

Macroeconomic Outlook for U.S. Agriculture



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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

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Overview of the Federal Reserve System

The “Fed” is the Central Bank of the U.S.

- Board of Governors: 7 members, each appointed by U.S. President
- Federal Reserve Banks: 12 Banks, 24 Branches
- The Federal Open Market Committee (FOMC) has 19 members, 12 voting.

Primary functions:

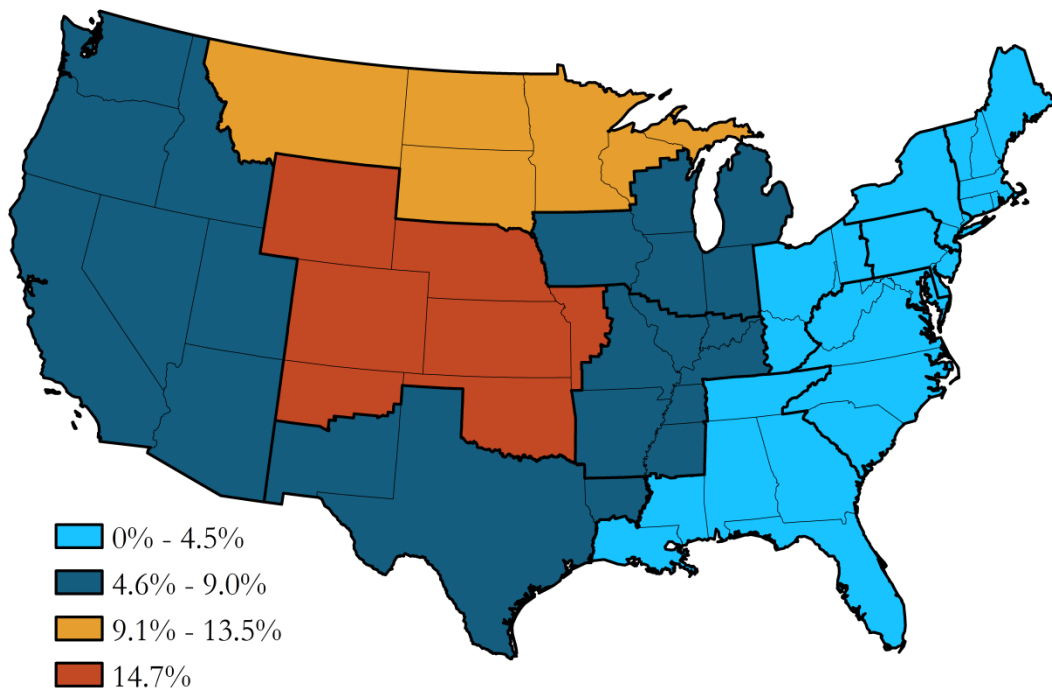
- Monetary Policy – pursue maximum employment and stable prices
- Bank Regulation – ensure safety and soundness of banks.
- Financial Services – bank for banks, and bank for federal govt.
- Lender of Last Resort – provide liquidity in times of crisis



Of the 12 Fed Districts, the 10th District is the most concentrated in agriculture by some measures.

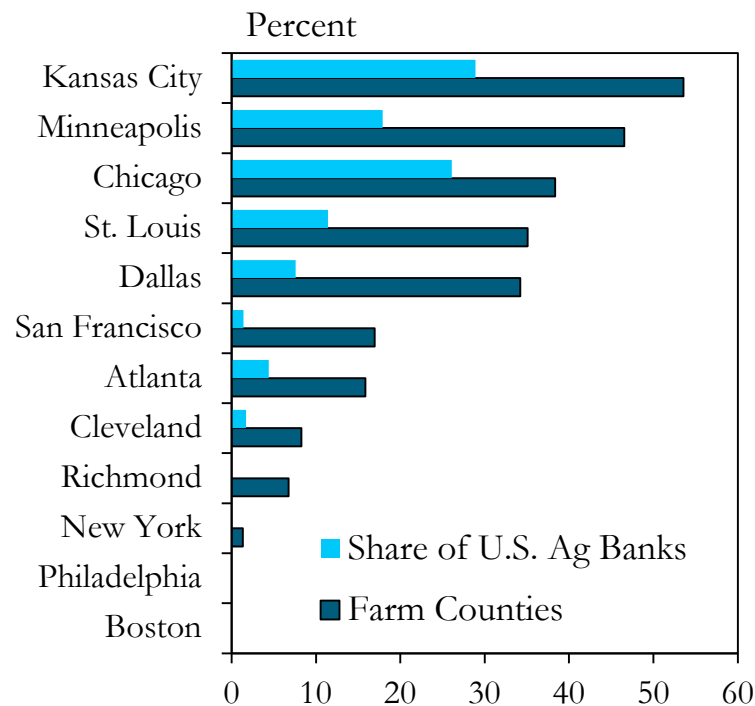
Average Farm Income as a Share of Total Personal Income

Average Across Counties by Fed District



Source: BEA.

Proportion of “Farm Dependent” Counties and Agricultural Banks



Source: BEA, USDA, Ag Finance Databook and staff calculations



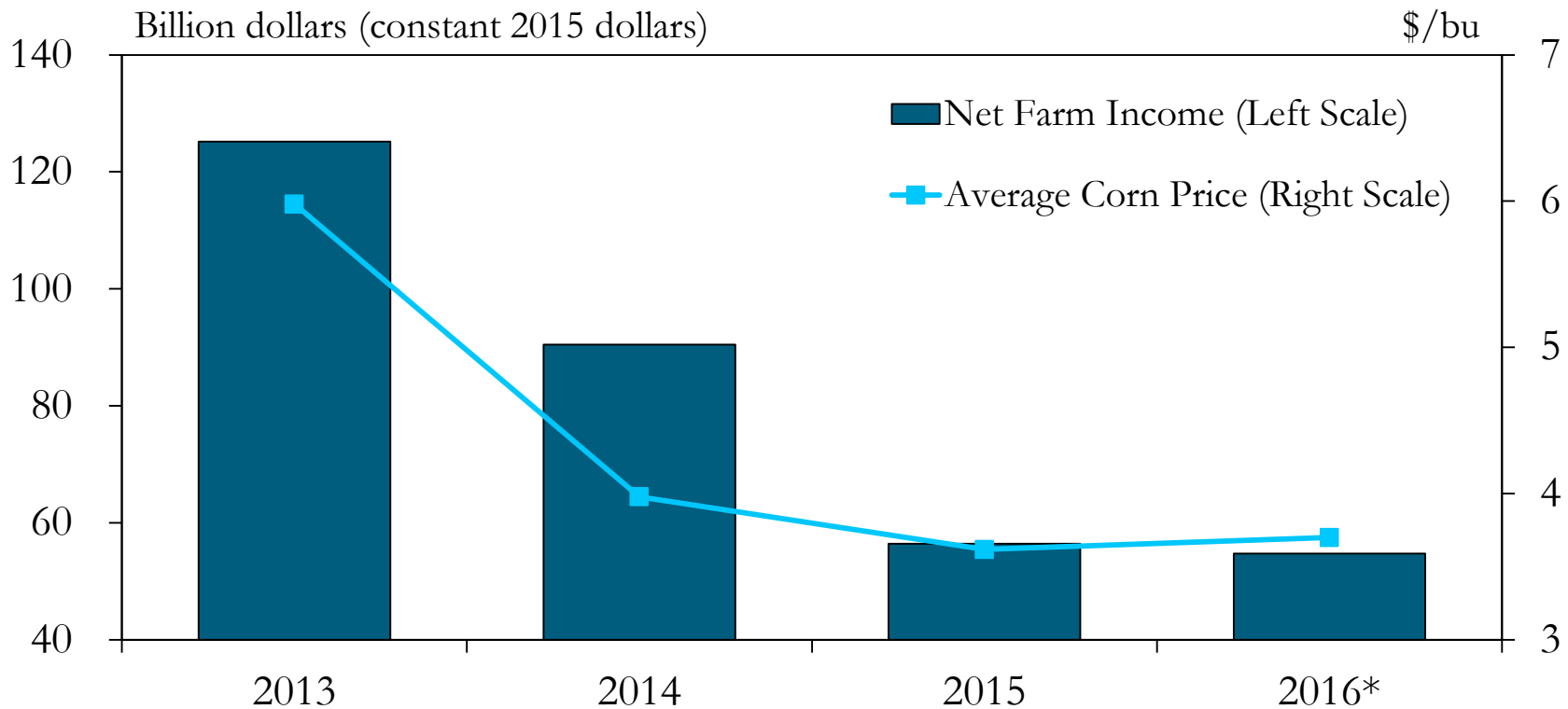
Outline

- A 3rd consecutive year of a “downturn” in the ag economy.
- Supply factors at play year-to-year, but demand strength likely the long term driver.
- Recent global and macroeconomic developments have shaped the set of concerns in the ag economy.
- Financial stress among ag borrowers and ag lenders could be more pronounced in the near future.



Farm income has dropped sharply from recent highs, along with crop prices.

U.S. Real Net Farm Income



Source: USDA.

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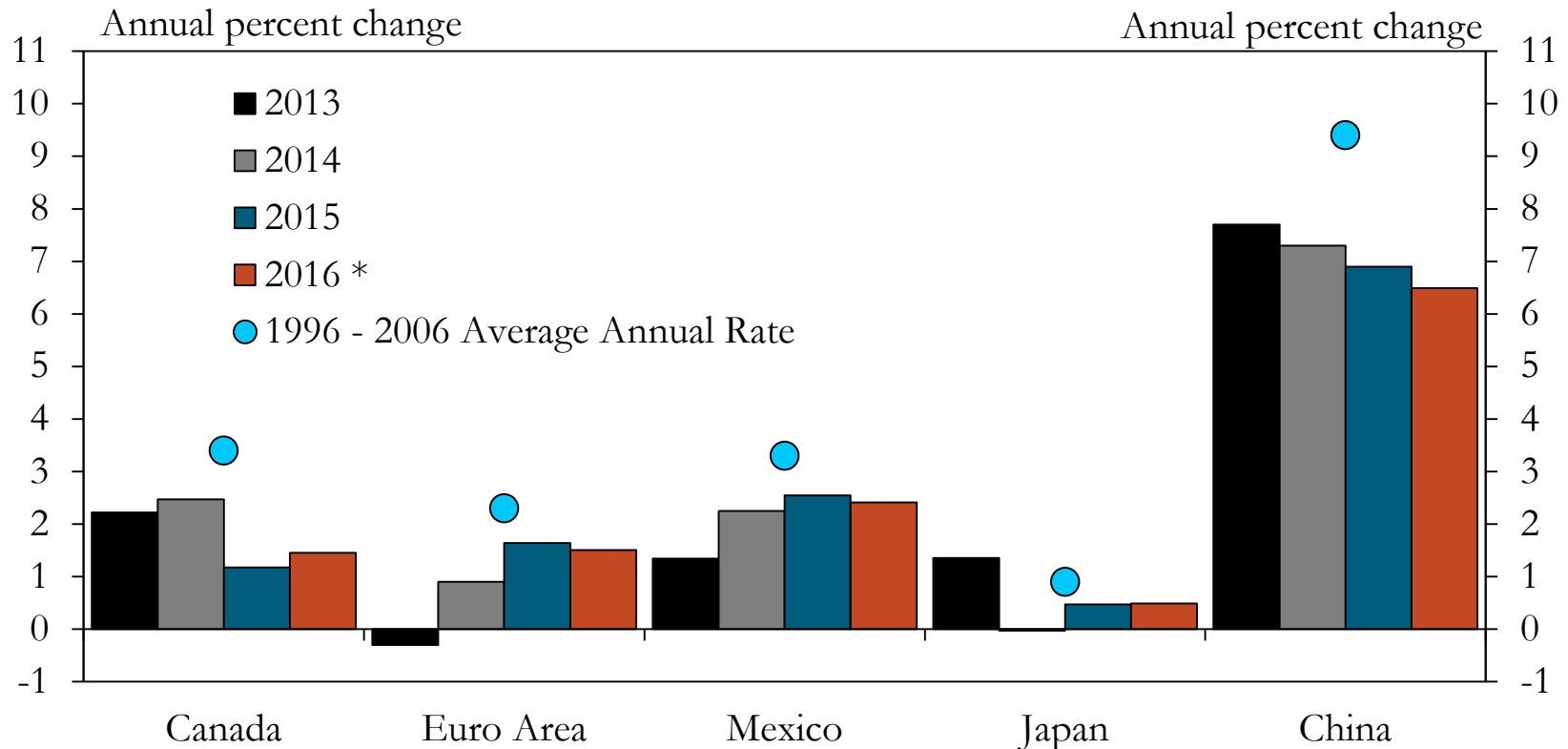
Outside of agriculture, the last three years have also been notable for the global economy.

- Fiscal challenges
- Monetary policy divergence
- Oil price collapse
- Exchange rate volatility
- Renewed China concerns
- Global financial market turmoil
- _rexit?



Global economic growth has been sluggish the last few years.

Global Real GDP Growth



* Forecast

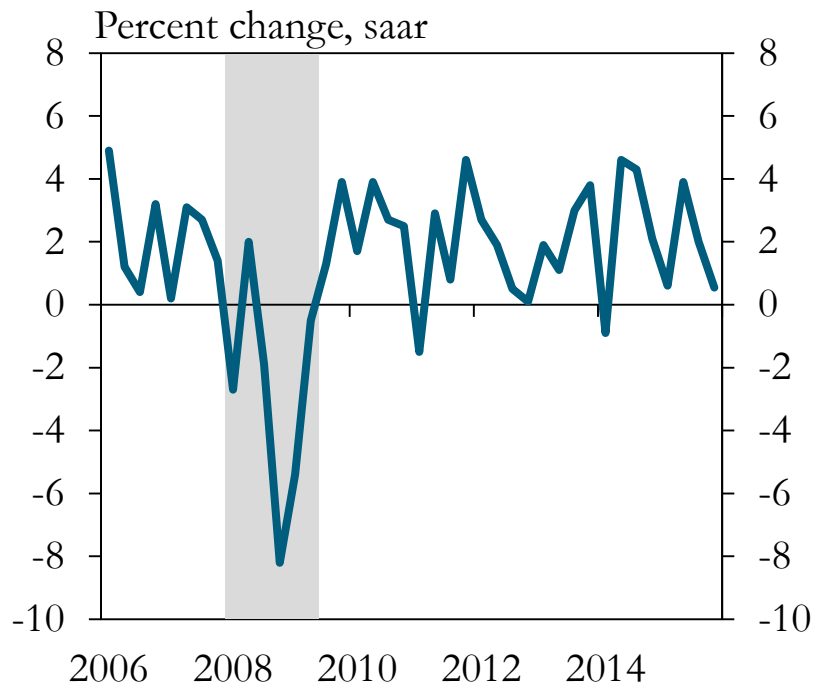
Source: IMF April 2016 Update

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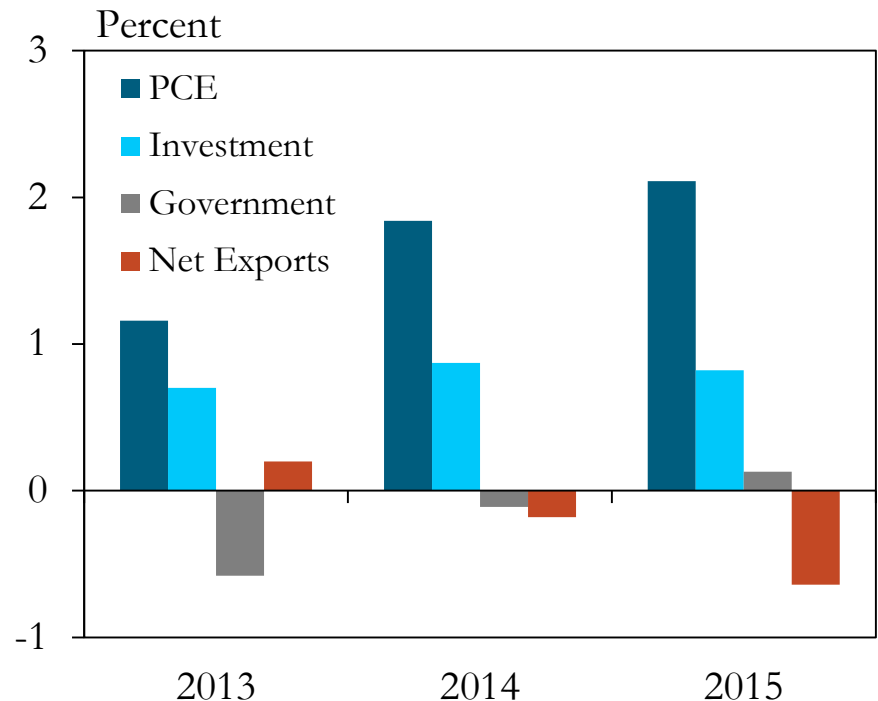
U.S. growth has been slightly better,
driven by the strength of the consumer.

U.S. Real GDP Growth



Source: BEA and Haver Analytics.

Contributions to GDP Growth

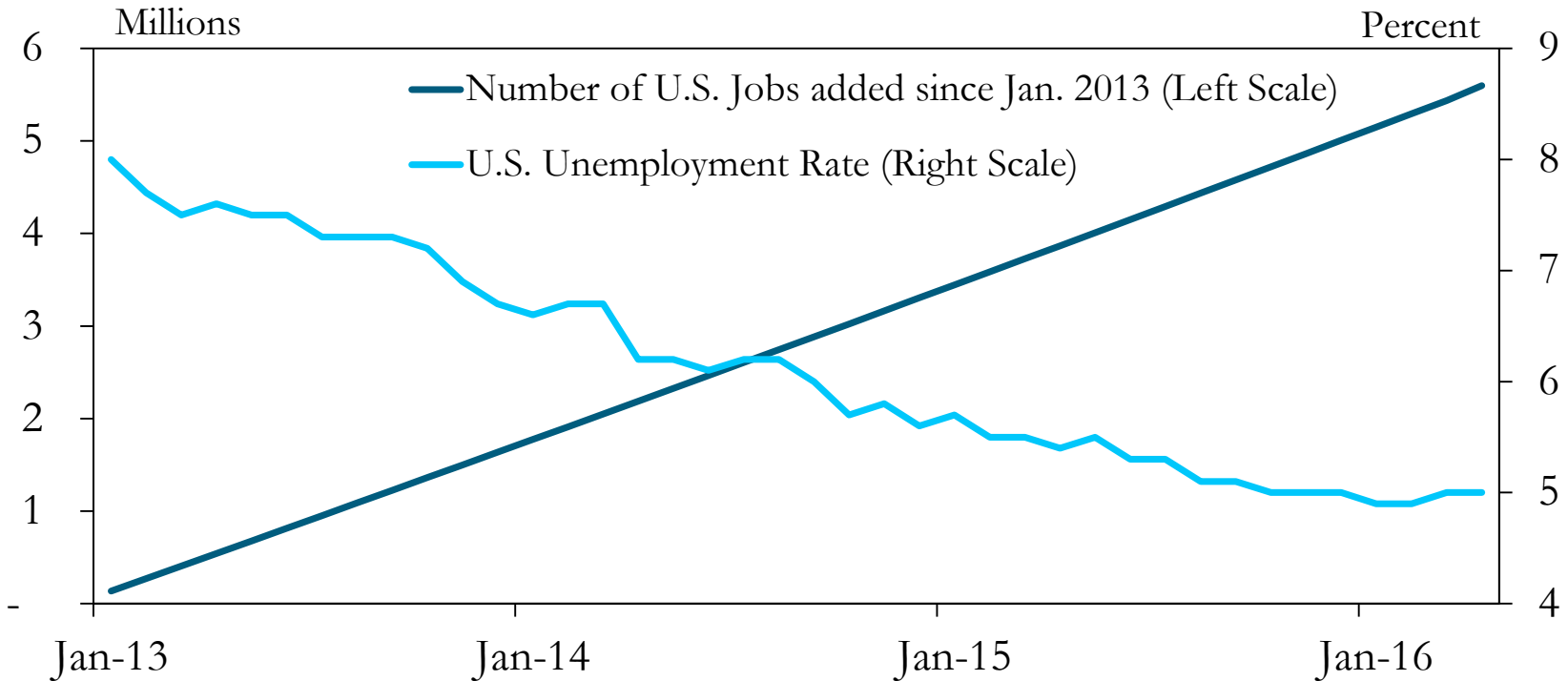


Source: BEA and Haver Analytics.



U.S. labor markets have steadily improved.

U.S. Labor Market



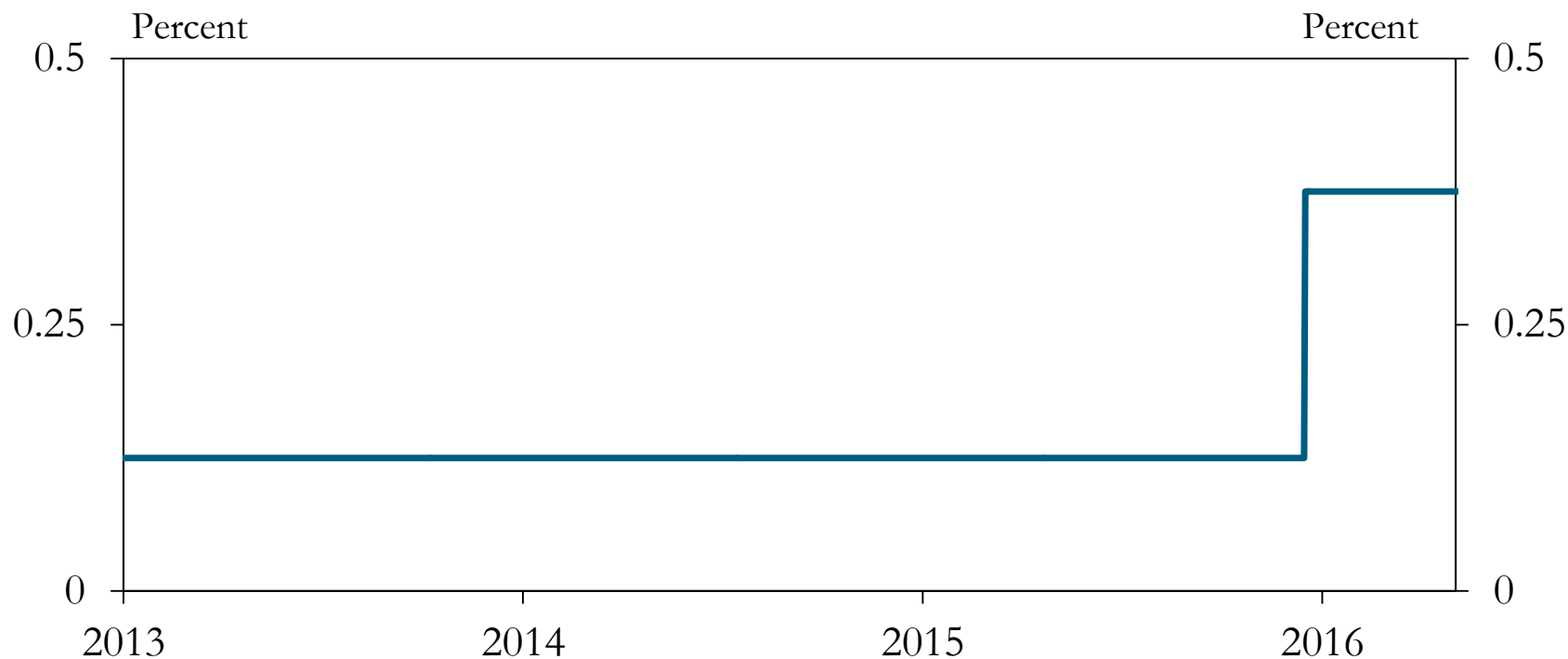
Sources: Bureau of Labor Statistics and Haver Analytics.

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Monetary policy has responded to U.S. economic improvement.

Federal Funds Target Rate



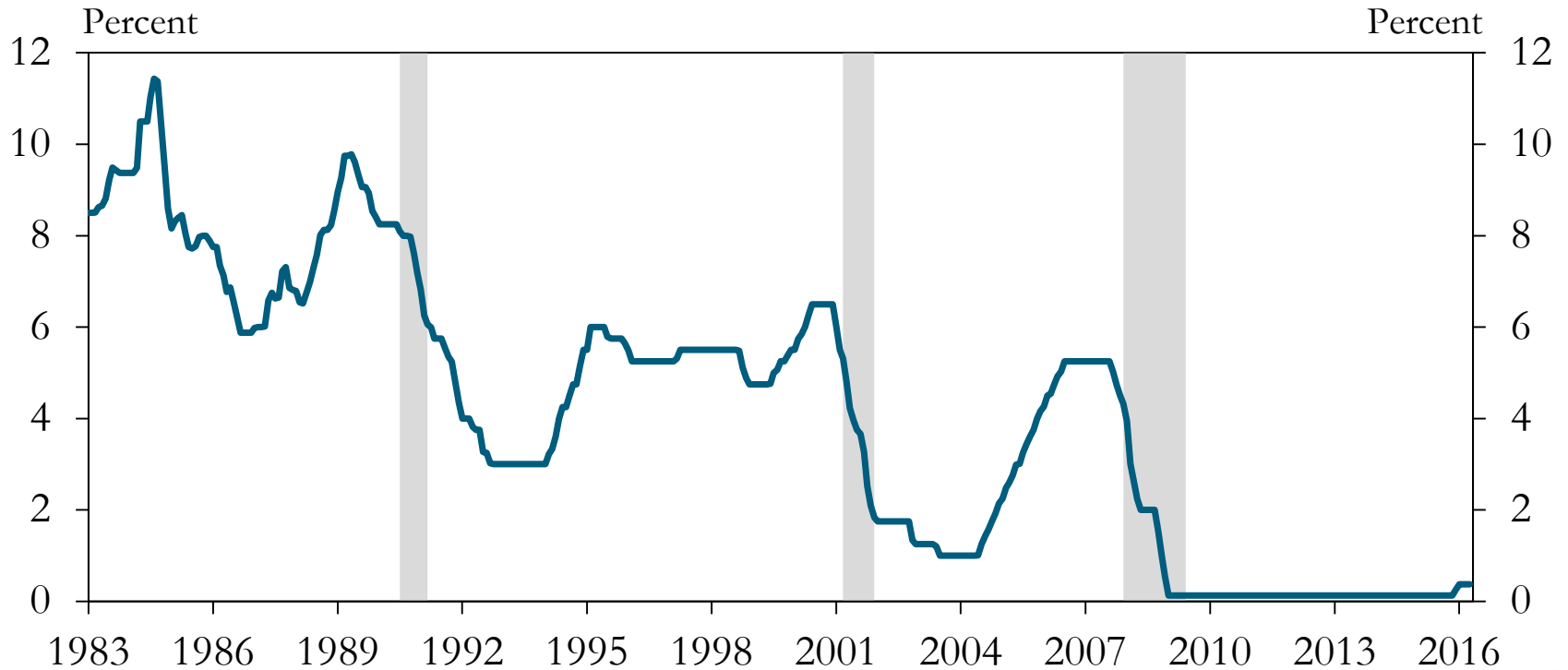
Sources: Federal Reserve Board and Haver Analytics

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But policy remains very accommodative.

Federal Funds Target Rate



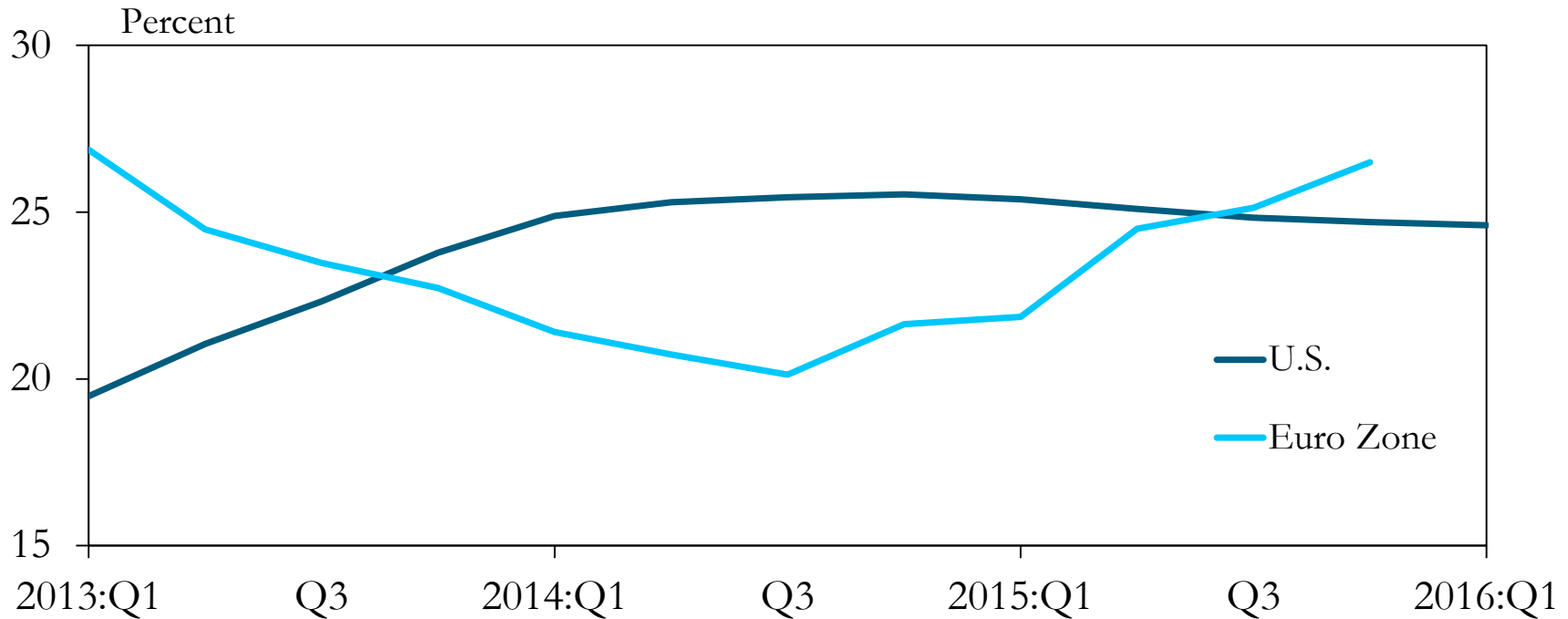
Sources: Federal Reserve Board and Haver Analytics

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Globally, central bank policies have shifted since 2013.

Central Bank Balance Sheet Assets as a Percent of GDP

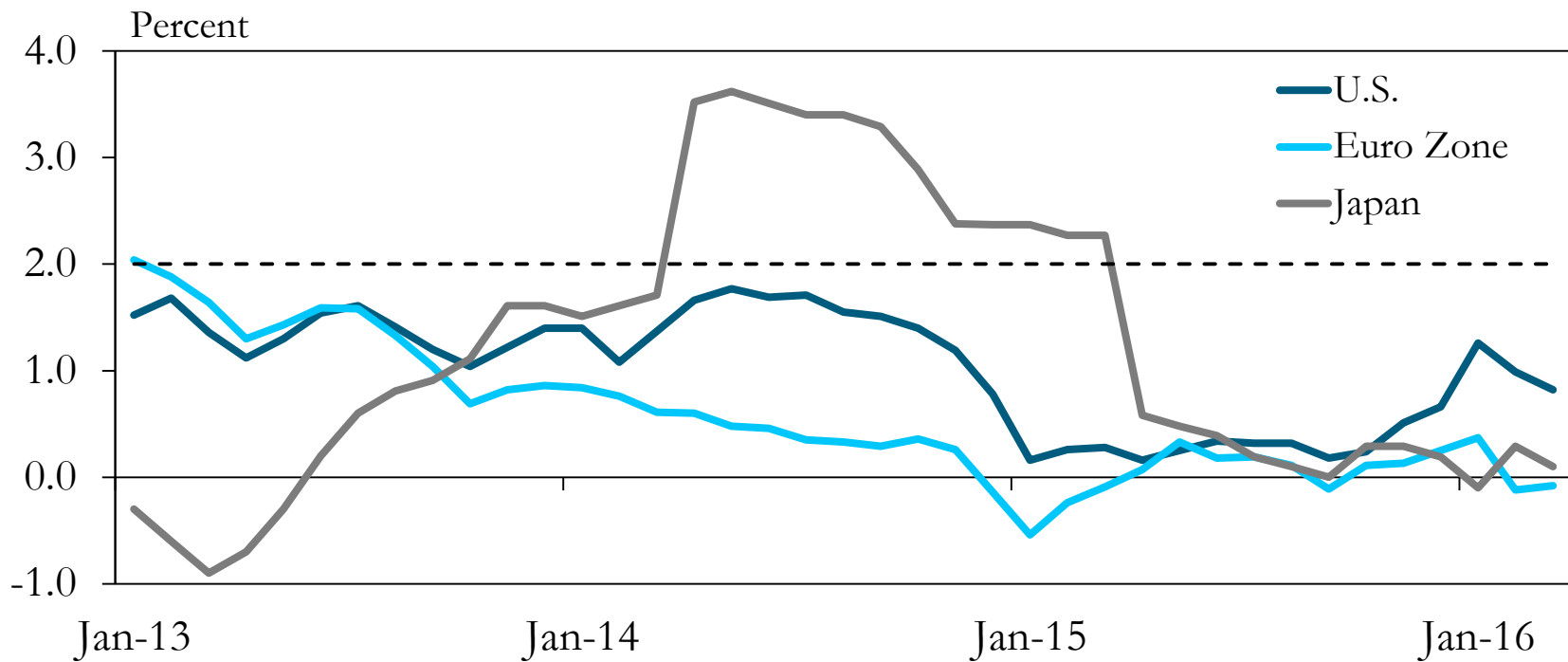


Sources: Federal Reserve Board, BEA, ECB, and Haver Analytics.



Inflation has been persistently low,
both in the U.S. and abroad.

Inflation Indexes

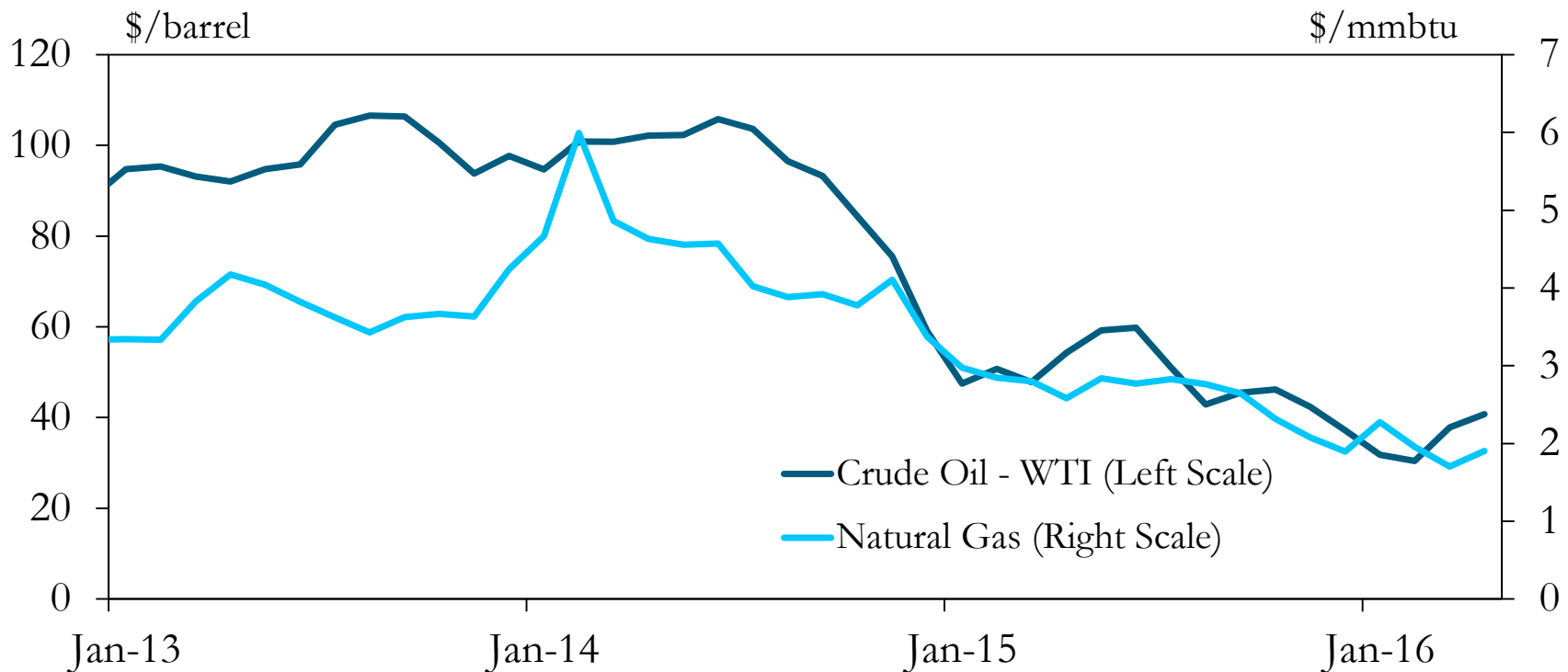


Source: Haver Analytics.



Sharp declines in energy prices have kept inflationary pressures subdued.

U.S. Energy Prices



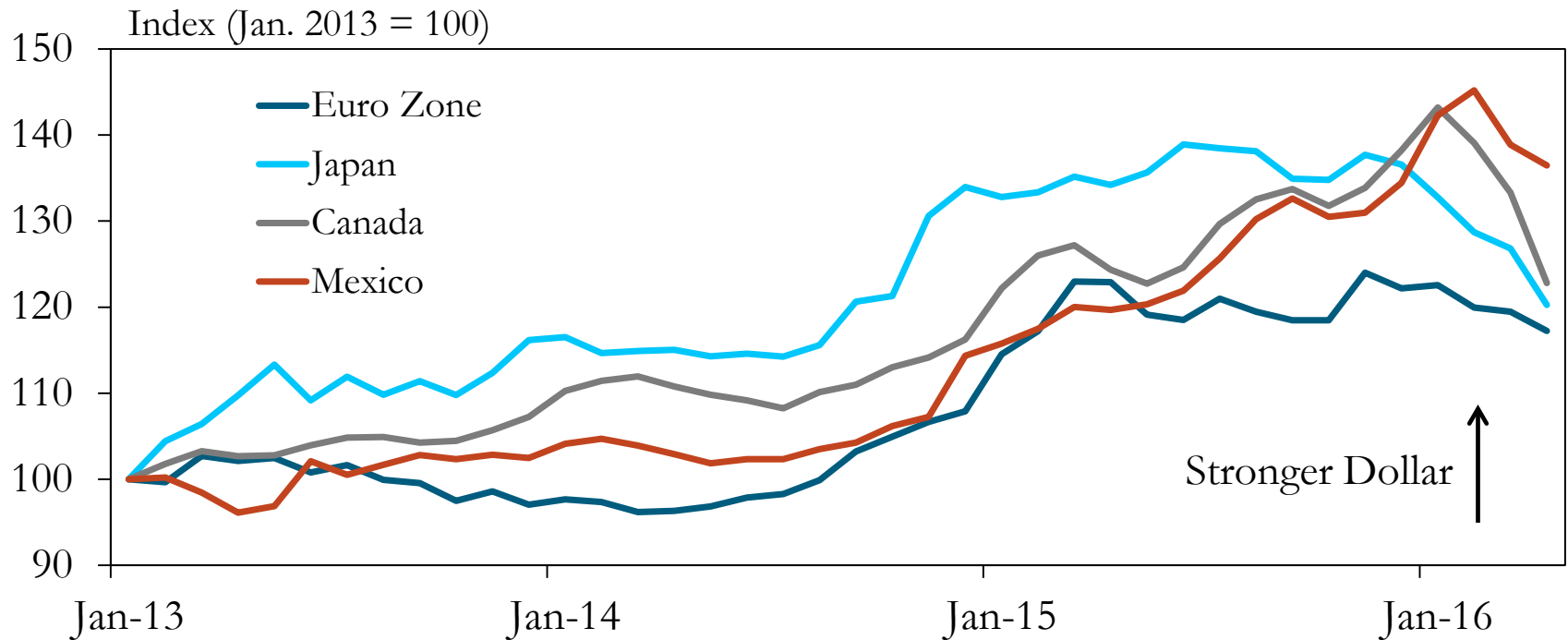
Sources: *Wall Street Journal*, EIA, CME Group, and Haver Analytics.

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Inflation in the U.S. has also been dampened by a stronger dollar.

Currency Exchange Rates



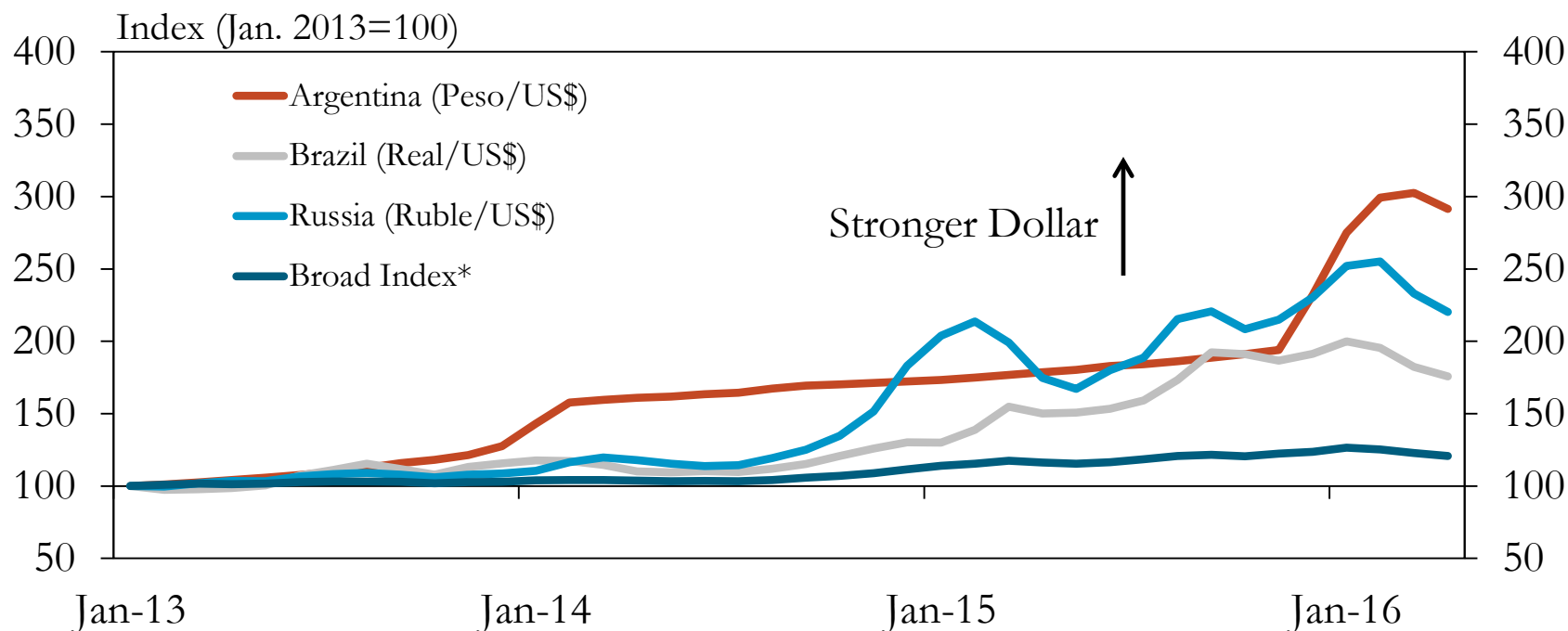
Sources: Federal Reserve Board and Haver Analytics.

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The dollar has surged even more dramatically against regions competing for ag exports.

Currency Exchange Rates

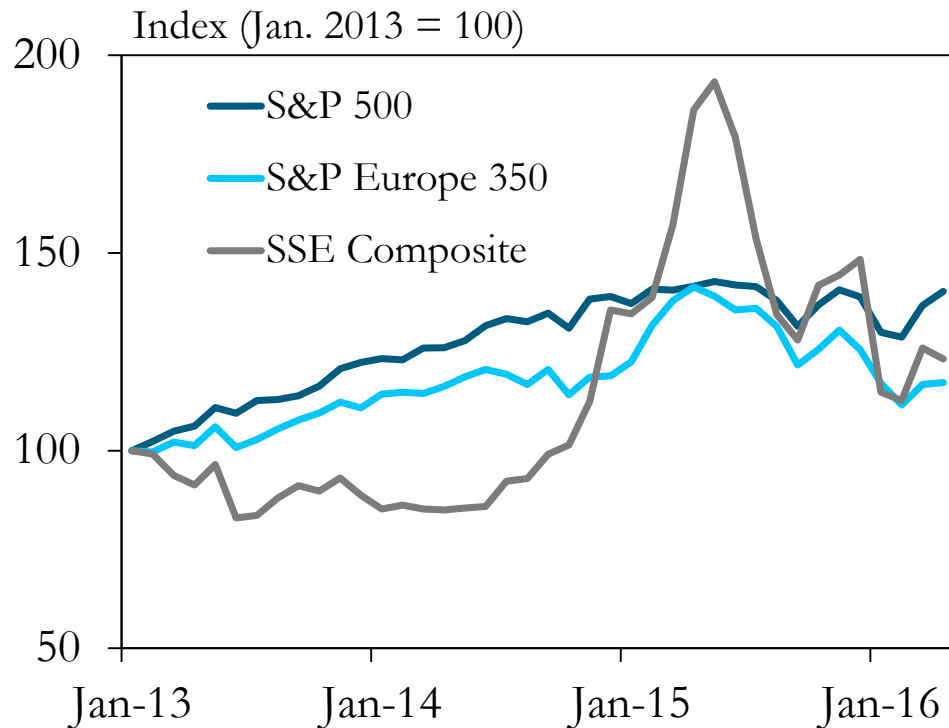


*Nominal broad trade-weighted exchange value of the U.S. dollar
Sources: FRB, IMF and Haver Analytics.

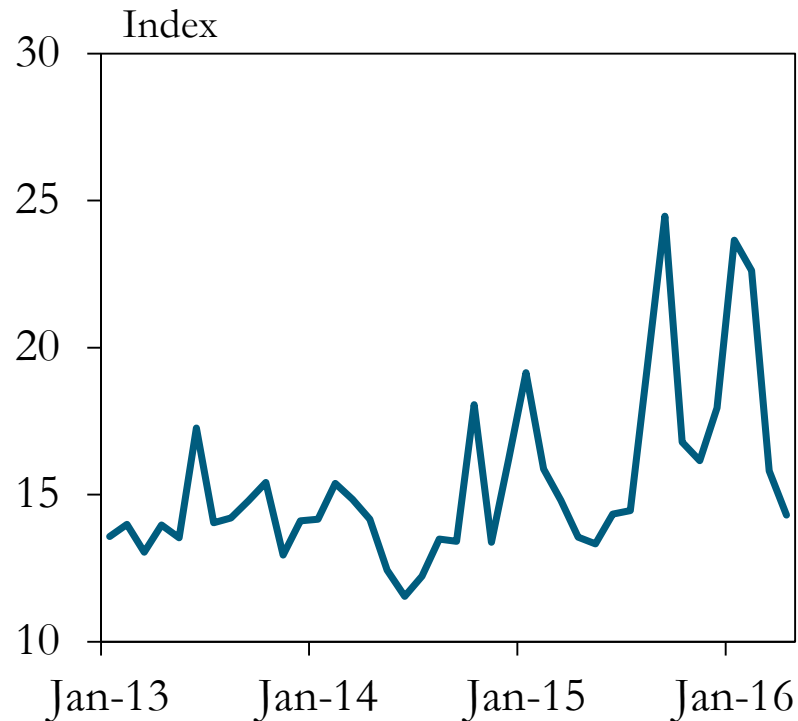


Financial markets have also been marked by episodes of significant volatility.

Stock Market Indices



Market Volatility Index (VIX)

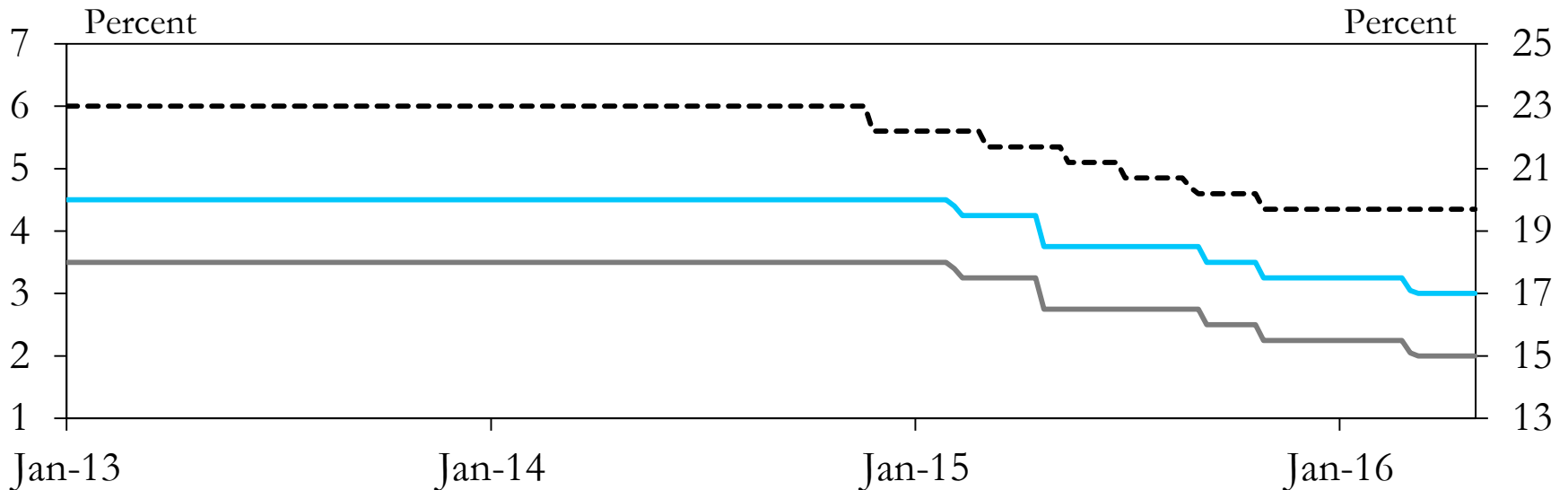


Sources: Standard & Poor's, Yahoo Finance, WSJ, and Haver Analytics.



Last year's developments in China renewed concerns about its growth prospects.

China Lending Rates and Reserve Requirements



- 1-Year Lending Rate (Left Scale)
- Reserve Requirement (Large Banks - Right Scale)
- Reserve Requirement Ratio (Small/Medium Dep. Institutions - Right Scale)

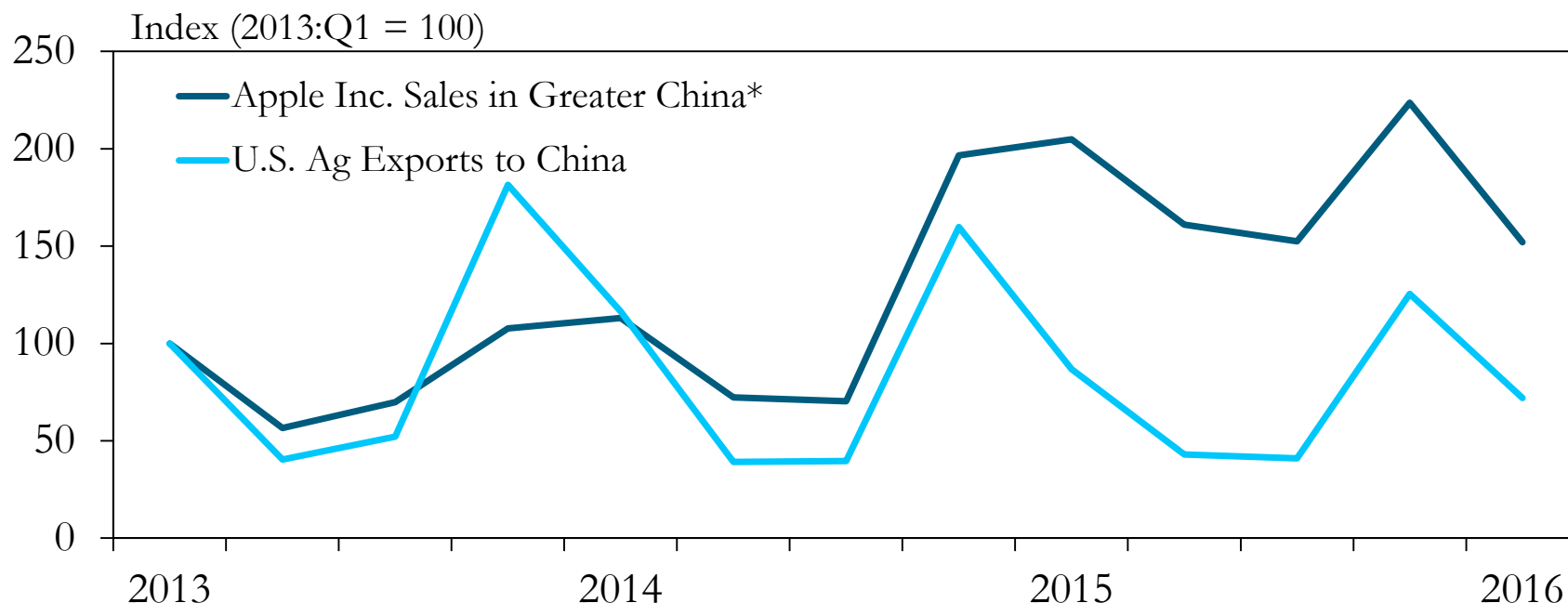
Sources: PBOC and Haver Analytics.

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More recent developments underscore concerns about slowing in China.

Apple Inc. Sales and U.S. Ag Exports to China

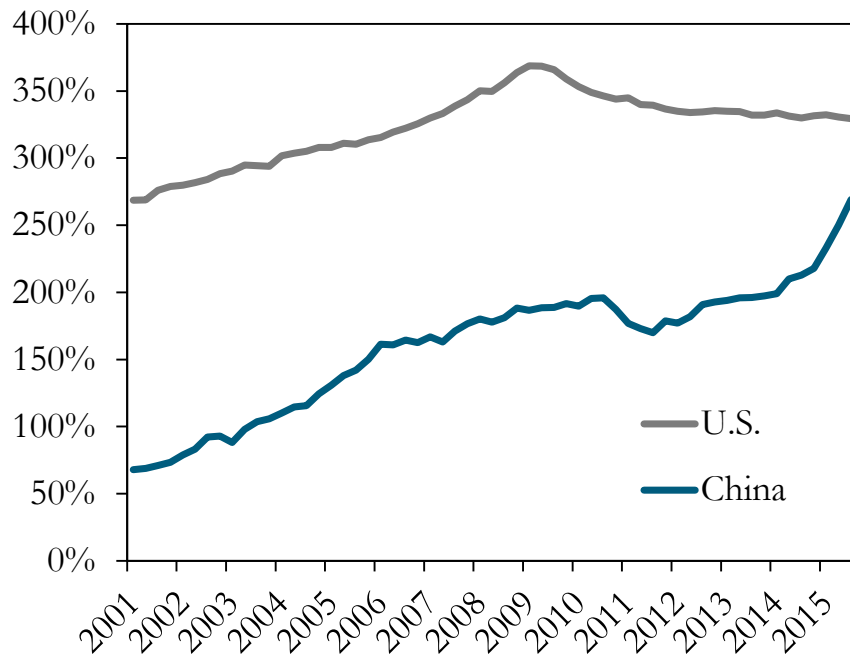


* Greater China includes mainland China, Taiwan, and Hong Kong.
Sources: Apple and USDA.

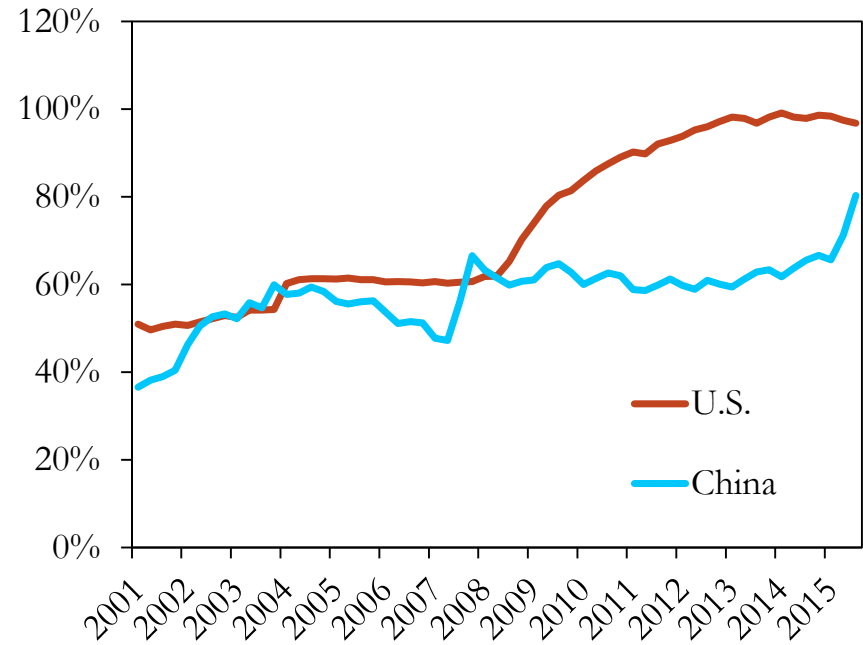


Debt in China has increased notably, but is still lower than in the U.S.

Total Debt to GDP



Government Debt to GDP

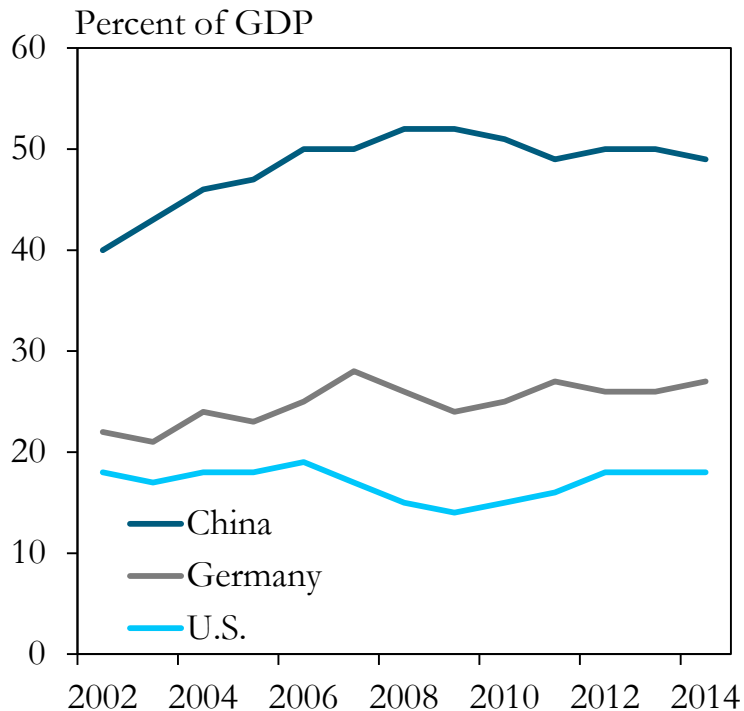


Sources: Federal Reserve Board, BIS and Haver Analytics.



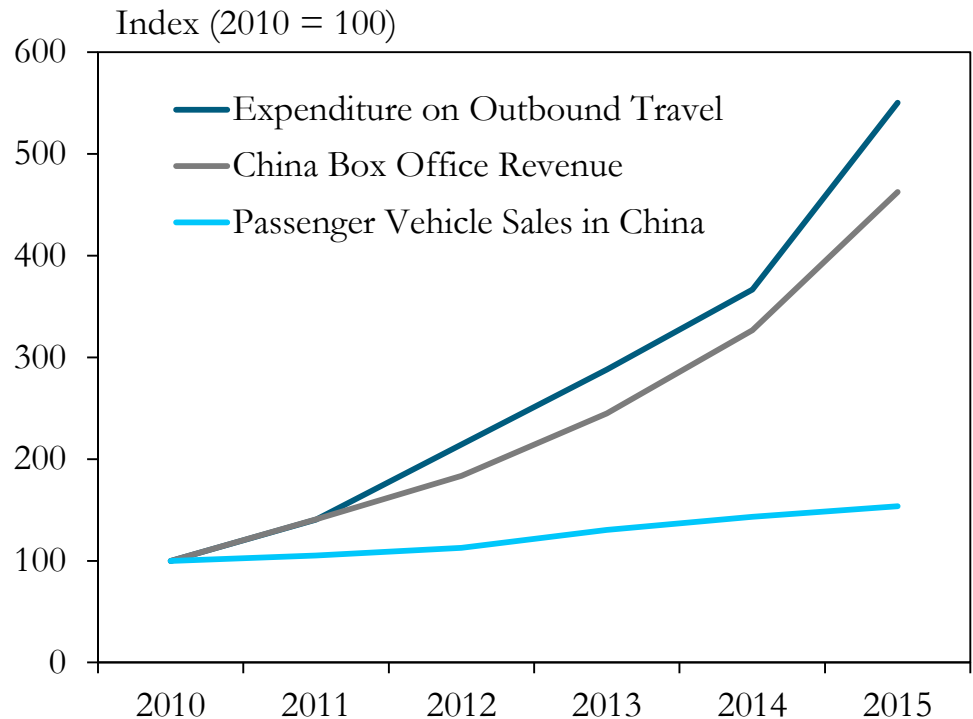
And other indicators point to momentum in the Chinese economy.

Gross Savings



Source: World Bank.

China Consumer Spending



Sources: World Travel & Tourism Council, China Association of Automobile Manufacturers, Motion Picture Association of America, and Haver Analytics.

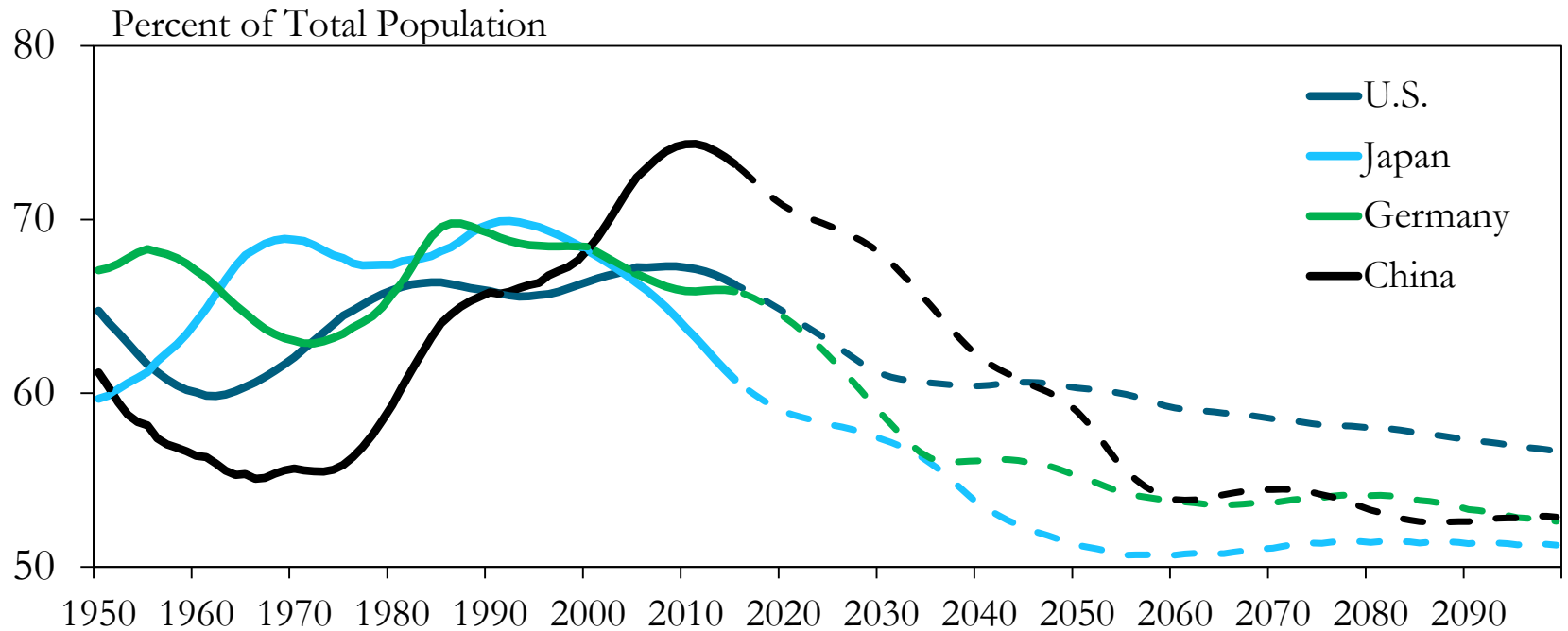


Some trends may also be hard to reverse.



Understanding demographic trends will be key to understanding future global demand.

Working Age Population

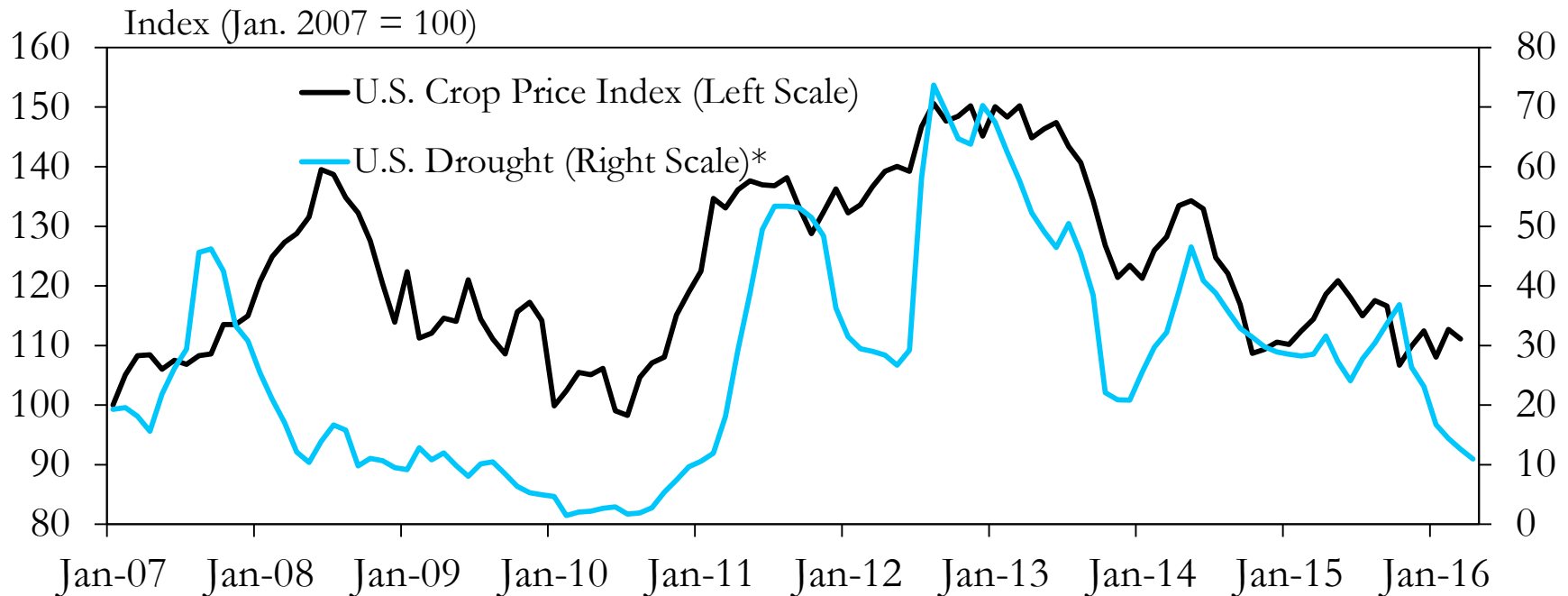


Sources: United Nations and Haver Analytics.



In agriculture, weather plays a crucial role in determining crop prices in the short-term.

U.S. Crop Prices and Drought



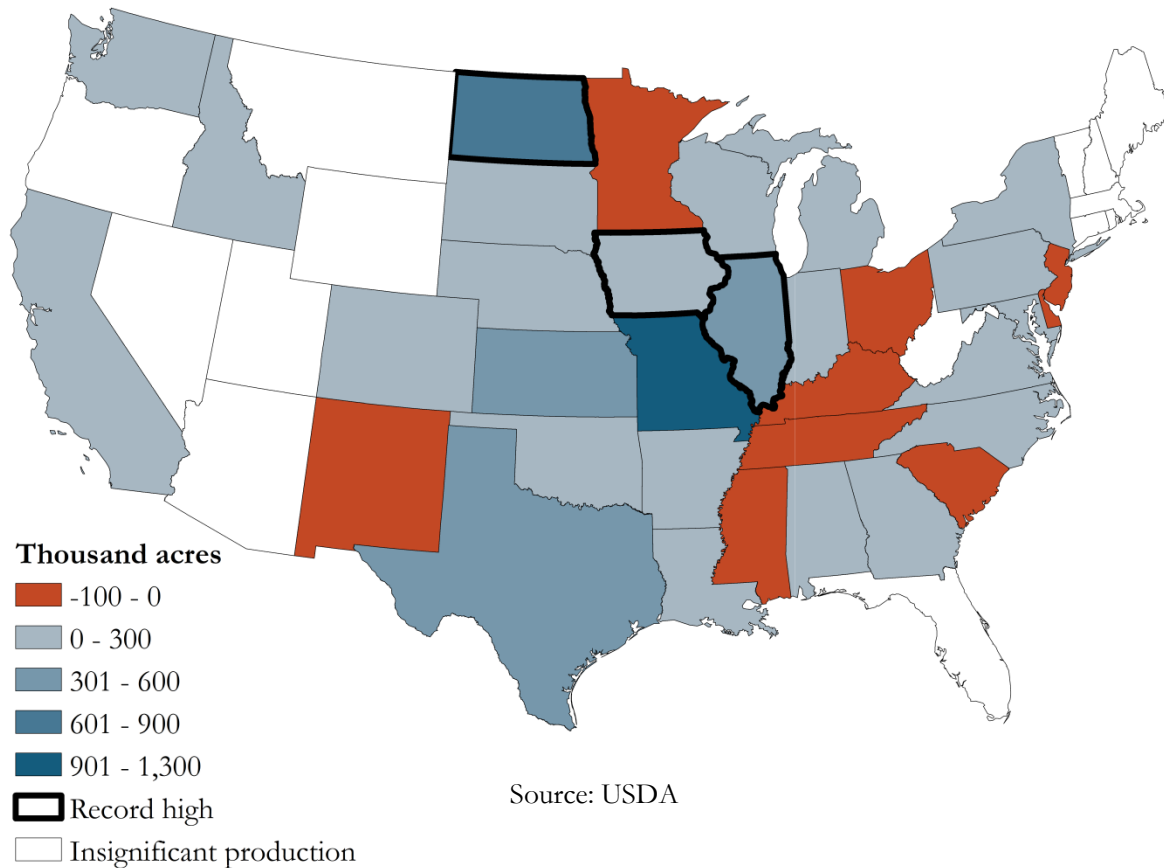
Sources: USDA, University of Nebraska-Lincoln and NOAA.

* Includes lower 48 states only.



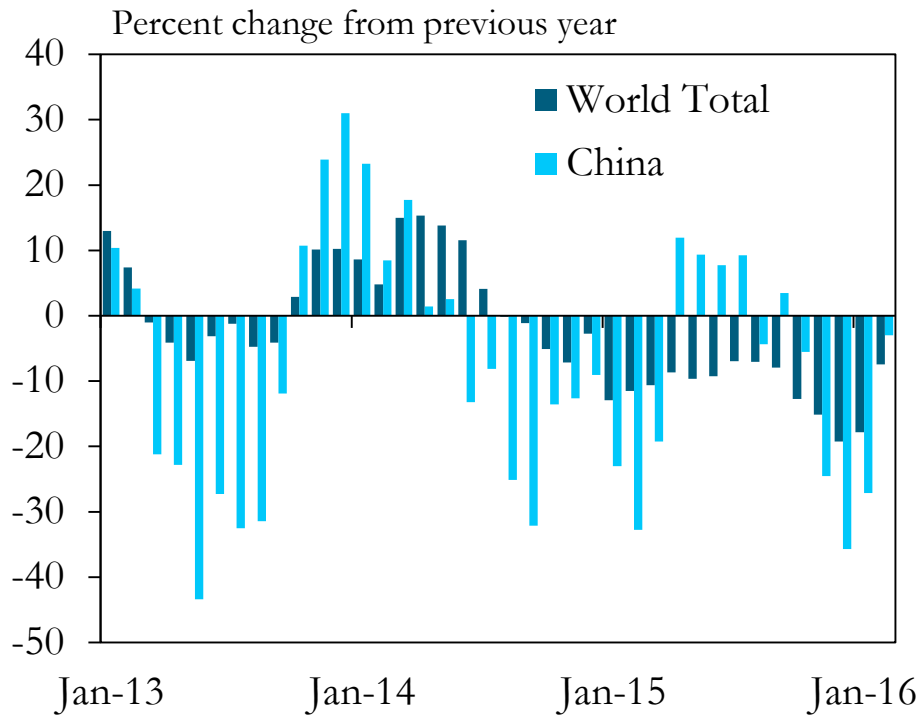
Expectations of expanded crop acreage in the Corn Belt could play a significant role this year.

Projected Change in Corn and Soybean Acres Planted



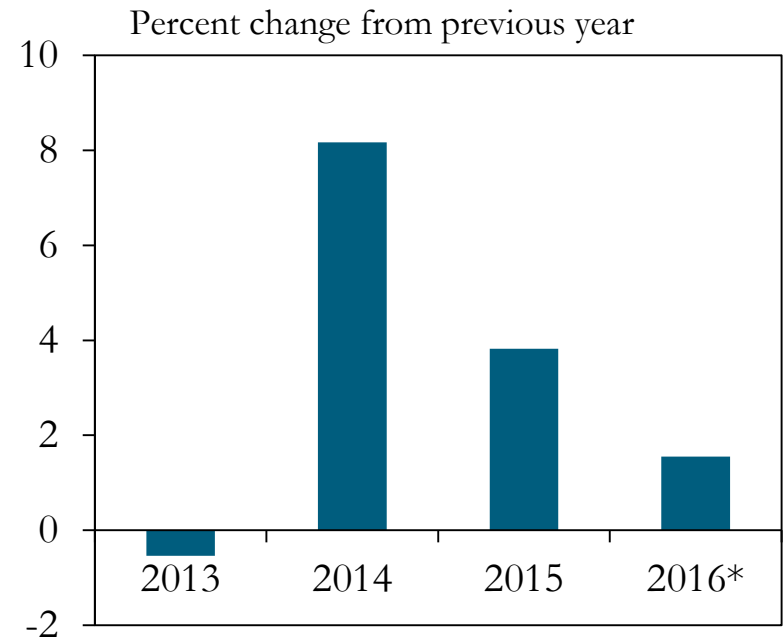
But demand strength will be the key
long-term driver.

U.S. Ag Exports



Source: USDA.

U.S. Ethanol Production



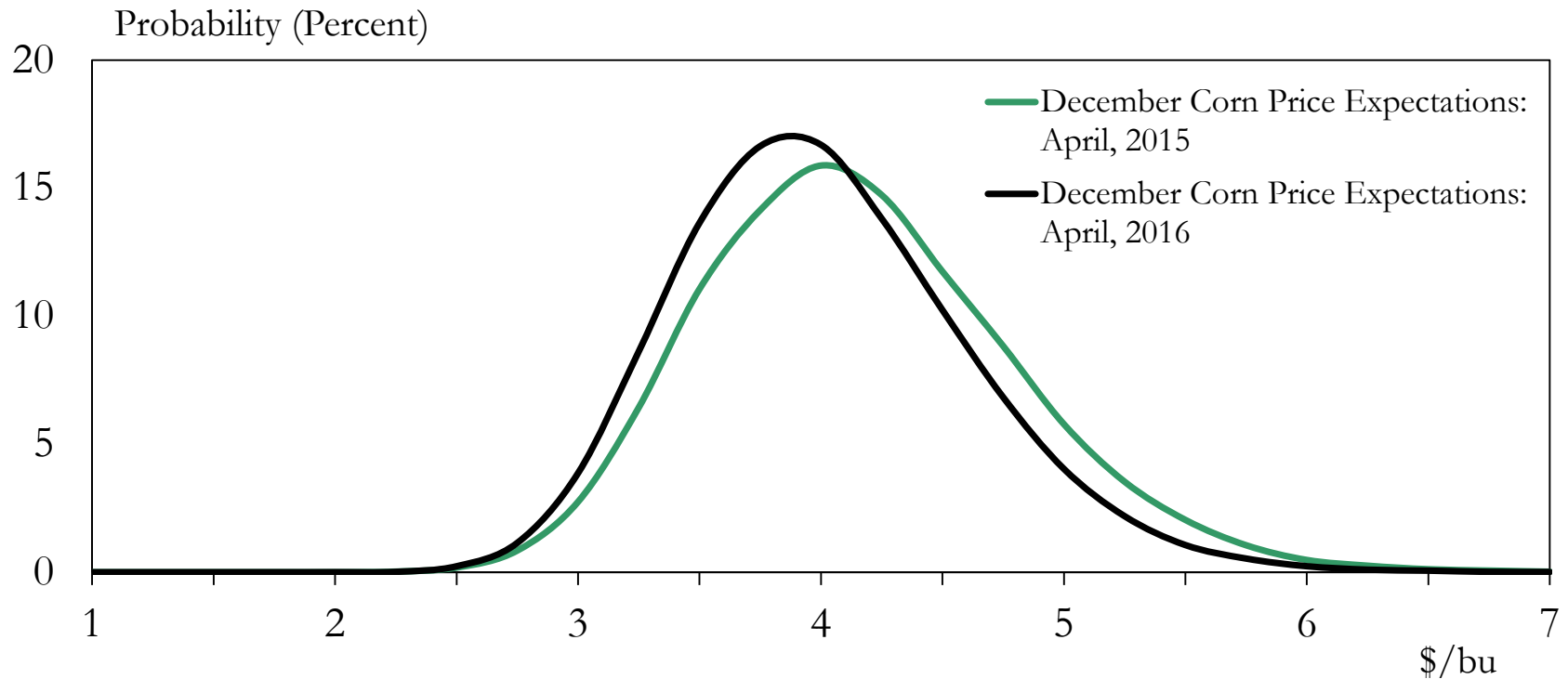
* Year-to-date average through April.

Source: EIA.



As it stands, crop price expectations are even slightly more bearish than last year.

U.S. Corn Price Expectations

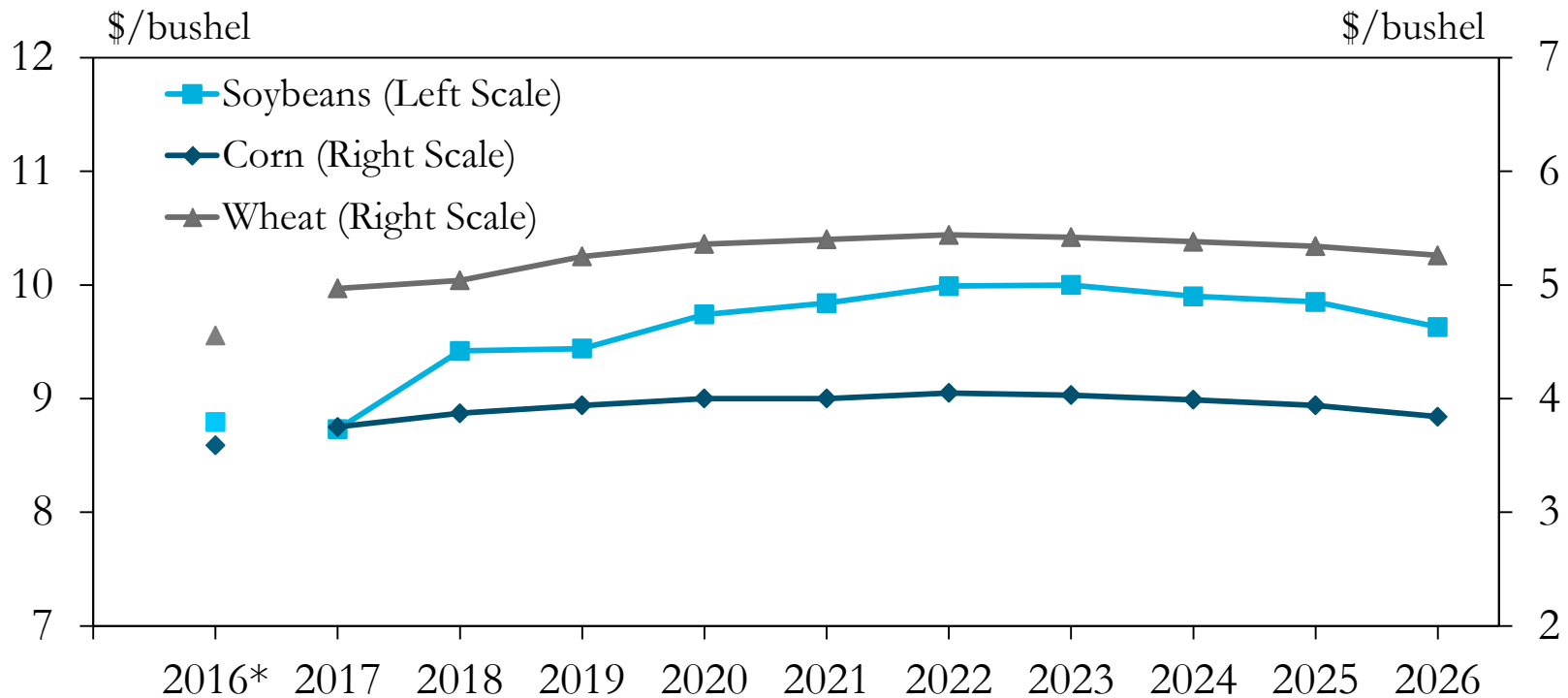


Source: Calculations based on data from barchart.com



An unexpected demand shock may be needed to envision a higher path of growth for crop prices.

Long-term Crop Price Projections



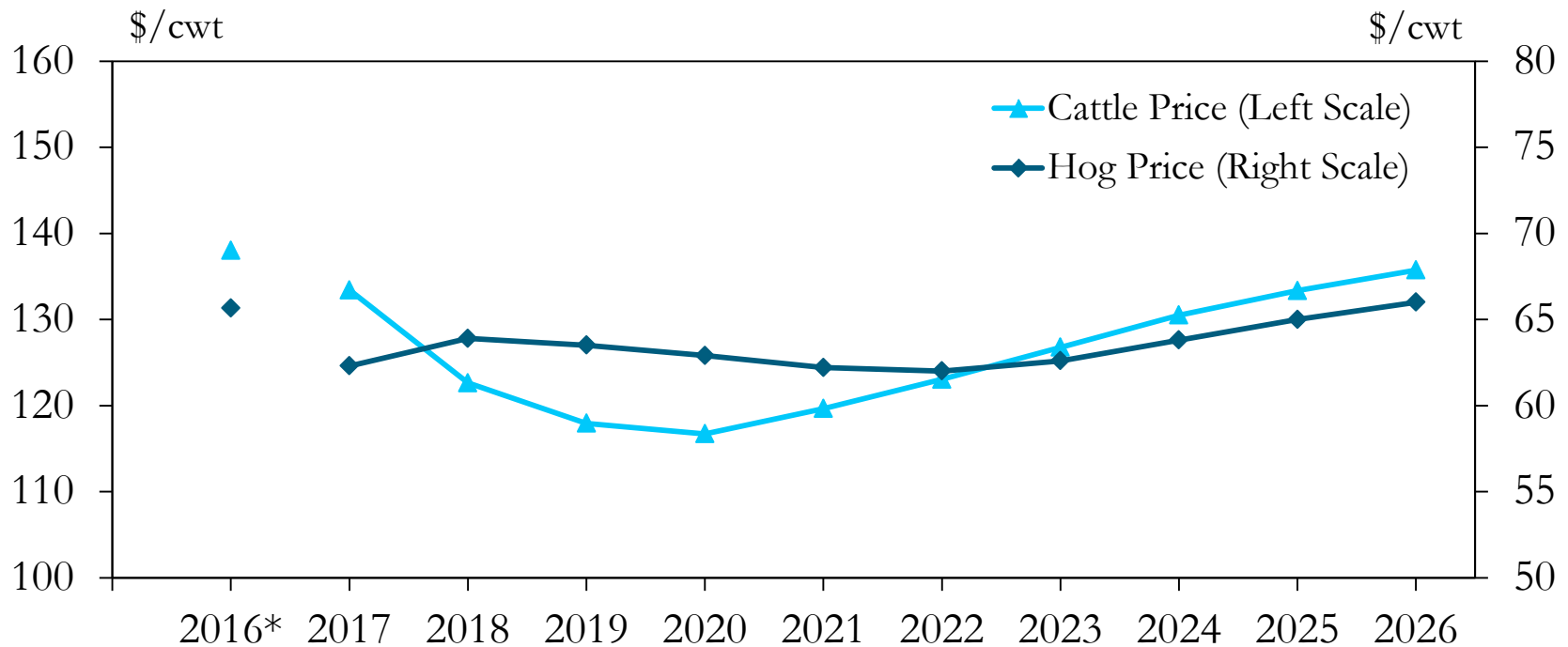
Sources: University of Missouri: FAPRI, *Wall Street Journal* and Haver Analytics

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Livestock prices are also generally projected to remain below current levels.

Long-term Livestock Price Projections



Sources: University of Missouri; FAPRI, *Wall Street Journal* and Haver Analytics

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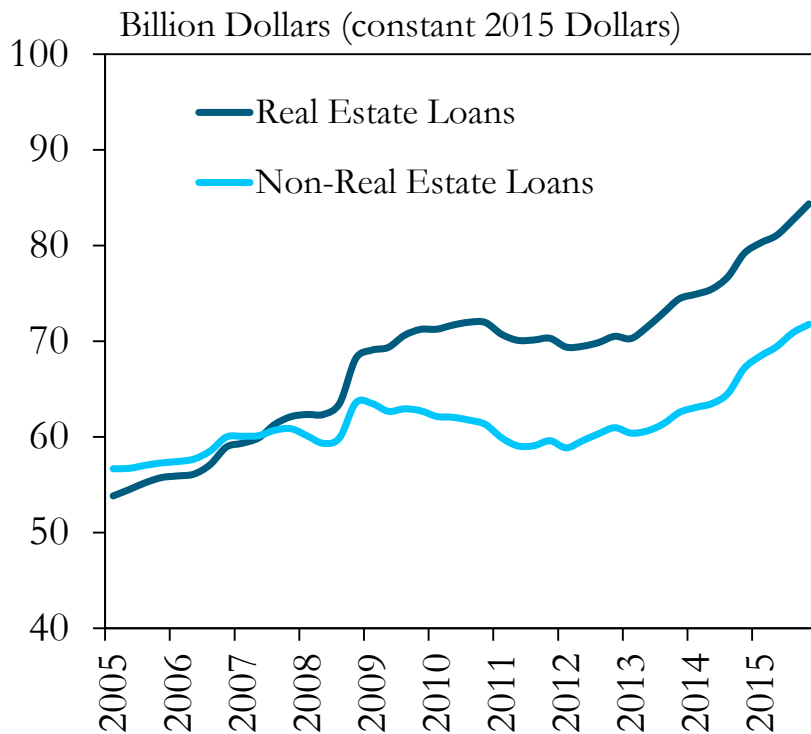


*The downturn in the U.S. ag economy
has persisted for 3 years.
Implications for credit markets?*

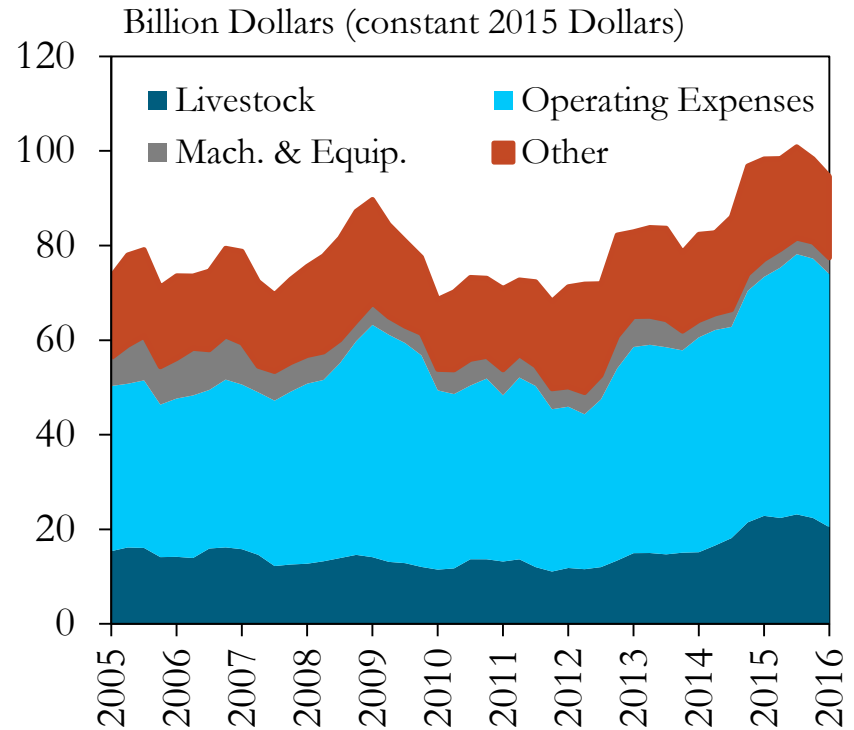


Financing needs began rising notably in 2013, and have remained high.

Total US Farm Debt



Composition of Non-Real Estate Farm Debt



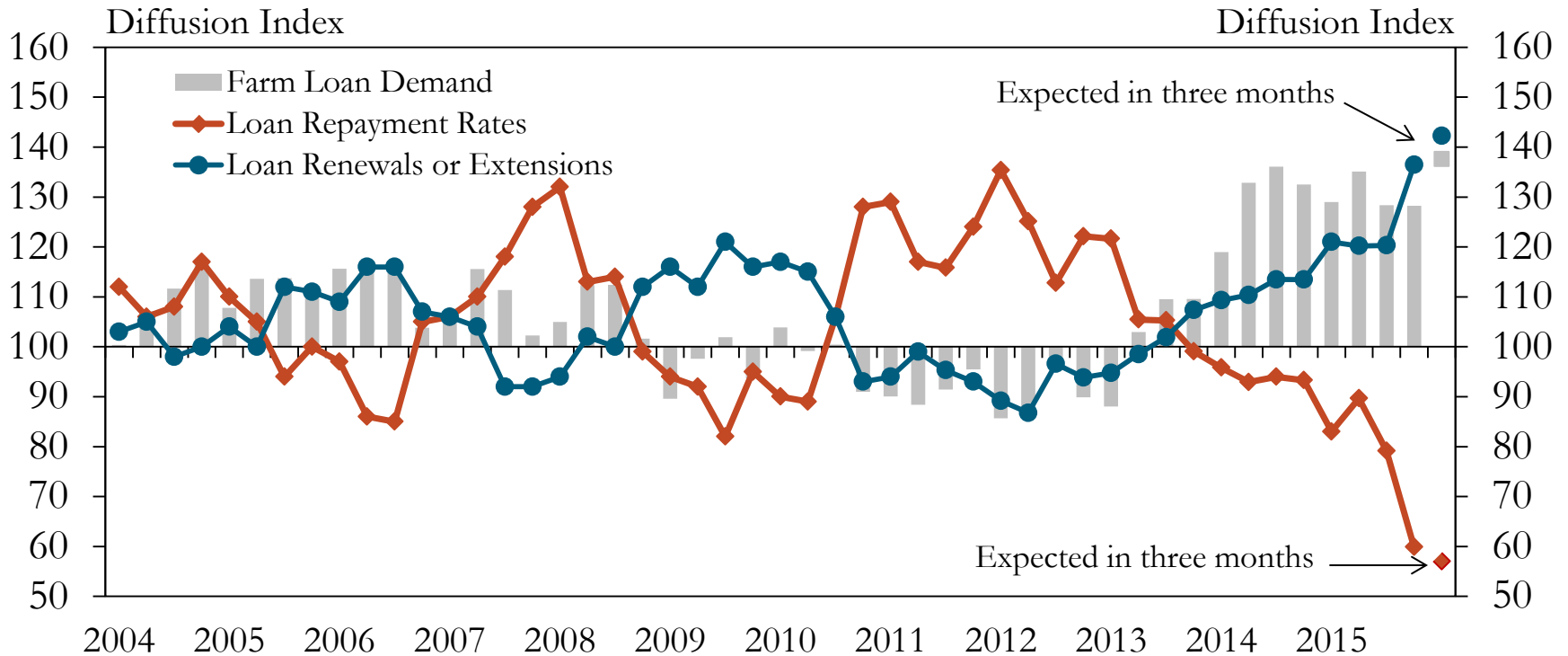
Source: Federal Reserve Bank of Kansas City, Ag Finance Database

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Credit conditions have gradually deteriorated.

Tenth District Credit Conditions 2015, Fourth Quarter



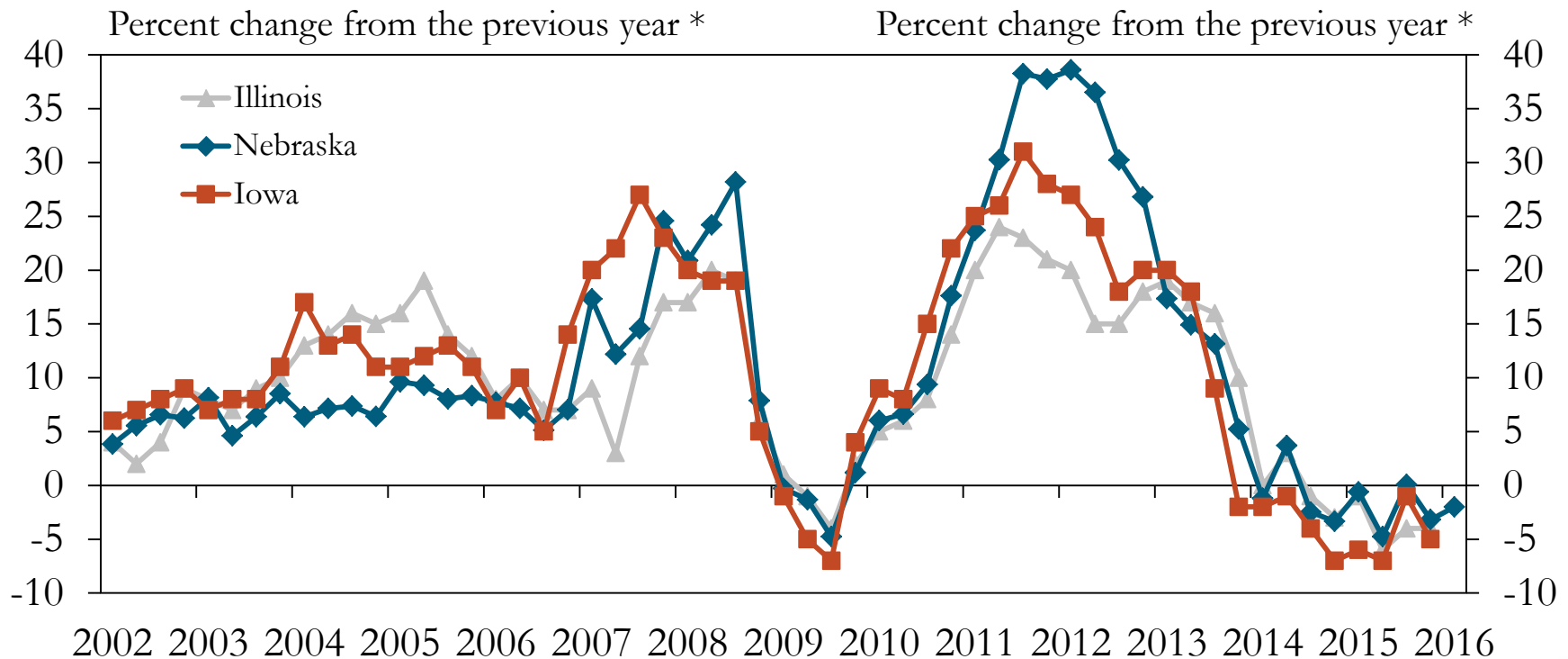
Source: Federal Reserve Bank of Kansas City, Survey of Ag Credit Conditions

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Farmland values have also declined, but only at a modest pace.

Changes in High Quality Farmland Values



*Percent changes are calculated using responses only from those banks reporting in both the past and the current quarters.

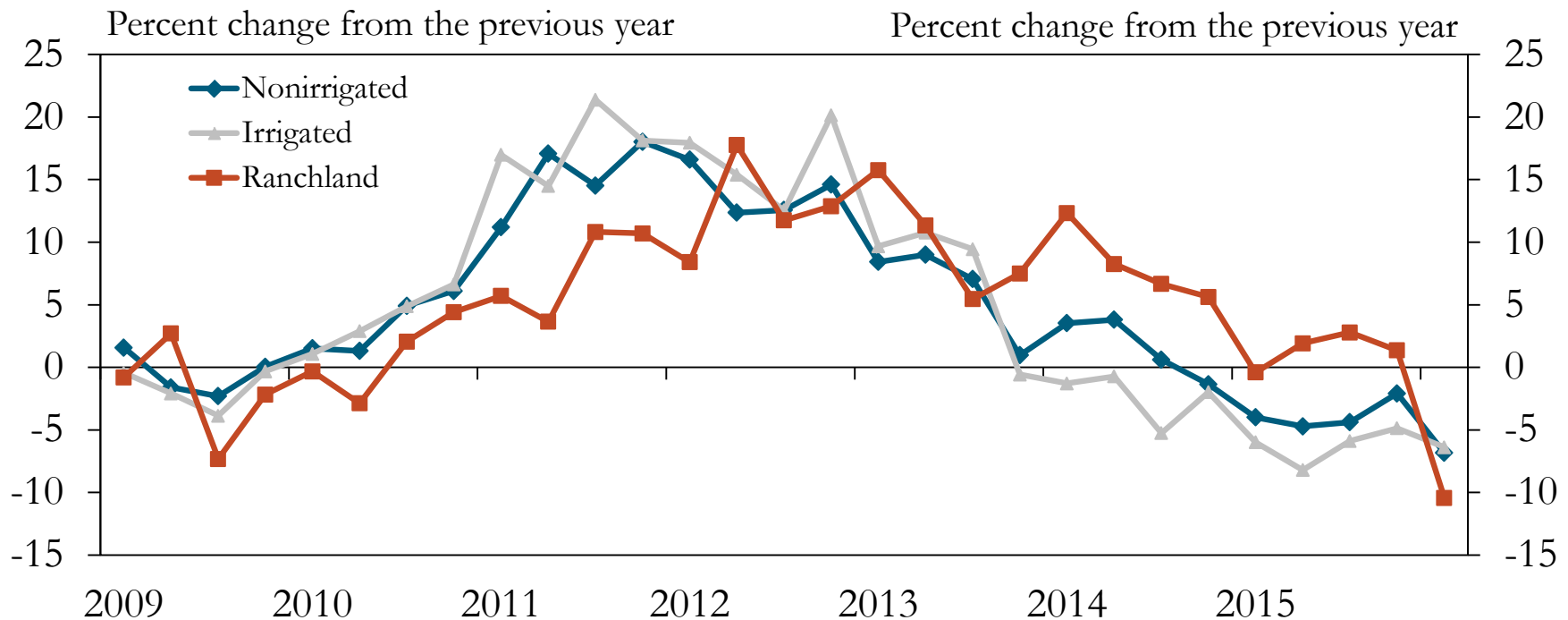
Source: Federal Reserve Bank of Kansas City

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Cash rents have declined somewhat, but not as quickly as most producers have hoped for.

Changes in Tenth District Cash Rents



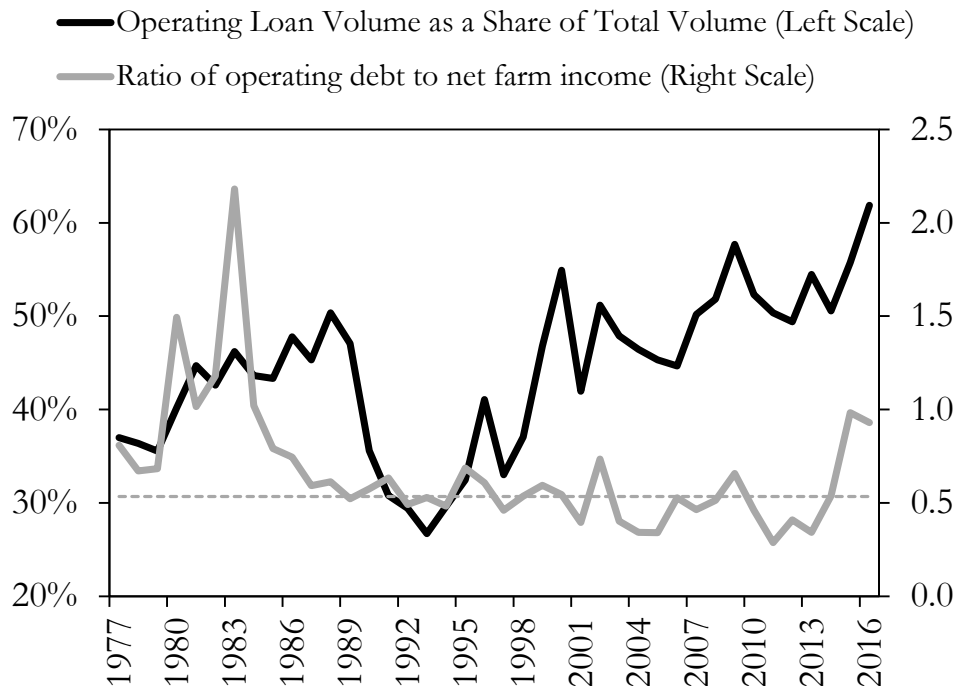
Source: Federal Reserve Bank of Kansas City

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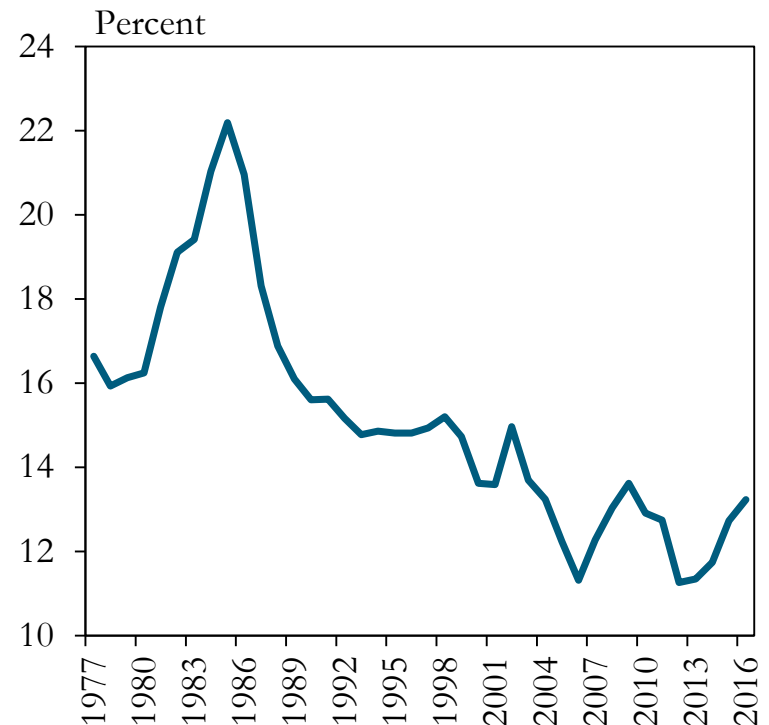
In the short-term, liquidity may be a more significant concern than solvency.

U.S. Farm Sector Operating Loan Volume (Commercial Banks)



Source: Federal Reserve Bank of Kansas City

U.S. Farm Sector Debt-to-Asset Ratio



Source: USDA.

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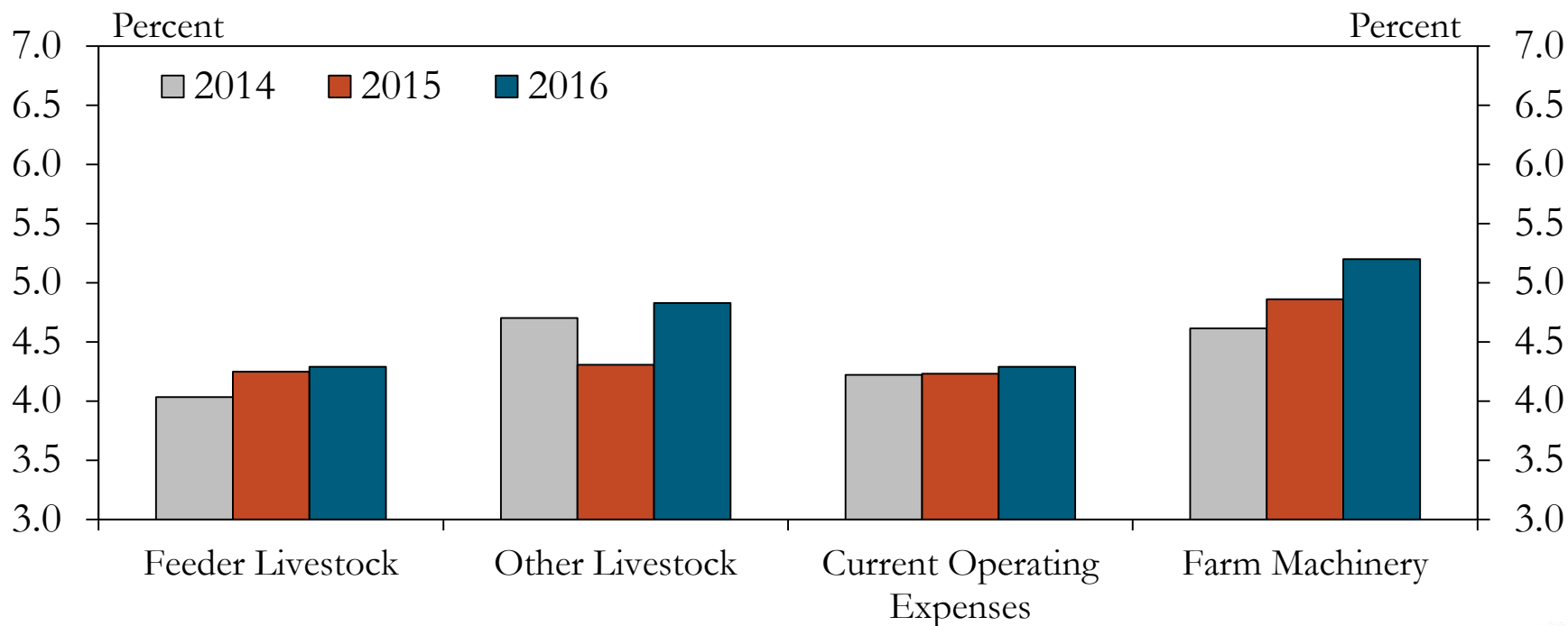
How might a changing interest rate environment affect the ag economy?



Farm interest rates have increased, but only slightly.

Interest Rates on Non-Real Estate Farm Loans

First Quarter



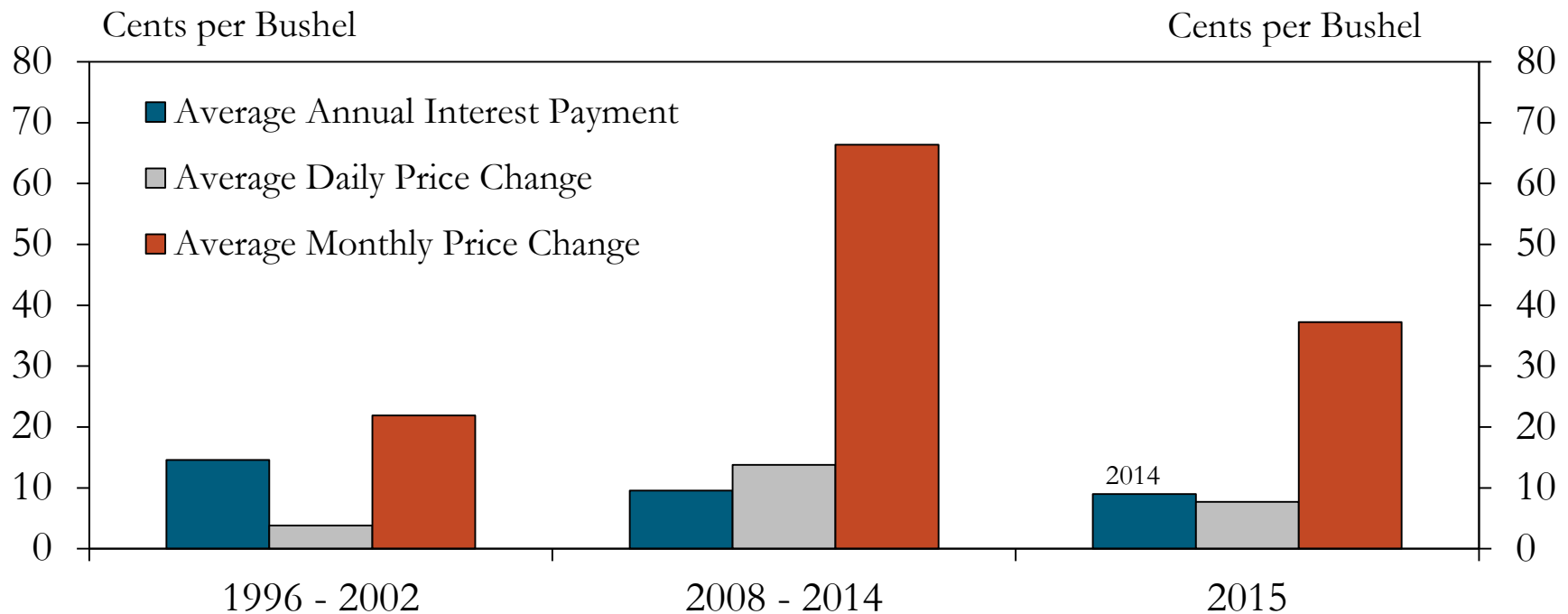
Source: Agricultural Finance Databook, Table A.5

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Interest expenses, however, are small when compared to fluctuations in commodity prices.

U.S. Corn Producers - Interest Expenses and Price Fluctuations



Sources: USDA, barchart.com and author's calculations.



Concluding Points

- Farm income has continued to weaken with low commodity prices.
 - Supply-side headwinds: strong U.S. and global production.
 - Demand-side headwinds: ethanol blend wall, export markets and China.
 - Biofuel exports may be a longer-term boost.
- Effects of the downturn in the farm economy:
 - Tightening credit conditions.
 - Pressure on cash rents and farmland values.
 - Consolidation (opportunities for some).
 - Accelerating decline in rural, agricultural areas.



Questions?

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