

Agricultural Outlook

“Running Against the Wind”



FEDERAL RESERVE BANK *of* KANSAS CITY

February 1, 2017

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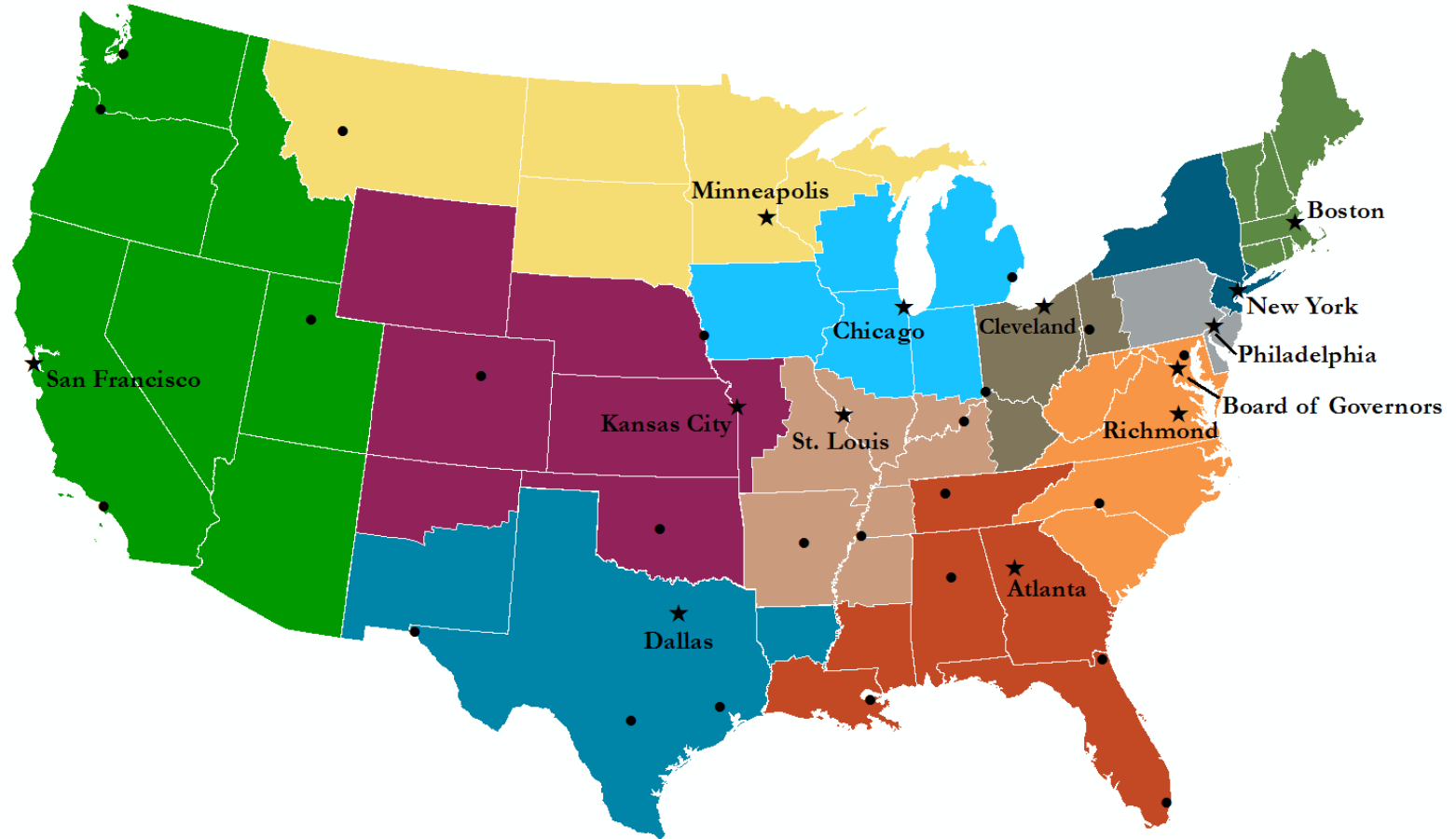
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Federal Reserve Bank of Kansas City

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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Regional Federal Reserve Banks are important to the structure of U.S. monetary policy.



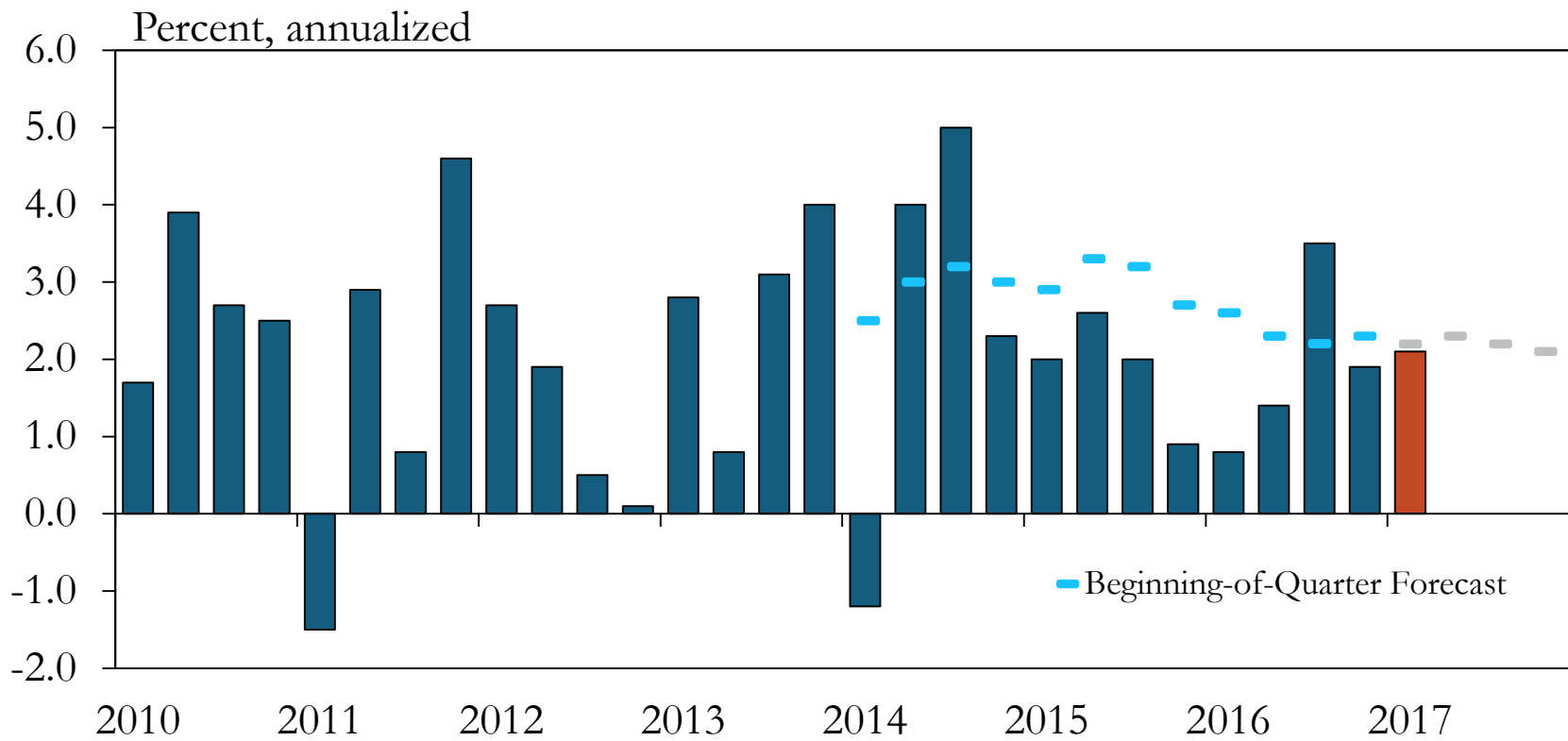
Outlook Themes

- Global demand for agricultural products remains strong, but there are macroeconomic headwinds.
- As with other commodities, supply has caught up with demand, and profits have been tight.
- Financial stress has increased gradually, and pressure could continue to build.



Economic growth has generally been positive, but has consistently fallen short of expectations.

U.S. Real GDP Growth

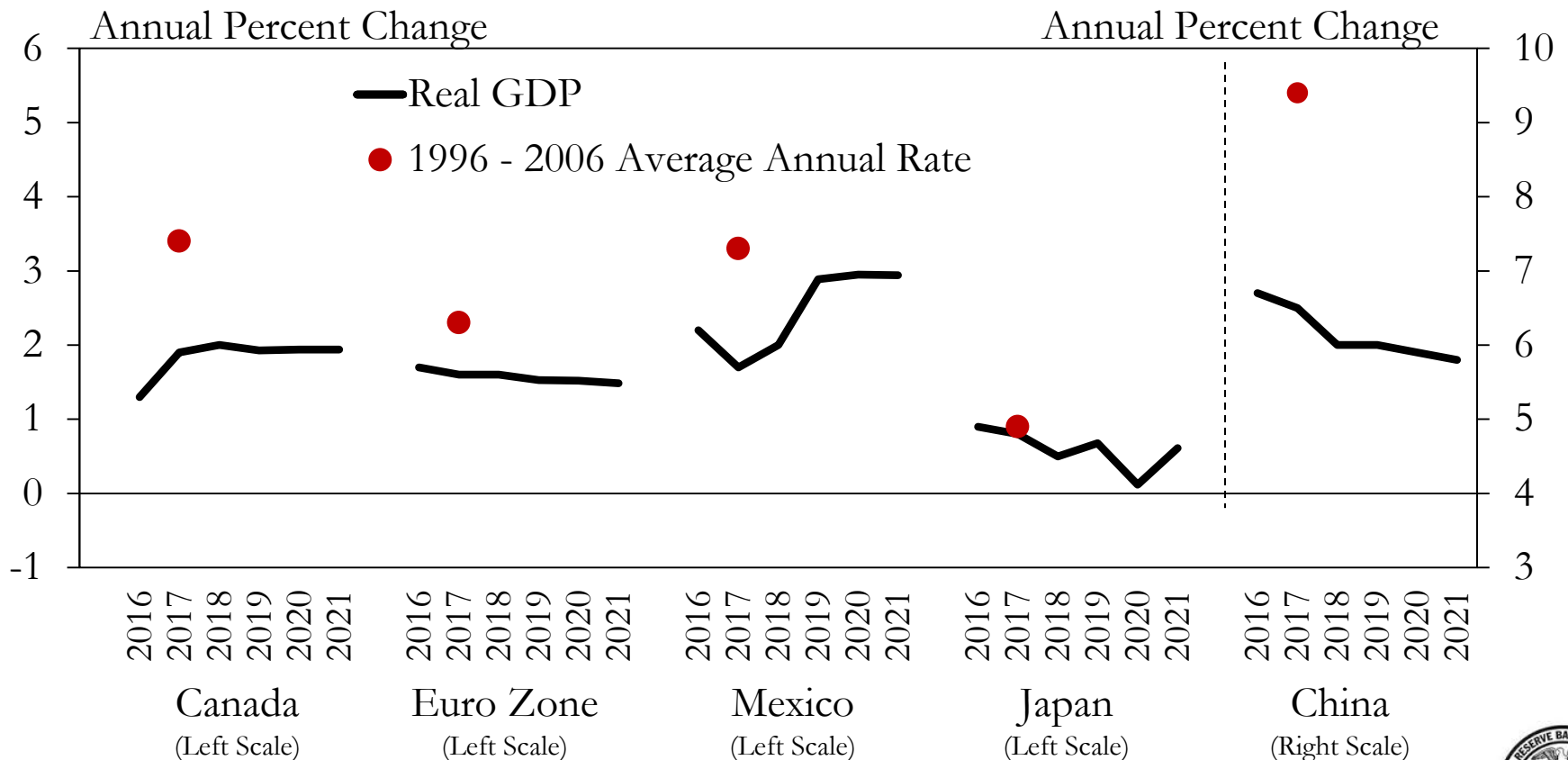


Sources: Bureau of Economic Analysis, Haver Analytics, Macroeconomic Advisors and Blue Chip Financial Forecasts.



Globally, economic growth has also been sluggish.

Global Real GDP Growth



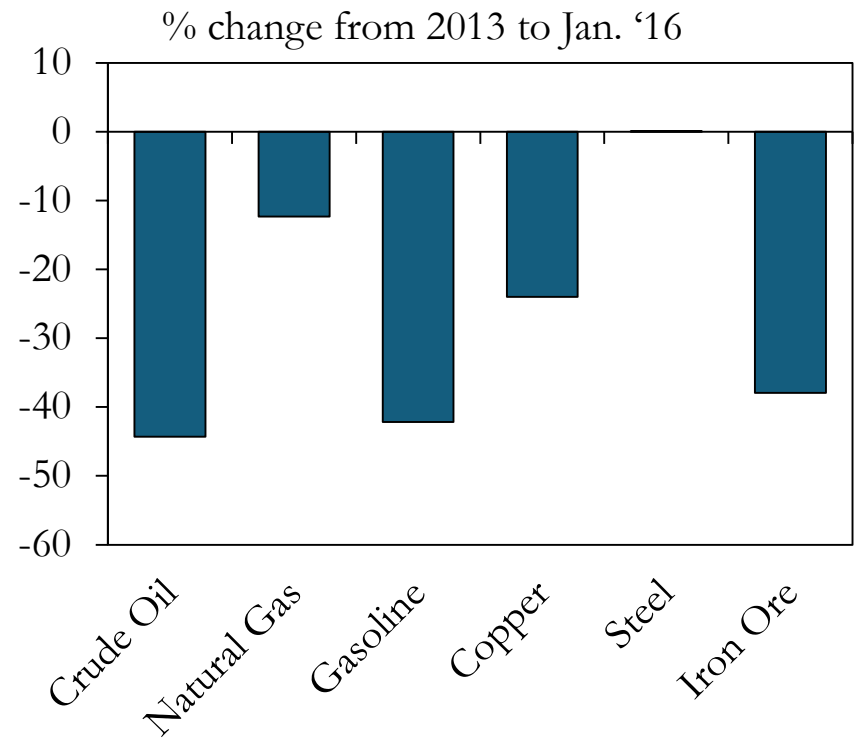
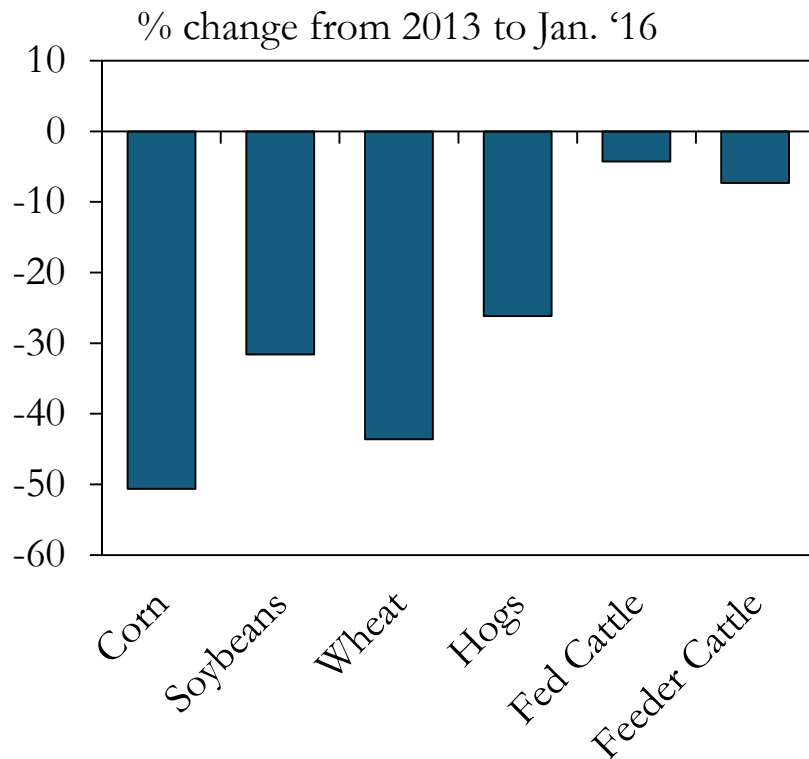
Sources: IMF and Haver Analytics.

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Commodity prices, not just in agriculture, have fallen sharply since 2013.

Change in Commodity Prices since 2013

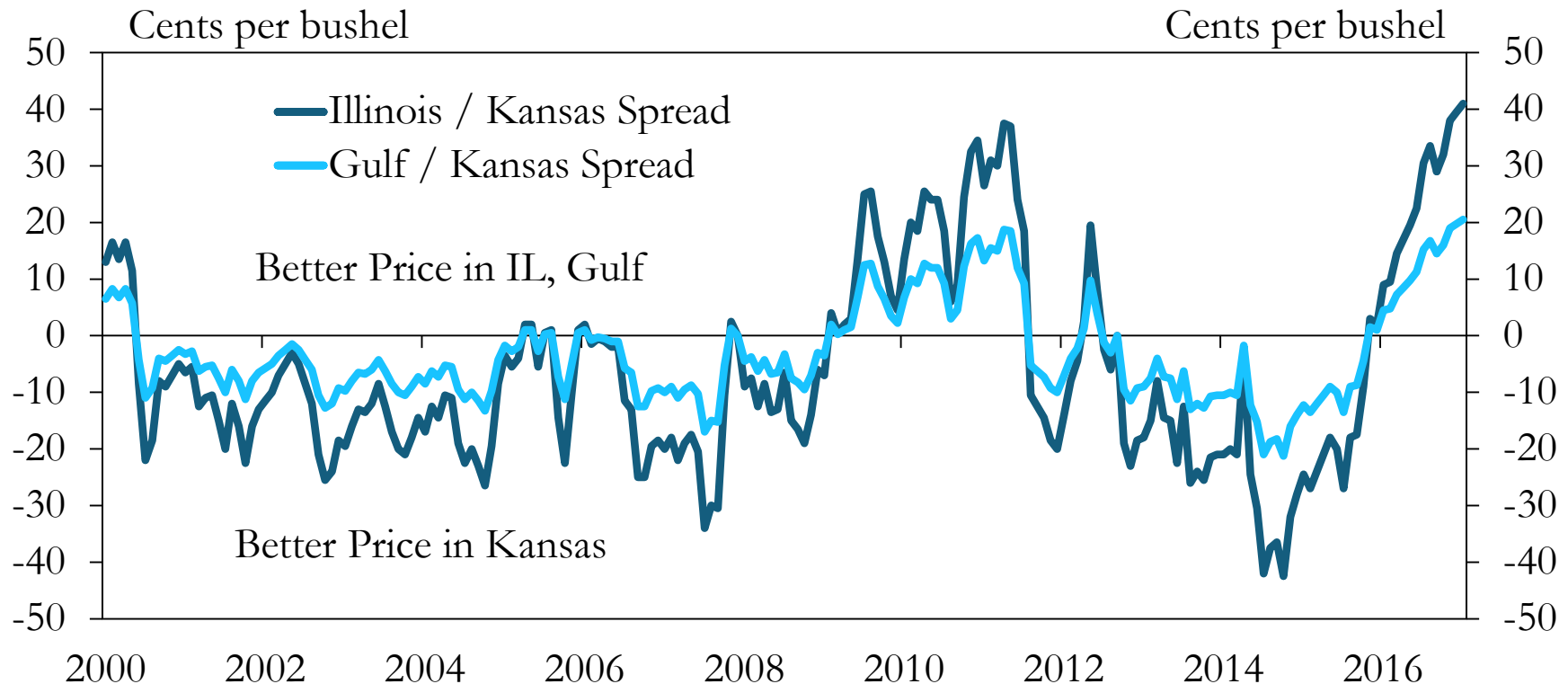


Sources: *The Wall Street Journal* and Haver Analytics.



Lower energy prices have reduced transportation costs and have led to swings in regional price spreads.

Regional Corn Price Spreads



Note: Gulf price is for delivery in 30 days, Central Illinois and Western Kansas are cash.

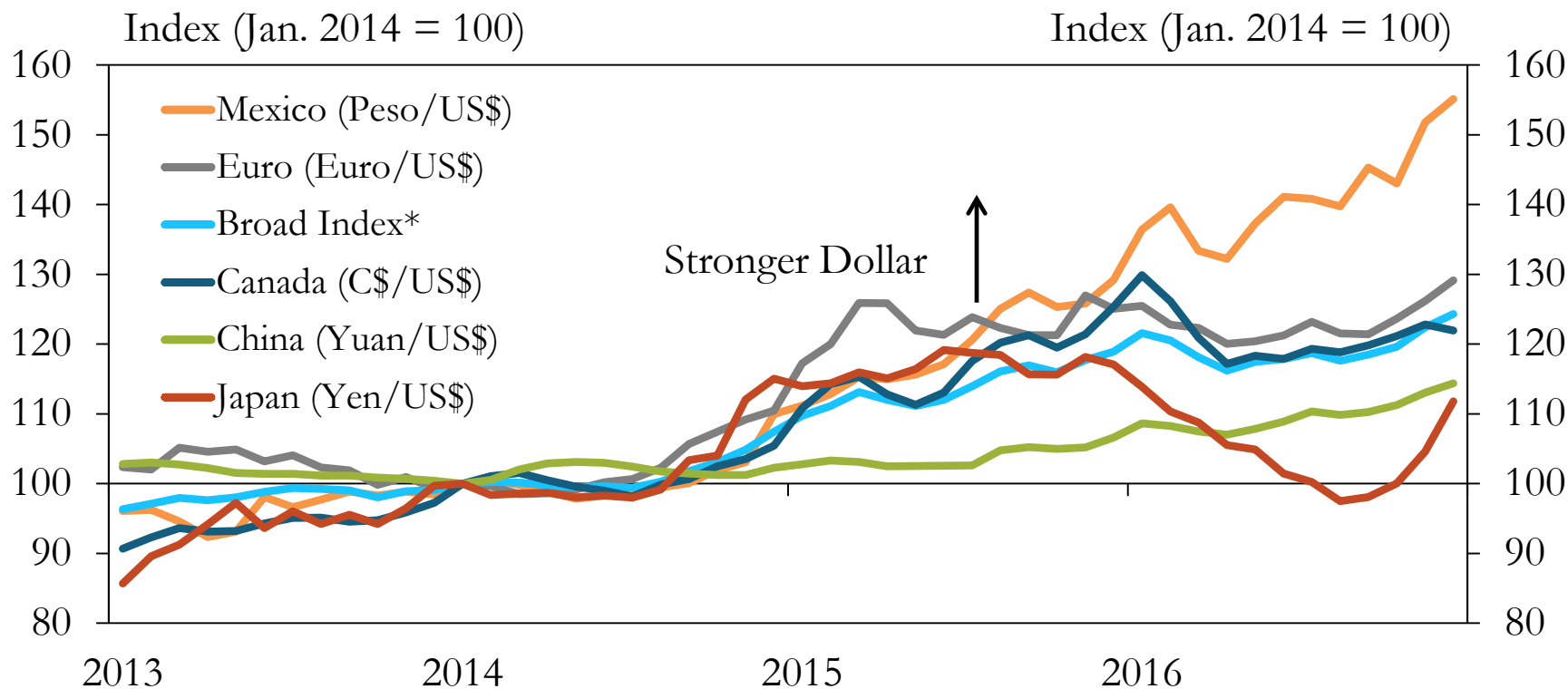
Source: USDA.

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A strengthening dollar, however, has been a major headwind for U.S. exports.

Currency Exchange Rates



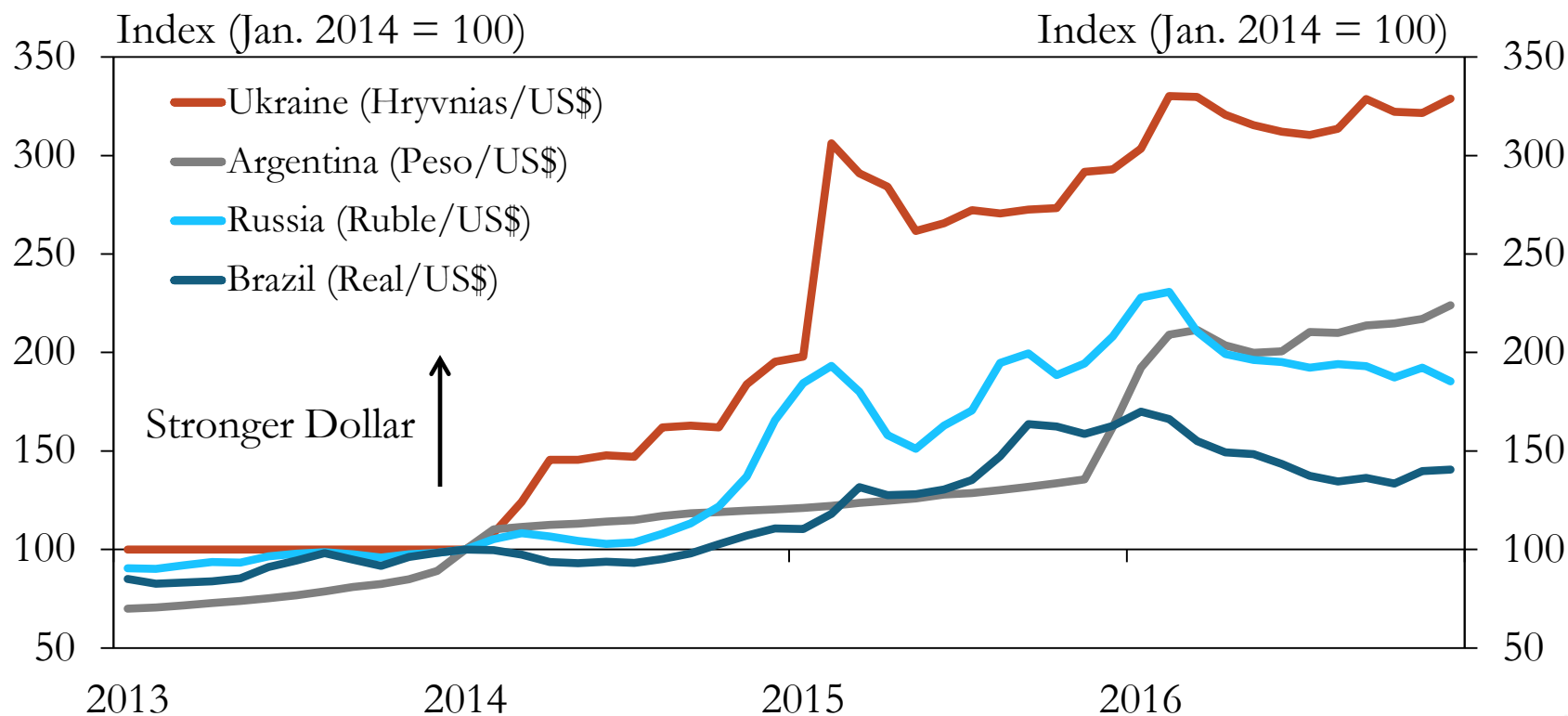
*Nominal broad trade-weighted exchange value of the U.S. dollar.

Sources: Federal Reserve Board and Haver Analytics.



The dollar has also strengthened significantly against the currencies of other key agricultural producers.

Currency Exchange Rates



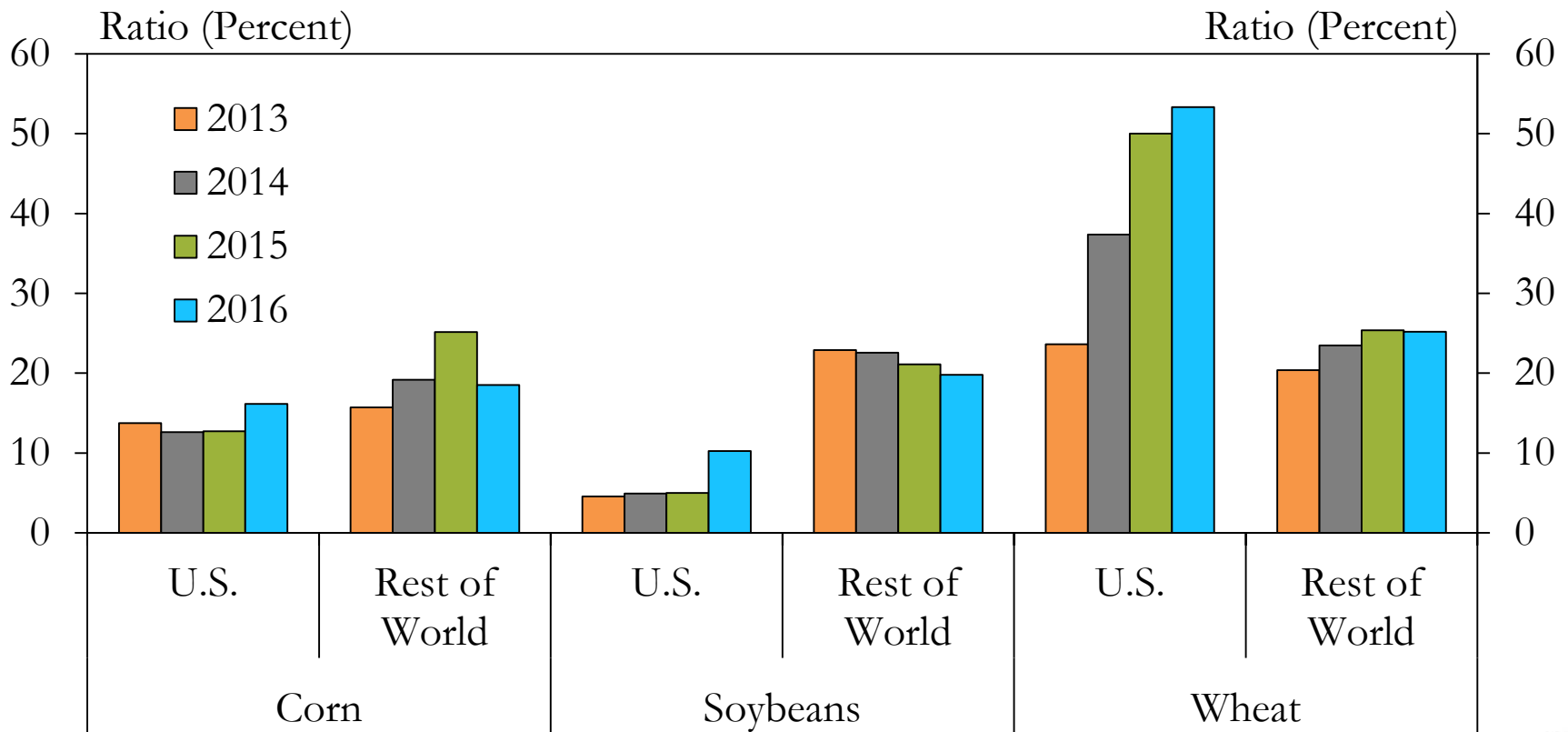
Sources: FRB, IMF and Haver Analytics.

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Slower demand growth and rising production has boosted inventories of ag commodities.

Stocks – to – Use Ratios



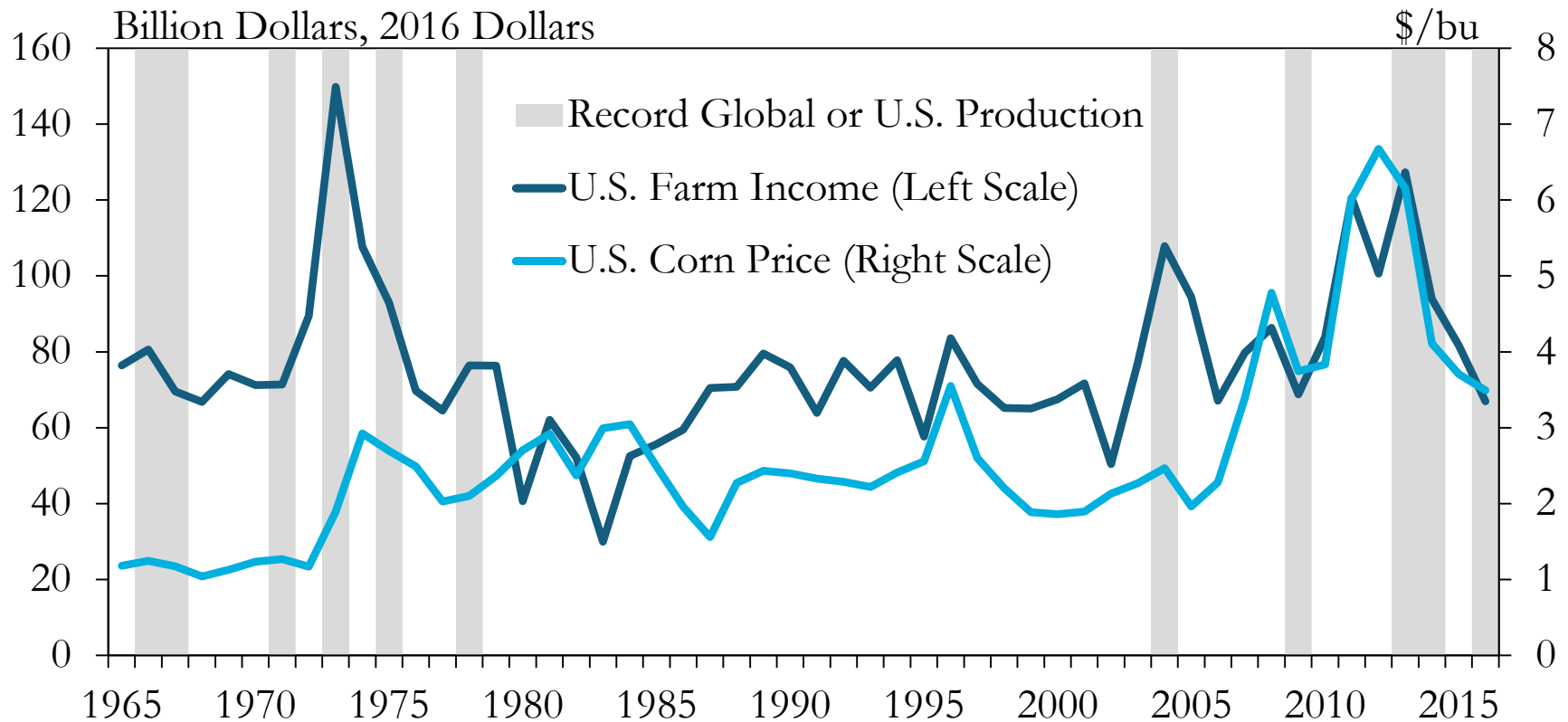
Source: USDA.

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Multiple years of record production, and the drop in commodity prices, have cut farm income.

Net Farm Income and Production



Note: The shaded areas represent years when either U.S. or global production of corn, soybeans and wheat set a new record.

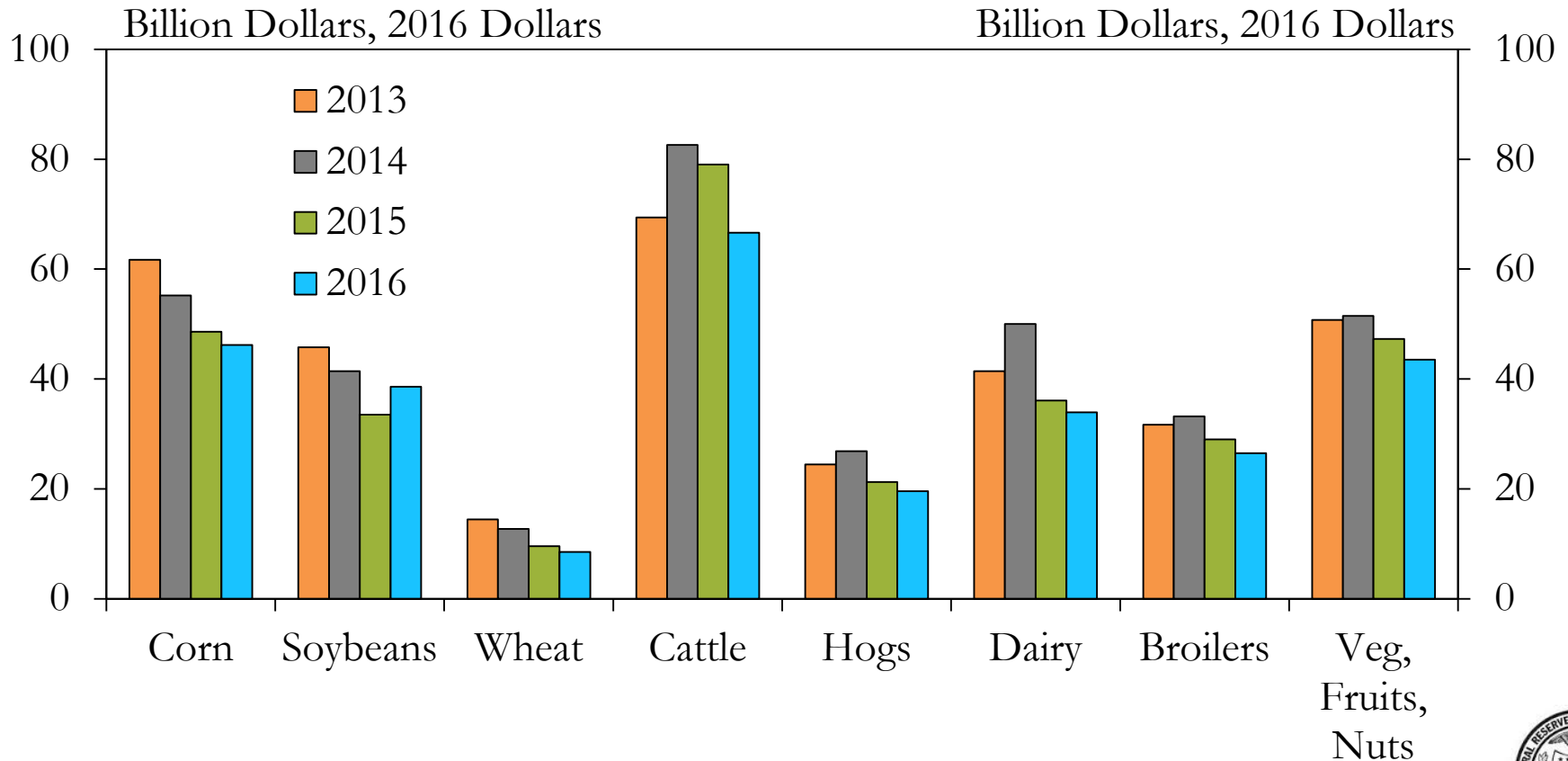
Sources: USDA.

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The decline in revenue has spanned across many different industries.

Farm Sector Cash Receipts



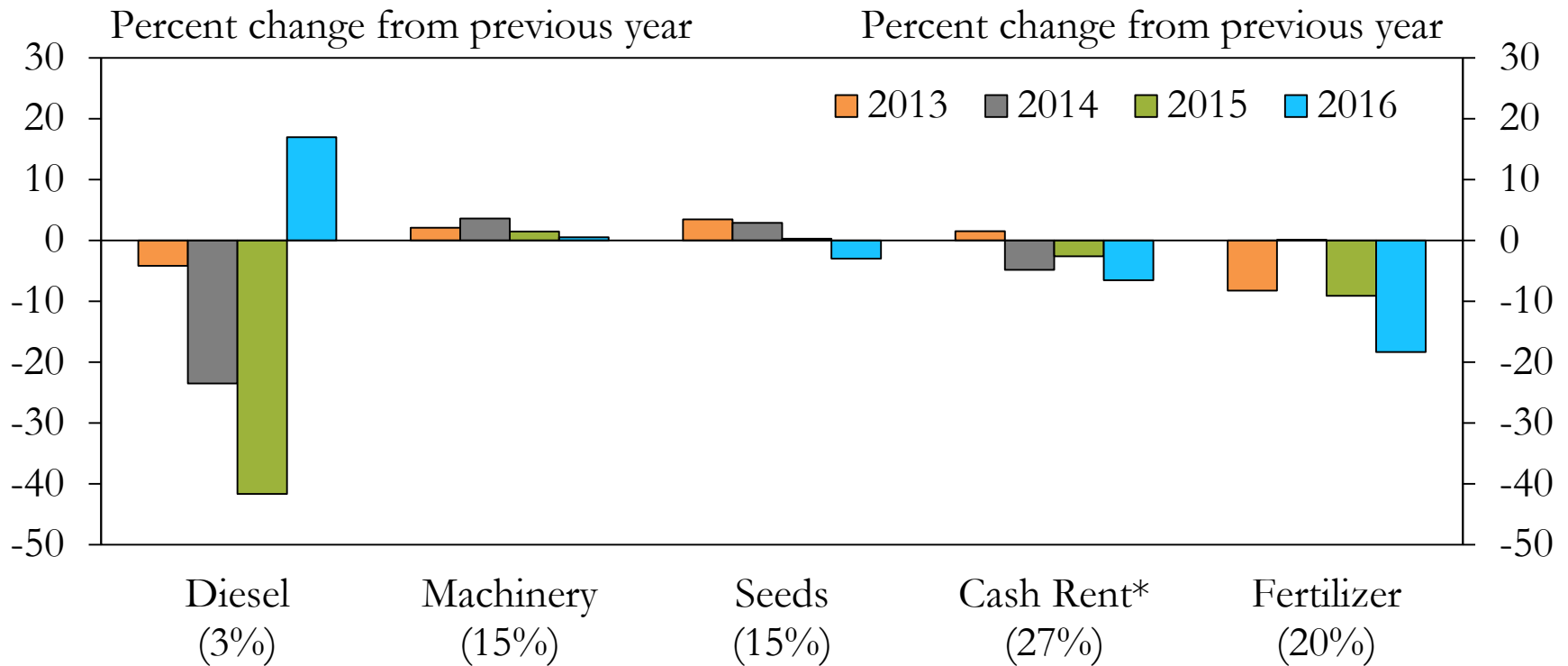
Source: USDA.

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On the positive side, input costs have declined in some areas.

Farm Sector Input Costs



Note: Percentages in parentheses indicate each input's share of the total cost of production for corn in 2016.

Sources: USDA, Haver Analytics, EIA, and Federal Reserve Bank of Kansas City.

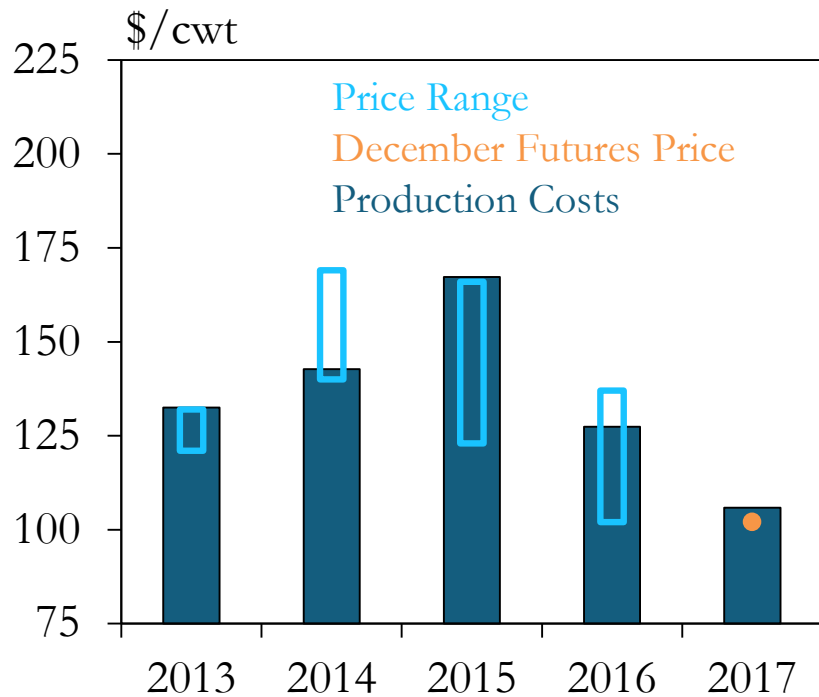
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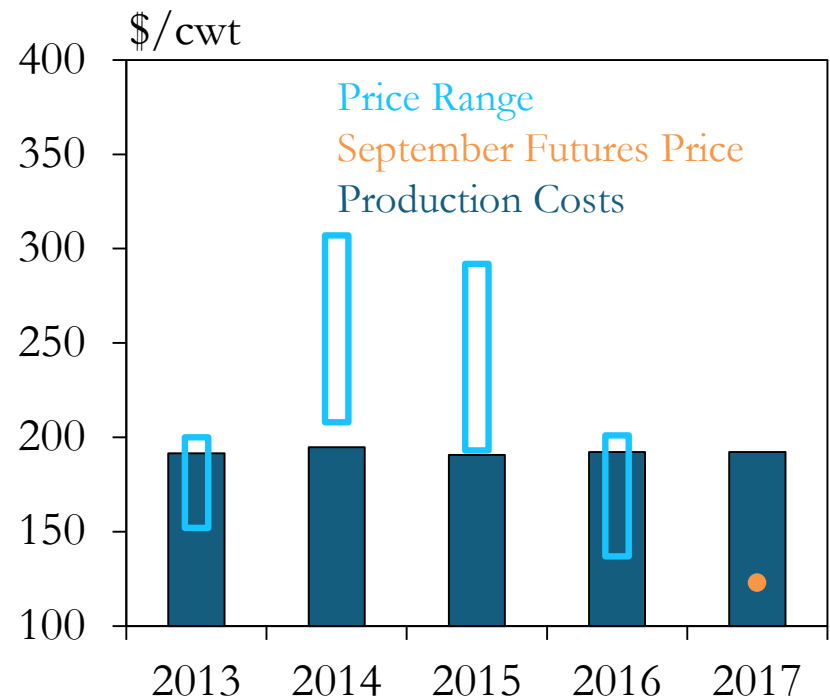
But profit margins have generally remained poor in both the livestock and crop sectors.

U.S. Livestock Sector Profit Margins

Cattle



Cow / Calf



Sources: USDA, Haver Analytics and CME.

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.

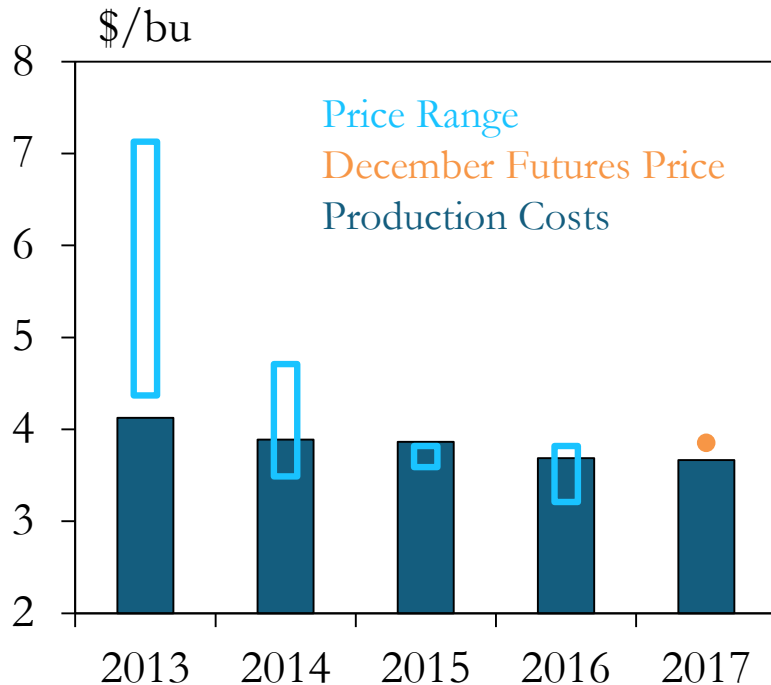
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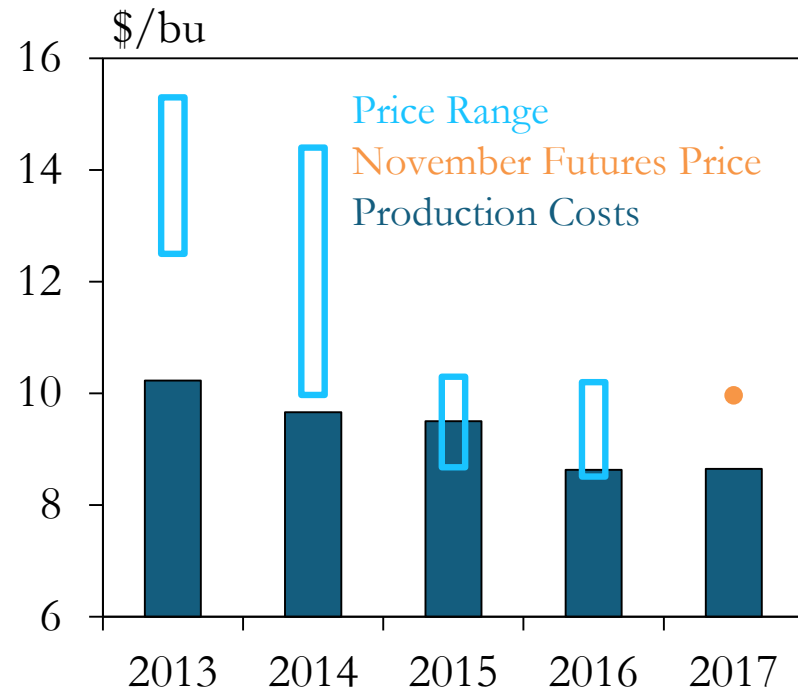
But profit margins have generally remained poor in both the livestock and crop sectors.

U.S. Crop Sector Profit Margins

Corn



Soybeans



Sources: USDA, Haver Analytics and CME.

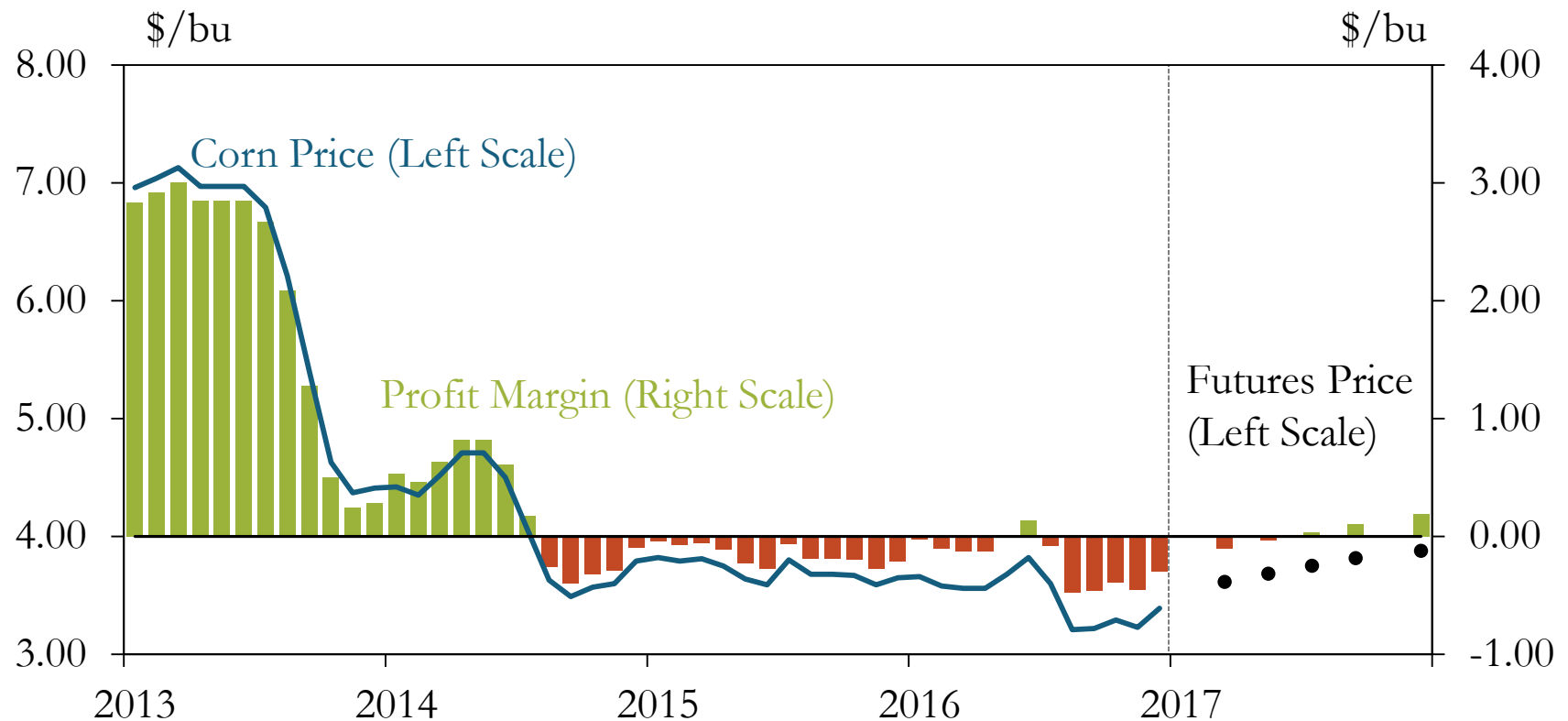
Note: Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

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Profit opportunities for corn producers have been limited since 2013.

U.S. Corn Profit Margins



Sources: USDA, Haver Analytics and CME.

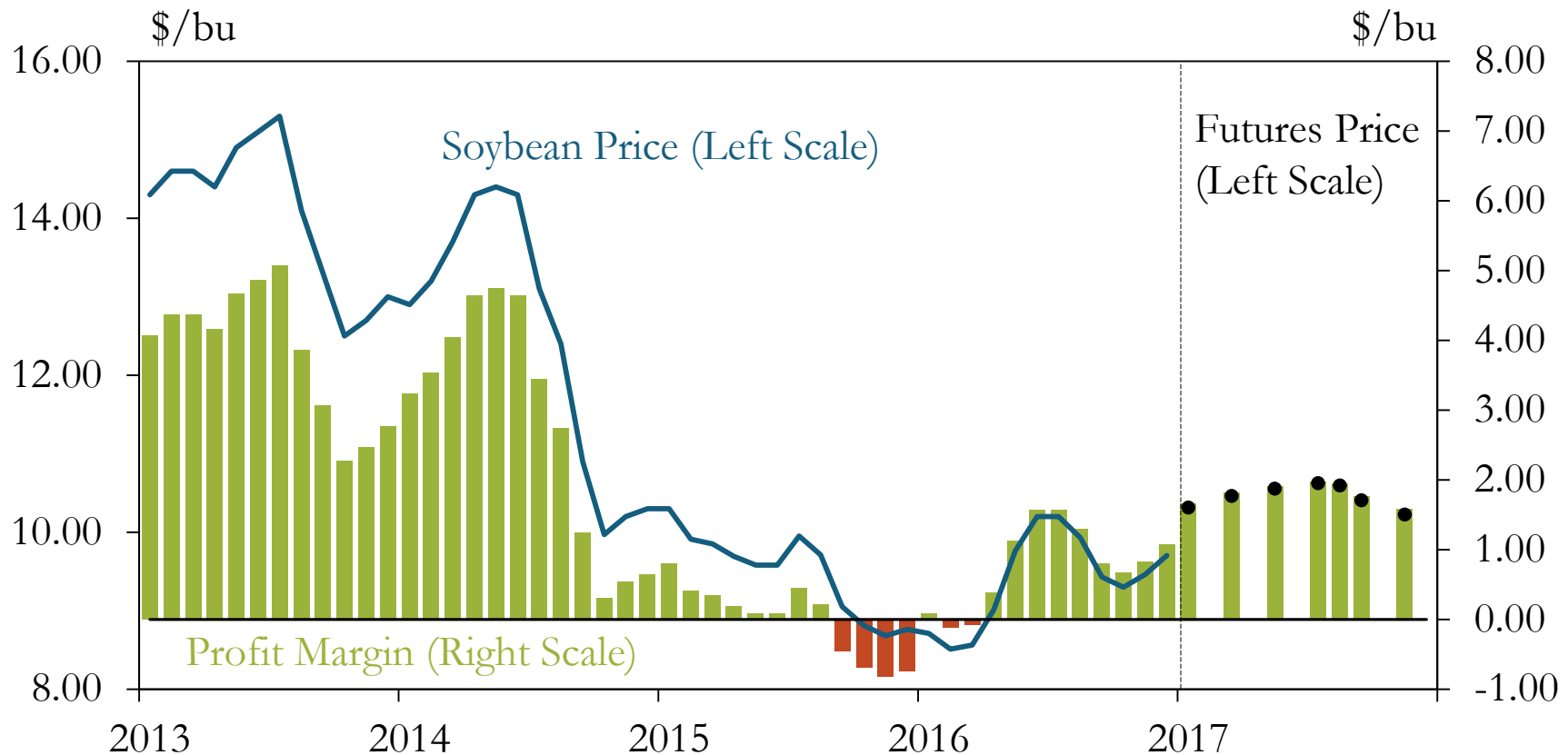
Note: Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

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Opportunities to sell soybeans for a profit have been greater.

U.S. Soybean Profit Margins



Sources: USDA, Haver Analytics and CME.

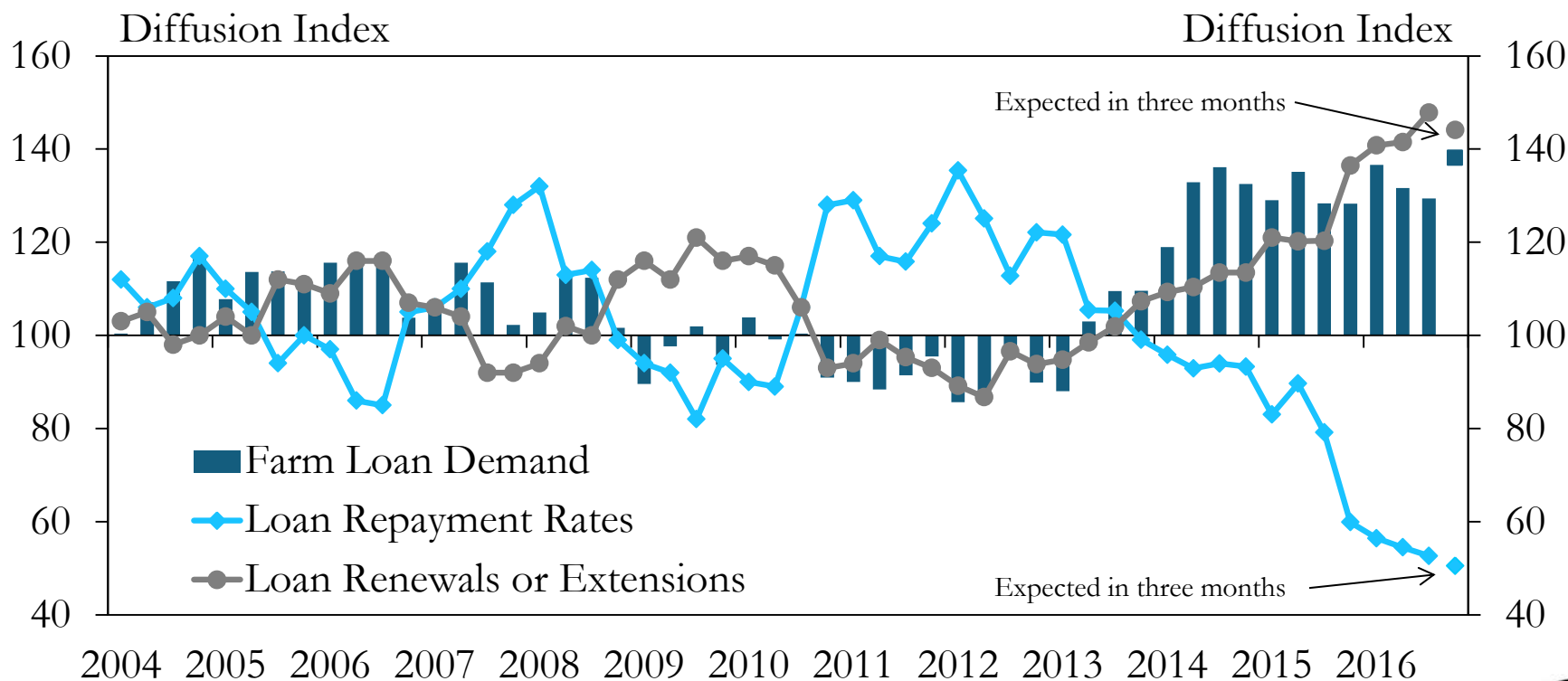
Note: Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

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Still, reduced farm income has spurred demand for financing, and loan repayment rates have softened.

Agricultural Credit Conditions KC Fed District



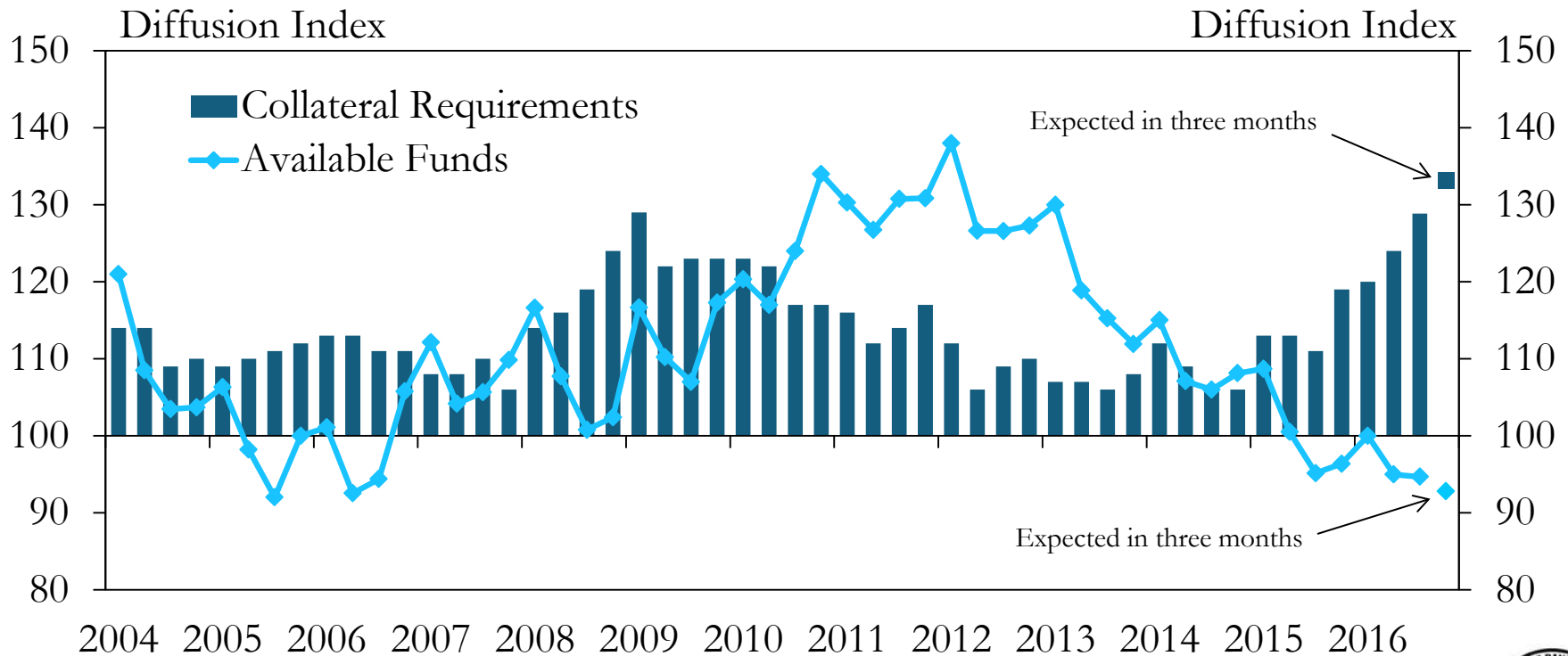
Source: Federal Reserve Bank of Kansas City.

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Collateral requirements have risen steadily and fund availability has declined.

Agricultural Credit Conditions KC Fed District



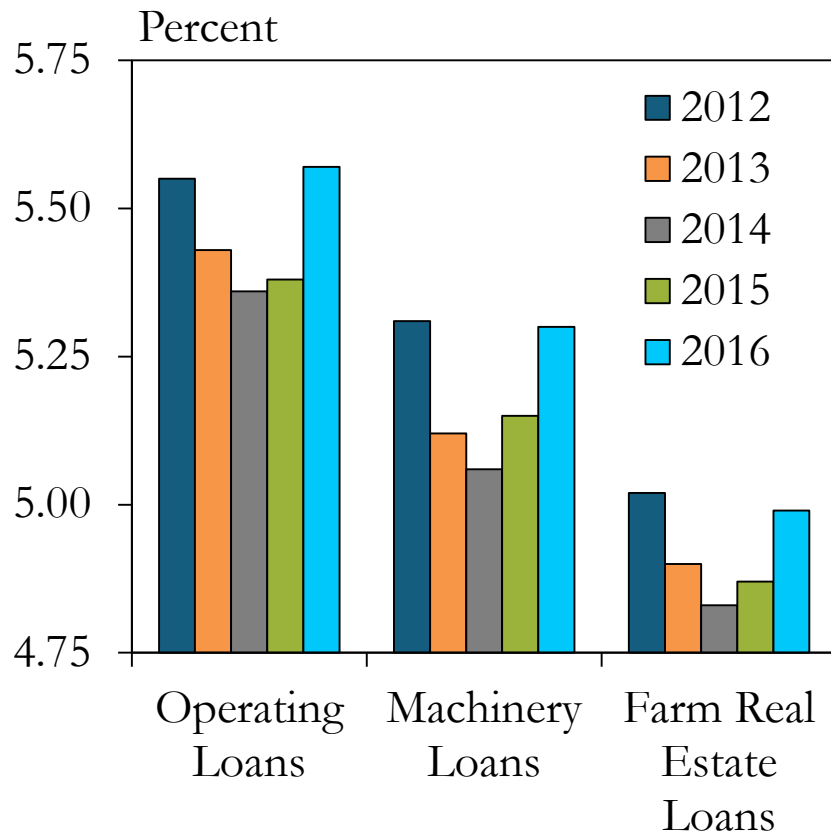
Source: Federal Reserve Bank of Kansas City.

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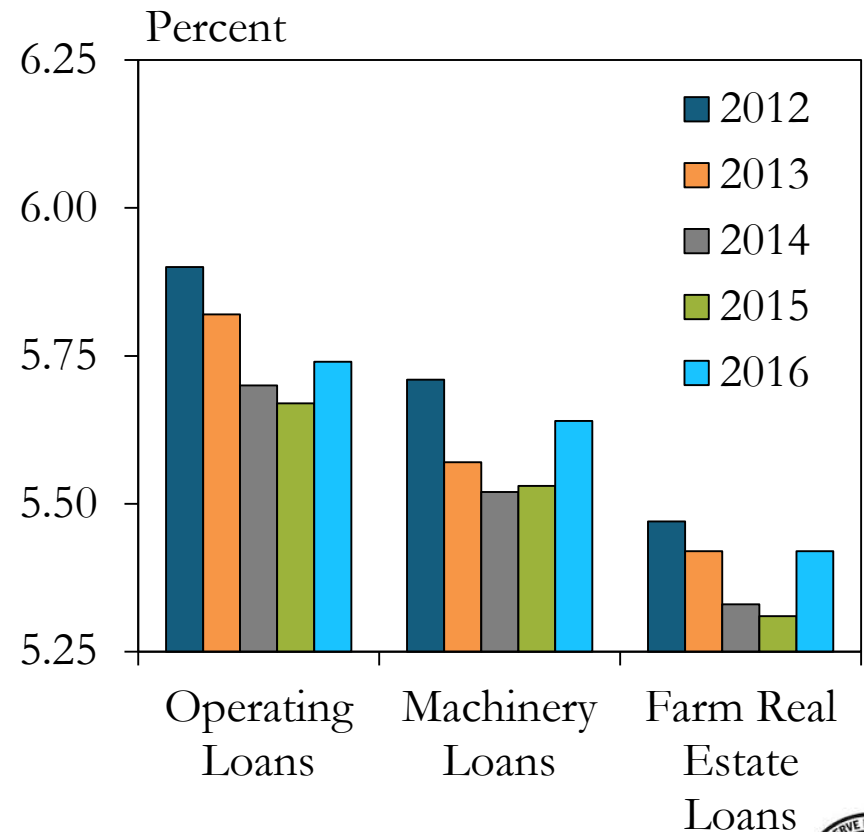
Interest rates have edged up, particularly for variable rate loans.

Variable Interest Rates



Source: Federal Reserve Bank of Kansas City.

Fixed Interest Rates

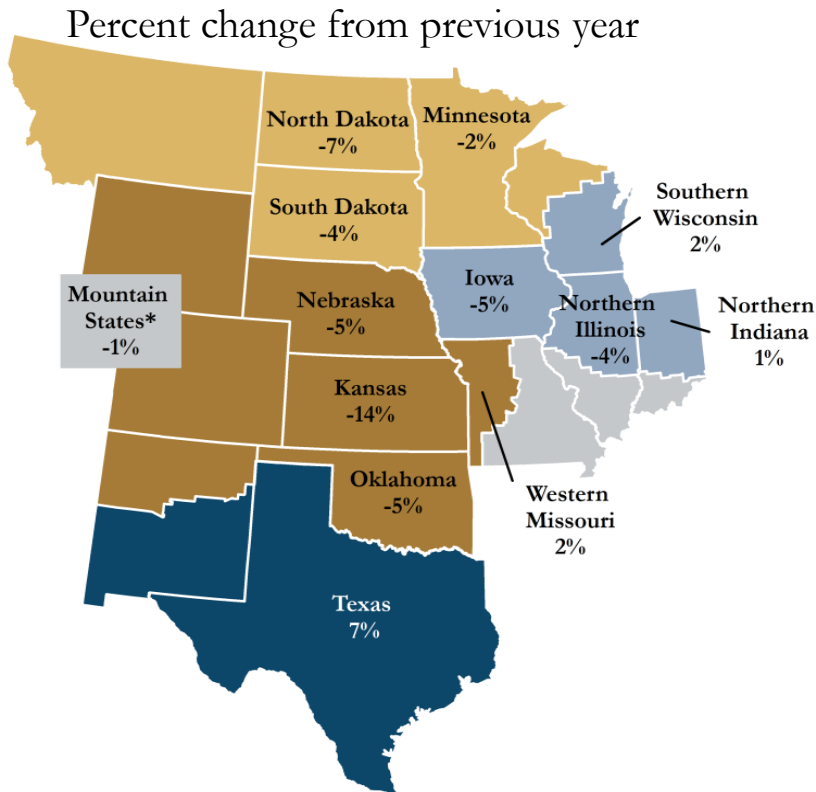


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Farmland values have continued to decline from their peaks in 2013-2014.

High Quality Farmland Values 2016:Q3



Source: Federal Reserve Bank of Kansas City.

Change in U.S. Farmland Values, Peak to 2016:Q3

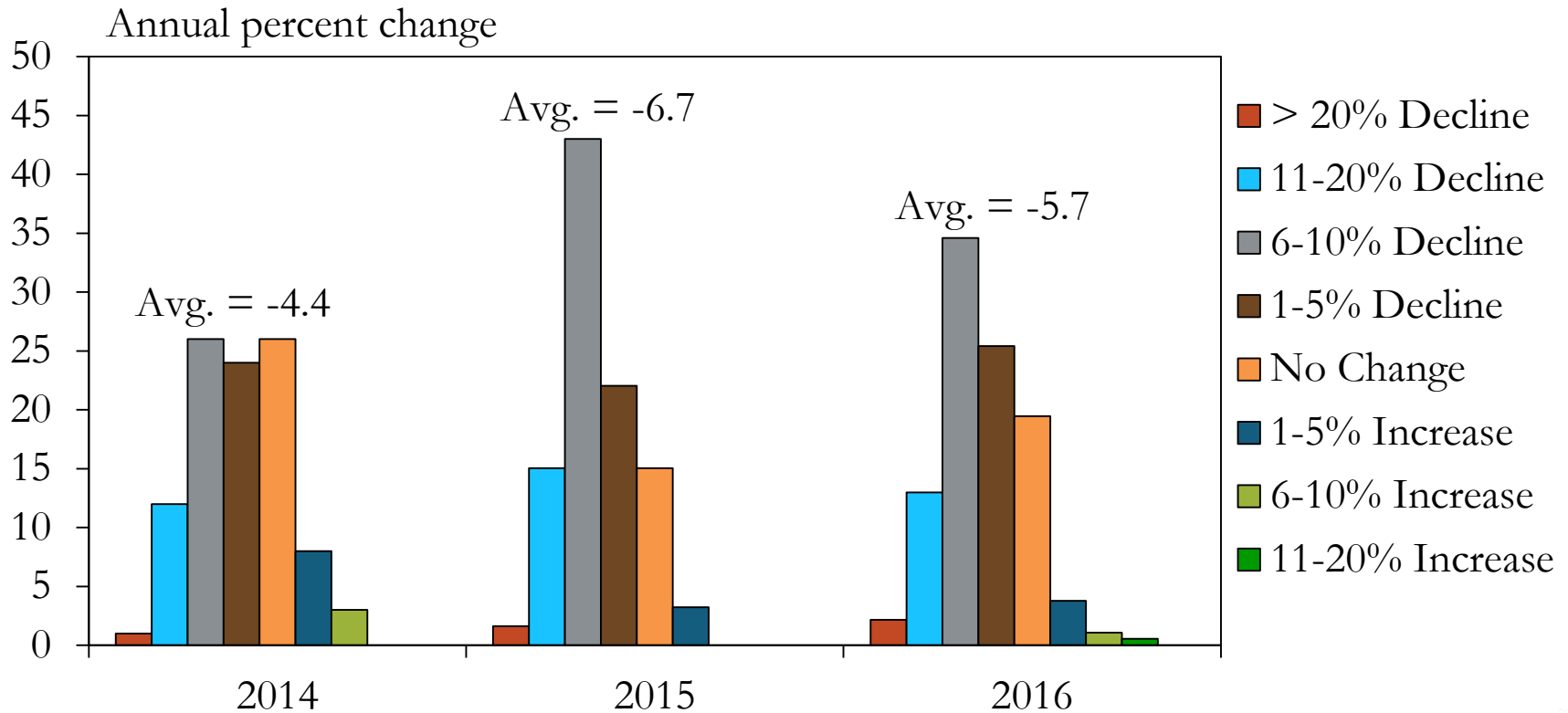
State	Peak Quarter	Percent Change from Peak
Kansas	2013:Q4	-20
Missouri	2013:Q3	-2
Nebraska	2013:Q3	-11
Oklahoma	2015:Q4	-4
Mountain States*	2016:Q2	-14
Minnesota	2013:Q1	-16
N. Dakota	2015:Q3	-9
S. Dakota	2014:Q3	-16
Texas	2016:Q3	No Decline
N. Illinois	2014:Q2	-11
N. Indiana	2013:Q4	-9
Iowa	2013:Q2	-19
S. Wisconsin	2015:Q1	-1

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Farmland values are expected to trend lower.

Expected Change in Nonirrigated Cropland Values



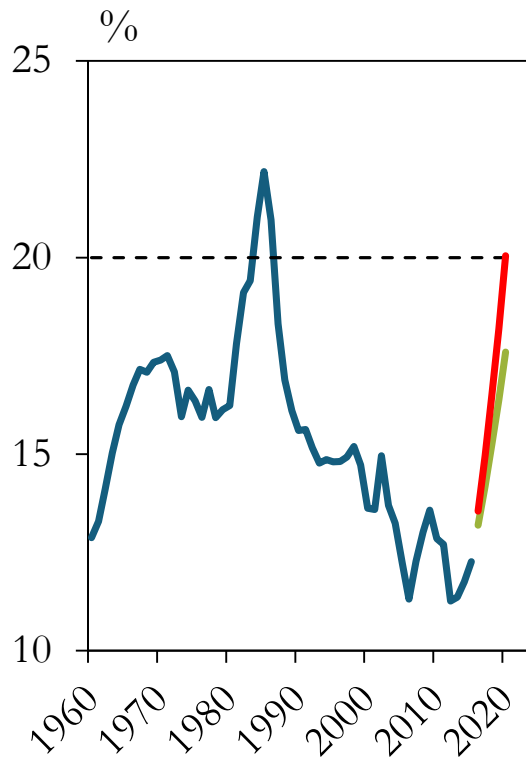
Source: Federal Reserve Bank of Kansas City.

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If debt continues to grow, and land values continue to fall, significant problems may not arise until 2020 or later.

Farm Sector Debt-to-Asset Ratio



Number of Years to Reach Debt-to-Asset Ratio of 20%

Annual Change in Farm Debt

Annual Change in Farmland Values

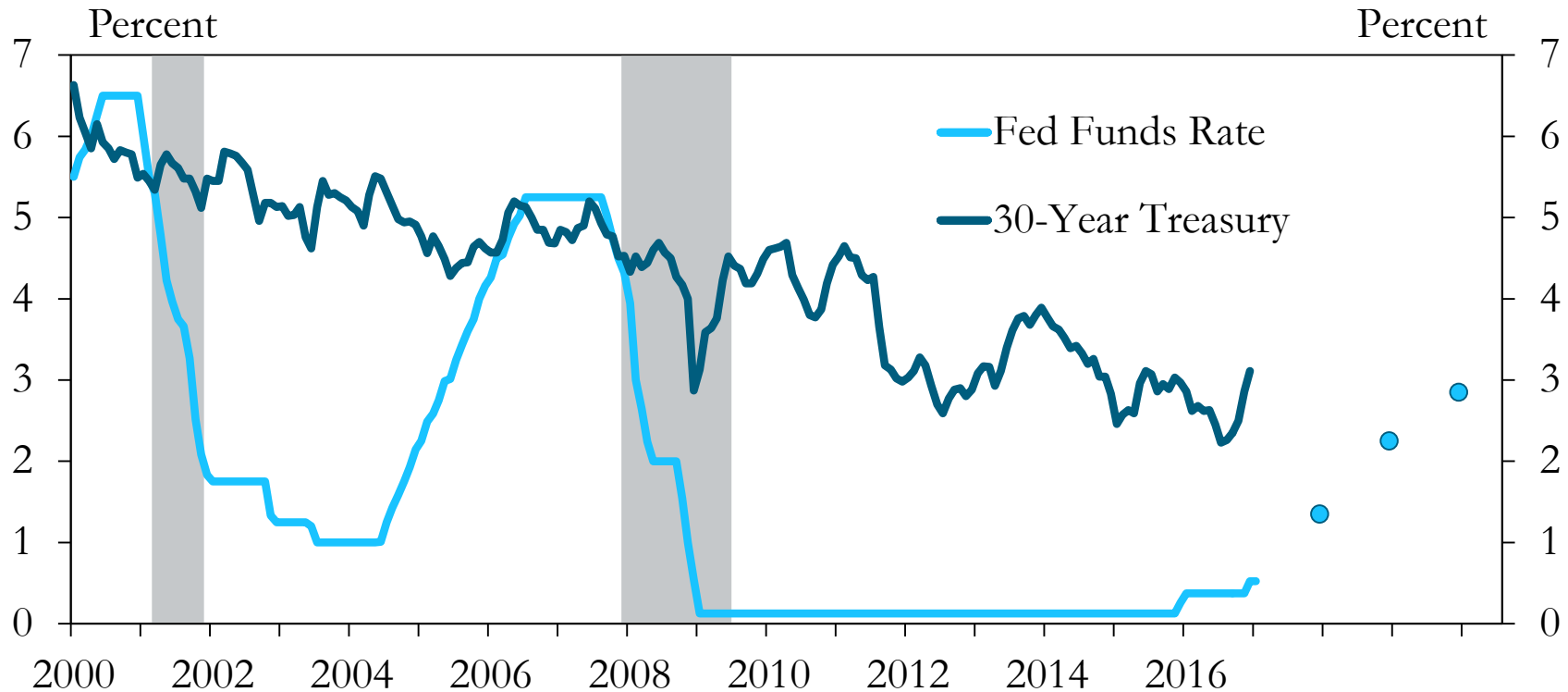
	0%	2%	4%	6%	8%	10%
0%	--	24.7	12.5	8.4	6.4	5.2
-2%	31.7	13.7	8.9	6.6	5.3	4.4
-4%	15.6	9.4	6.8	5.4	4.5	3.8
-6%	10.3	7.2	5.8	4.6	3.9	3.4
-8%	7.7	5.8	4.7	3.9	3.4	3.0
-10%	6.0	4.8	4.0	3.4	3.0	2.7
-12%	5.0	4.1	3.5	3.1	2.7	2.5

Source: USDA and author's calculations.



Interest rates have been projected to rise gradually.

Interest Rates



Sources: Federal Reserve Bank Board of Governors and Haver Analytics.

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Concluding Remarks

- Persistently lower farm income has intensified the financial stress in the ag economy, but gradually.
- Barring a weather shock that might temporarily boost prices, farm income is likely to remain low. Managing debt and maintaining discipline will be key.
- If you're running a marathon, manage your heart rate at mile 5... especially if the wind picks up.



Questions?

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