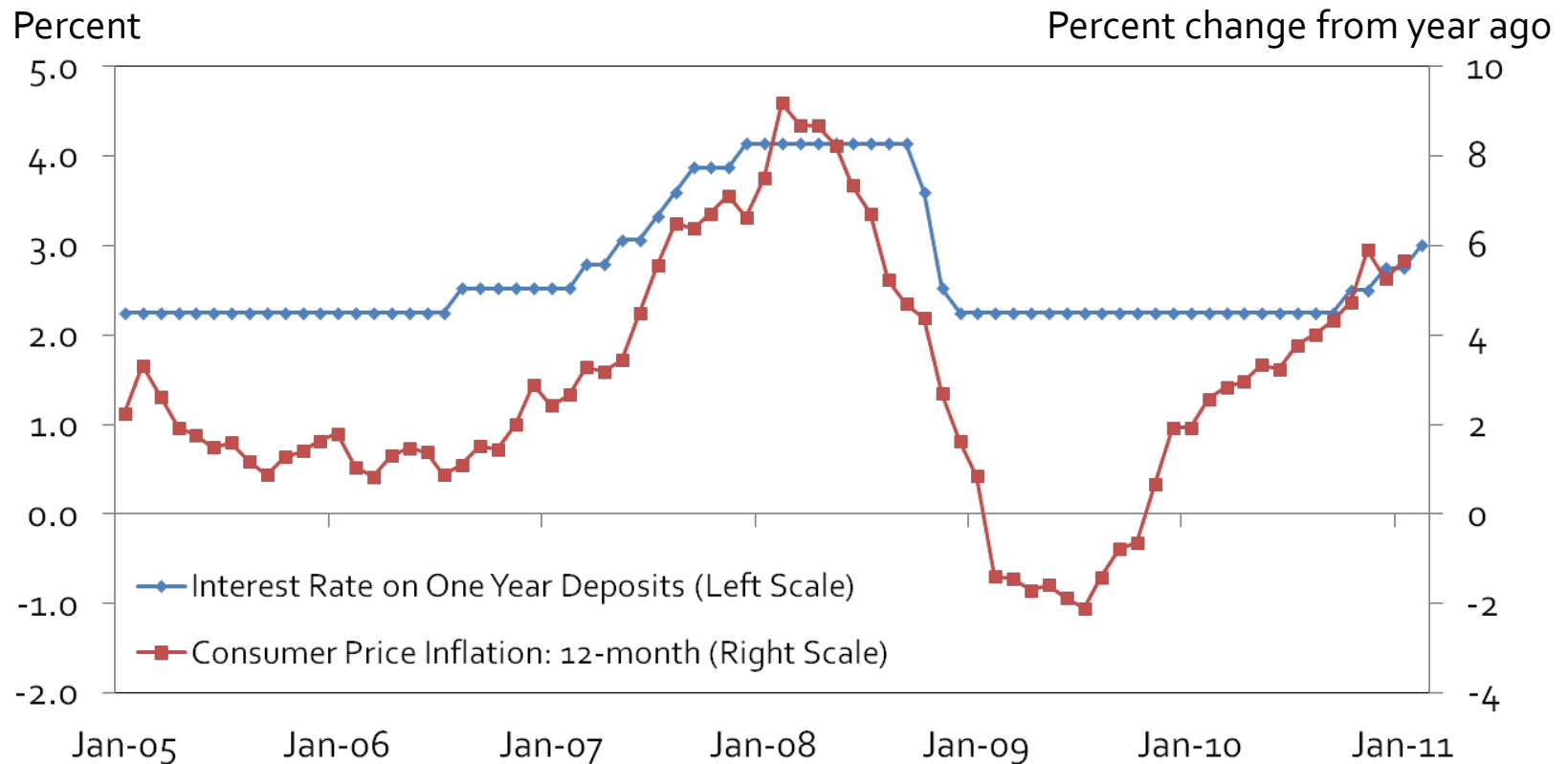


Source: Food and Agricultural Organization of the United Nations and Energy Information Administration

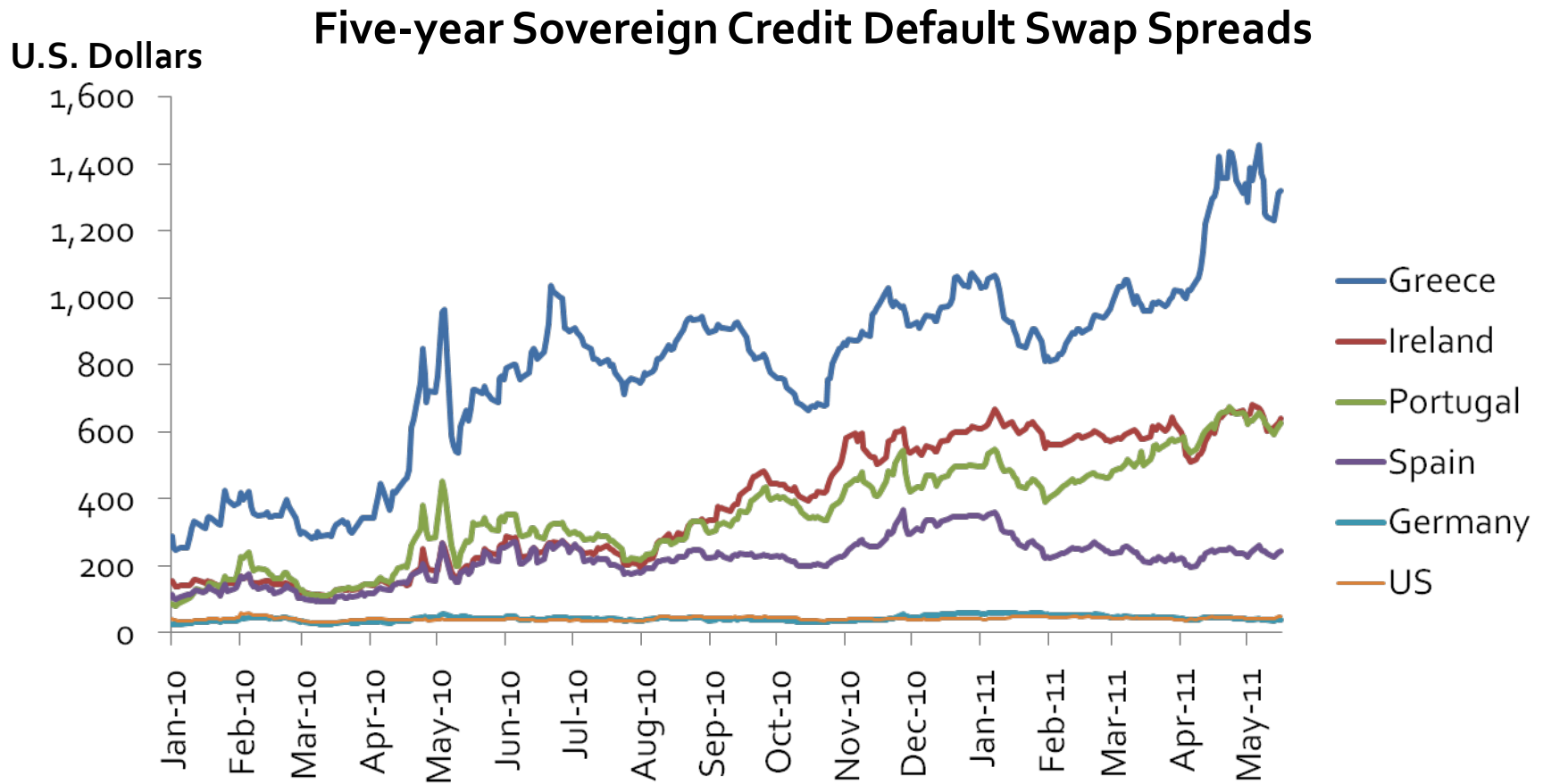


Risk #4: Higher interest rates slow the Chinese economy.

China's Inflation and Interest Rates



Risk #5: Will the Eurozone sovereign debt problems impact U.S. agriculture?



Source: Bloomberg data starting 1/4/10 and ending 1/19/11. U.S. is priced to Euros.



Risk #6: Agriculture Faces Huge Interest Rate Risk.

$$\text{Capitalized Land Values} = \frac{\text{Expected Incomes}}{\text{Expected Discount Rates}}$$

Farm Incomes Rise with
Lower Interest Rates

Discount Rates Fall with
Lower Interest Rates

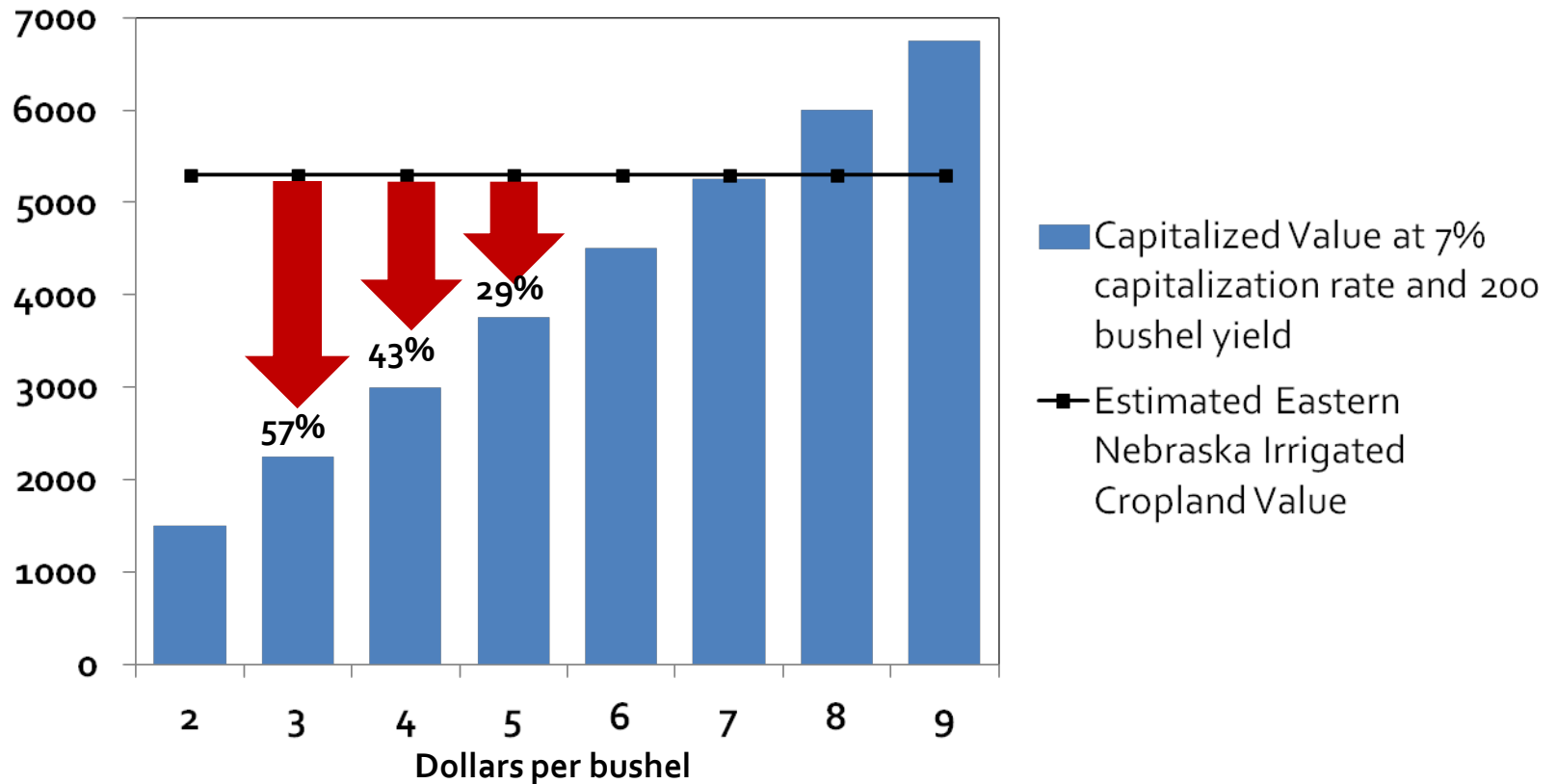
What Happens to Farmland Values
Under Higher Interest Rates?



Could farmland values experience a correction?

Capitalized Revenues from Corn Production

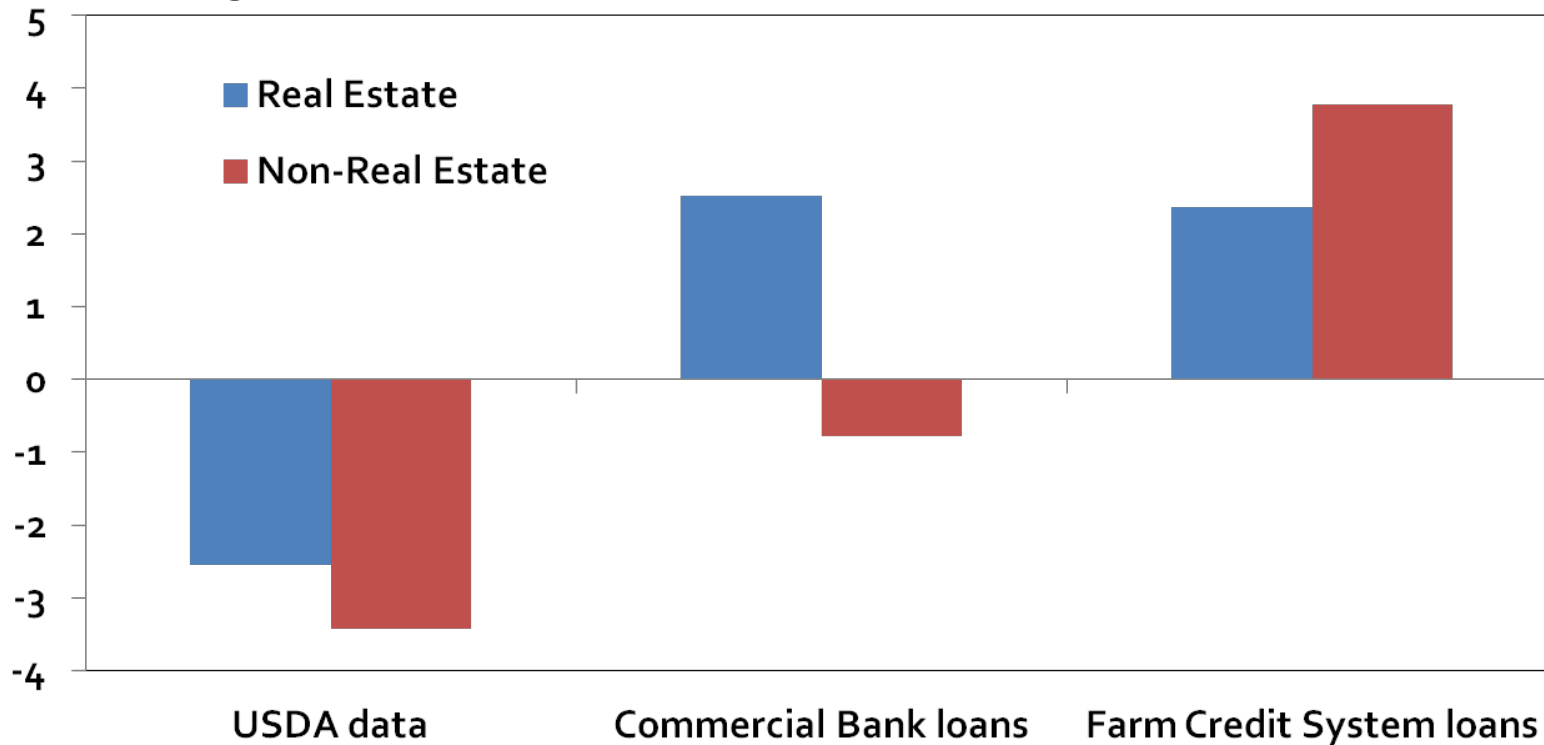
Dollars per acre



Risk #7: How much debt do farmers really have?

Growth in Farm Real Estate and Non-Real Estate Debt (2009 to 2010)

Percent change from previous year



Source: USDA, Agricultural Finance Databook, Federal Farm Credit Banks



Conclusions

- Rural America fared better during the recession and recovery.
- Crop incomes are booming and farmers are buying tractors, land, and more.
- Economic growth and inflations have risen recently.
- Despite a stronger recovery, headwinds remains.
- New opportunities are emerging with stronger demand.
- Agriculture continues to face volatile markets.

Low leverage ratios and strong working capital are the best way to manage through volatile times.



For More Information on Agricultural and Rural Economies

www.kansascityfed.org

