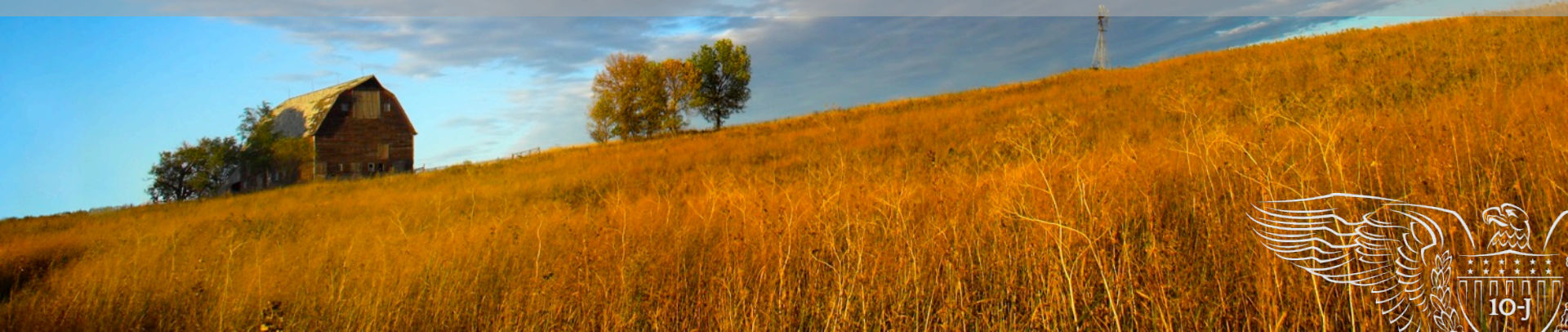


# U.S. Ag Economy Stuck in Neutral and Facing Uphill Climb

Nate Kauffman, Federal Reserve Bank of Kansas City

November 2, 2018



# Outlook Themes

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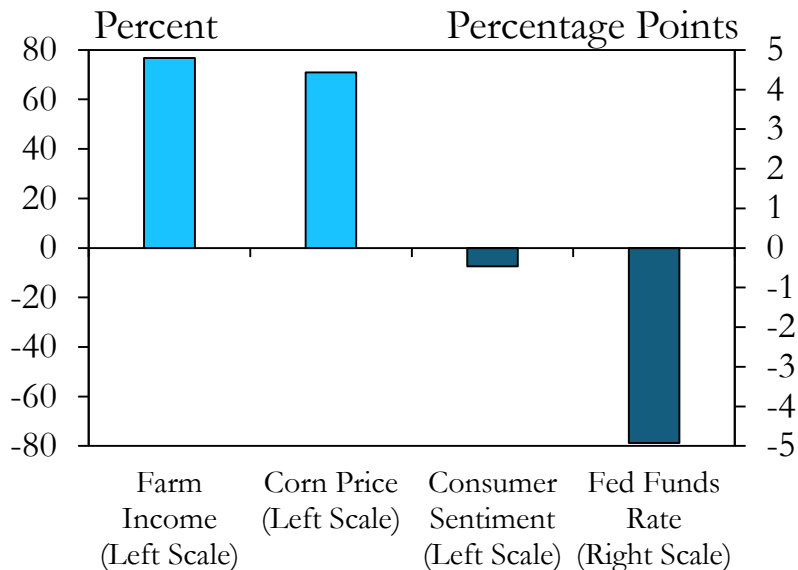
- Despite recent financial market volatility, momentum in the national economy has persisted. The ag economy, however, has remained in a prolonged downturn.
- Ag credit conditions have deteriorated gradually, but farmland markets have remained a relative bright spot.
- Signs of stabilization in agriculture earlier in the year have become more questionable with intensifying trade disputes.
- Interest rates have continued to rise at a gradual pace, putting pressure on highly leveraged operations.



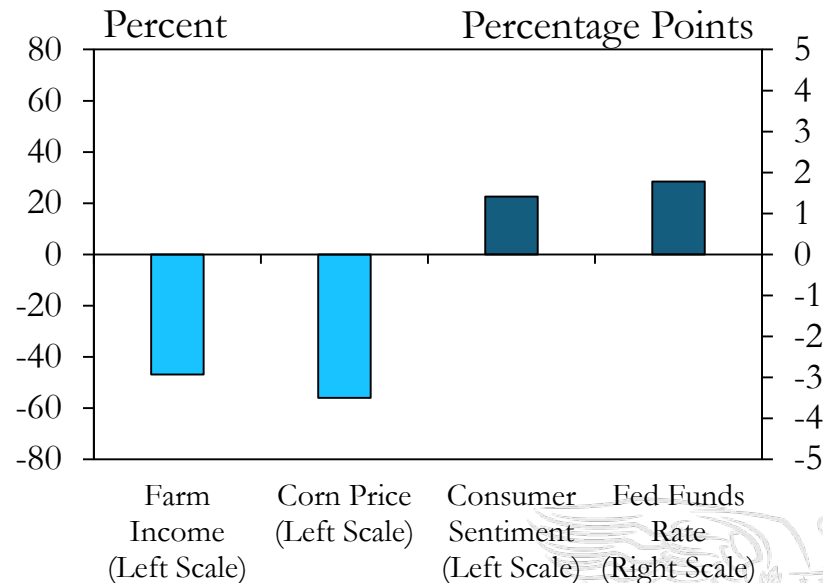
# The outlooks for agriculture and the U.S. economy have reversed since 2013.

## Indicators for Ag Economy and Broader U.S. Economy

Change from 2007–2013



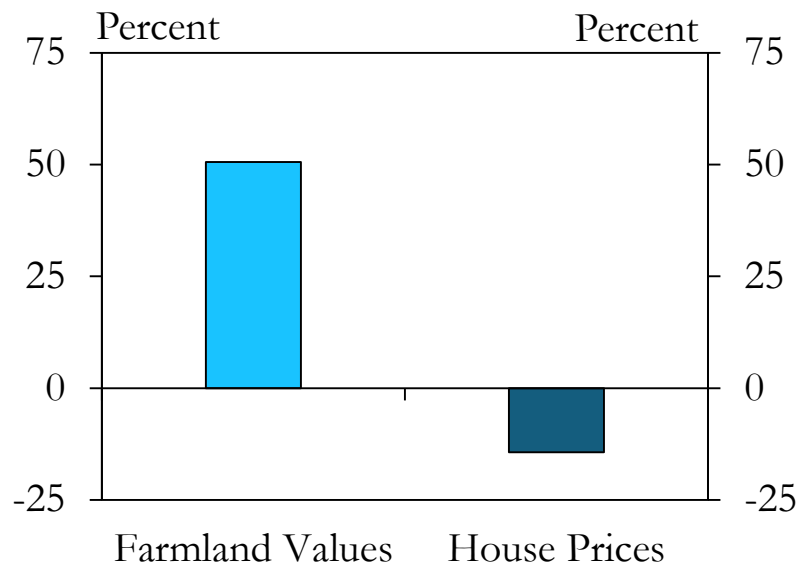
Change from 2013–2018



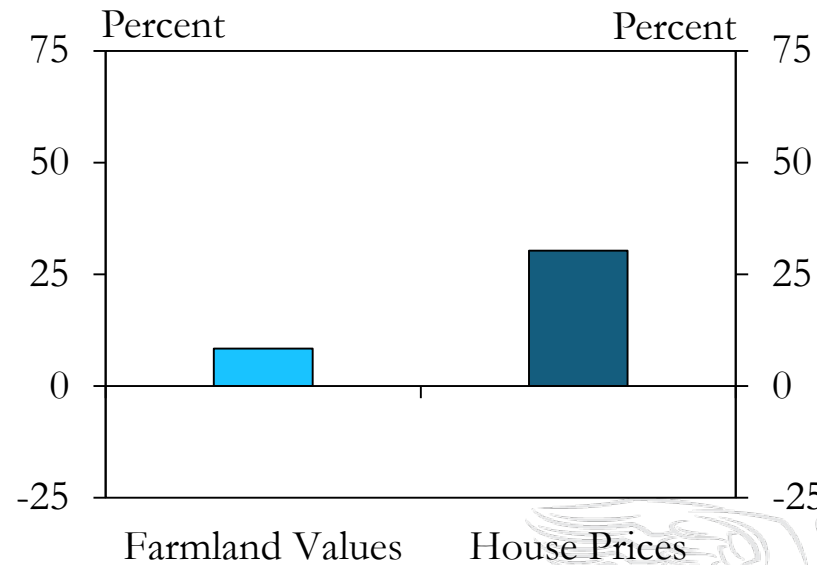
# Residential real estate markets have also picked up while farmland markets have cooled.

## U.S. House Prices and Farmland Values

Change from 2007–2013

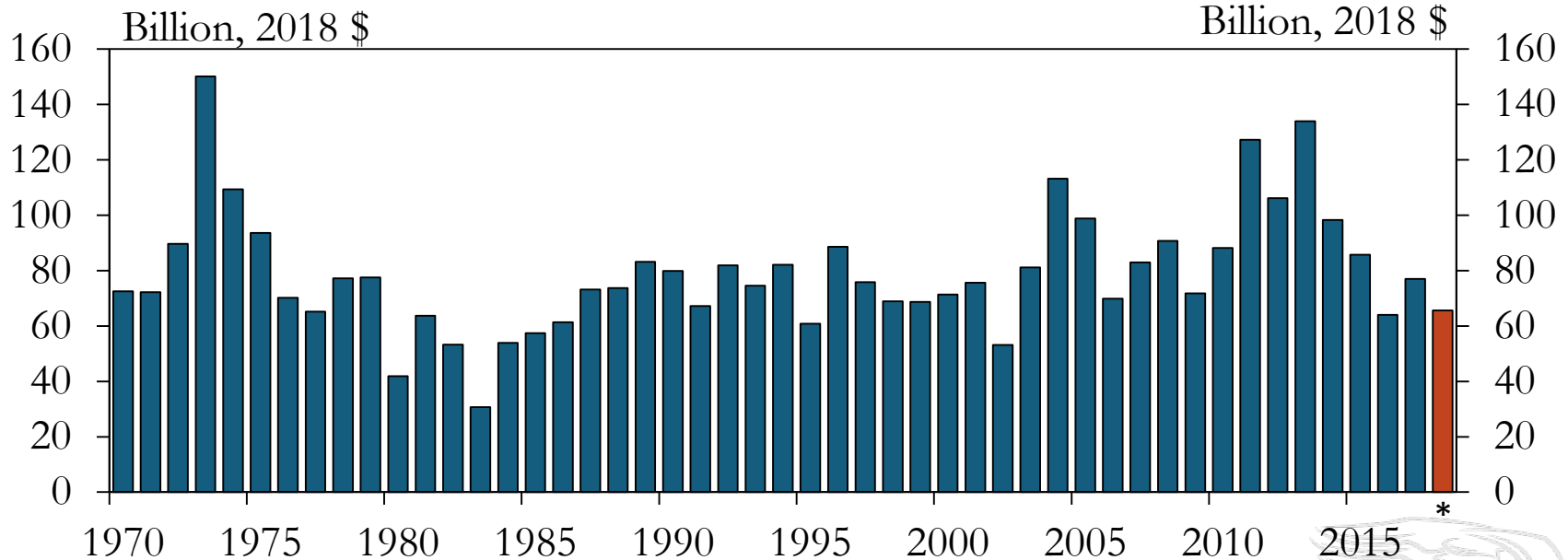


Change from 2013–2018



And farm income has remained less than half of its recent peak.

## U.S. Net Farm Income



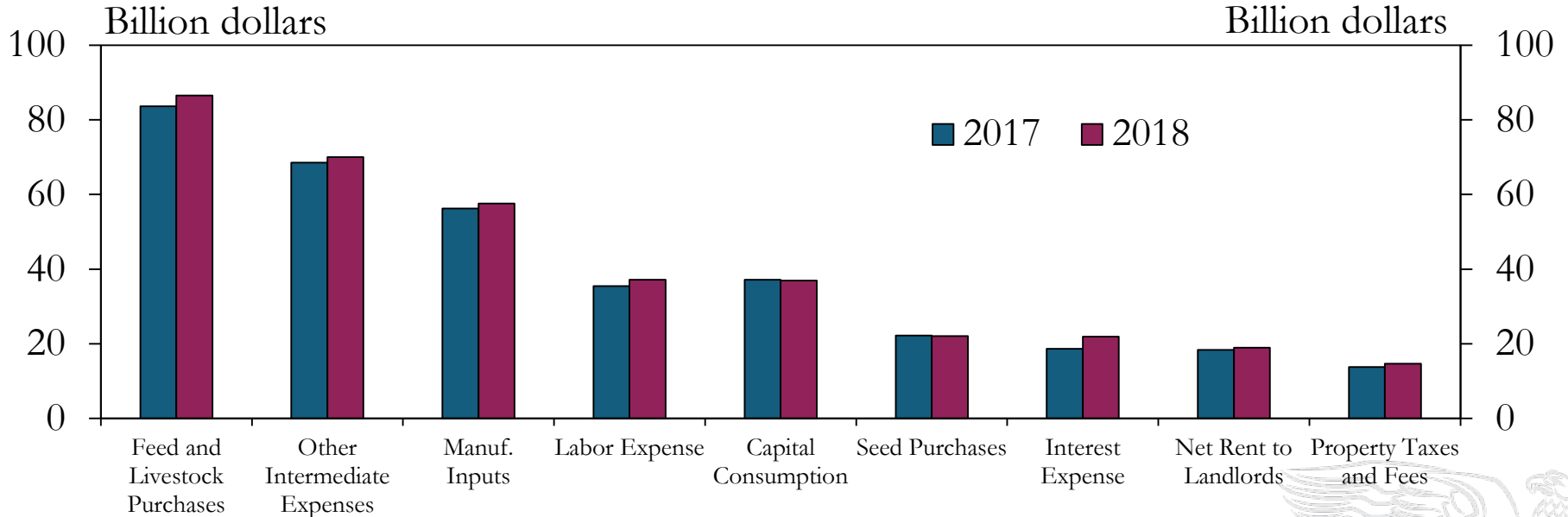
\* 2018 Forecast

Source: USDA



The forecast of lower farm income in 2018 was primarily driven by modest increases in expenses.

## U.S. Farm Expenses by Component



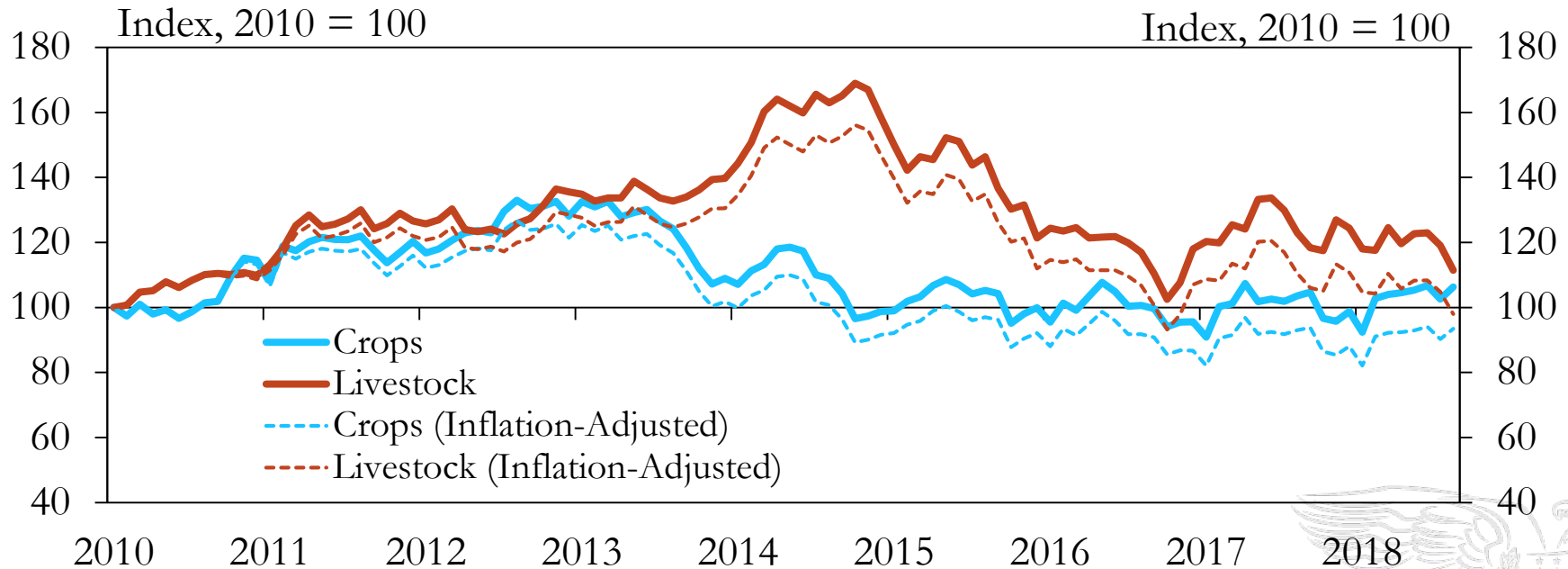
**Note:** Farm expense estimate for 2017; forecast for 2018.

**Source:** USDA and staff calculations.



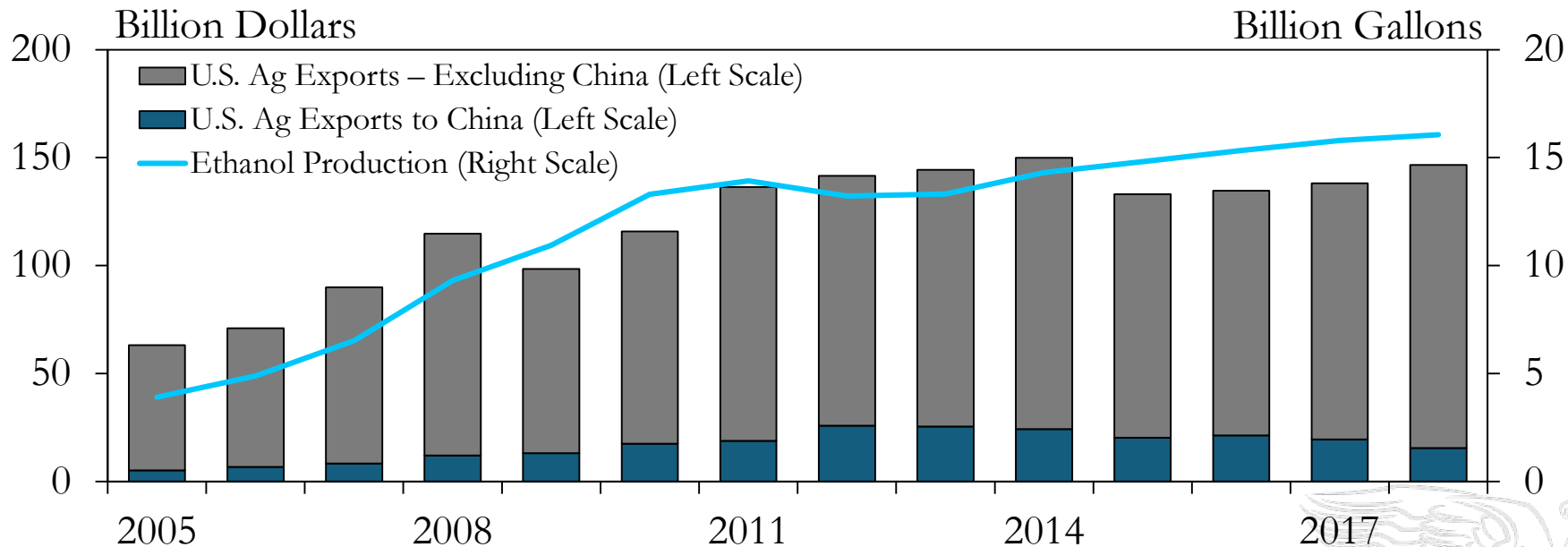
Lower commodity prices also have been a primary driver of the sustained weakness.

## U.S. Agricultural Prices



# Despite heightened trade risks, key sources of demand for ag products have been relatively strong.

## U.S. Ag Exports and Ethanol Production



**Note:** 2018 estimated based on changes year-to-date through June compared with the previous year.

**Source:** USDA, U.S. EIA, and Renewable Fuels Association.

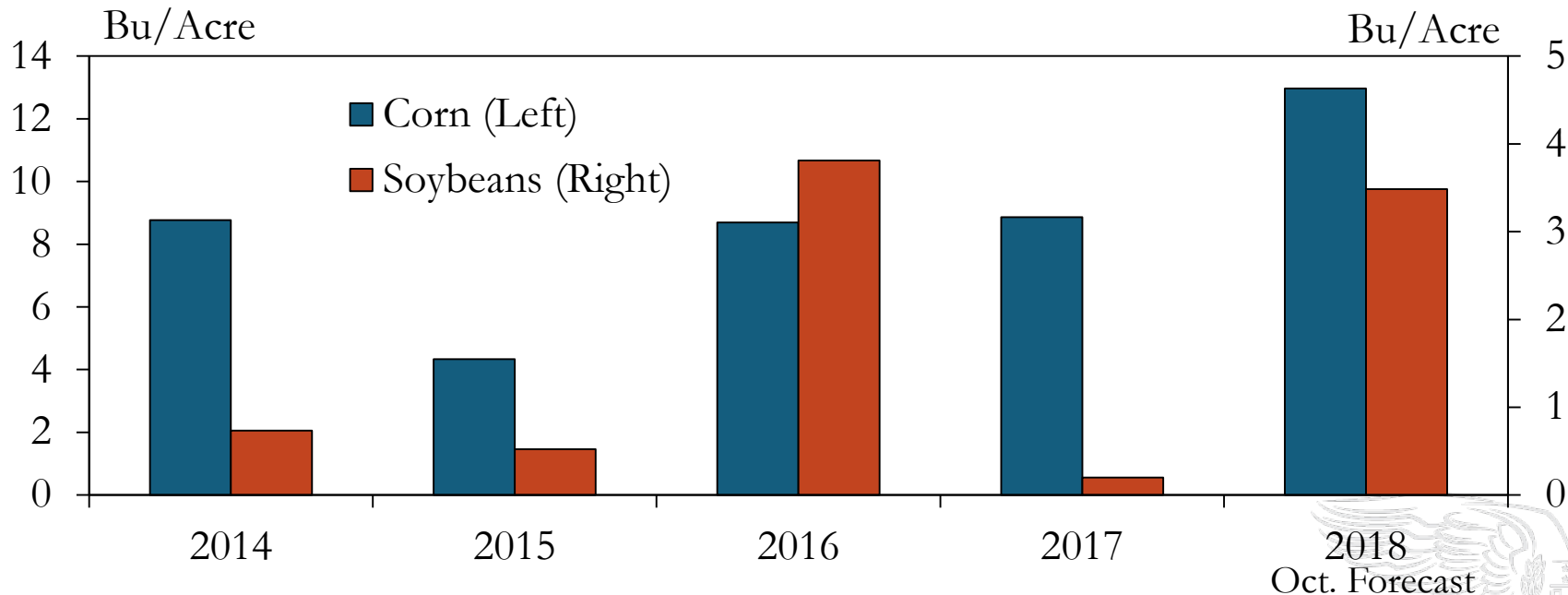




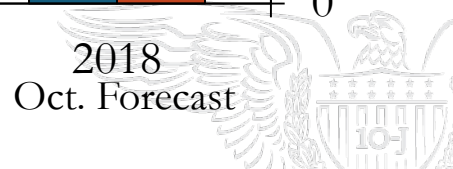
Demand has remained strong, but higher-than-expected crop production has weighed on prices.

## U.S. Corn and Soybean Yields

Deviation from Trend

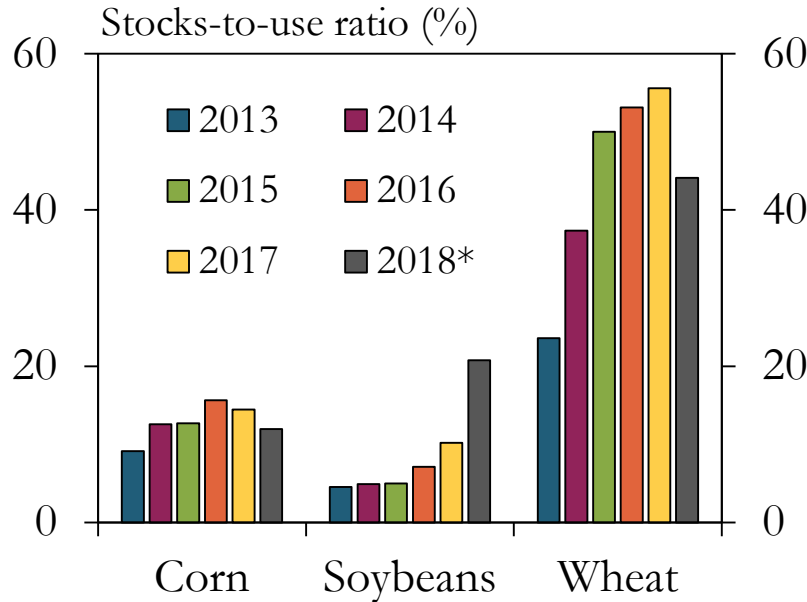


Source: USDA and staff calculations.

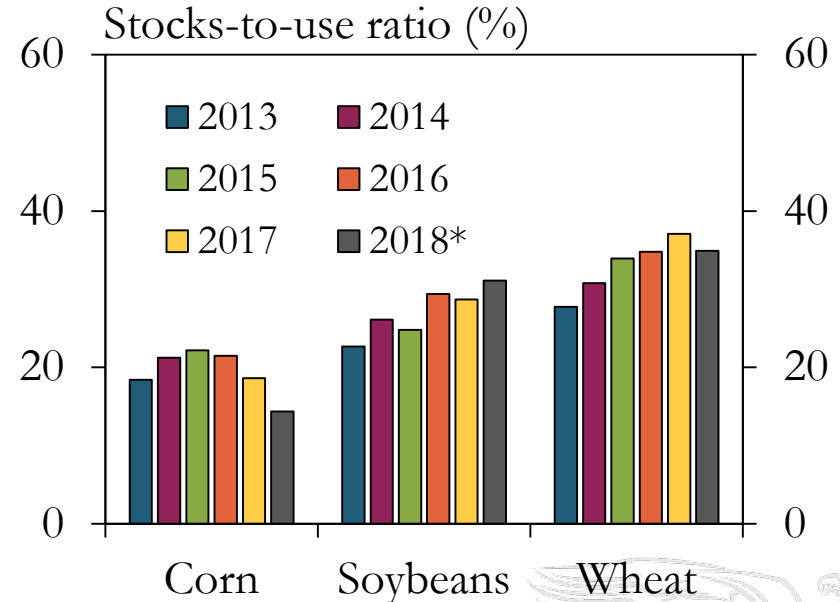


# Inventories of major row crops have continued to build, both in the U.S. and globally.

## U.S. Crop Inventories



## World Crop Inventories



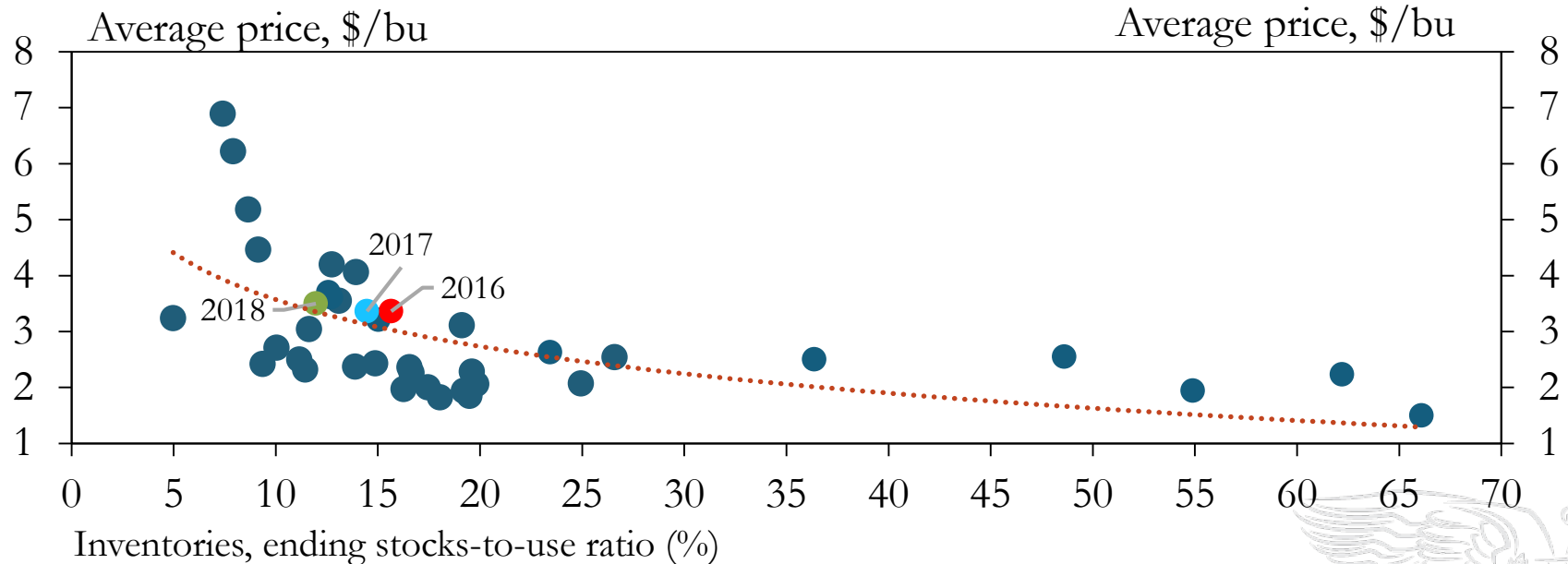
\* Forecasted range for marketing-year weighted average price received by farmers.

Source: USDA.



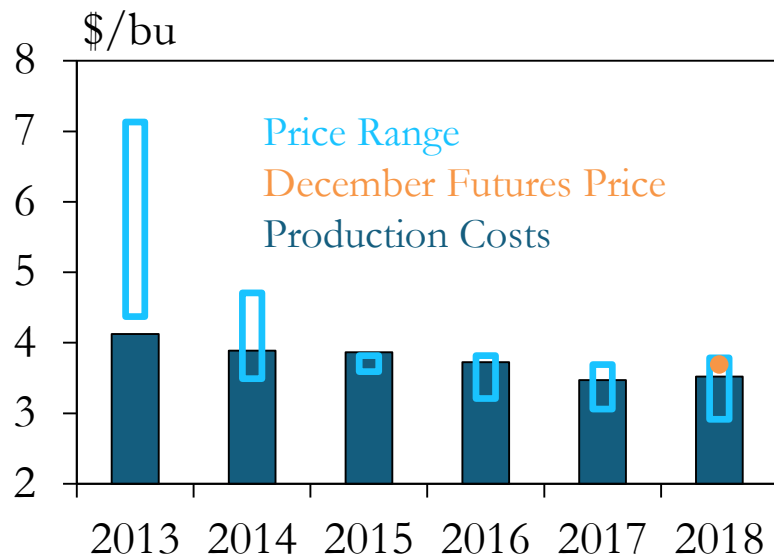
Crop inventories are highly correlated with average annual prices over time.

## U.S. Corn Inventories and Prices, 1980 - 2018

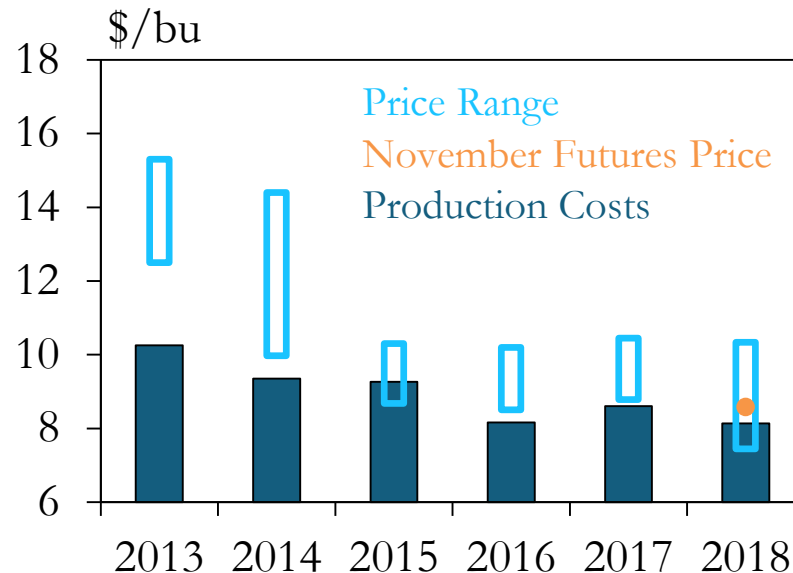


# The sustained weakness in crop prices has limited profit opportunities.

## Corn Profit Margins



## Soybean Profit Margins



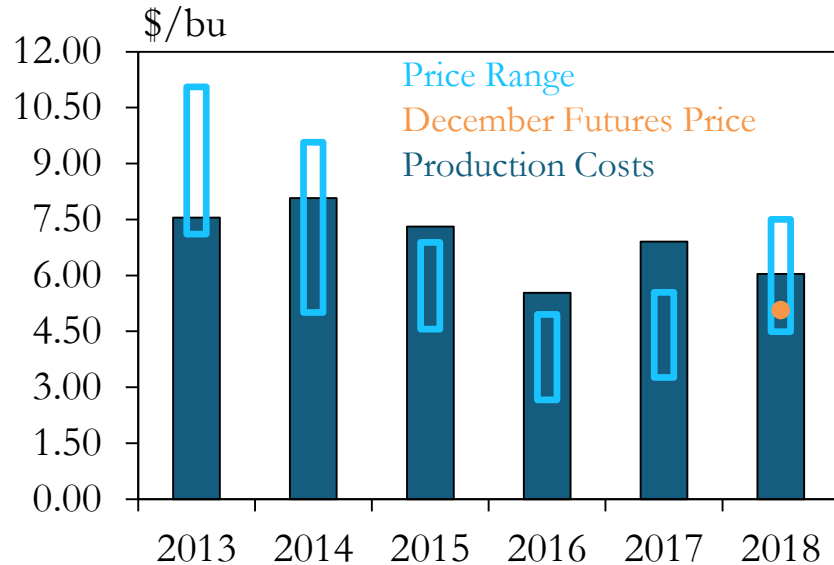
**Note:** Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

**Source:** USDA, Haver Analytics and CME.

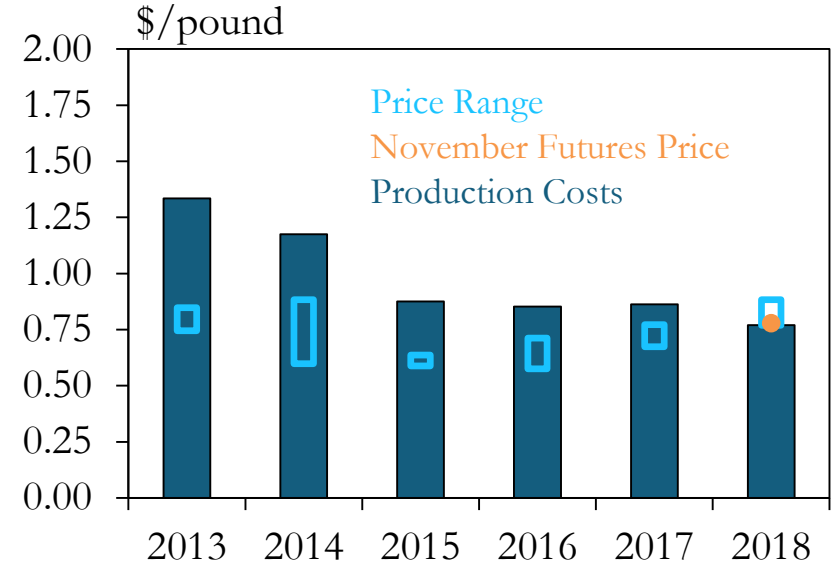


Profitability for wheat and cotton producers, however, has improved somewhat after being weak the past few years.

### Wheat Profit Margins



### Cotton Profit Margins



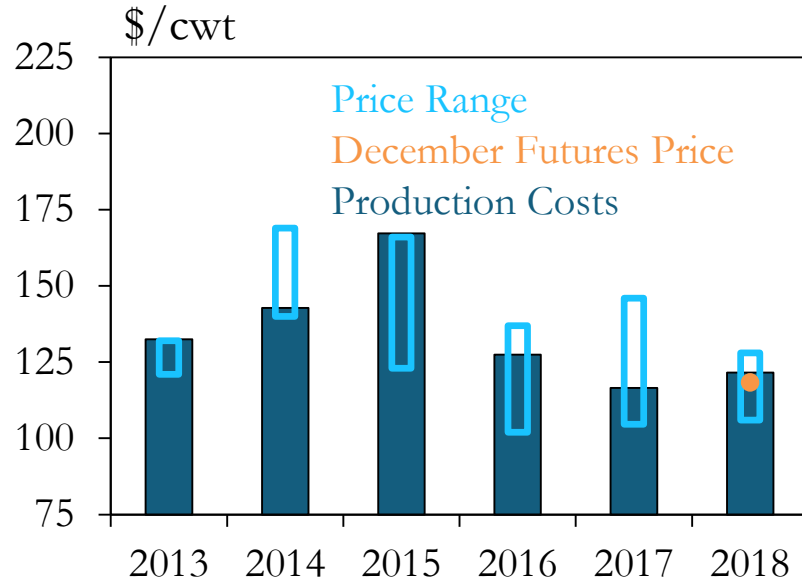
**Note:** Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

**Source:** USDA, Haver Analytics and CME.

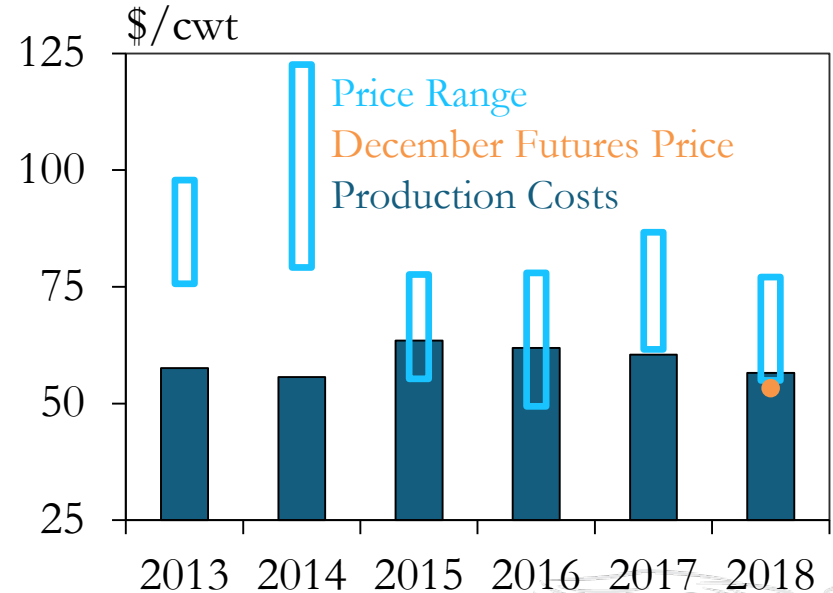


Profits in the livestock sector have fluctuated, but generally have been stronger than in crops the past two years.

### Cattle Profit Margins



### Hog Profit Margins



**Note:** Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

**Source:** USDA, Haver Analytics and CME.

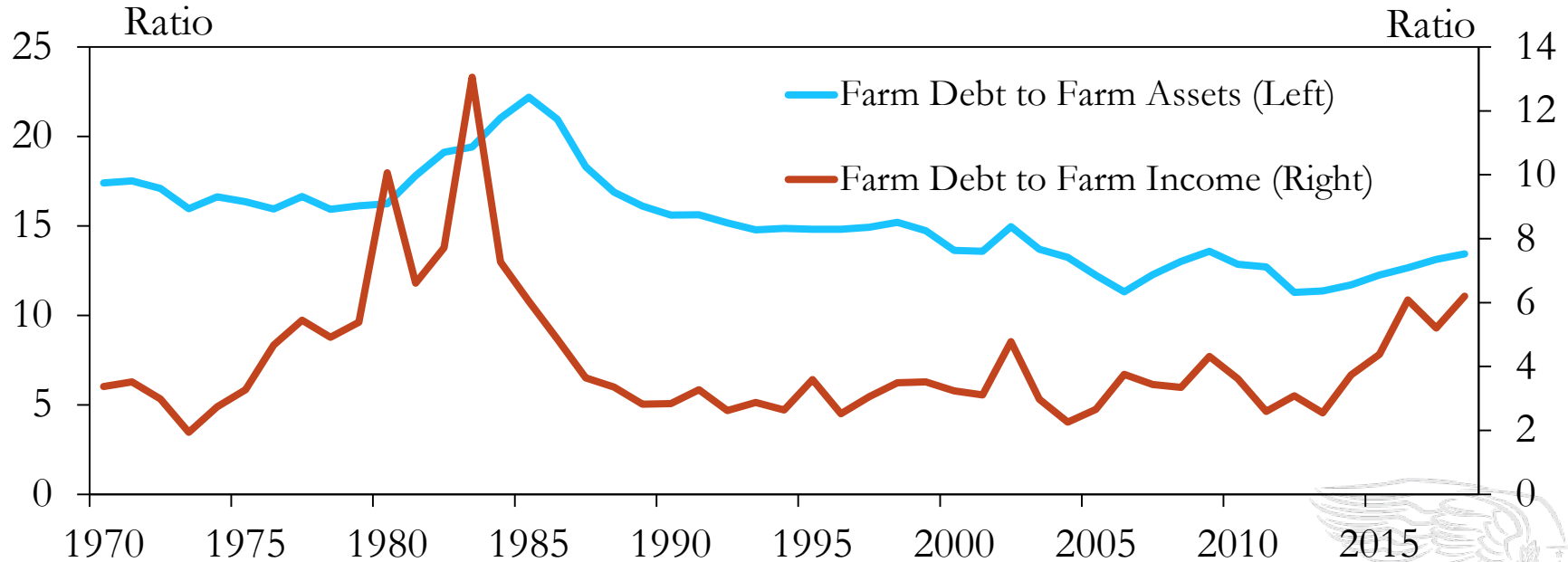


# Farm Finances

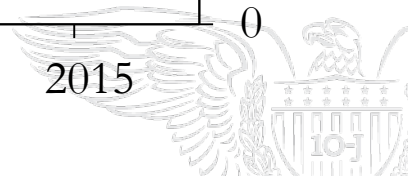


With lower ag prices, liquidity has deteriorated, but measures of solvency have remained strong.

## U.S. Farm Sector Solvency and Liquidity Metrics



Source: USDA.

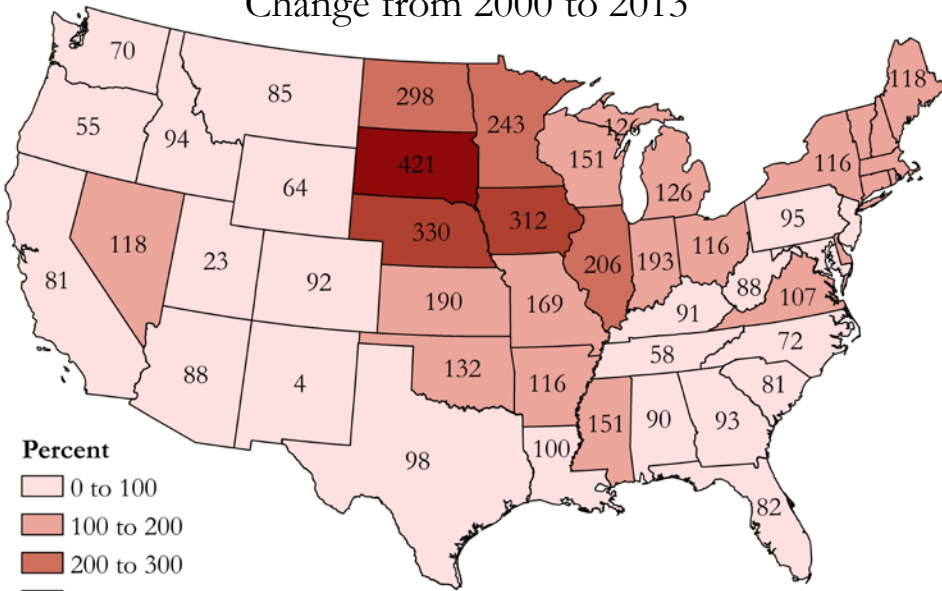




Although farmland values have declined in some states, the decreases have been quite modest.

## U.S. Farmland Values

Change from 2000 to 2013

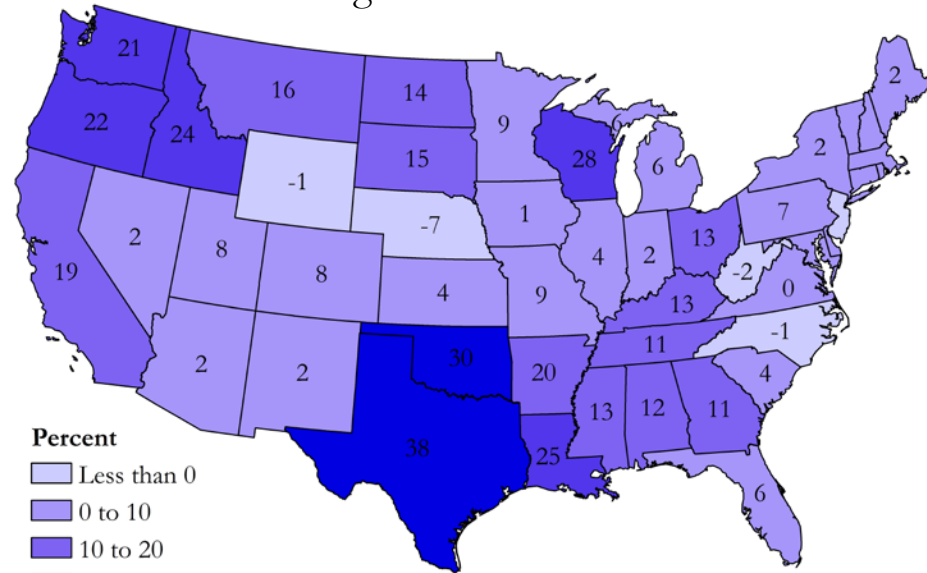


### Percent

- 0 to 100
- 100 to 200
- 200 to 300
- 300 to 400
- More than 400

## U.S. Farmland Values

Change from 2013 to 2018



### Percent

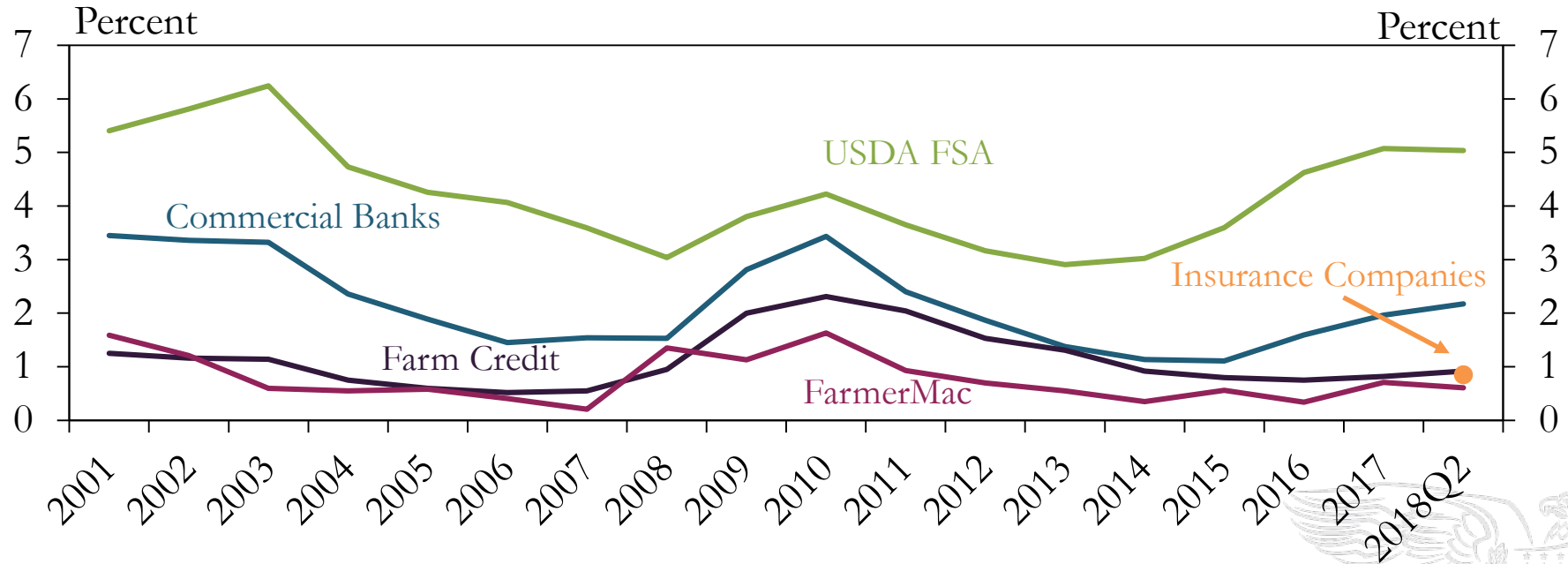
- Less than 0
- 0 to 10
- 10 to 20
- 20 to 30
- More than 30

Source: USDA.



And although repayment challenges have increased over the past few years, delinquencies remain low.

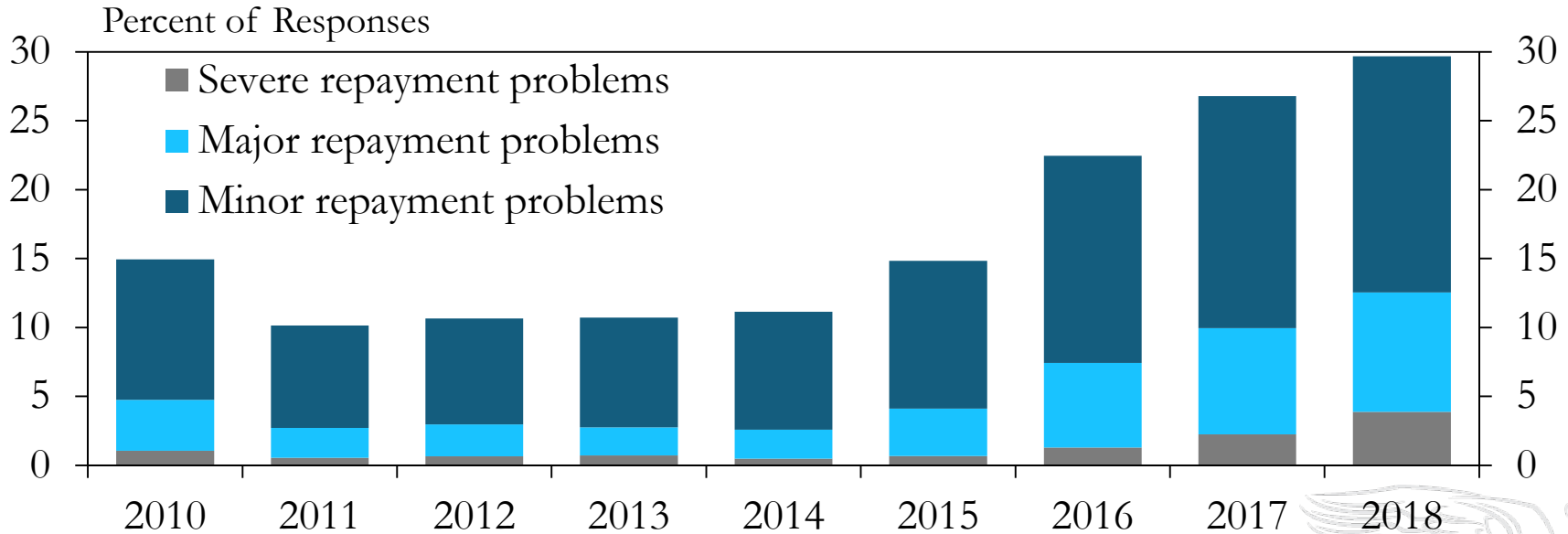
## Delinquency Rates on Farm Operating Loans



Sources: Board of Governors, Farm Credit Administration, FarmerMac, USDA, MetLife, PGIM and AXA Equitable AgriFinance.

# Still, loan repayment problems in the farm sector have continued to build.

## KC Fed District Loan Repayment Problems

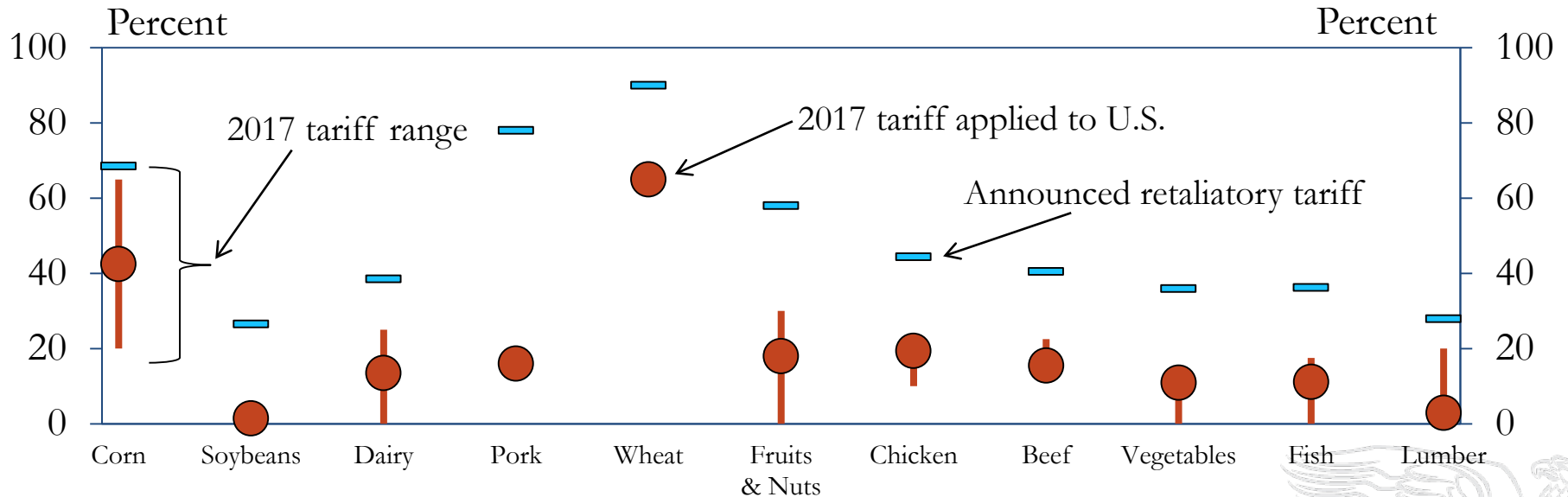


# Agricultural Trade



Trade disputes have elevated the risk for the agricultural sector in 2018.

## Most-Favored Nation Tariff Rates: China

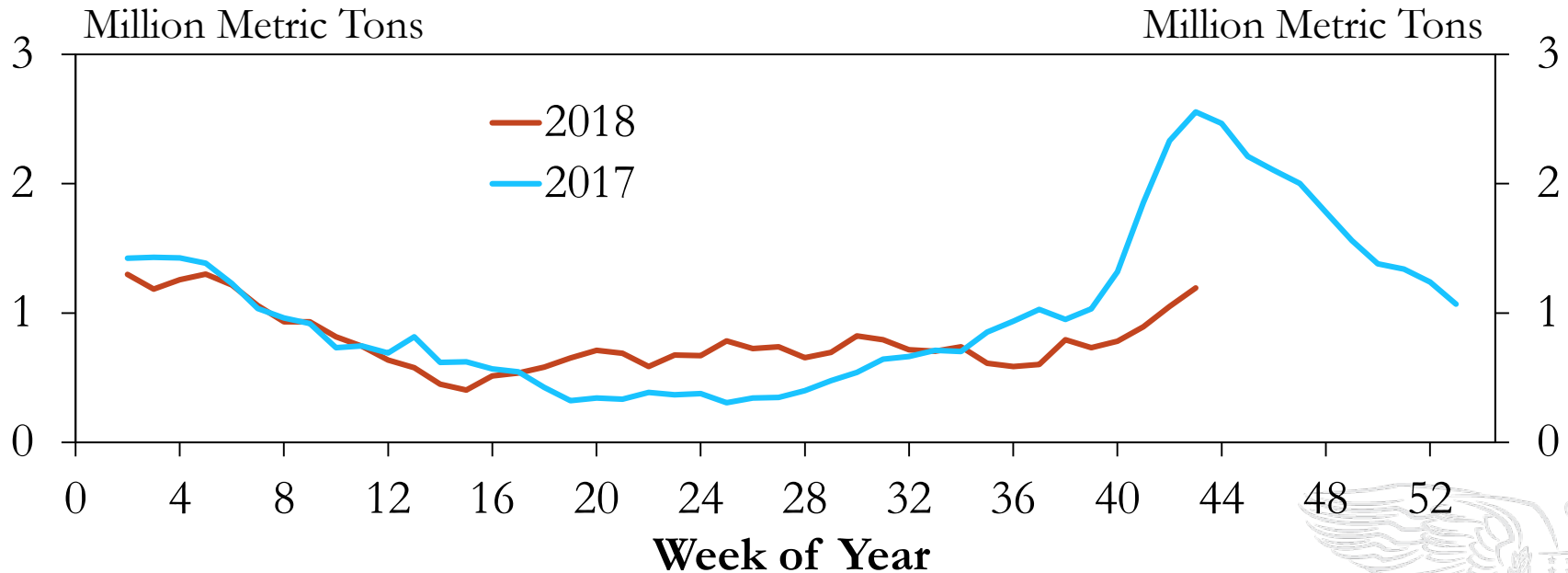


Source: World Trade Organization and USDA.



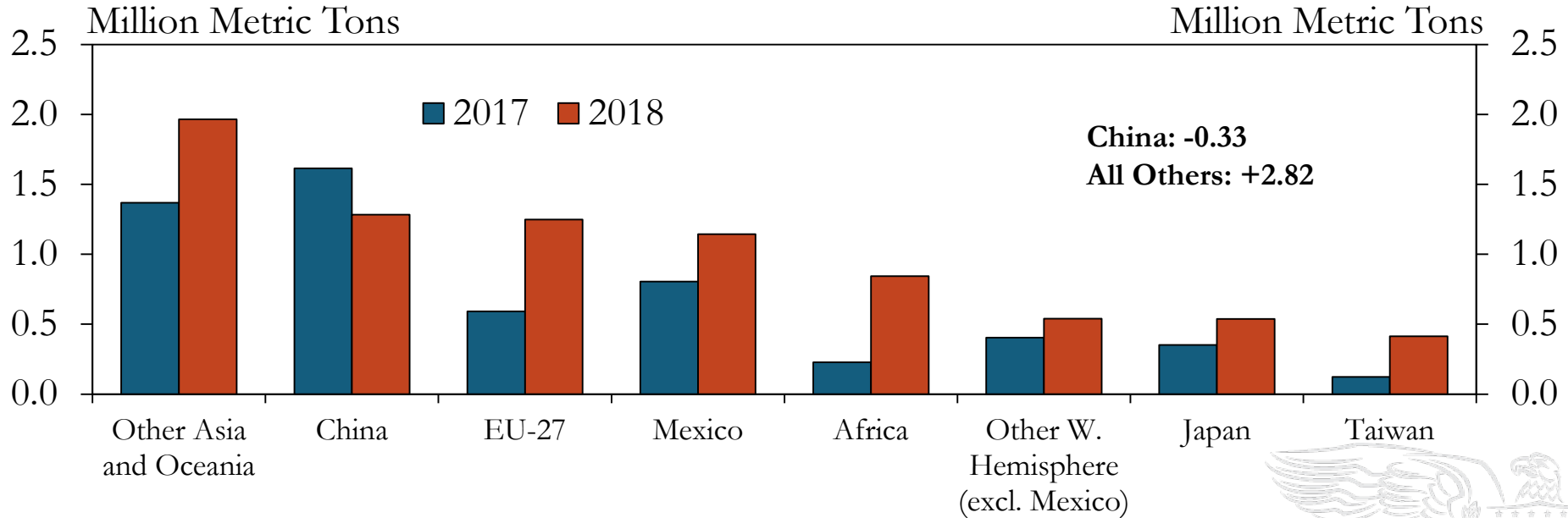
Soybean exports were strong in the first half of the year, but the strength has started to become more questionable.

## U.S. Soybean Exports



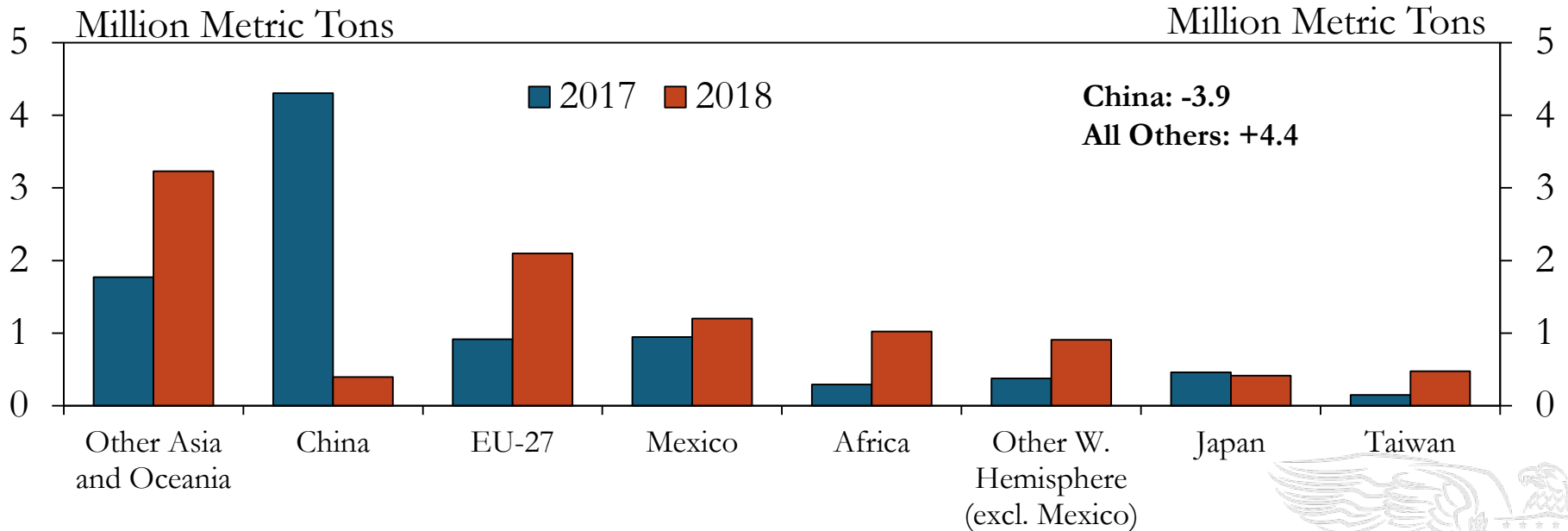
Earlier in the year, export strength was driven by demand from regions outside of China.

## U.S. Soybean Exports, Q2



Recently, however, U.S. soybean exports to China have dropped sharply.

## U.S. Soybean Exports, Q3

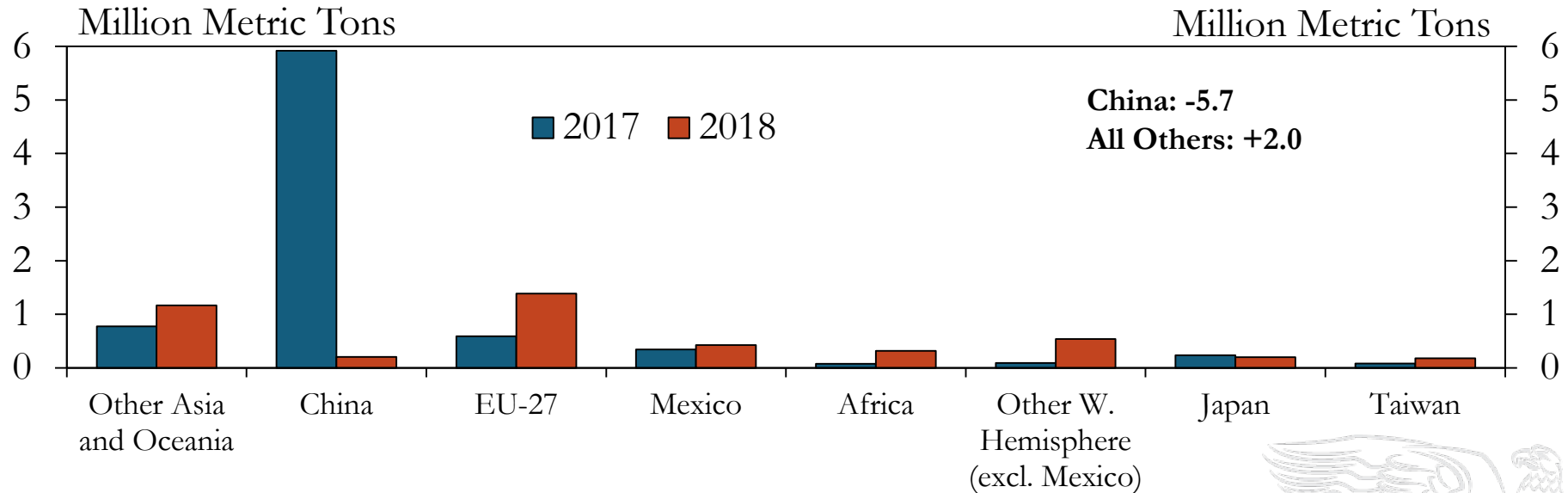




Reduced demand for U.S. soybean exports to China is a considerable risk that was not present a year ago.

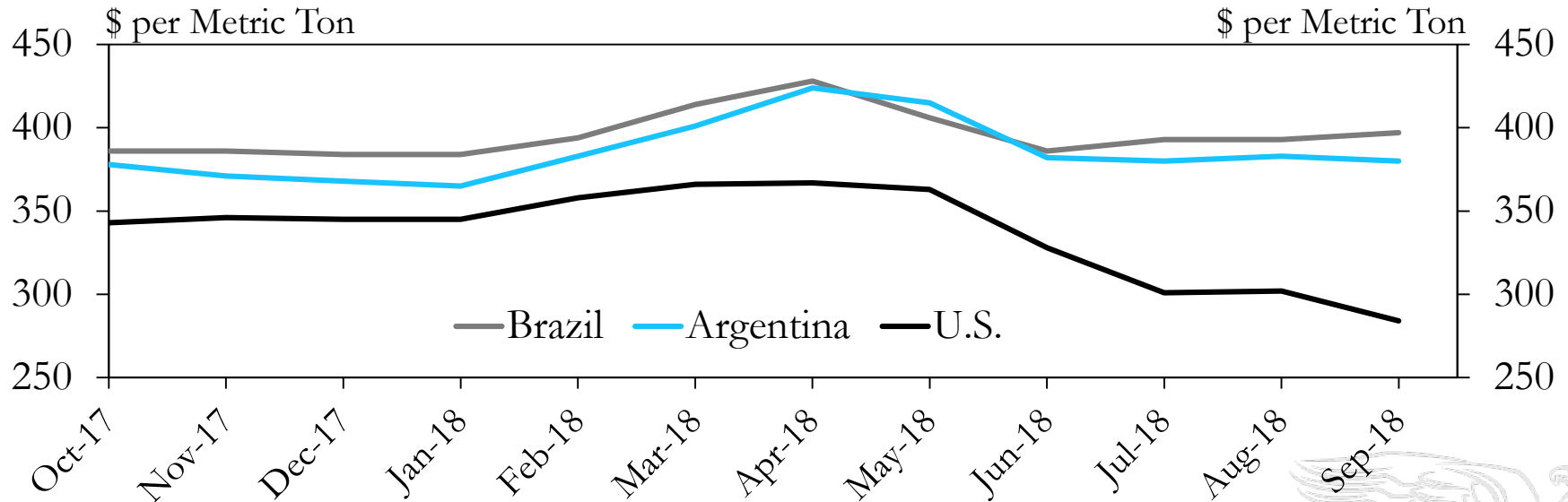
## U.S. Soybean Exports, Q4

(Through Oct. 25)



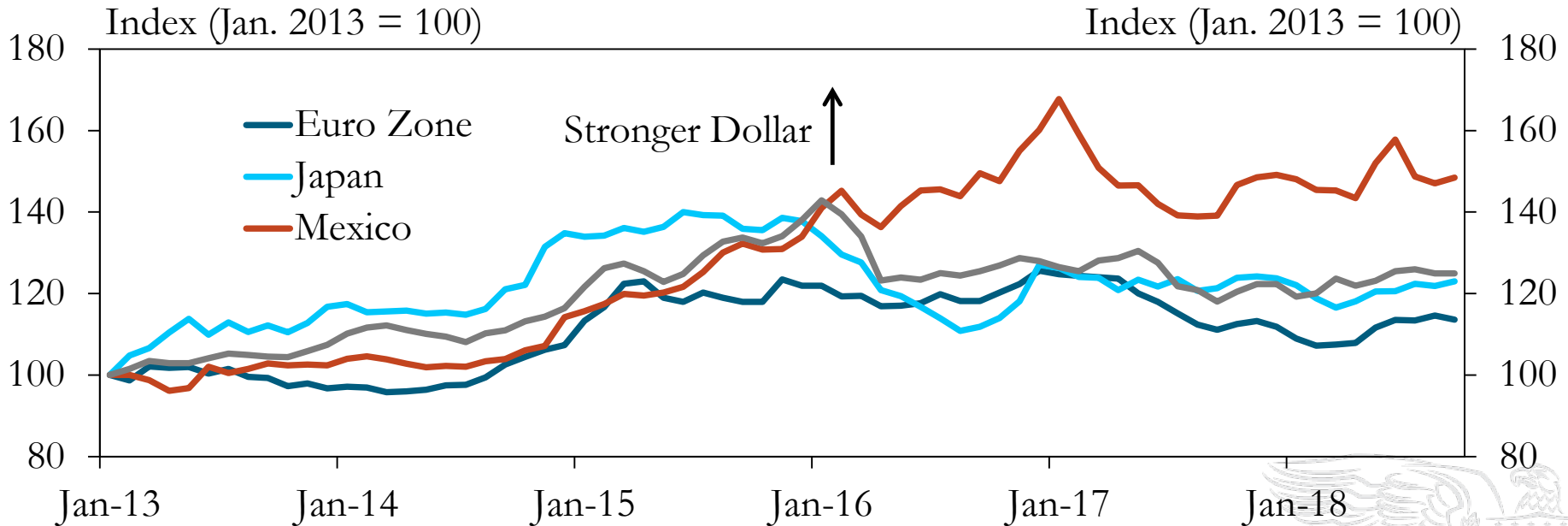
As the spread between prices in the U.S. and South America widens, the incentive to grow soybeans has changed.

## U.S. and South America Soybean Prices



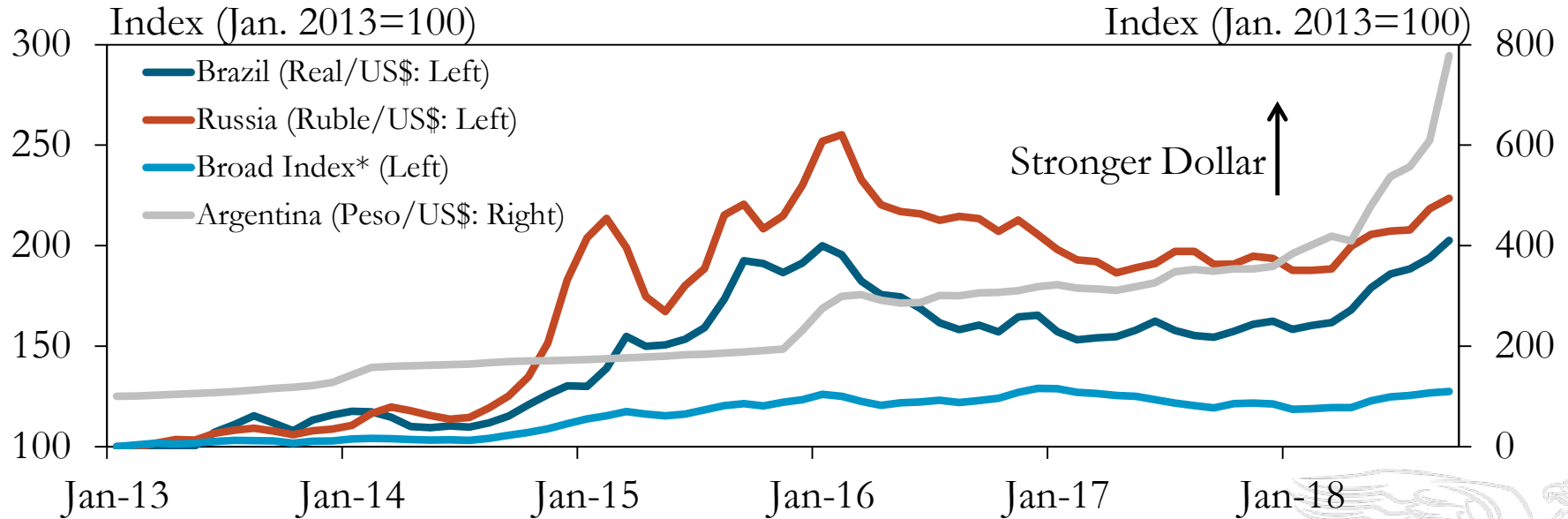
A stronger U.S. dollar has also affected buyers' decisions about where to source ag commodities.

## Currency Exchange Rates



The U.S. dollar has continued to strengthen even more notably against currencies of competing ag nations.

## Currency Exchange Rates



Sources: Federal Reserve, IMF and Haver Analytics

\*Nominal broad trade-weighted exchange value of the U.S. dollar

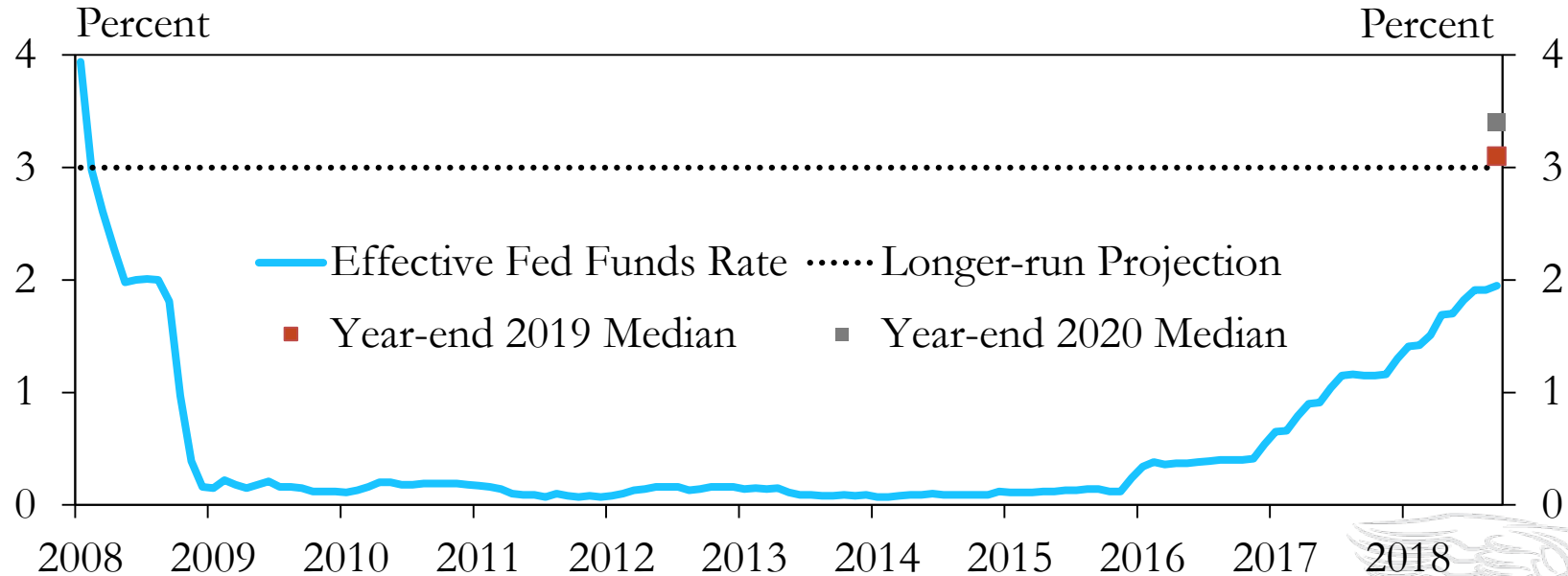


# Monetary Policy and Interest Rates



# Monetary policy in the U.S. has continued to adjust.

## Effective Federal Funds Rate

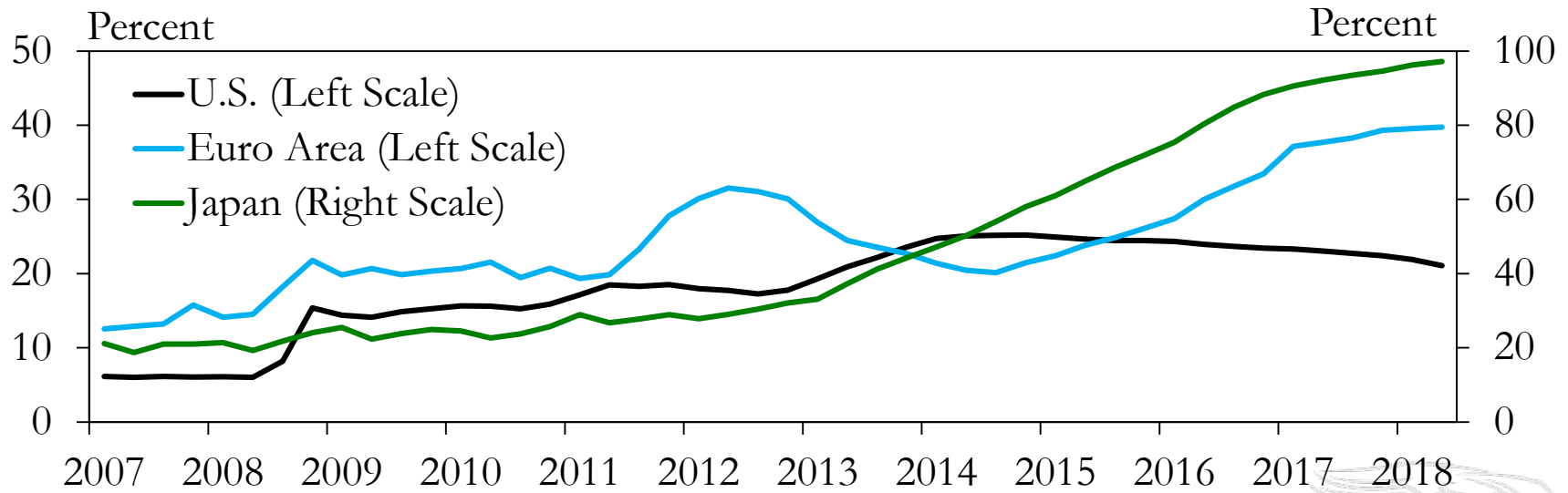


Source: Federal Reserve Board of Governors and Haver Analytics.



Central bank monetary policies have diverged the last few years as the Fed has gradually removed accommodation.

## Central Bank Assets as a Share of GDP

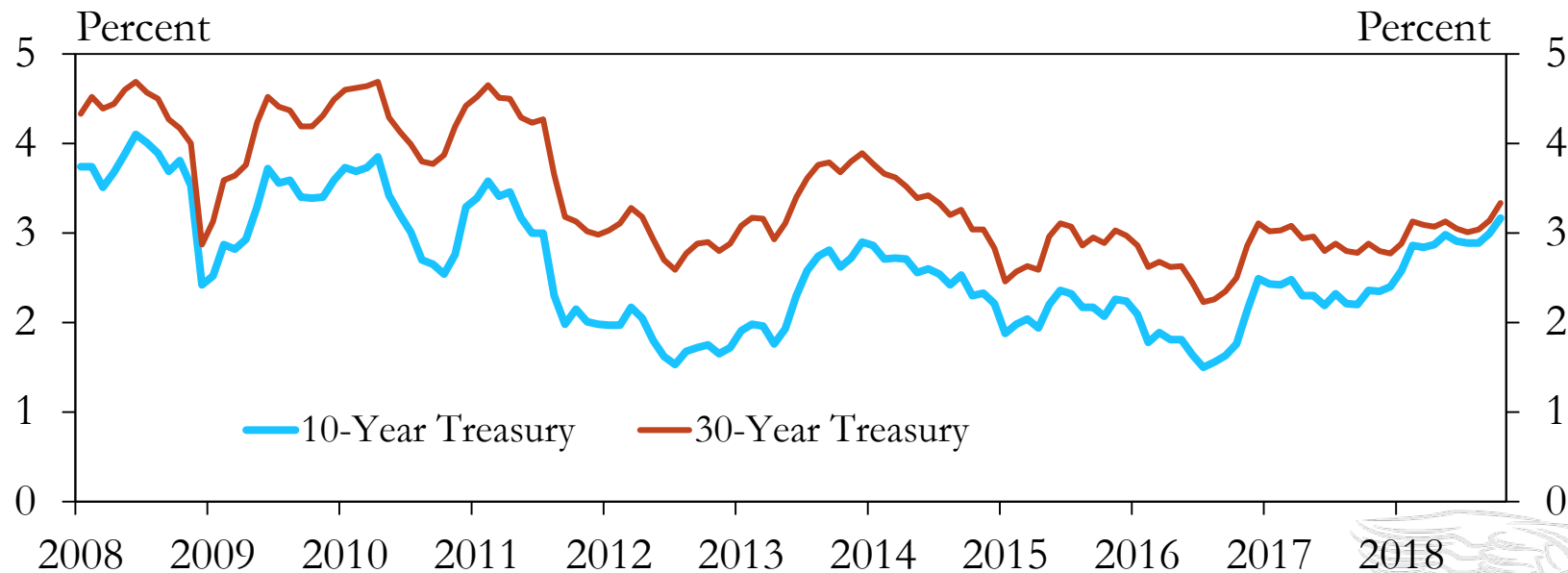


Sources: Federal Reserve Board of Governors, European Central Bank, Bank of Japan, and Haver Analytics.



In the U.S., longer-term interest rates have also risen from recent years' lows.

## Yield on U.S. Treasury Securities



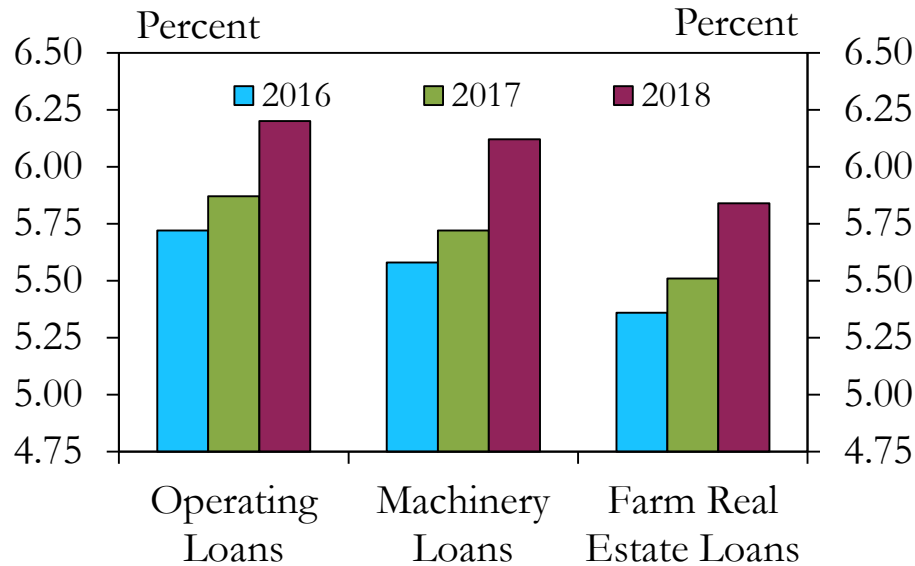
Source: Federal Reserve Board of Governors and Haver Analytics.



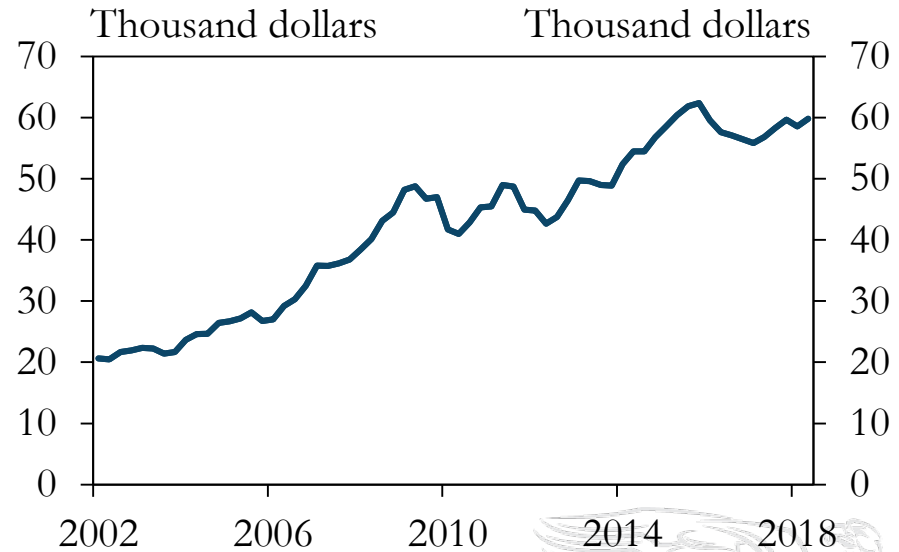


Interest rates on ag loans have edged higher and average loan sizes have continued to increase.

### Fixed Interest Rates



### Average Size of Farm Operating Loans



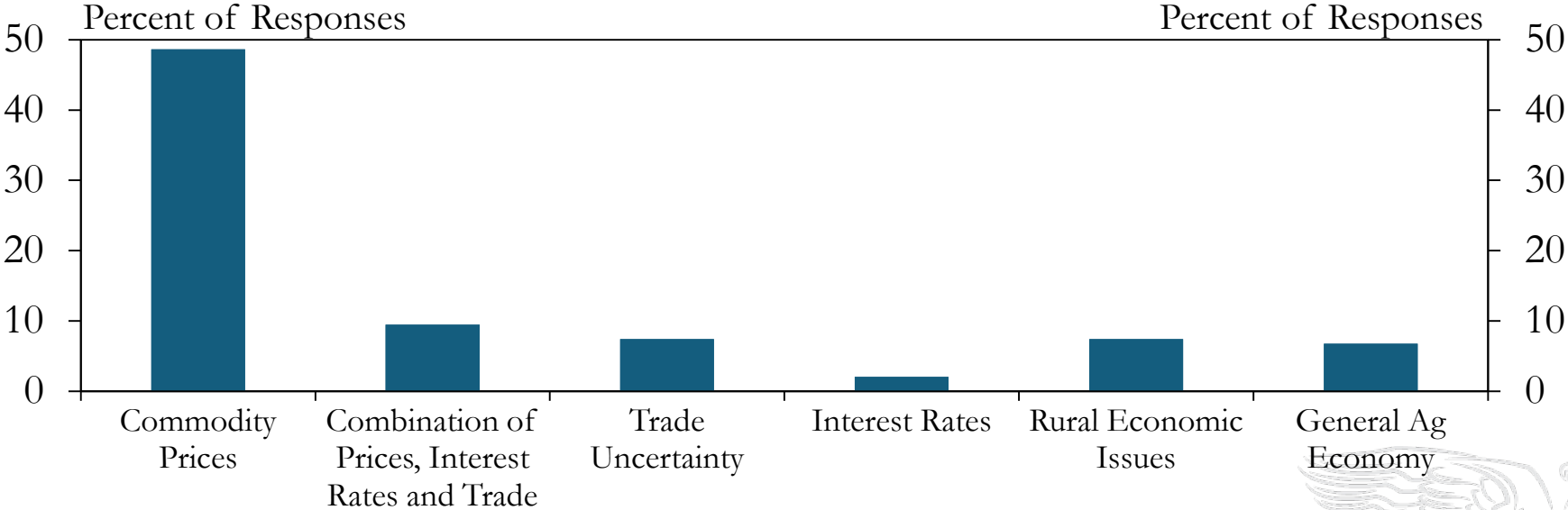
Source: Federal Reserve Bank of Kansas City.



Most agricultural lenders, however, highlight developments in commodity prices as the primary concern for rural areas.

## Potential Barriers to Rural Economic Growth

KC Fed District



Source: Federal Reserve Bank of Kansas City.



# Concluding Remarks

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- National economic indicators remain relatively strong, driven by growth in metro areas, consumer spending, and the services sector.
- The agricultural sector remains relatively weak alongside ongoing trade disputes.
- The near-term test for U.S. agriculture is beginning now, after the fall harvest. Risks will mount if China maintains its reduced pace of soybean imports from the U.S., and if planting in South America expands.
  - Uncertainty around the next Farm Bill also remains.



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# Questions?

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Federal Reserve Bank of Kansas City – Omaha Branch

