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The outlook for the swine industry and its relationship with the global economy

Brian C. Briggeman

Associate Professor and Director of the Arthur Capper Cooperative Center

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

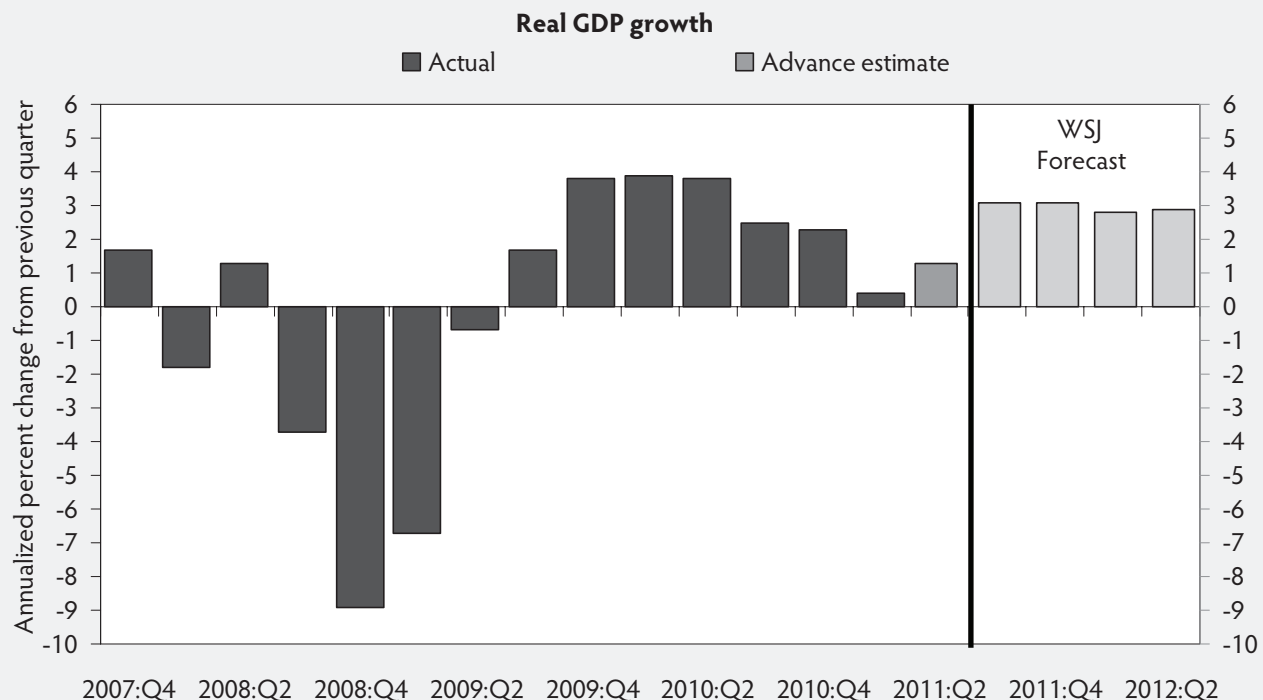
Opportunities

1. Economy is recovering
2. Food expenditures are rising
3. Business and financial markets have improved
4. Low cost of borrowing
5. Farm income is very positive
6. Agricultural exports have surged
7. Global food demand is changing
8. High commodity prices
9. Farmland values boom
10. Swine outlook: cautiously optimistic

Challenges

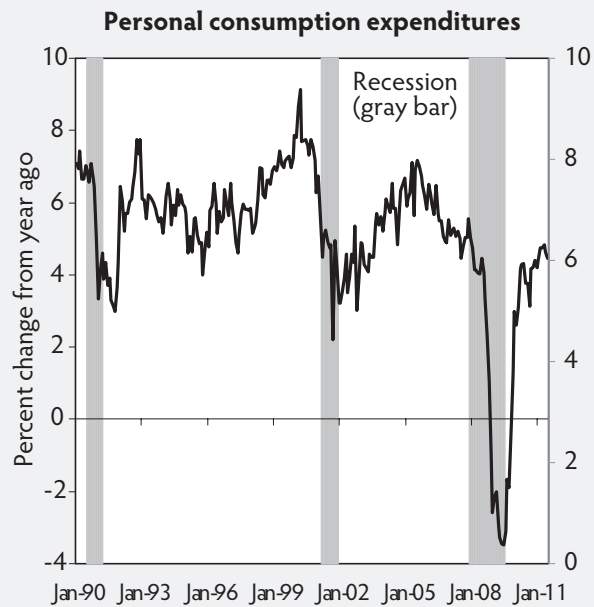
1. Recovery is anemic
2. Elevated unemployment rate
3. Uncertainty abounds
4. Inflation risk
5. Will expected profits falter?
6. Risks facing global growth
7. Who will meet this changing food demand?
8. High commodity prices
9. Will they bust?
10. Managing volatility and risk is critical

The economy is recovering from a steep recession. Will recent soft data adjust growth forecasts?

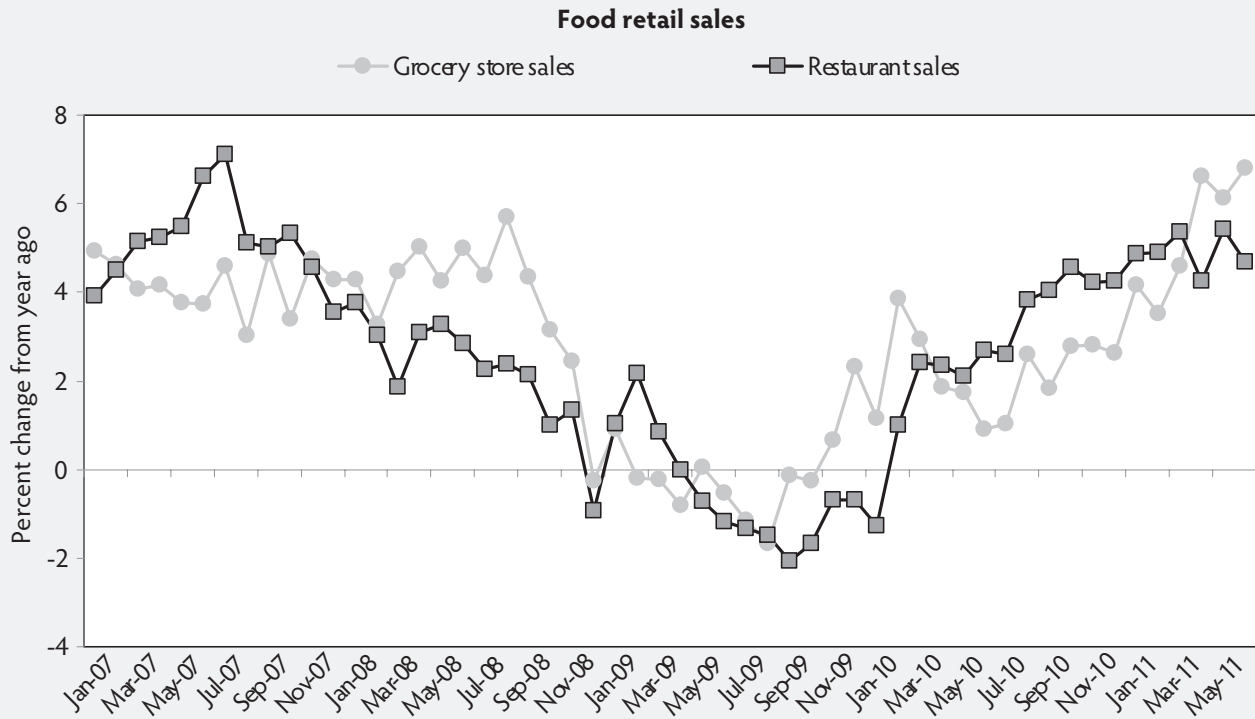


Consumption growth is key for the economic recovery in the United States

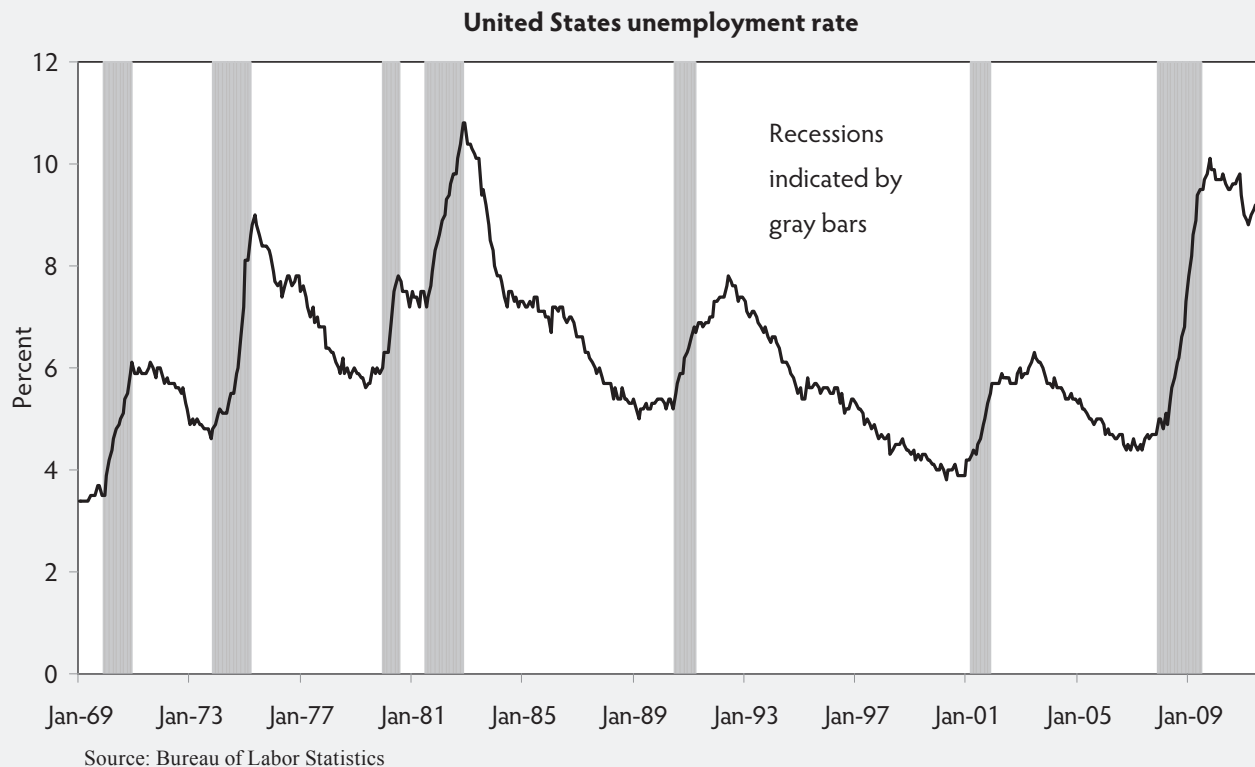
- About 70 percent of U.S. GDP comes from consumption.
- Consumption plummeted during the most recent recession.
- When tax credits expired, the housing sector slowed considerably.
 - ◀ Inventories remain elevated.
 - ◀ Housing starts remain low.
 - ◀ Are prices reaching a bottom?
- Consumer confidence is shaky.
- Savings rate has risen and debt is being reduced.
- Should consumers spend like they did in the 1990s and early 2000s?



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

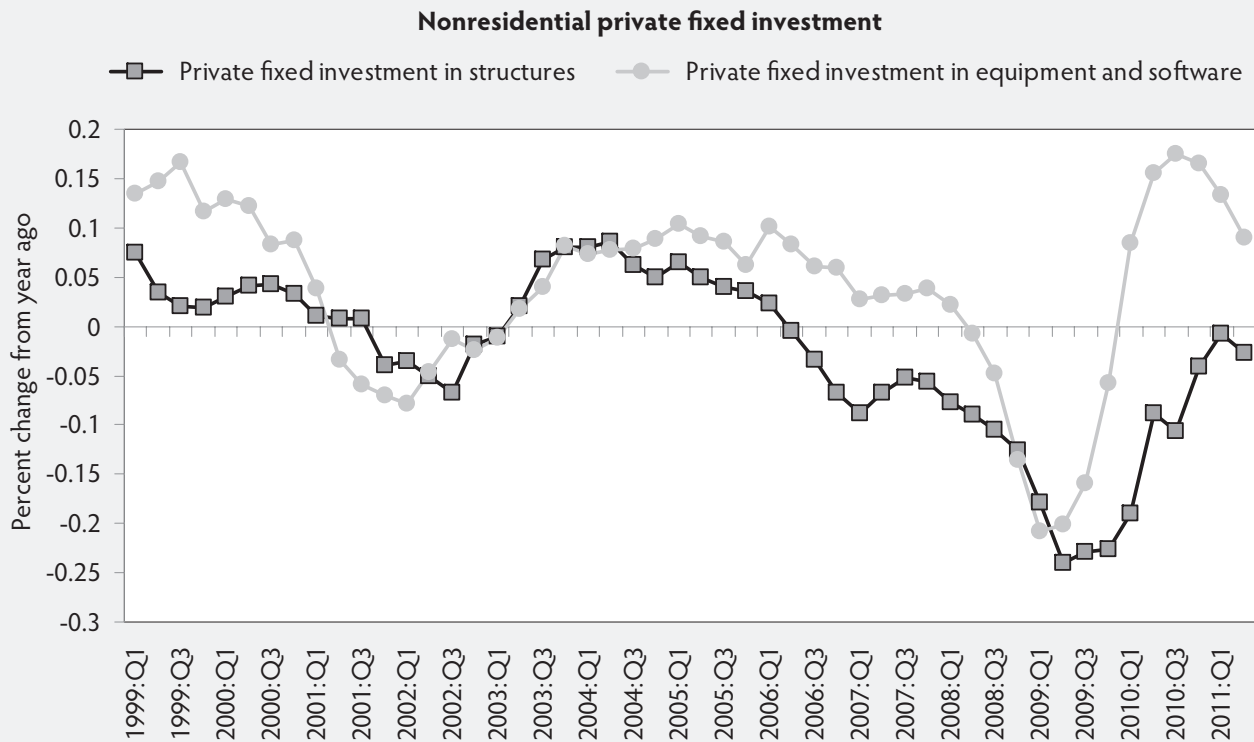


An elevated unemployment rate weighs on consumption.



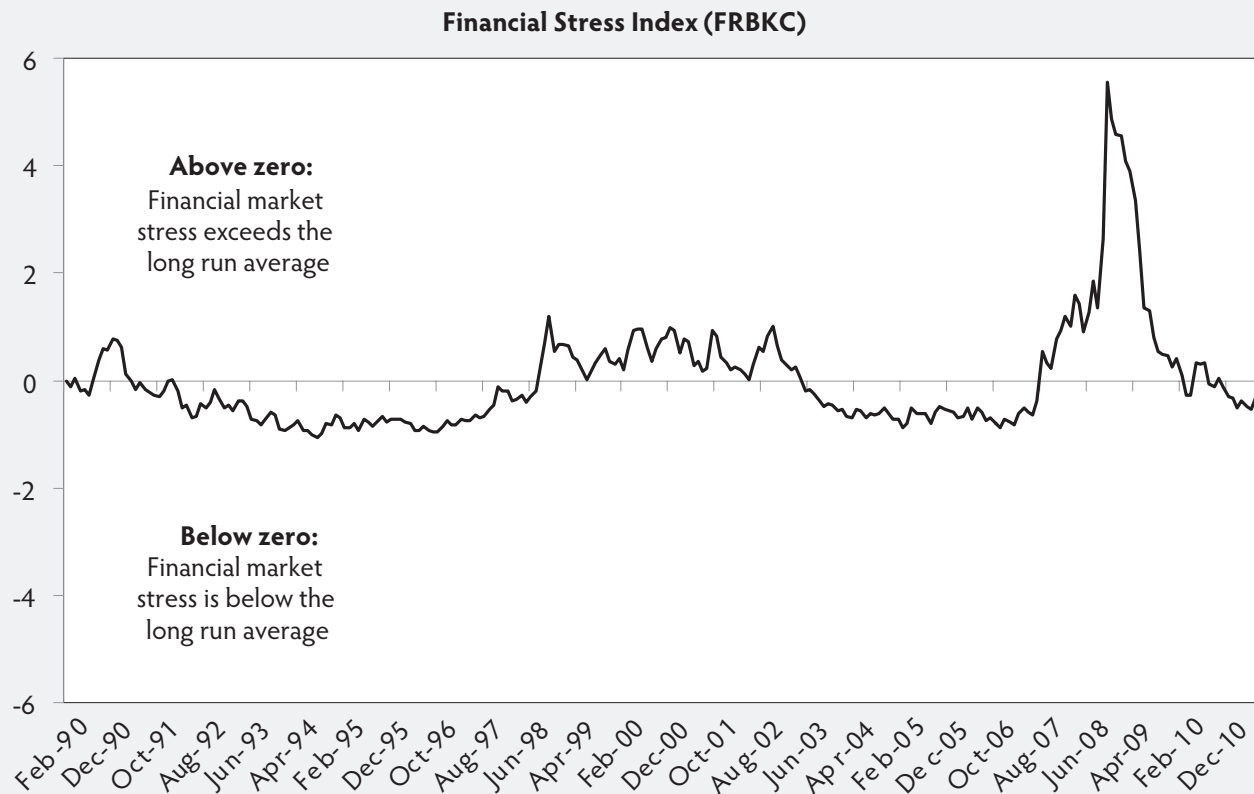
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Since 2008, business investment has improved, but will it continue?



Source: U.S. Census Bureau

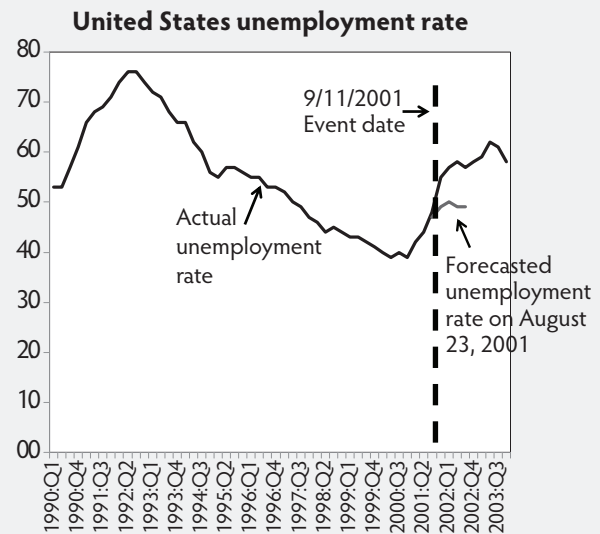
Since the financial crisis of 2008, financial stress has eased considerably.



Source: Federal Reserve Bank of Kansas City

In general, uncertainty hinders household and business decision making.

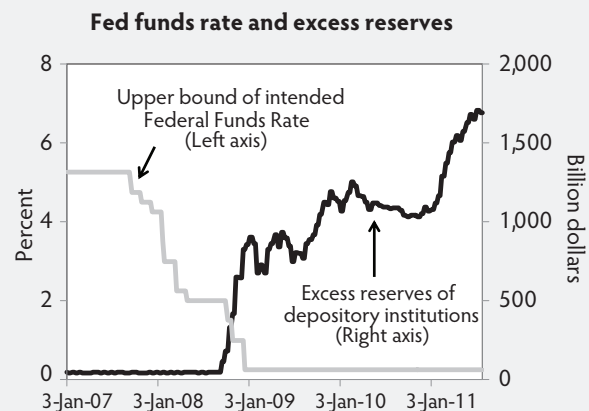
- According to economic theory, uncertainty will cause households and firms to take a ‘wait-and-see’ approach when making decisions.
- In a number of articles, Nicholas Bloom supports theory through empirical findings.
 - ◀ Unemployment rate following 9/11/2001



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

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

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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

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

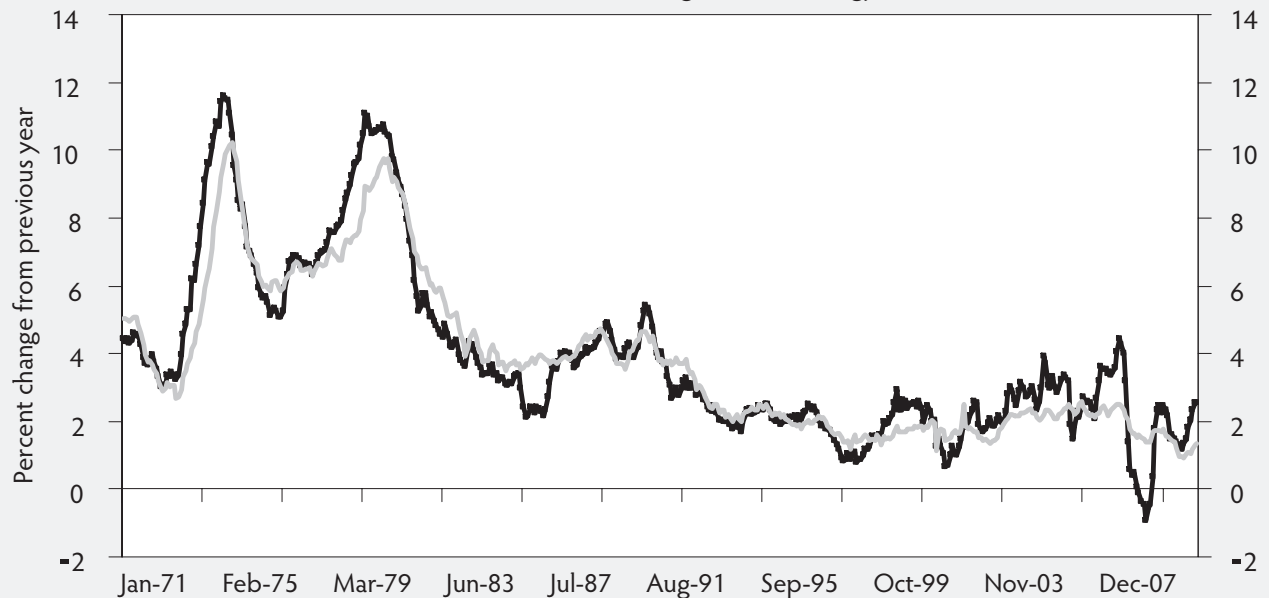
So, for rapid price inflation: $\frac{M \uparrow * V \uparrow}{Q \downarrow}$

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

Personal consumption expenditures price index

— PCE Price index (headline)

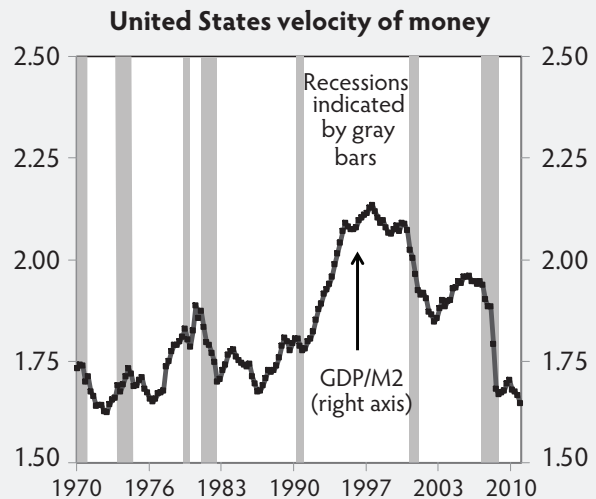
— PCE Price index excluding food and energy (core)



Source: Bureau of Economic Analysis

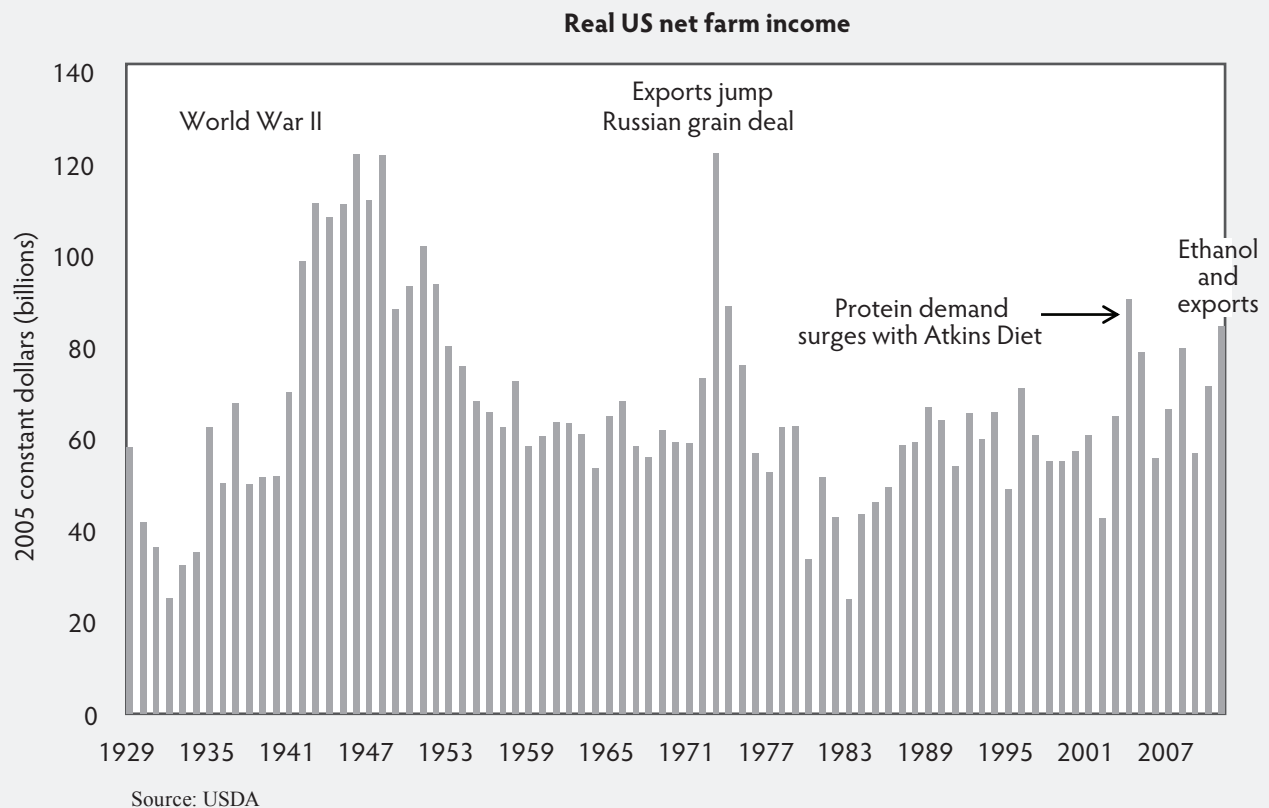
Why is inflation low? Velocity has plummeted.

- 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?



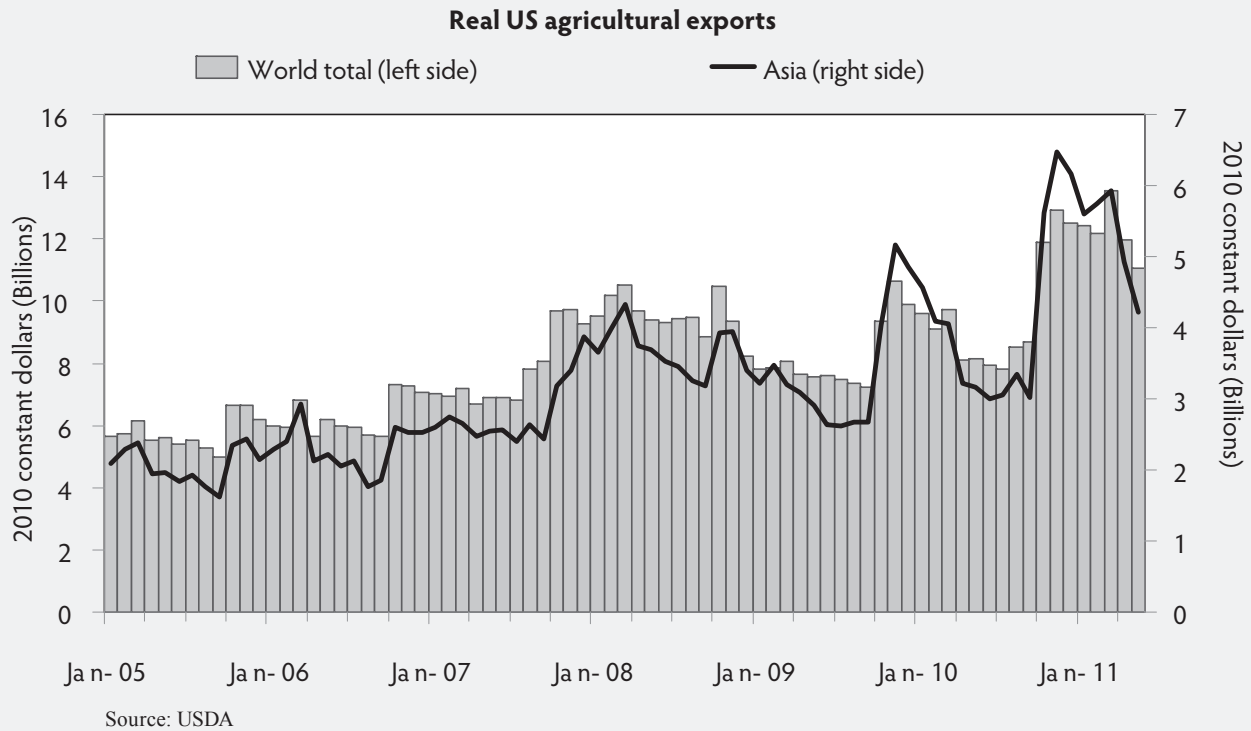
Source: BEA and Federal Reserve Board of Governors

Net farm income is subject to booms and busts.

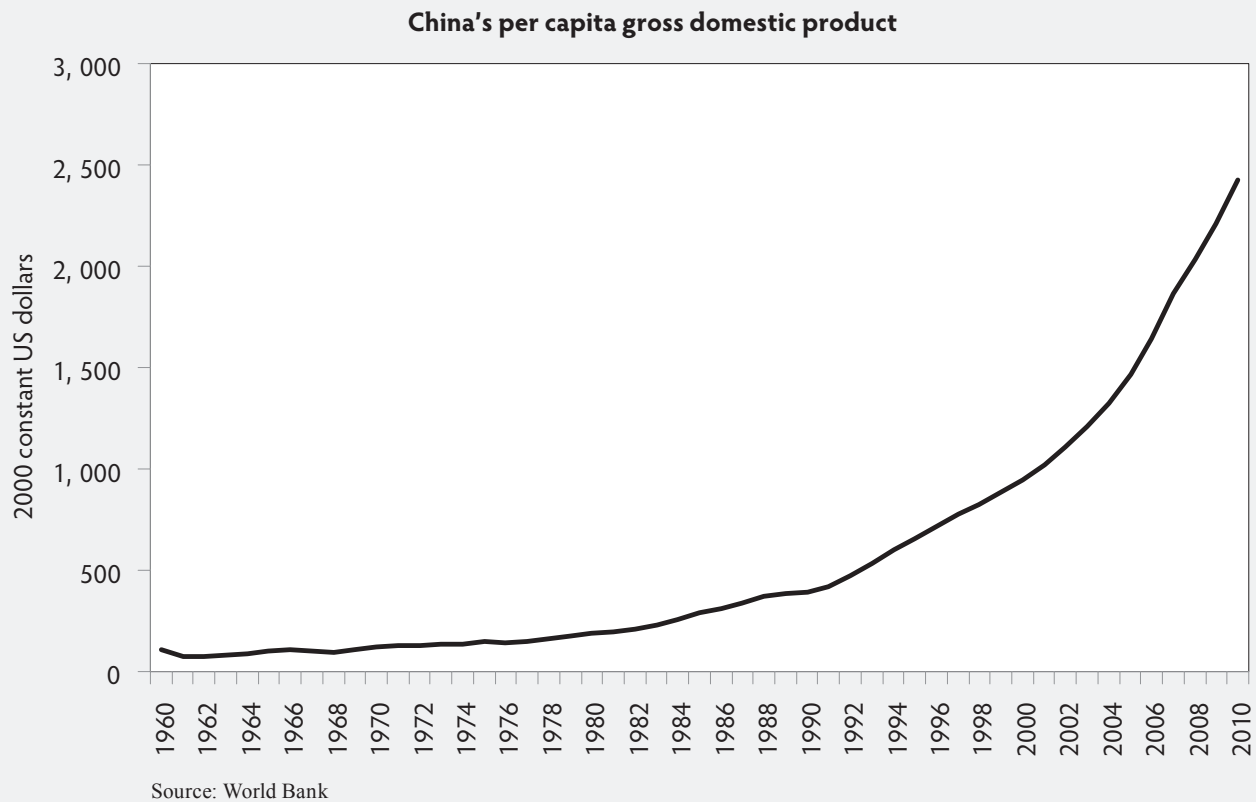


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Agricultural exports have surged led by Asia.



Will China's exponential income growth continue?

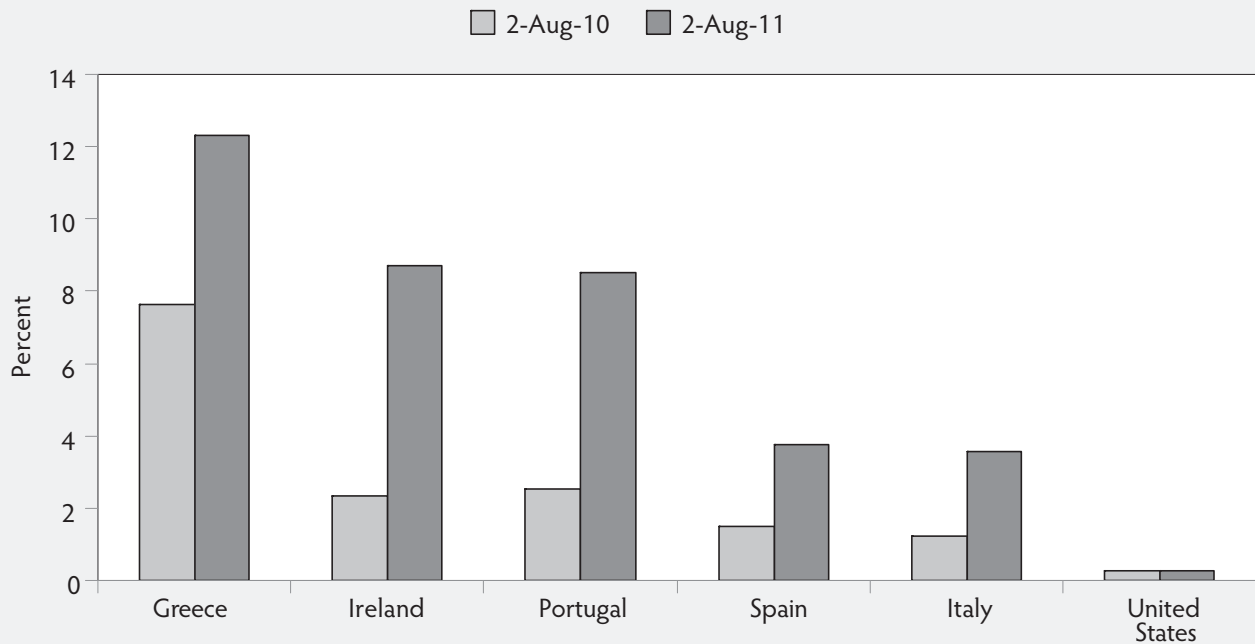


What happens if the Chinese economy slows?

- 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.

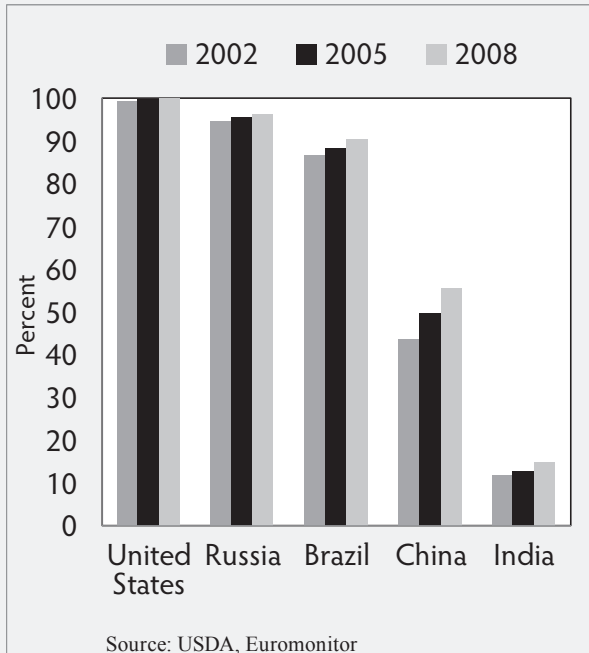
Spread between ten year government bond and German bund



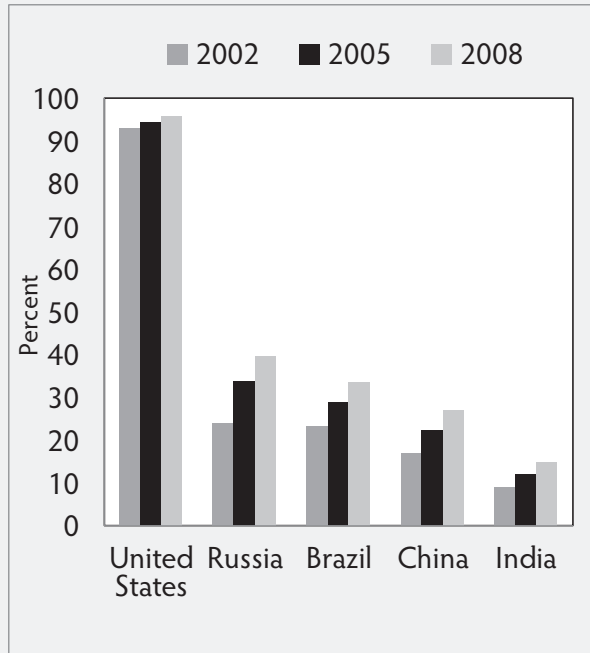
Source: Thomson Reuters

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

Households owning a refrigerator

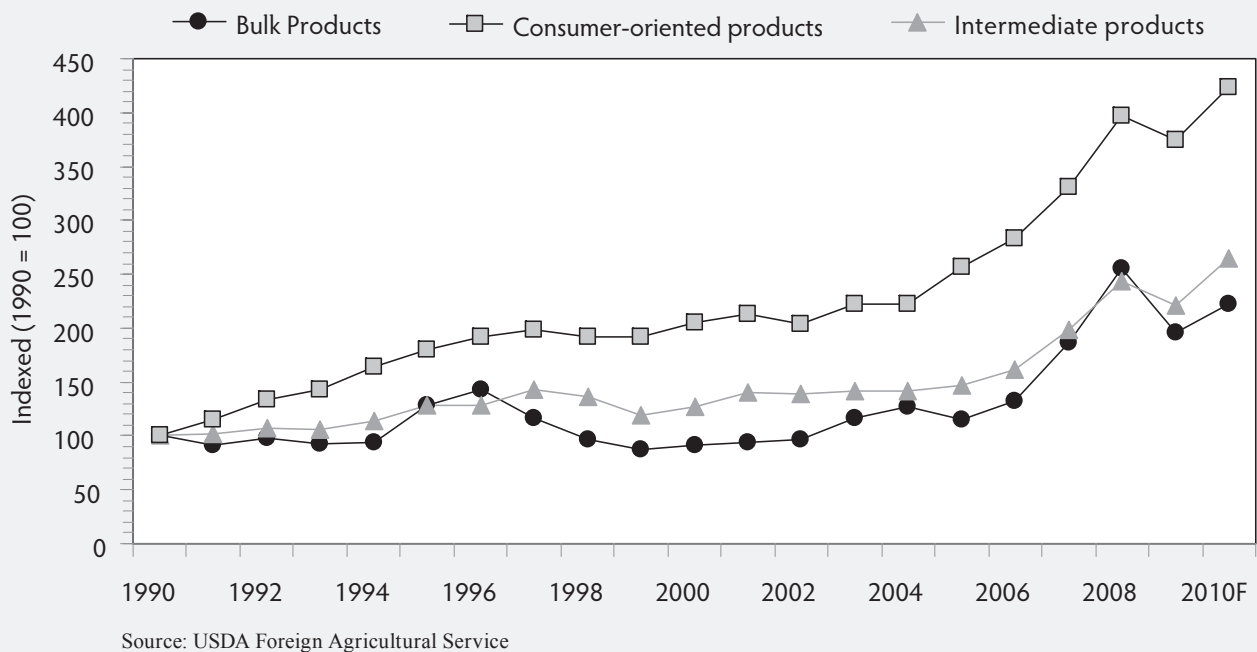


Households owning a microwave oven

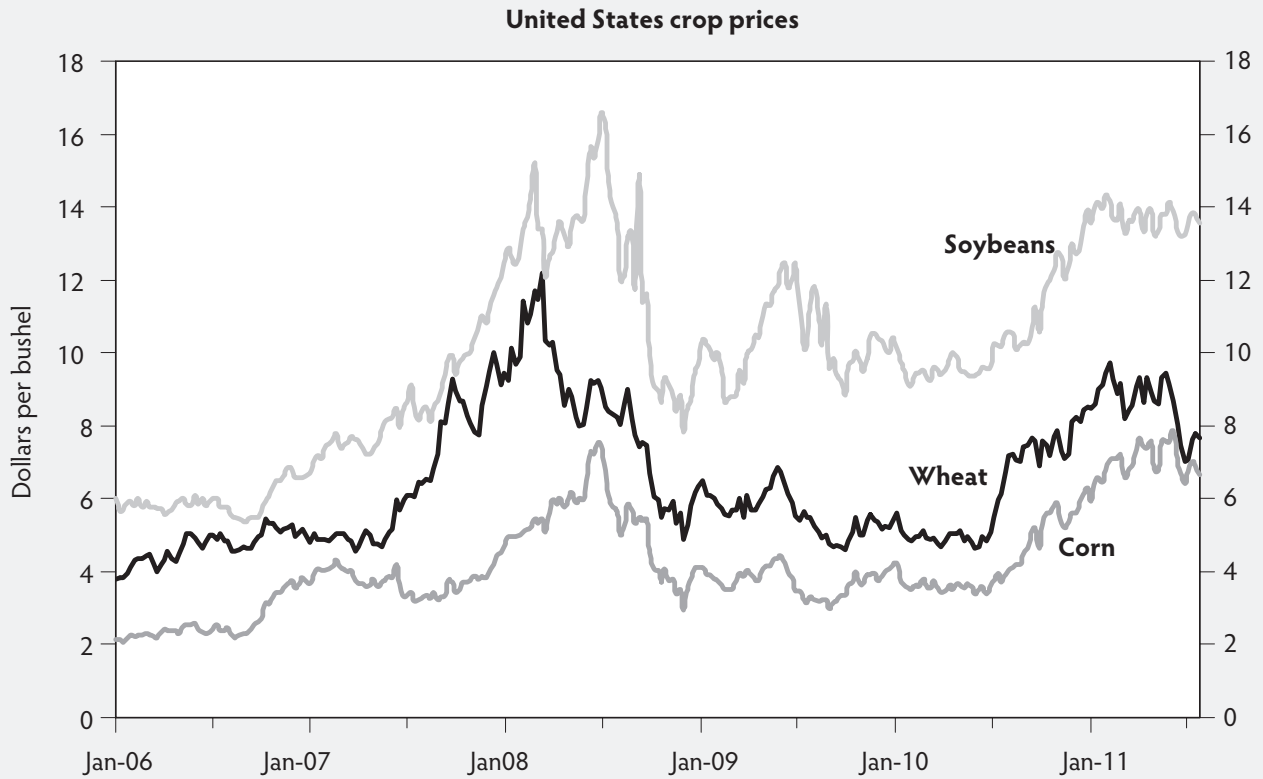


Will consumer-oriented products continue to lead agricultural exports?

Value of US agricultural exports

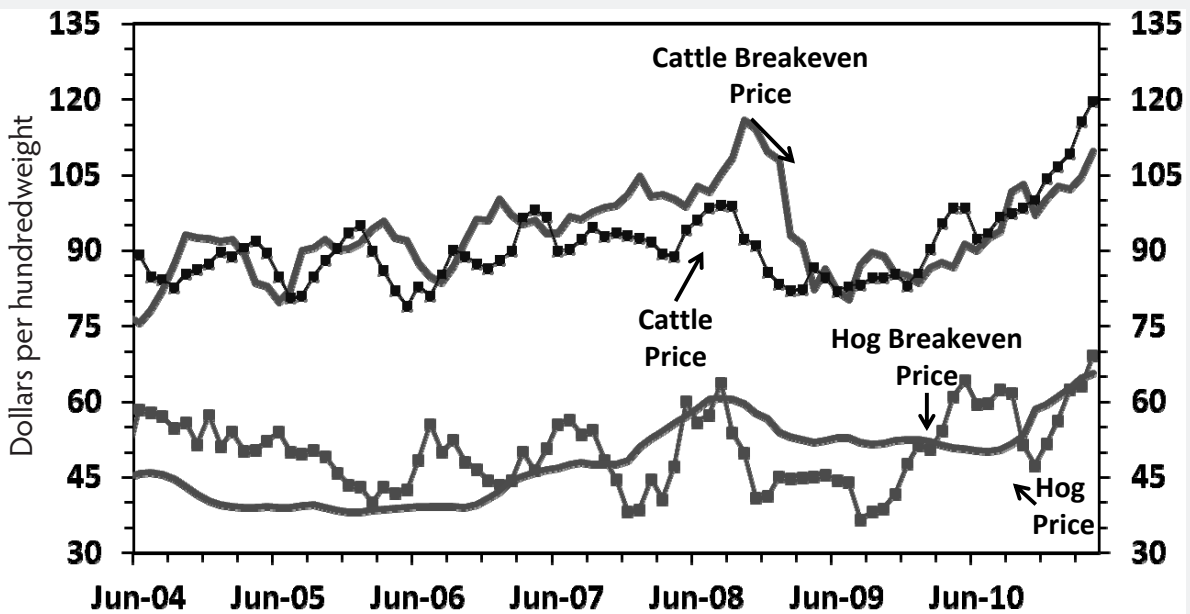


US crop prices have surged, boosting crop incomes.



Source: Commodity Research Bureau

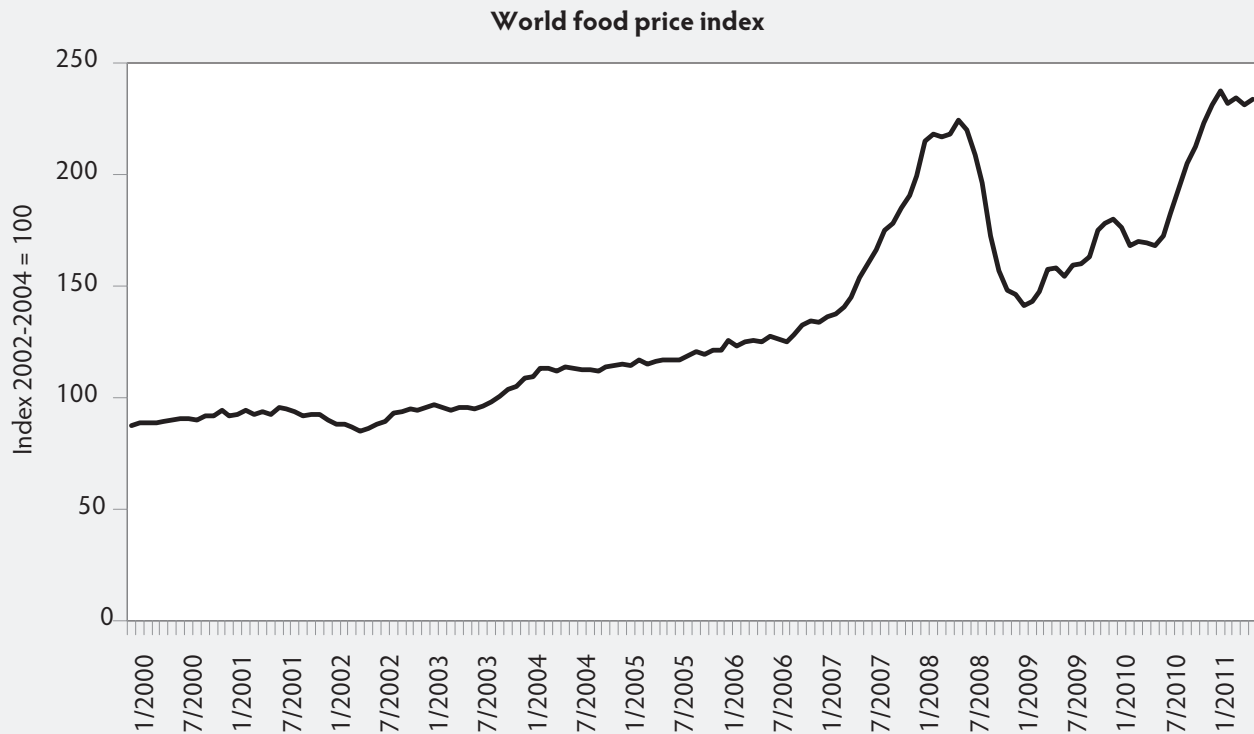
Despite rising crop prices, livestock profits have improved.



Source: USDA and Iowa State University

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



Source: Food and Agriculture Organization

Interest rates can affect farmland values through two avenues.

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Crop Surge Lifts Farmland Values

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By SCOTT KILMAN

Farmland values in much of the Midwest are climbing...

The New York Times

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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

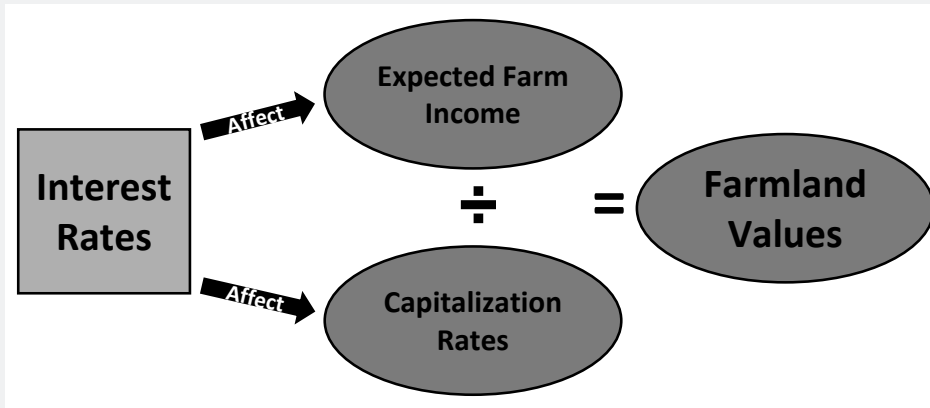
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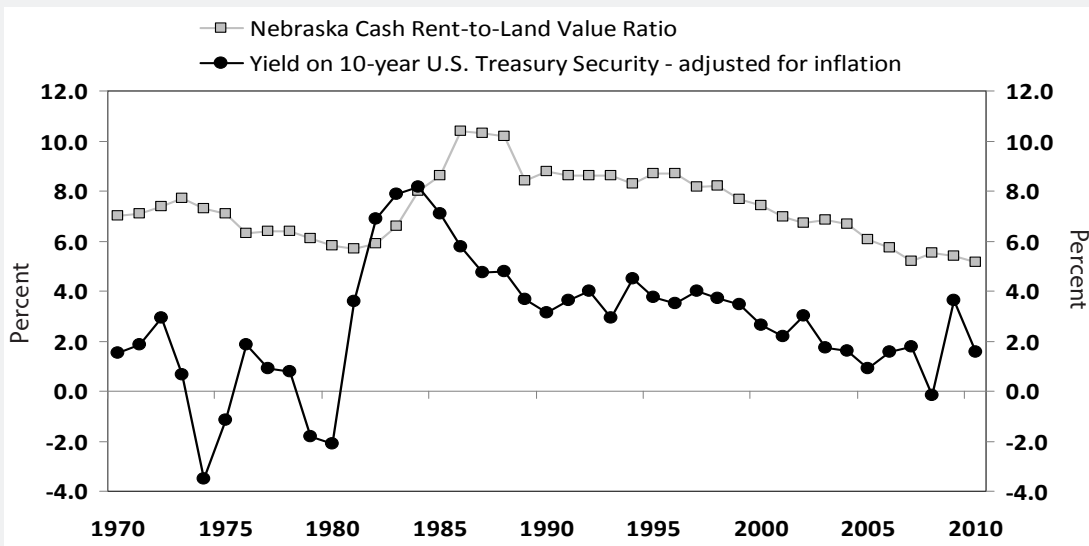
Jeff Freking and his brother on Monday for \$10,000 an acre would seem to have nothing in common with a condo in Miami or a house in Las Vegas.

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Interest rates can affect farmland values through two avenues.

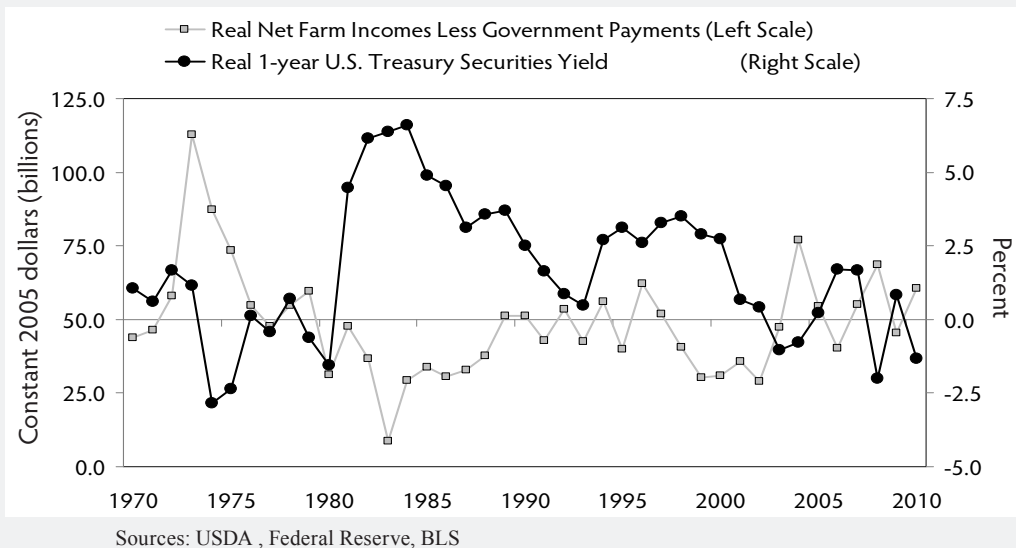


Over time, real interest rates and capitalization rates tend to move together.



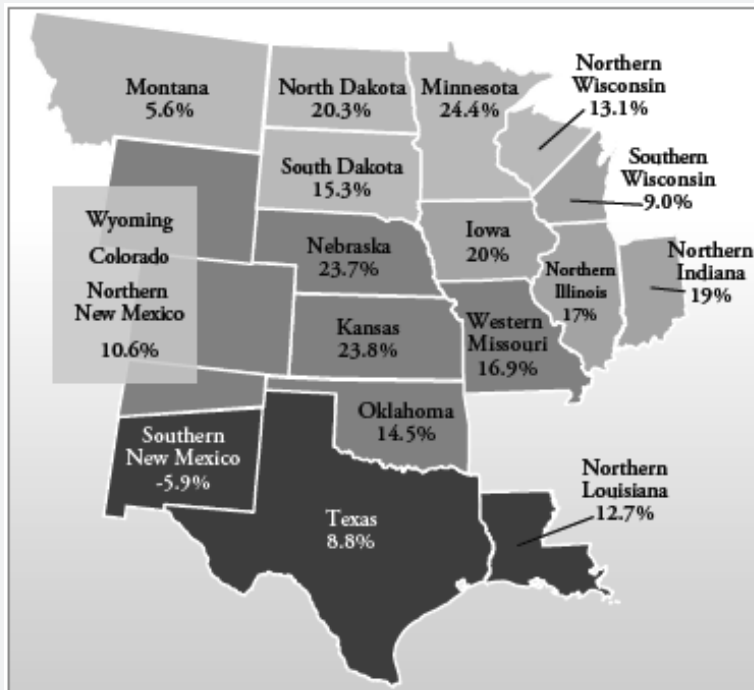
Sources: USDA, Federal Reserve and BLS

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



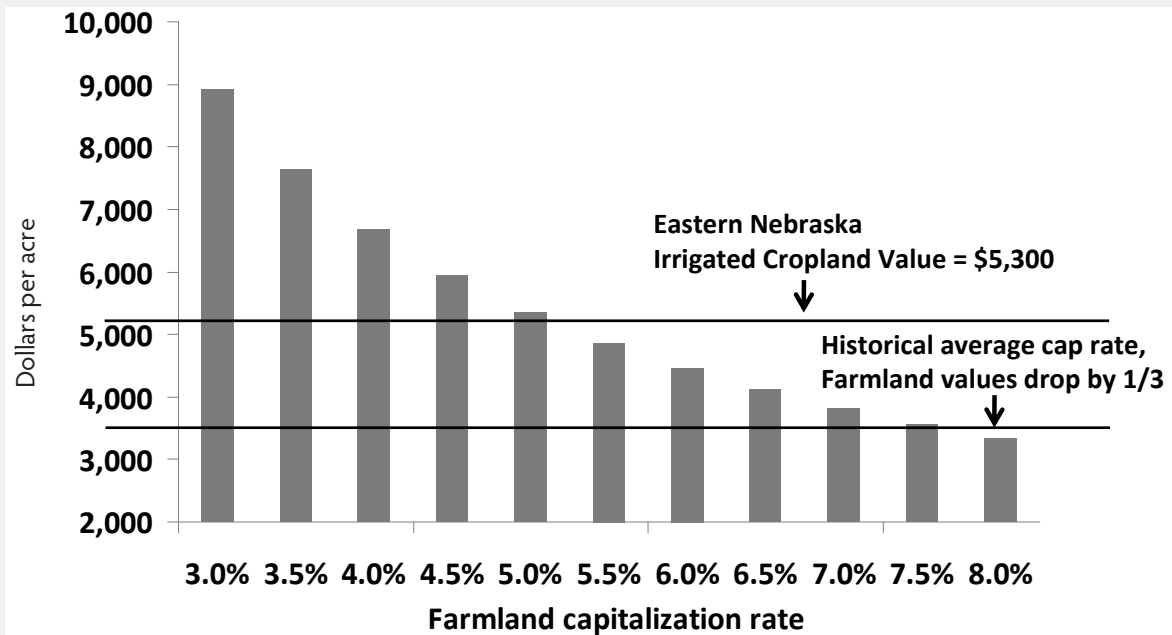
With low capitalization rates and elevated farm income, farmland values have surged.

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



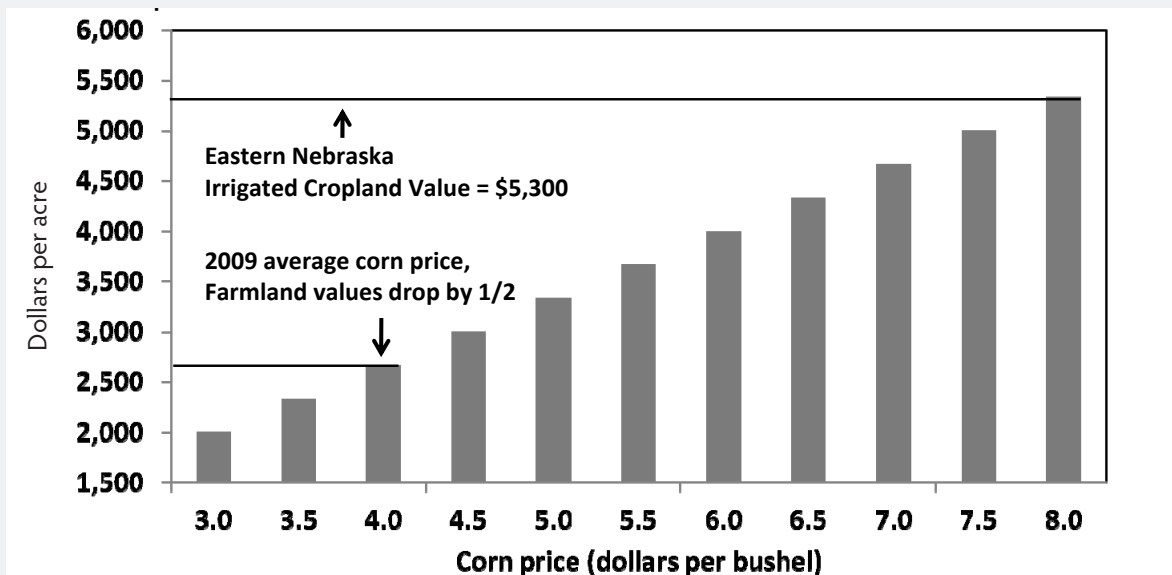
Source: Agricultural Finance Databook, Federal Reserve Bank of Kansas City

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.