

Agricultural Economic Update



FEDERAL RESERVE BANK *of* KANSAS CITY

March 20, 2017

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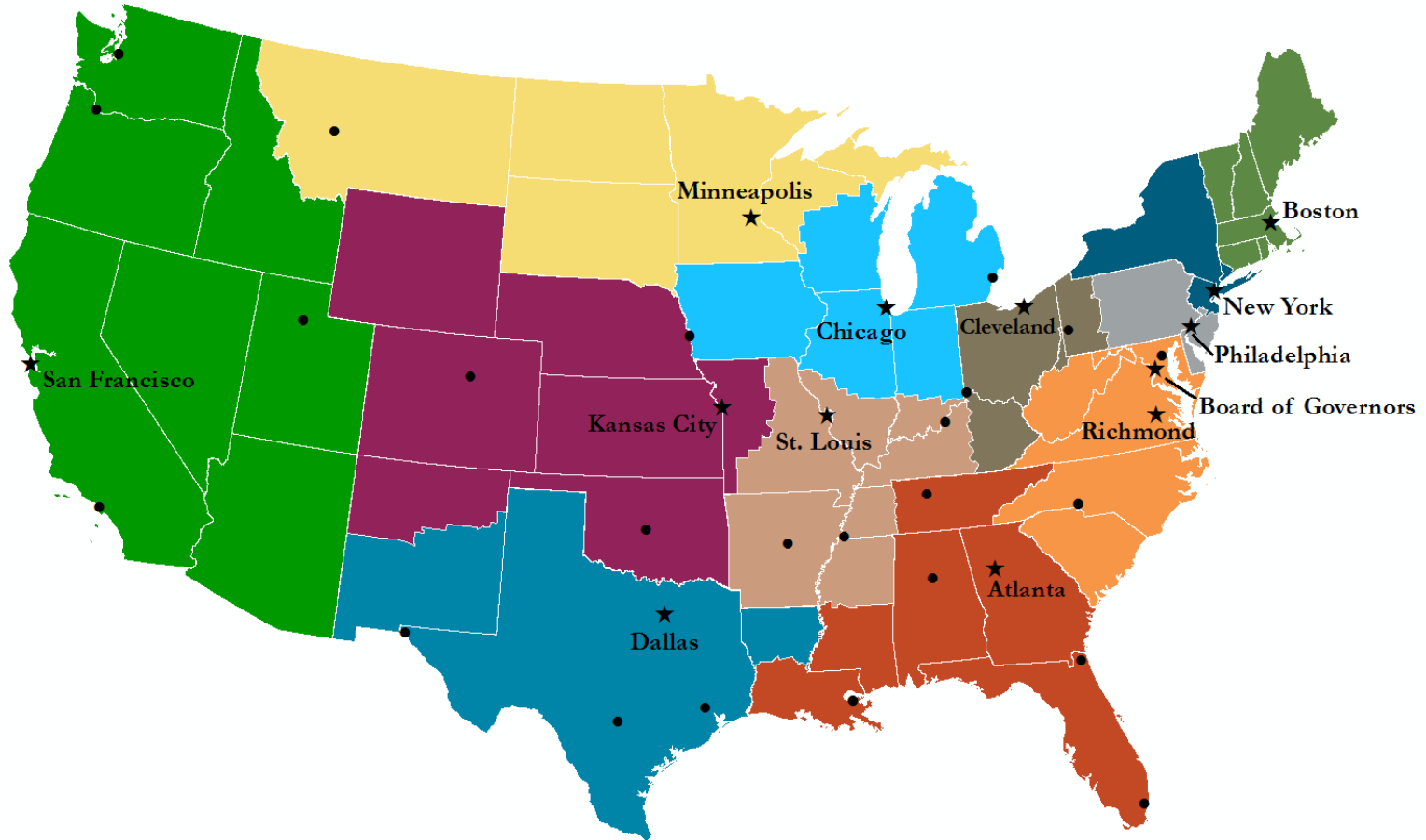
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The views expressed are those of the author and do not necessarily reflect the opinions of the Federal Reserve Bank of Kansas City or the Federal Reserve System

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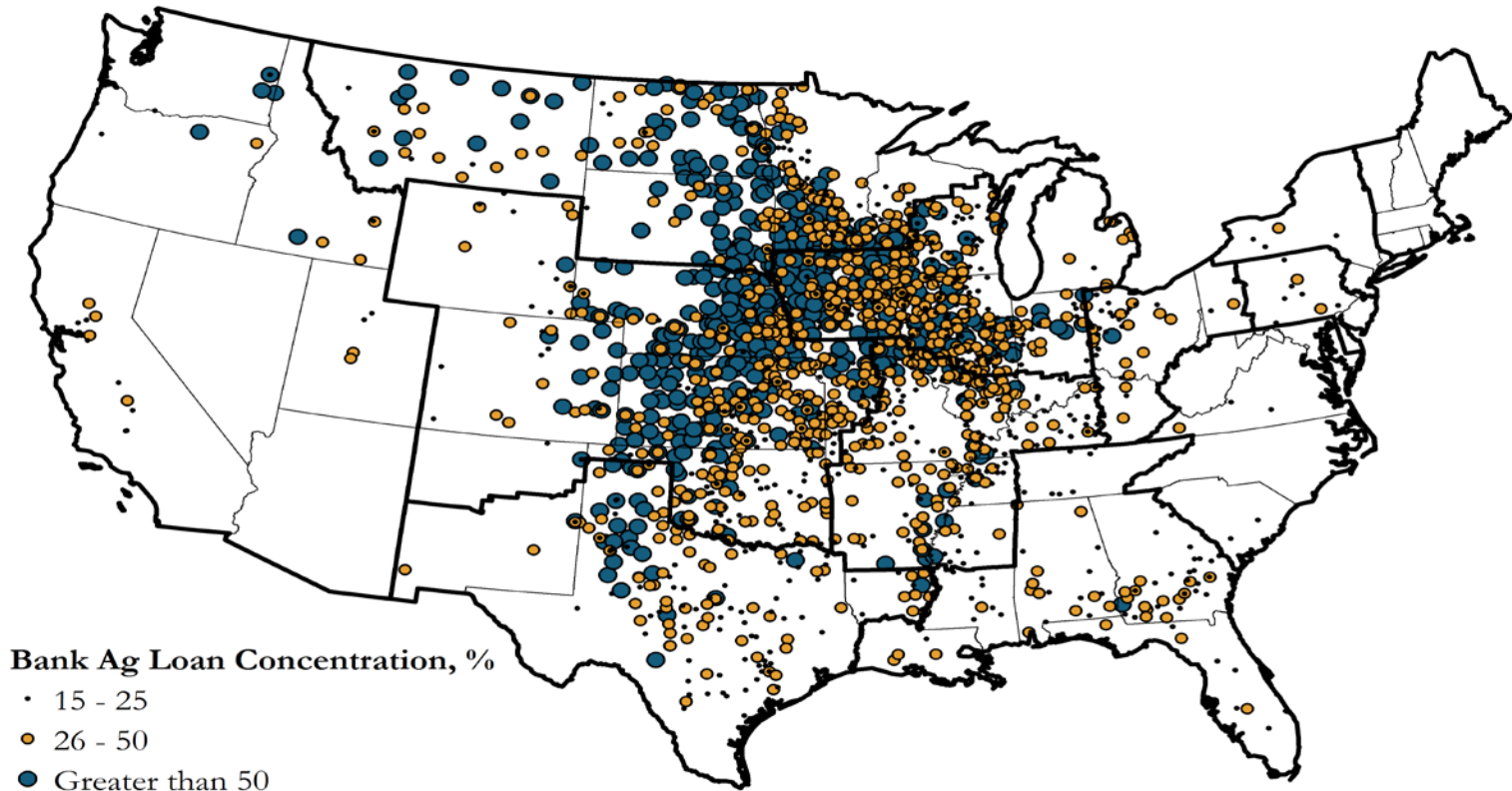


Regional Federal Reserve Banks are important to the structure of U.S. monetary policy.



Commercial banks connected to agriculture are concentrated in the region.

Agricultural Banks in the U.S.



Source: Federal Reserve Board of Governors.

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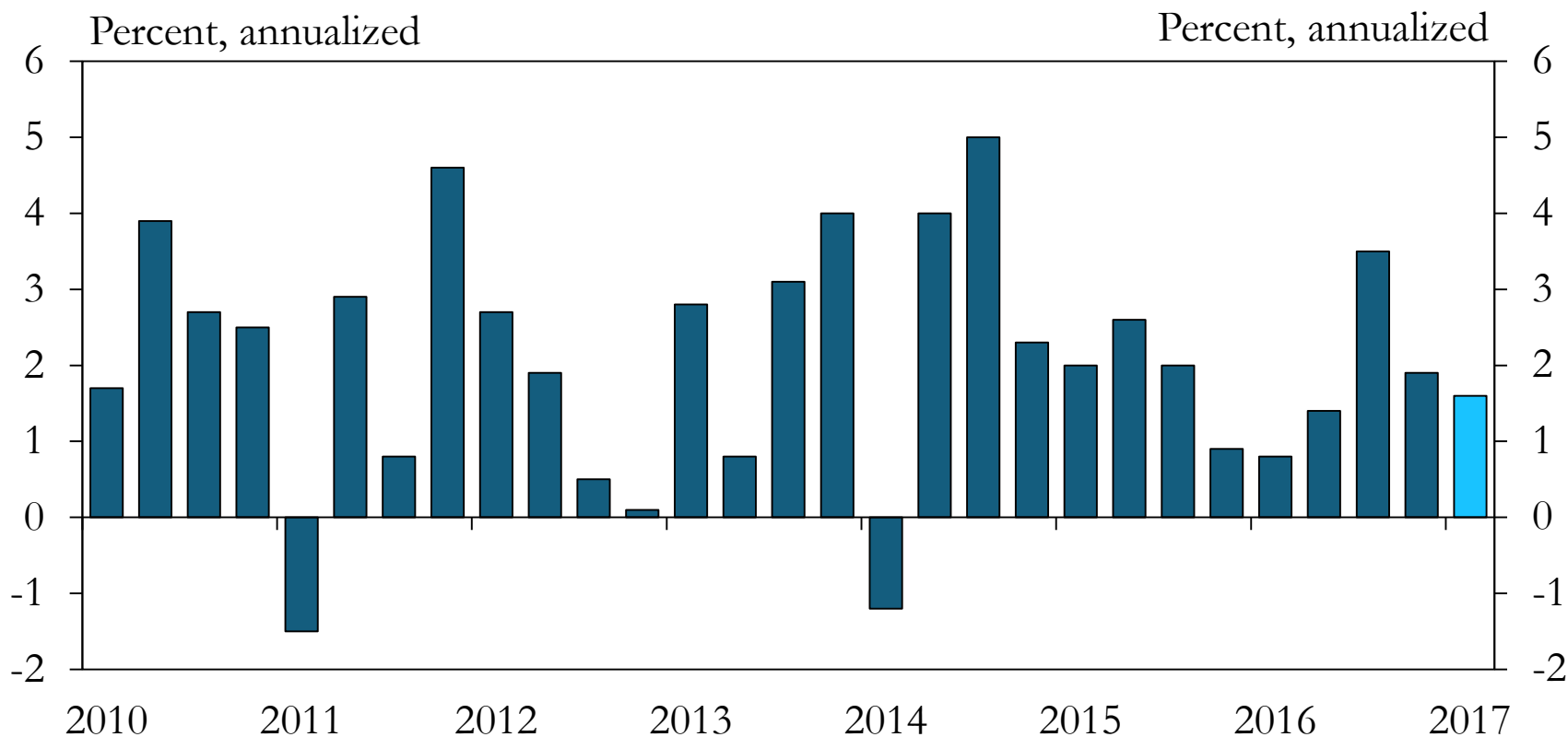
Outlook Themes

- U.S. economic growth has generally been steady, providing support for a modest increase in interest rates.
- Export-oriented, commodity-dependent regions and industries continue to face headwinds.
- The downturn in agriculture is in a 4th consecutive year.



The U.S. economy continues to grow at a modest, yet somewhat sluggish pace.

U.S. Real GDP Growth



Note: 2017 Q1 is a forecast from Macroeconomic Advisors as of March 10.

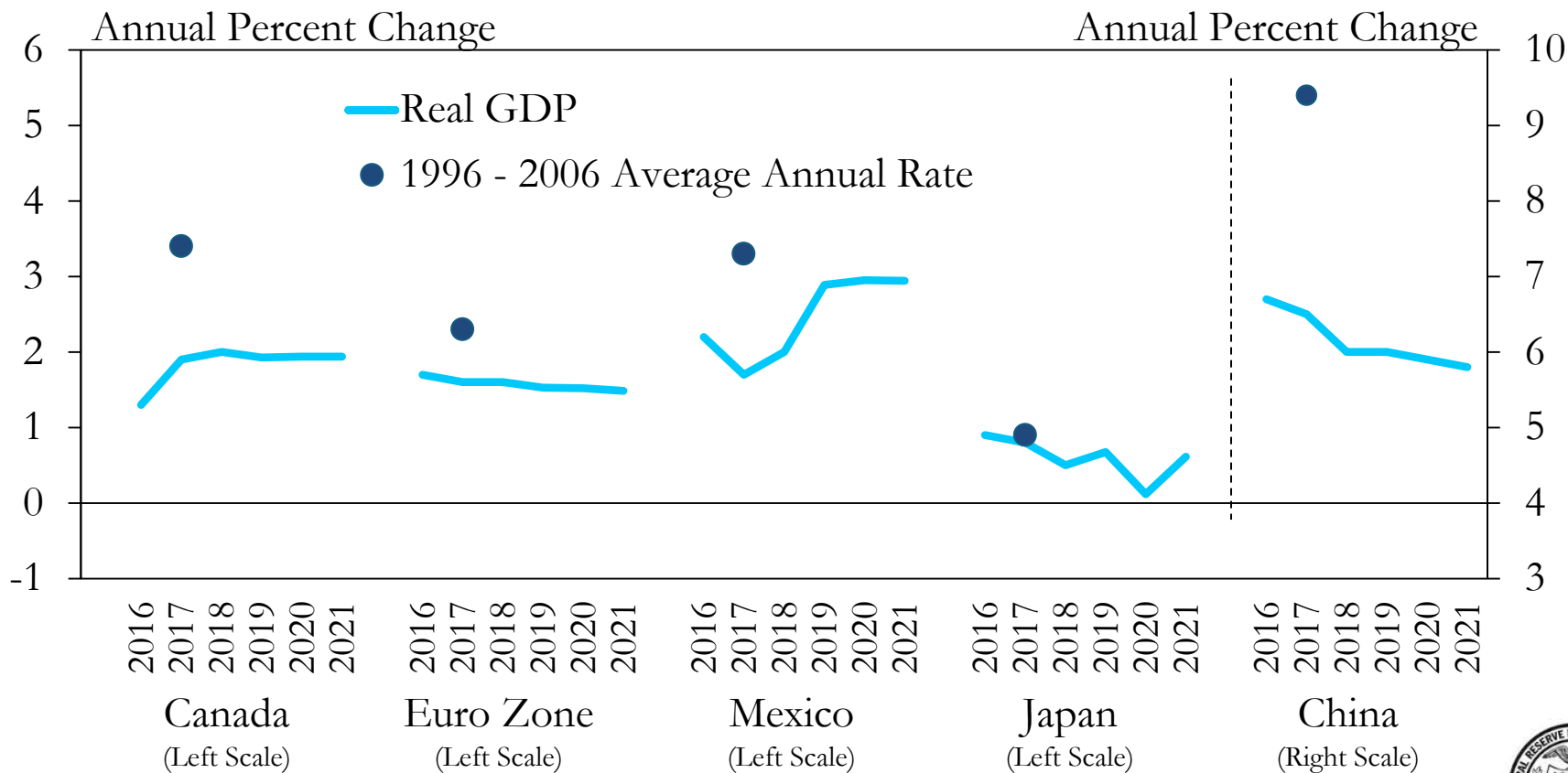
Sources: Bureau of Economic Analysis, Macroeconomic Advisors and Haver Analytics.

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Globally, economic growth has been positive, but also somewhat sluggish.

Global Real GDP Growth



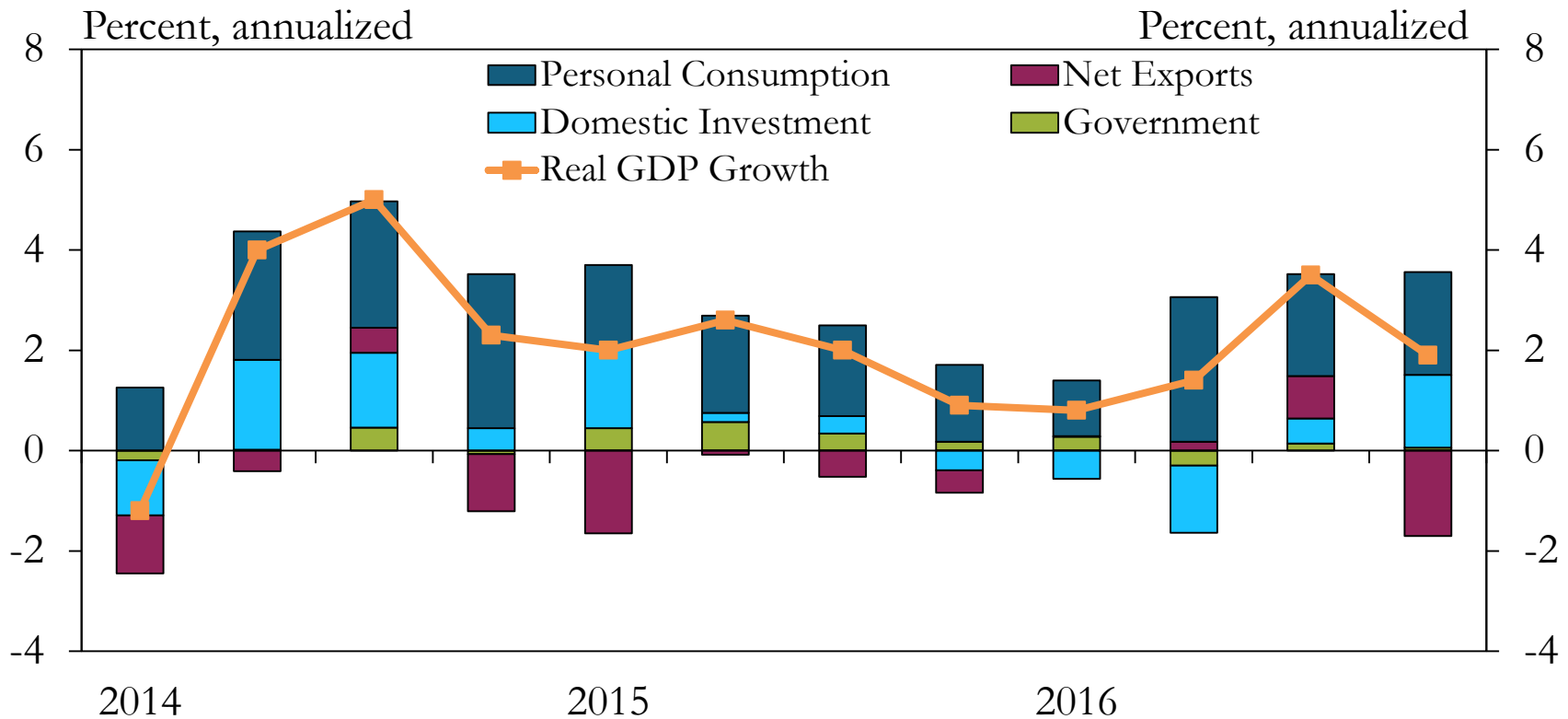
Sources: IMF and Haver Analytics.

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Exports have weighed on U.S. GDP growth, but consumers have driven further gains.

U.S. Real GDP Growth by Component



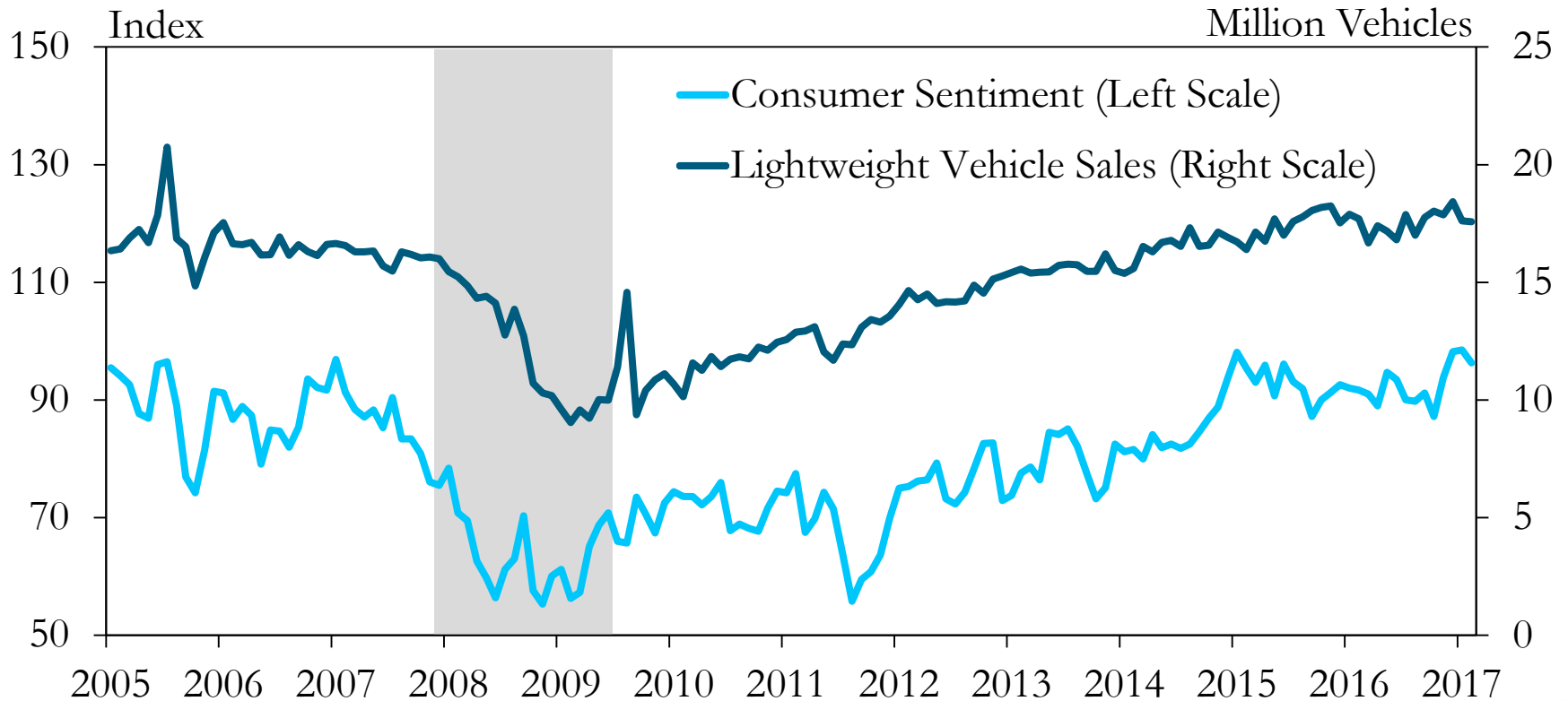
Sources: Bureau of Economic Analysis and Haver Analytics.

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Improved consumer confidence has continued to boost personal consumption.

U.S. Consumer Sentiment and Vehicle Sales



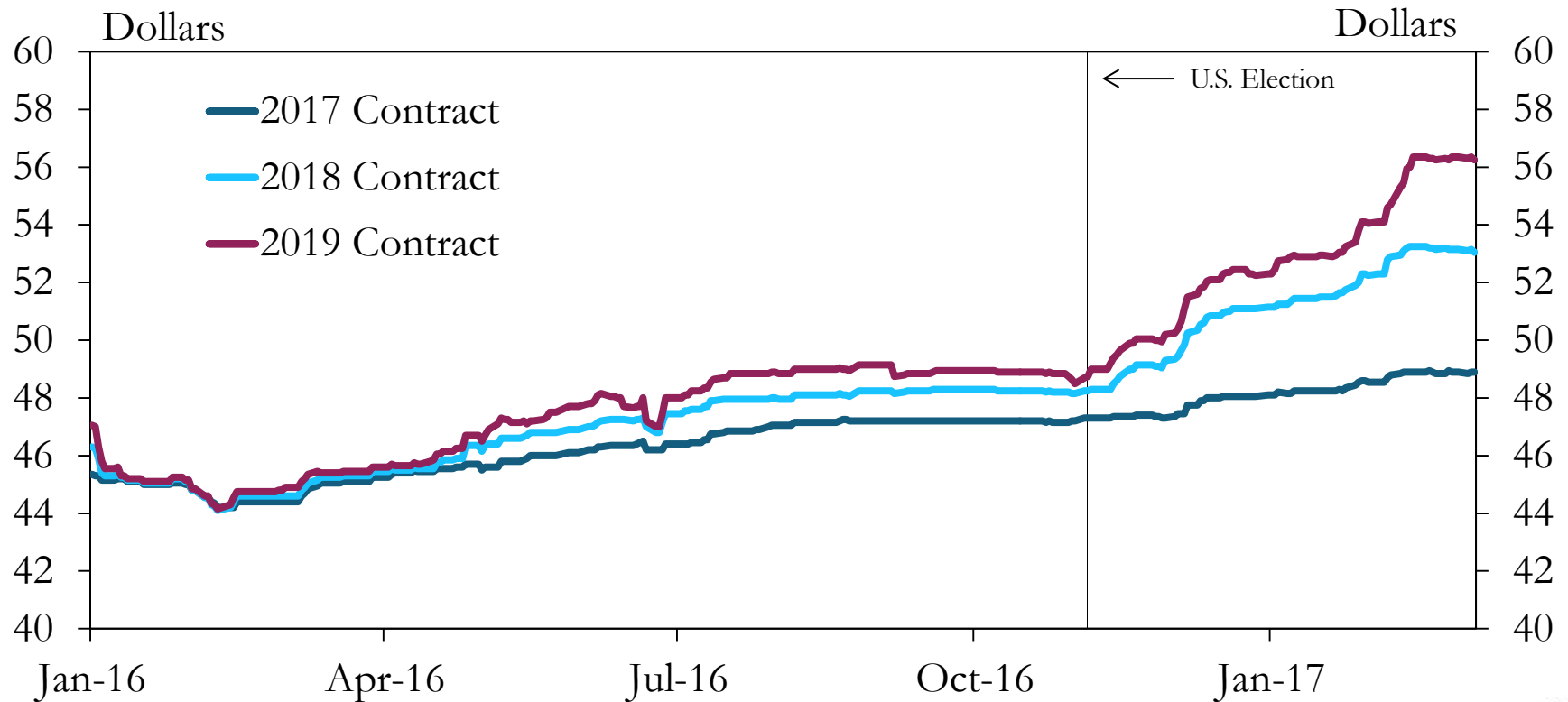
Source: University of Michigan, U.S. Census Bureau and Haver Analytics.

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Equity prices and expectations for future corporate dividends have increased since November.

S&P 500 Dividend Index Futures



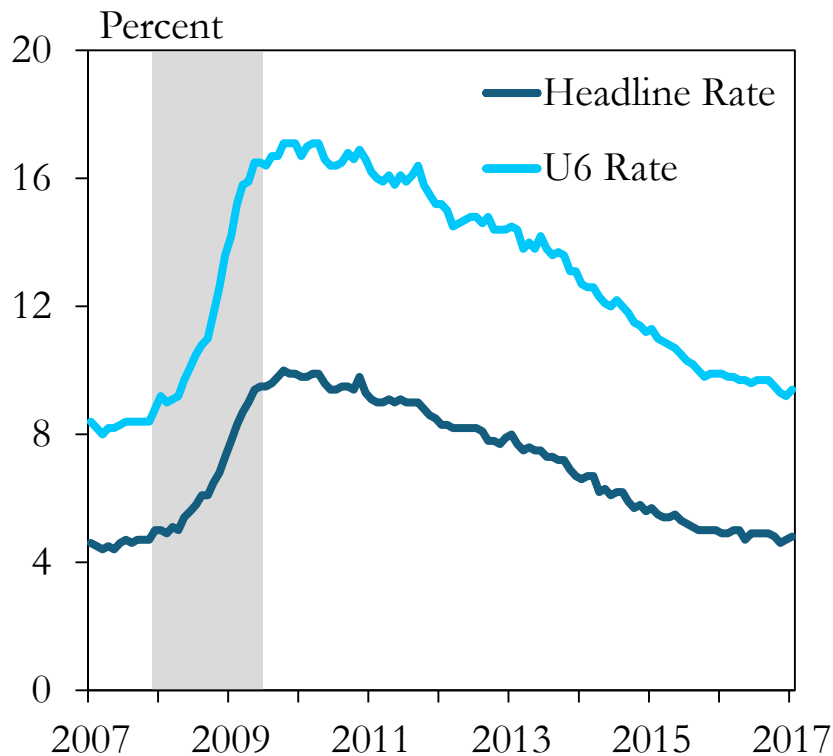
Source: Bloomberg.

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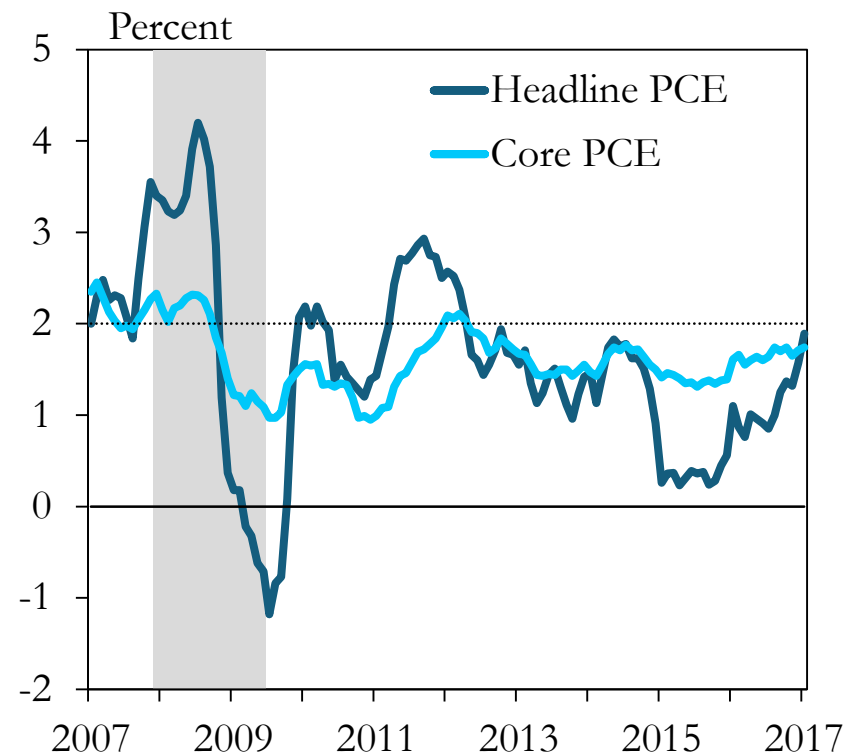


Unemployment is near its long-run level and inflation is close to the FOMC target.

U.S. Unemployment Rate



U.S. Inflation



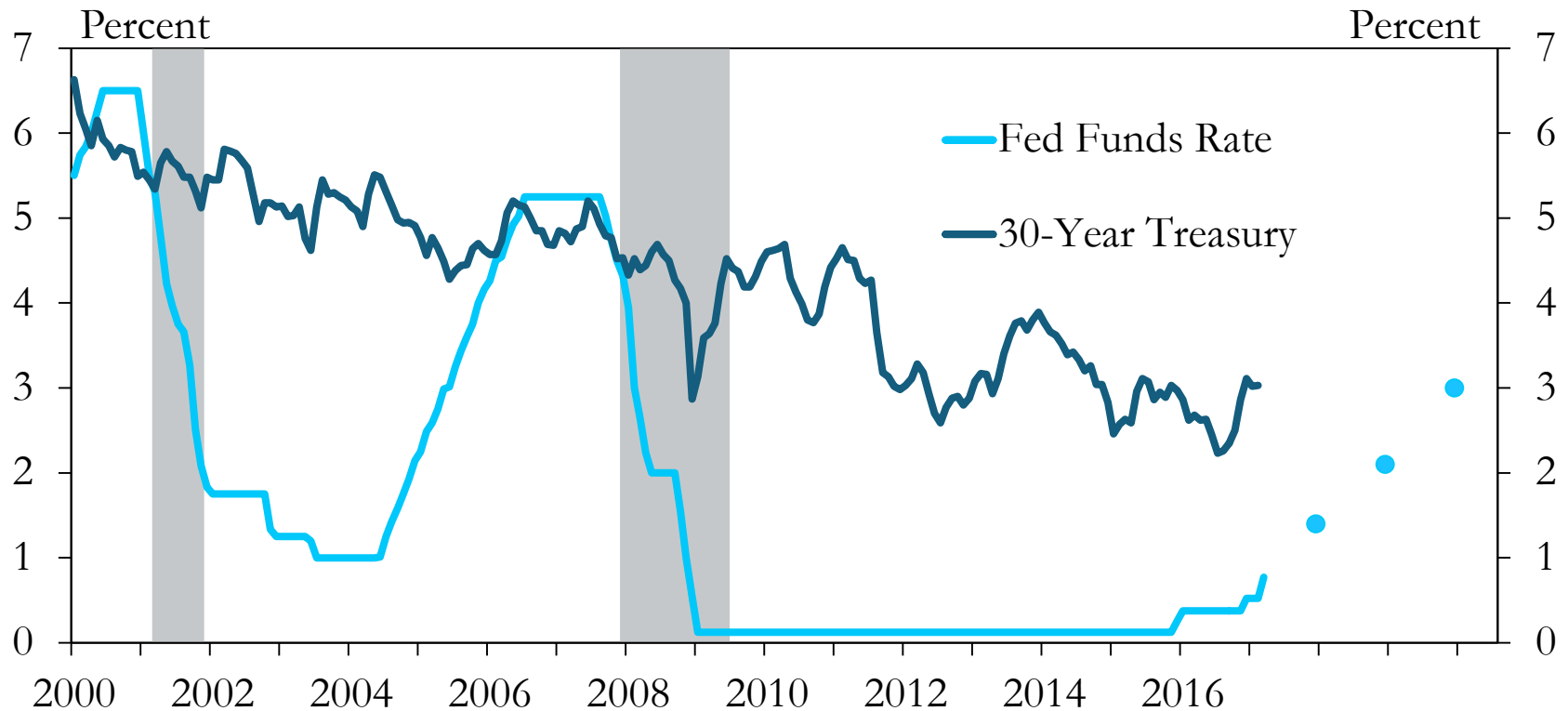
Sources: BLS, Federal Reserve Bank of San Francisco and Haver Analytics.

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Interest rates have been projected to rise gradually.

U.S. Interest Rates



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

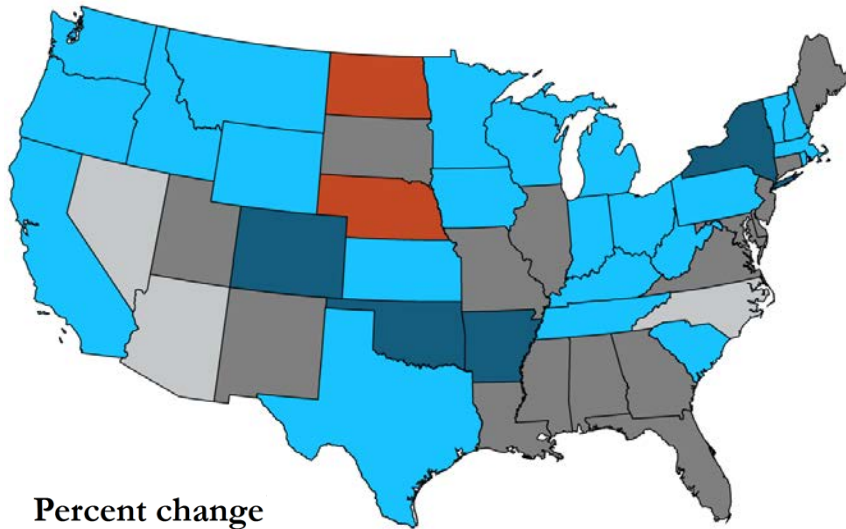
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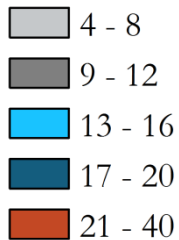
Per capita incomes are still rising, but have slowed in the central U.S., a commodity-dependent region.

Per Capita Personal Income

Change from 2008 to 2014

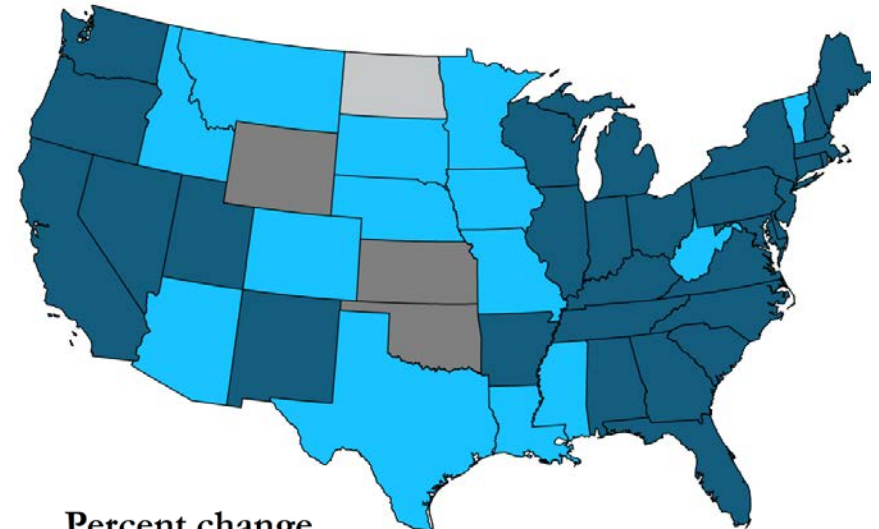


Percent change

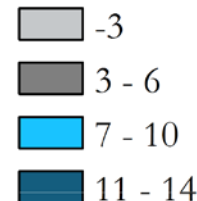


Source: BEA.

Change from 2014 to 2016



Percent change

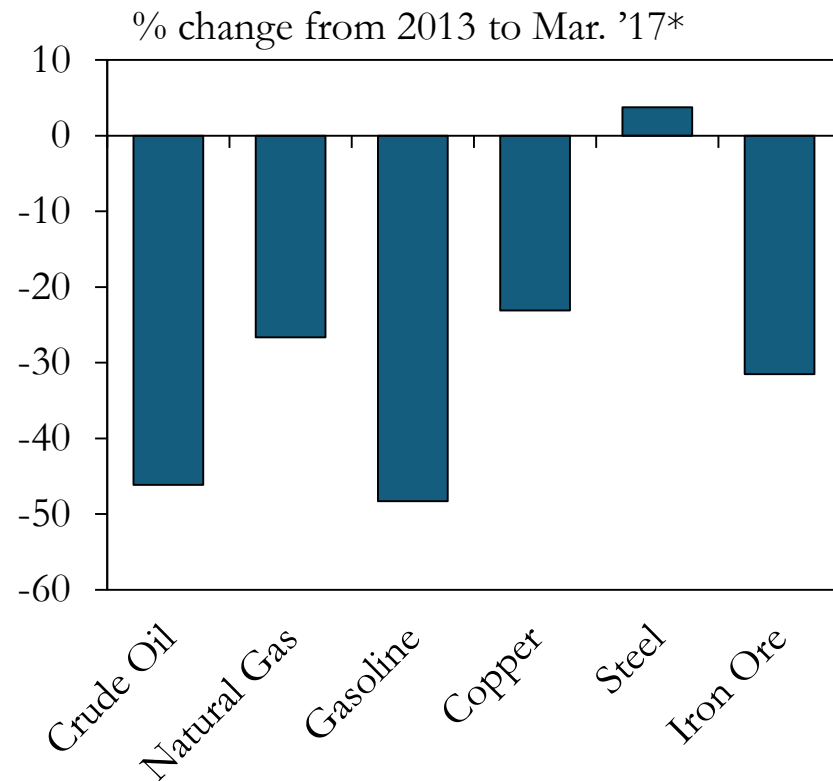
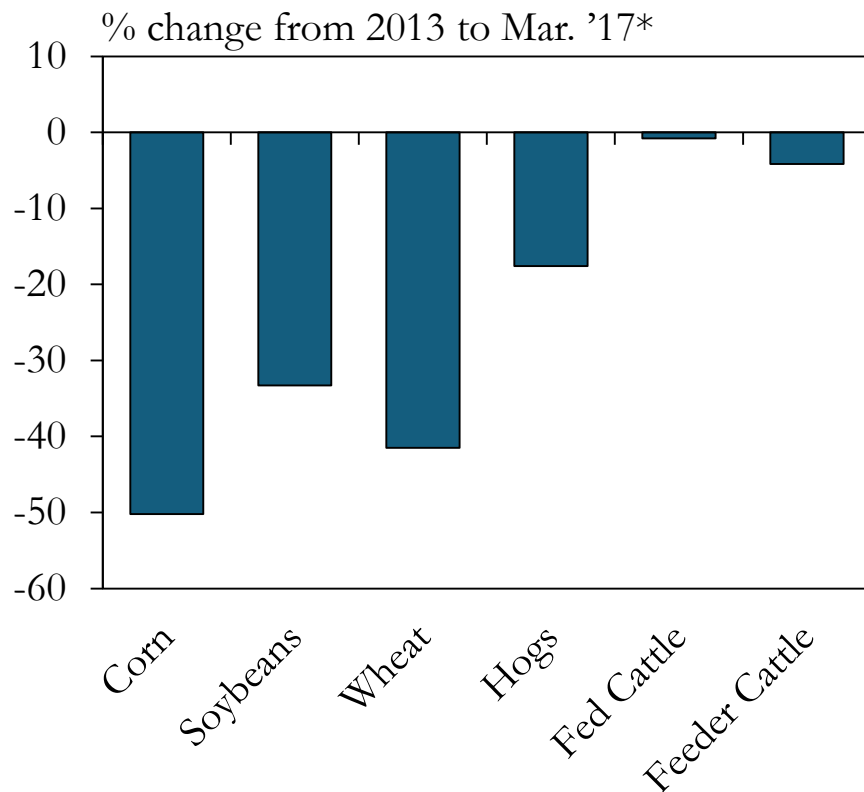


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Commodity prices, not just in agriculture, have fallen sharply since 2013.

Change in Commodity Prices since 2013



* Through 3/13/2017

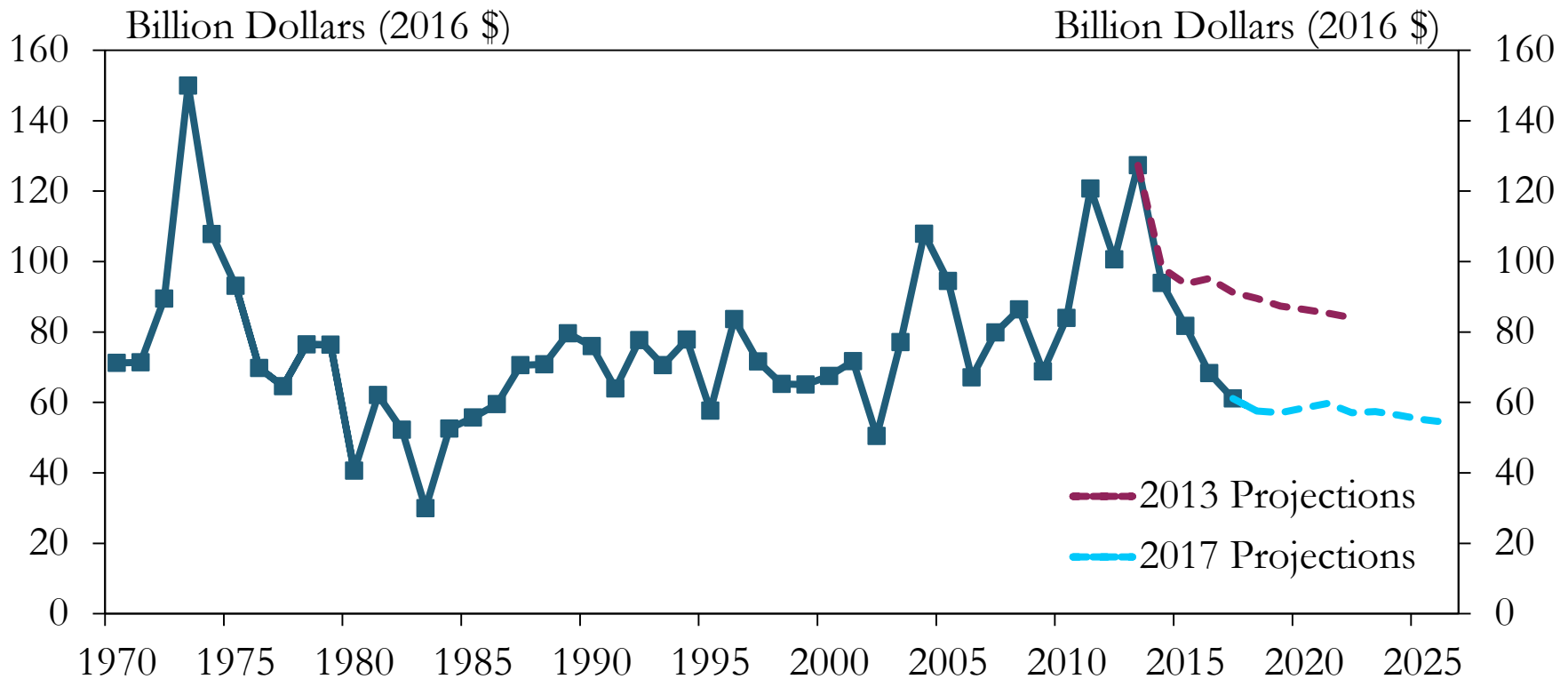
Sources: *The Wall Street Journal* and Haver Analytics.

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Farm income has dropped from recent highs and future projections have become more pessimistic.

U.S. Farm Income



Source: USDA.

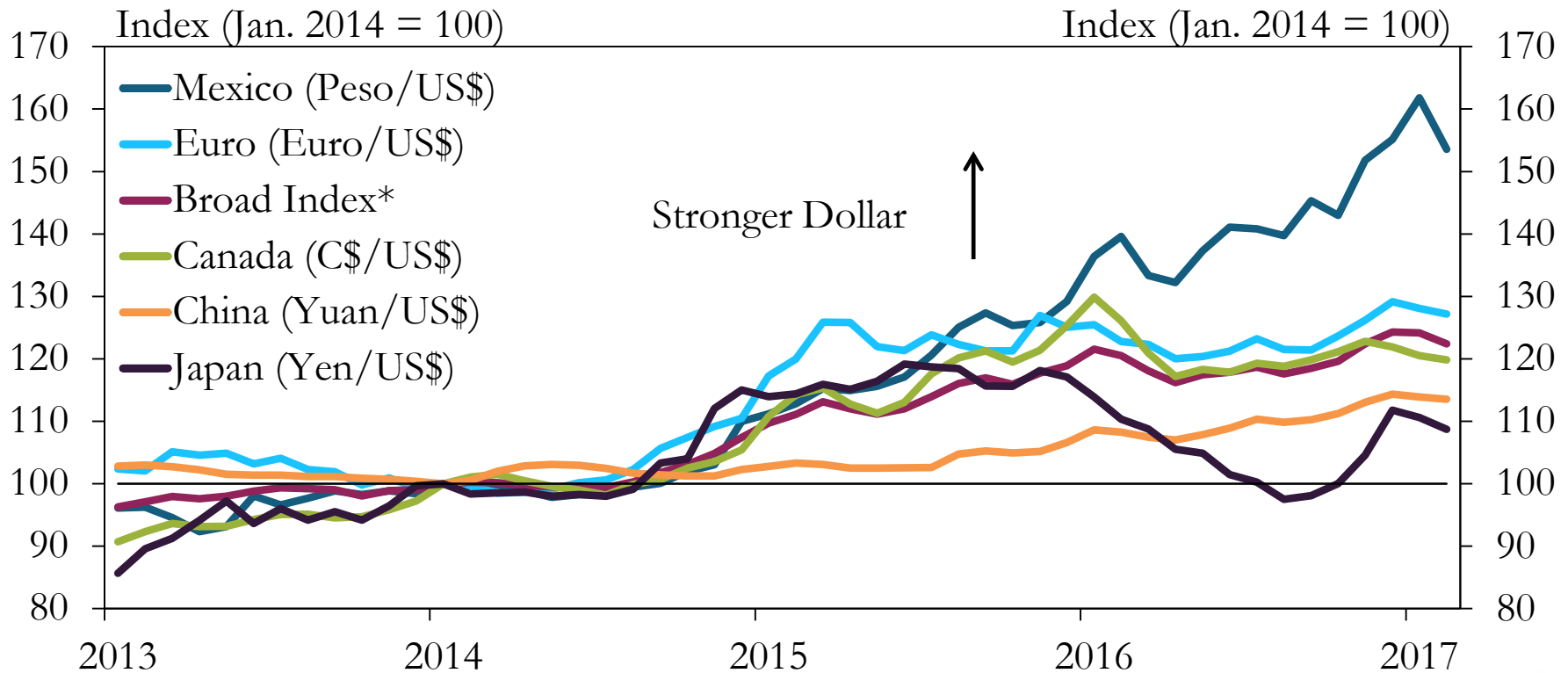
Note: Future years assume a deflator of 2% to match projections made in nominal terms with the inflation-adjusted historical data.

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A strengthening dollar has been a headwind for U.S. exporters.

Currency Exchange Rates



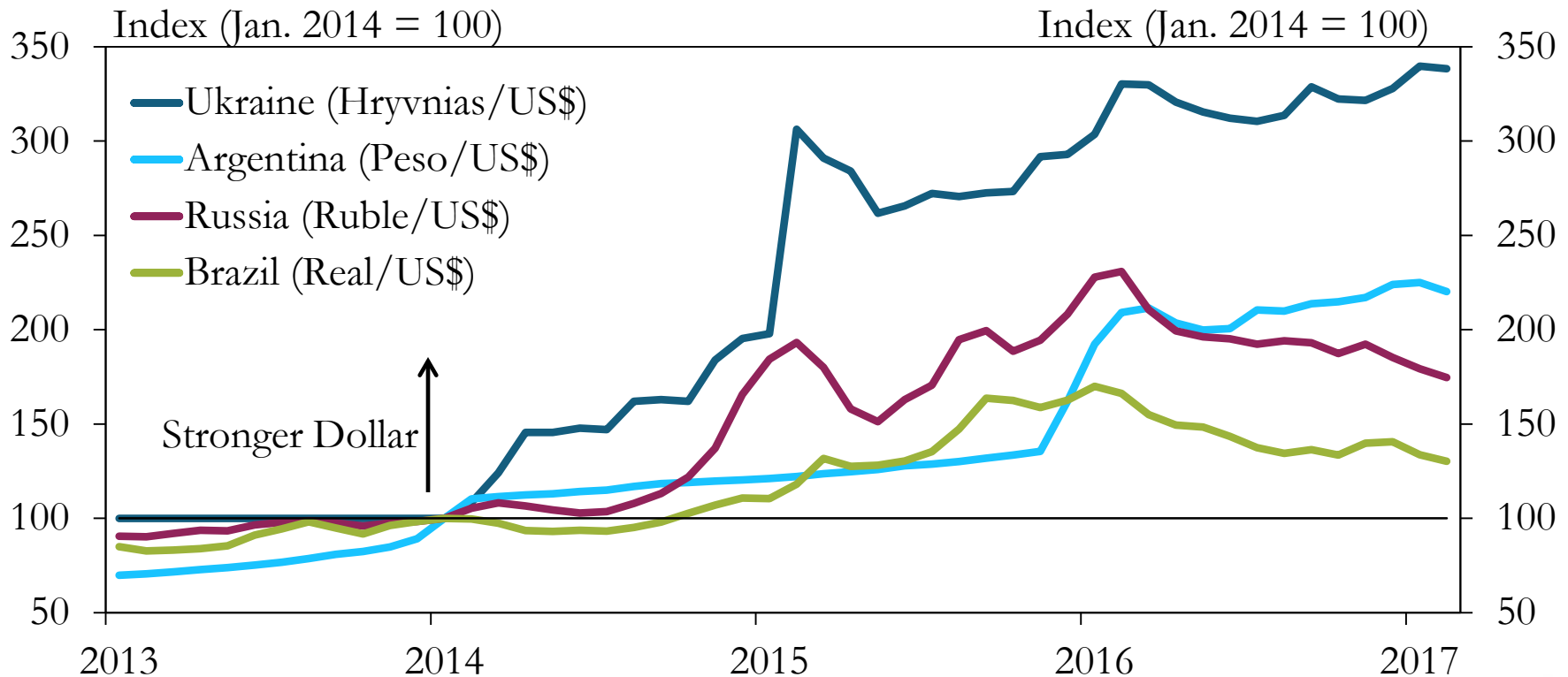
*Nominal broad trade-weighted exchange value of the U.S. dollar.
Sources: Federal Reserve Board and Haver Analytics.

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

Currency Exchange Rates



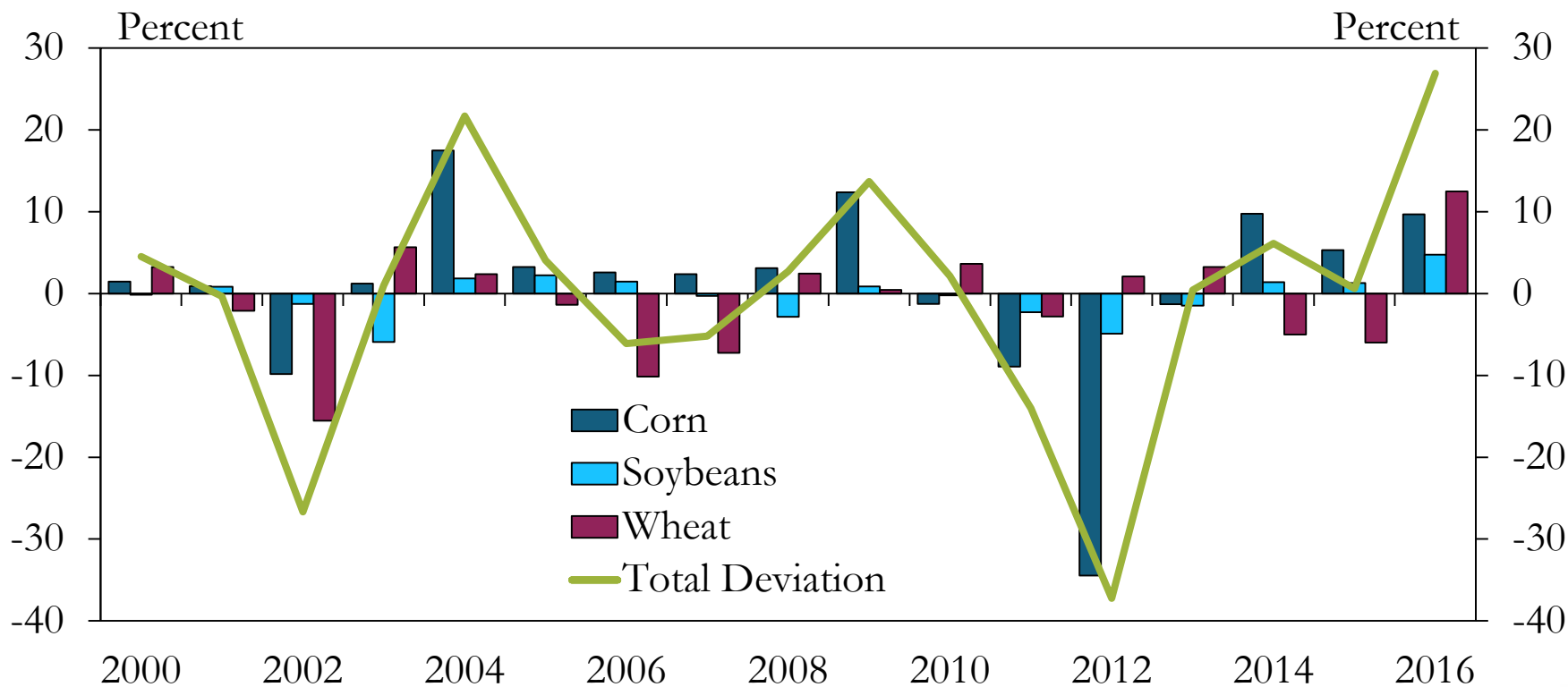
Sources: FRB, IMF and Haver Analytics.

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Last year's crop production boosted cash flow for some producers, but has weighed on prices.

Crop Yields: Deviation from Trend



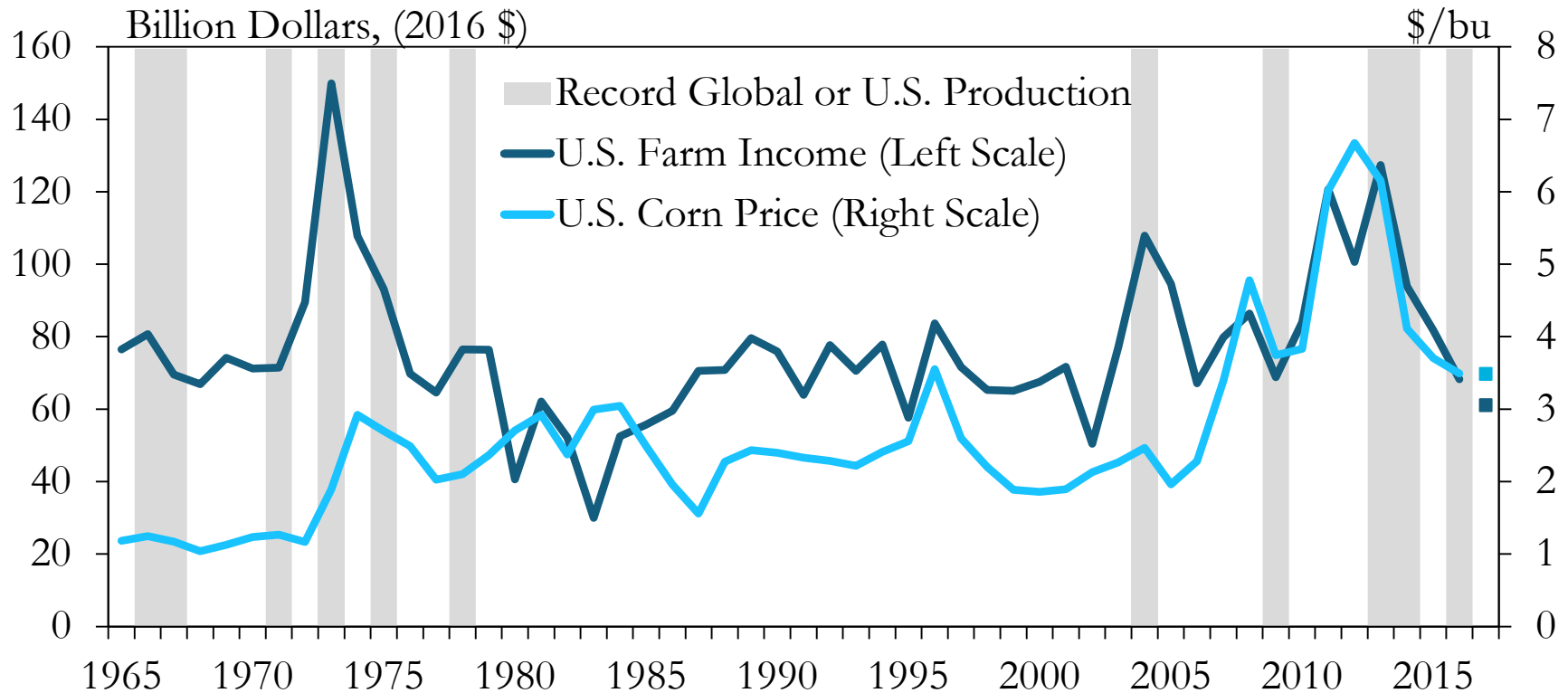
Source: USDA and staff calculations.

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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.

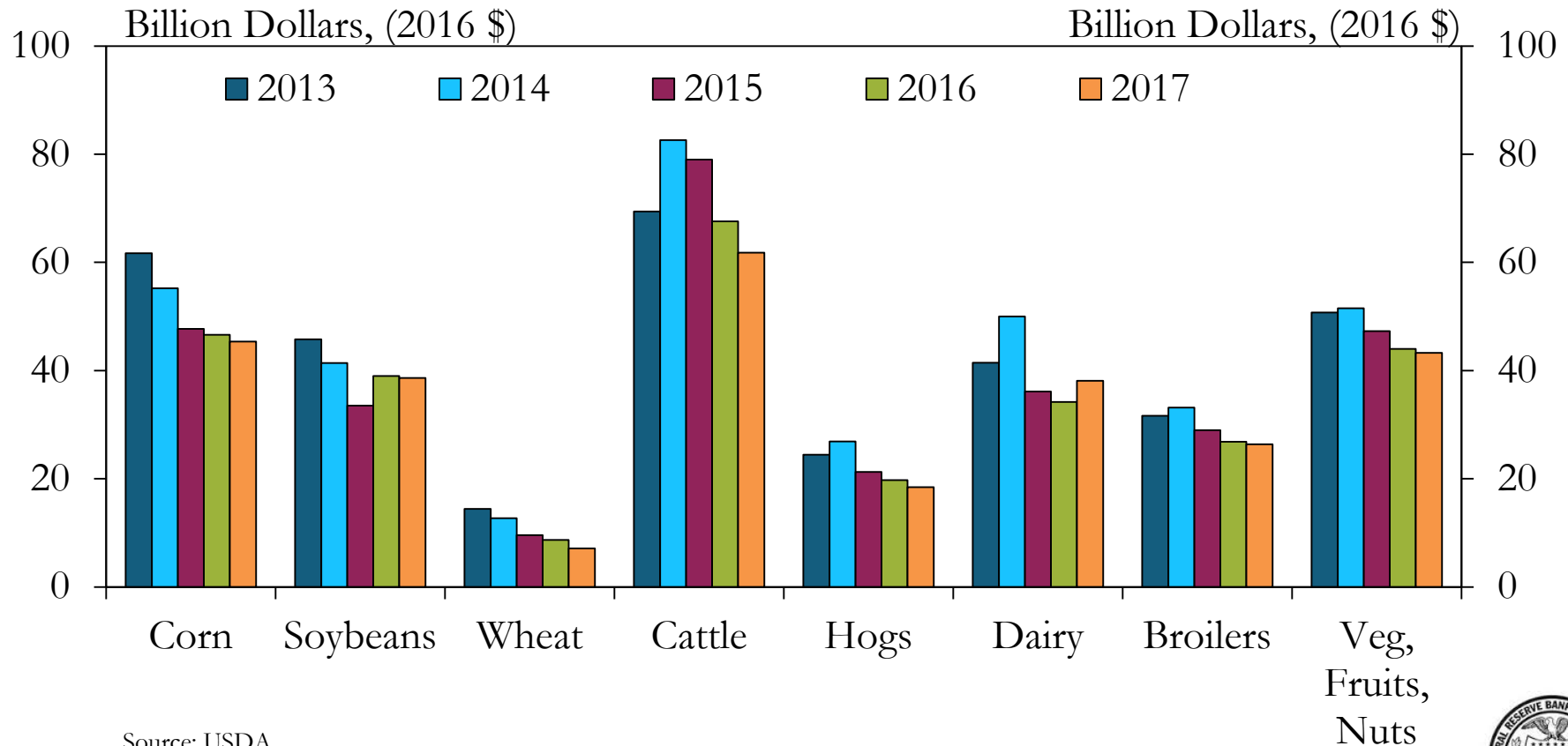
Sources: USDA.

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The decline in revenue has spanned across many different industries.

Farm Sector Cash Receipts



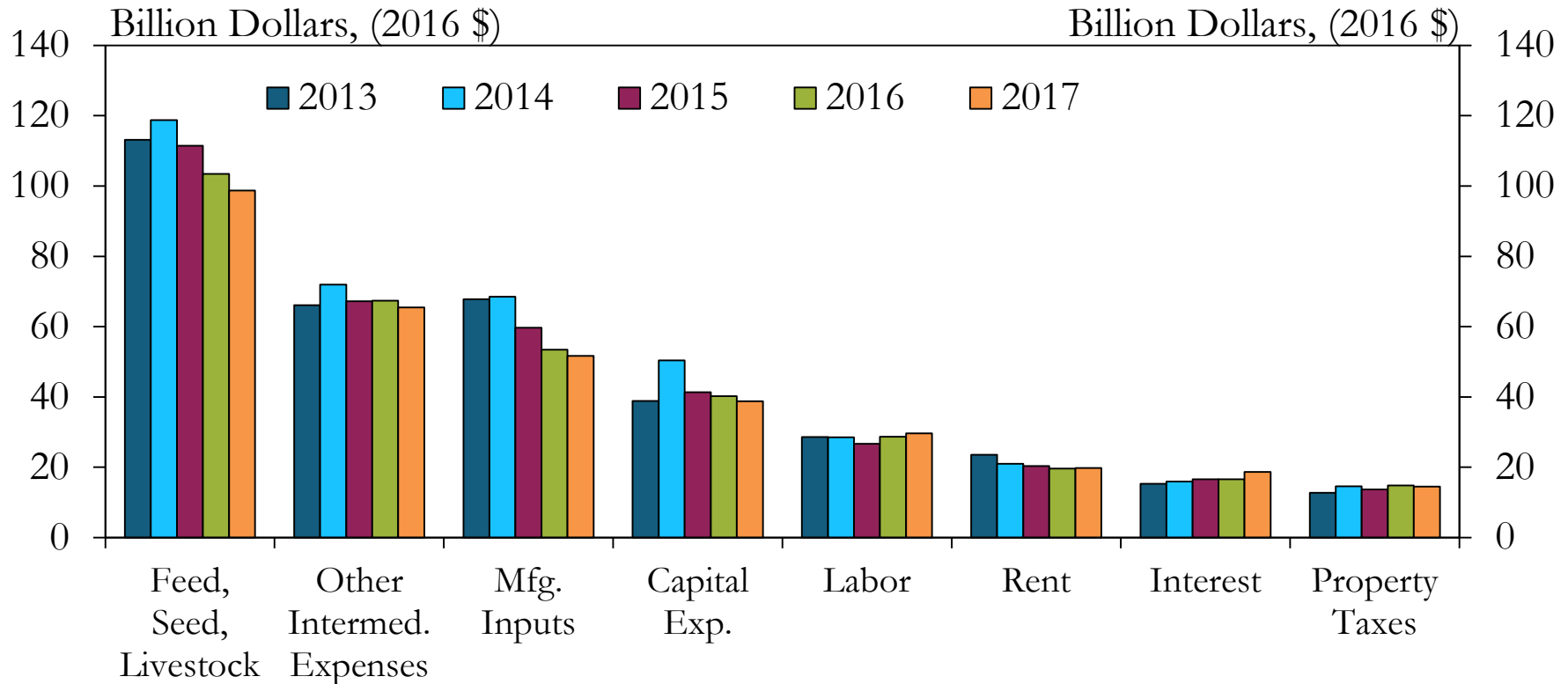
Source: USDA.

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Some input costs have declined modestly.

Farm Sector Input Costs



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

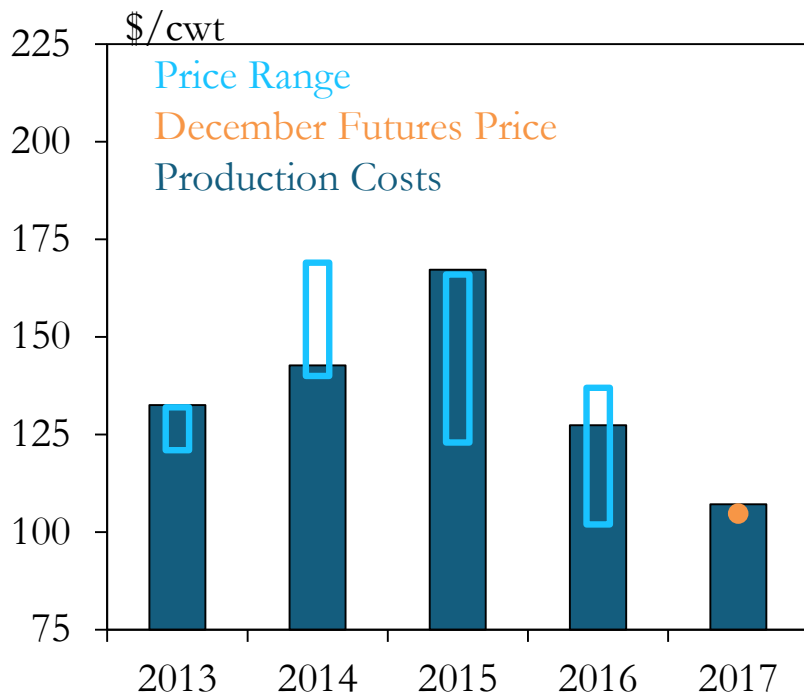
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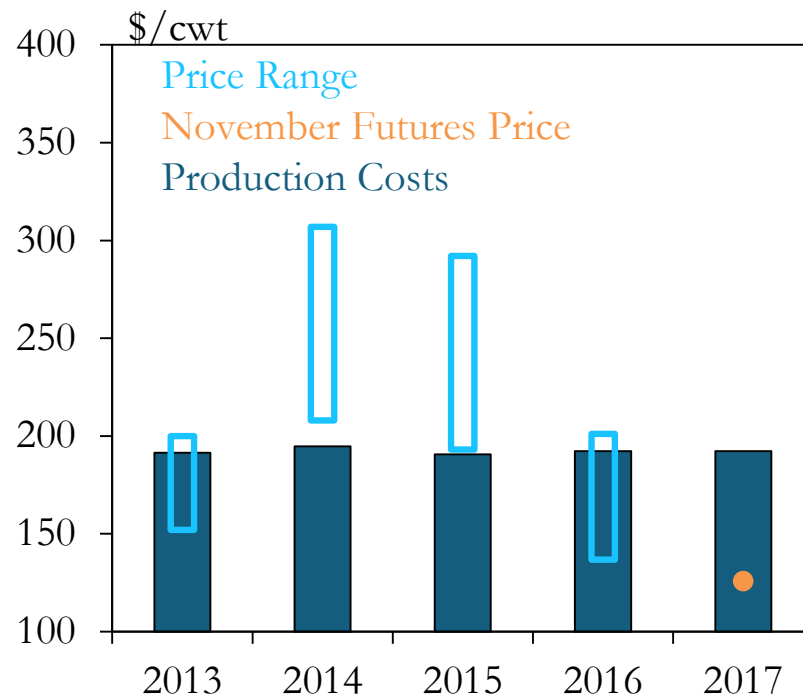
But profit margins have generally remained low in both the livestock and crop sectors.

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.

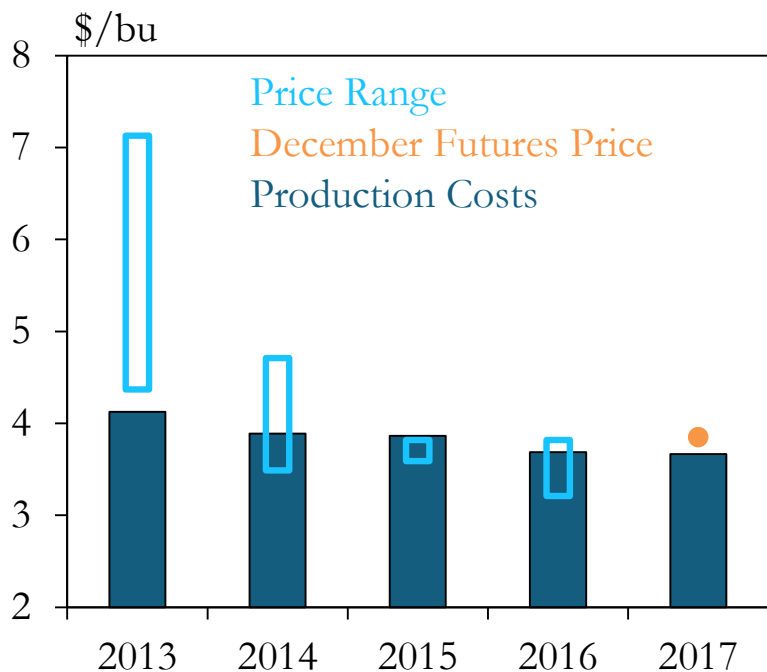
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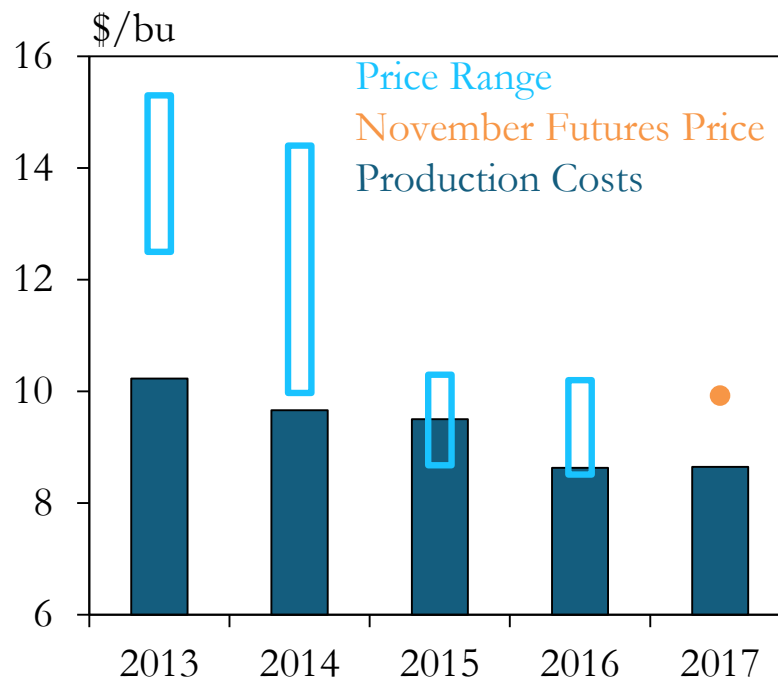
But profit margins have generally remained low in both the livestock and crop sectors.

U.S. Crop Sector Profit Margins

Corn



Soybeans



Sources: USDA, Haver Analytics and CME.

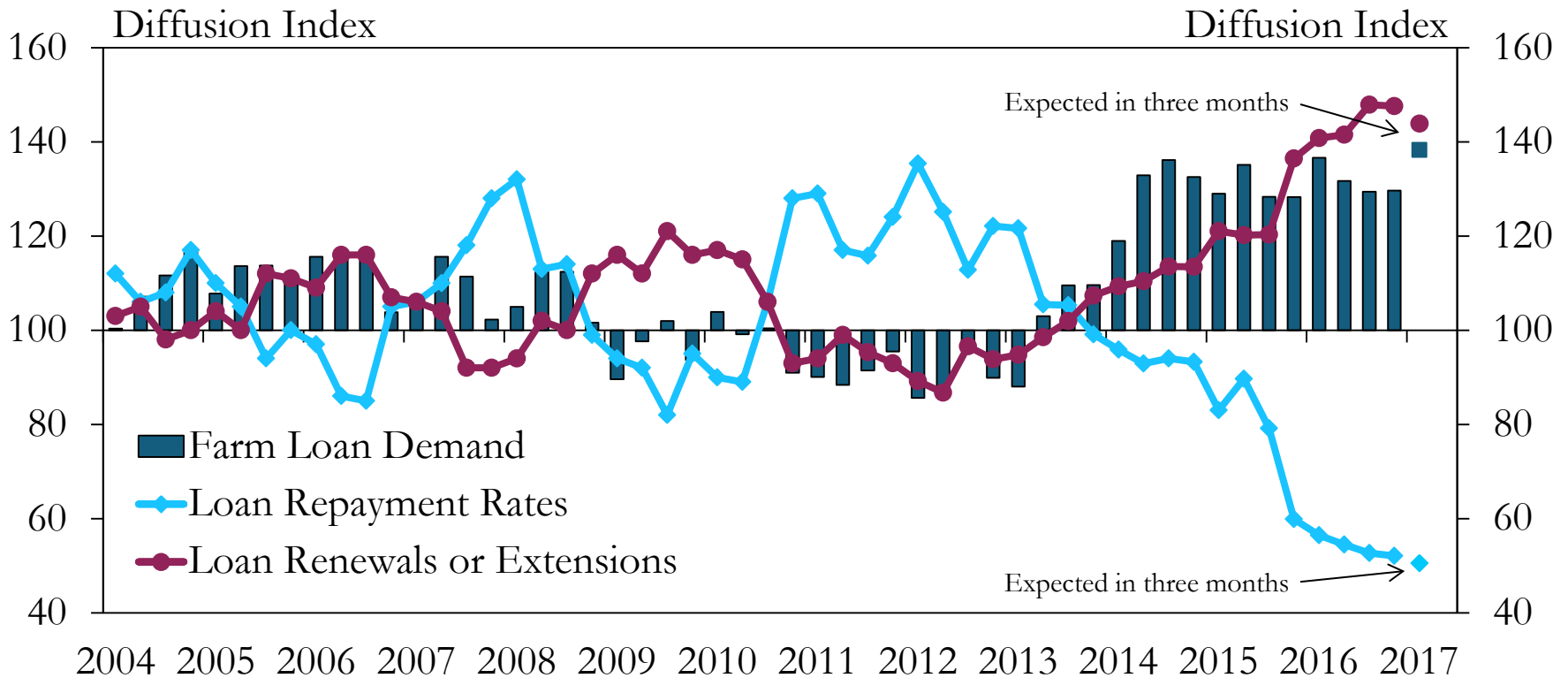
Note: Production costs are calculated from USDA's Economic Research Service (Commodity Costs and Returns) and national yield averages for each year shown, but exclude the opportunity cost of unpaid labor from the calculation.

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Reduced income has spurred demand for financing, and loan repayment rates have softened.

Agricultural Credit Conditions KC Fed District



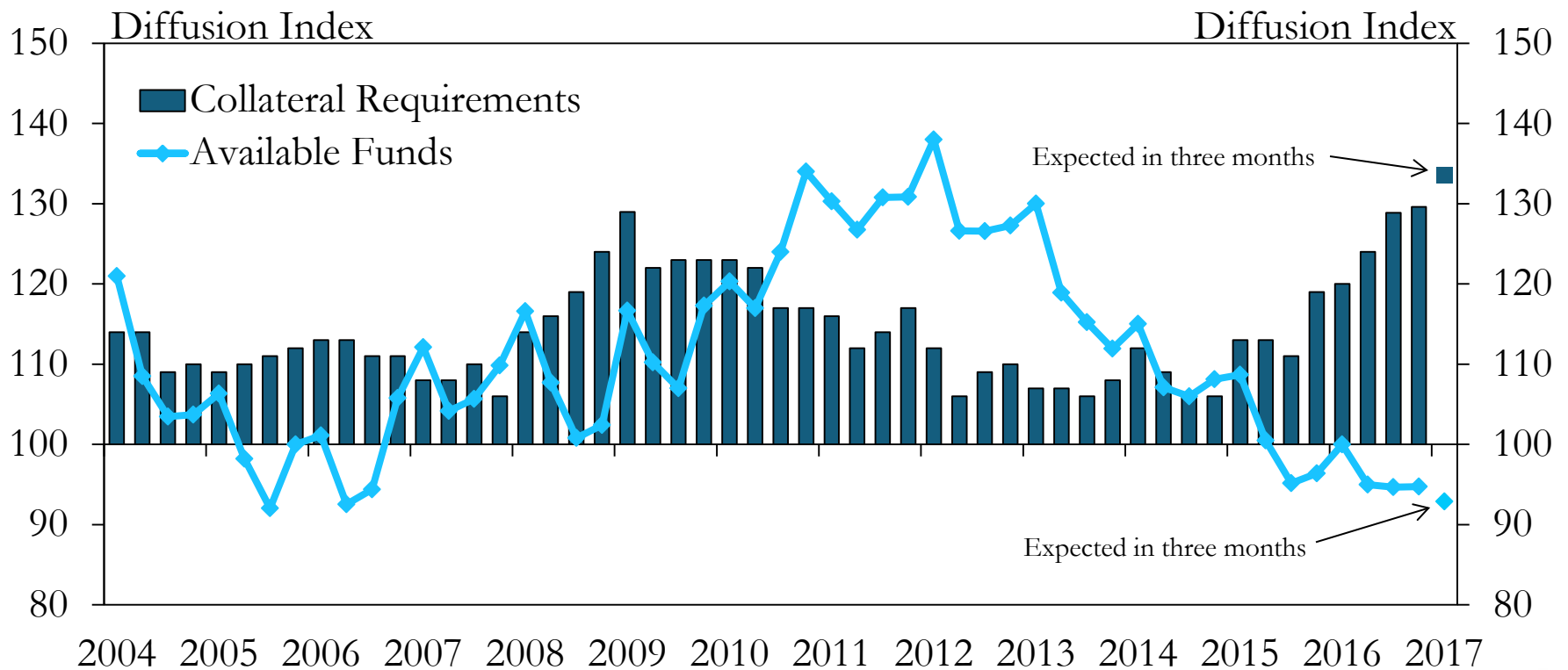
Source: Federal Reserve Bank of Kansas City.

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Collateral requirements have risen steadily and fund availability has declined somewhat.

Agricultural Credit Conditions KC Fed District



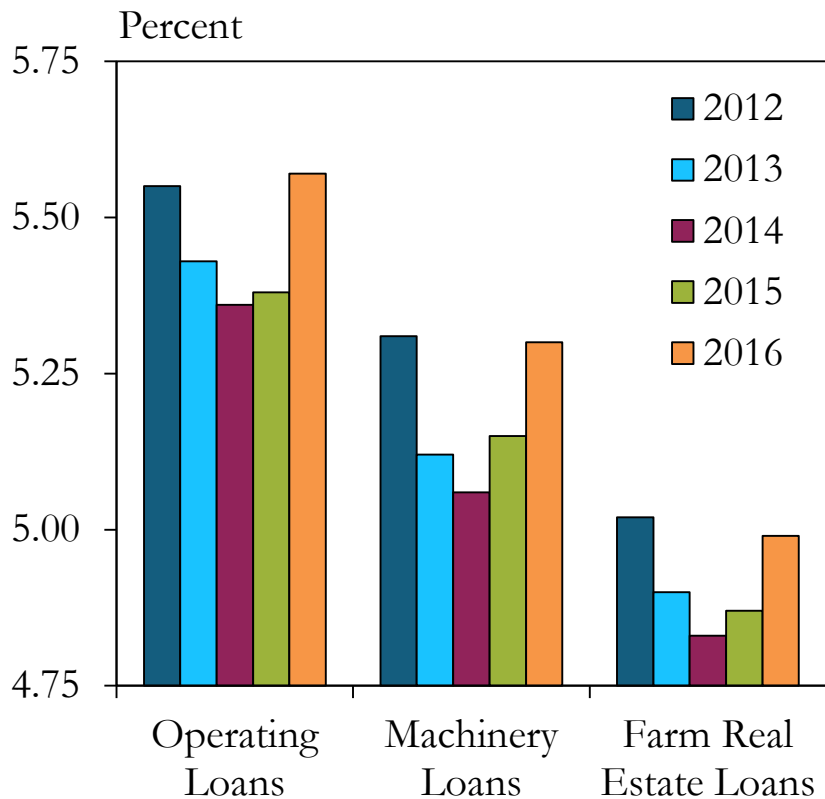
Source: Federal Reserve Bank of Kansas City.

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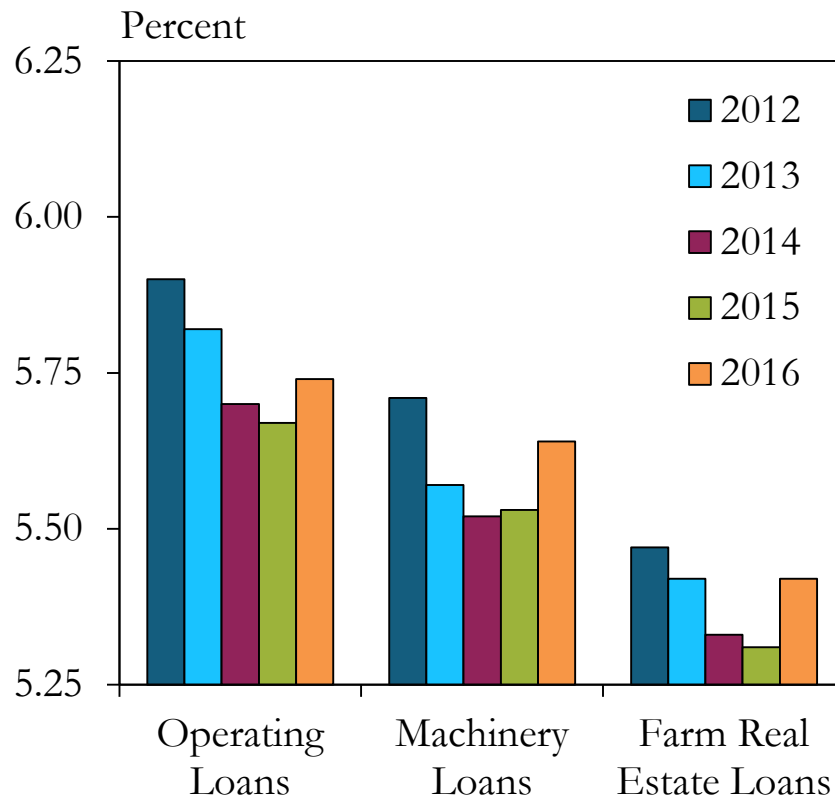


Interest rates have edged up, particularly for variable rate loans.

Variable Interest Rates



Fixed Interest Rates



Source: Federal Reserve Bank of Kansas City.

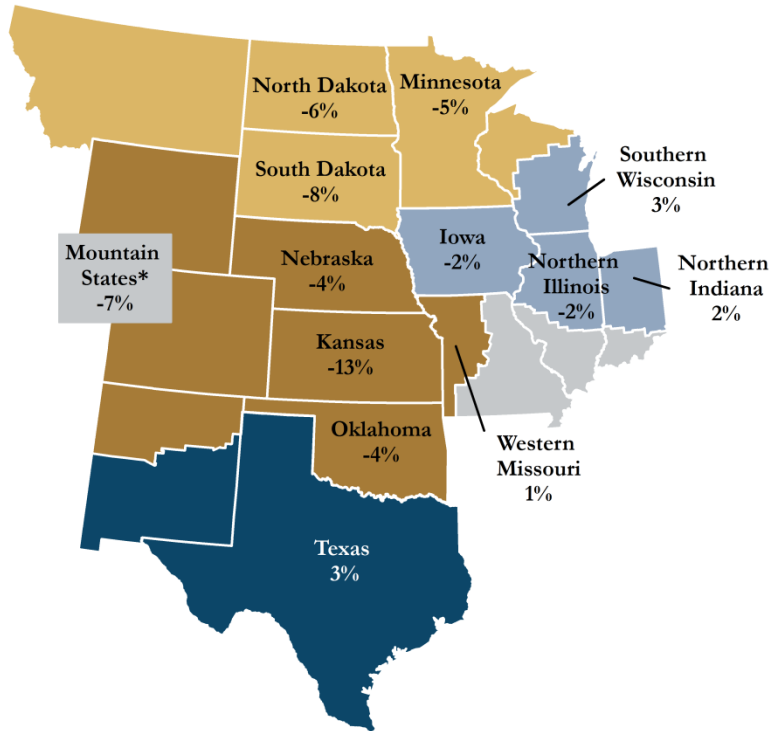
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Farmland values have continued to decline from their peaks in 2013-2014, but gradually.

High Quality Farmland Values 2016:Q4

Percent change from previous year



Change in U.S. Farmland Values, Peak to 2016:Q4

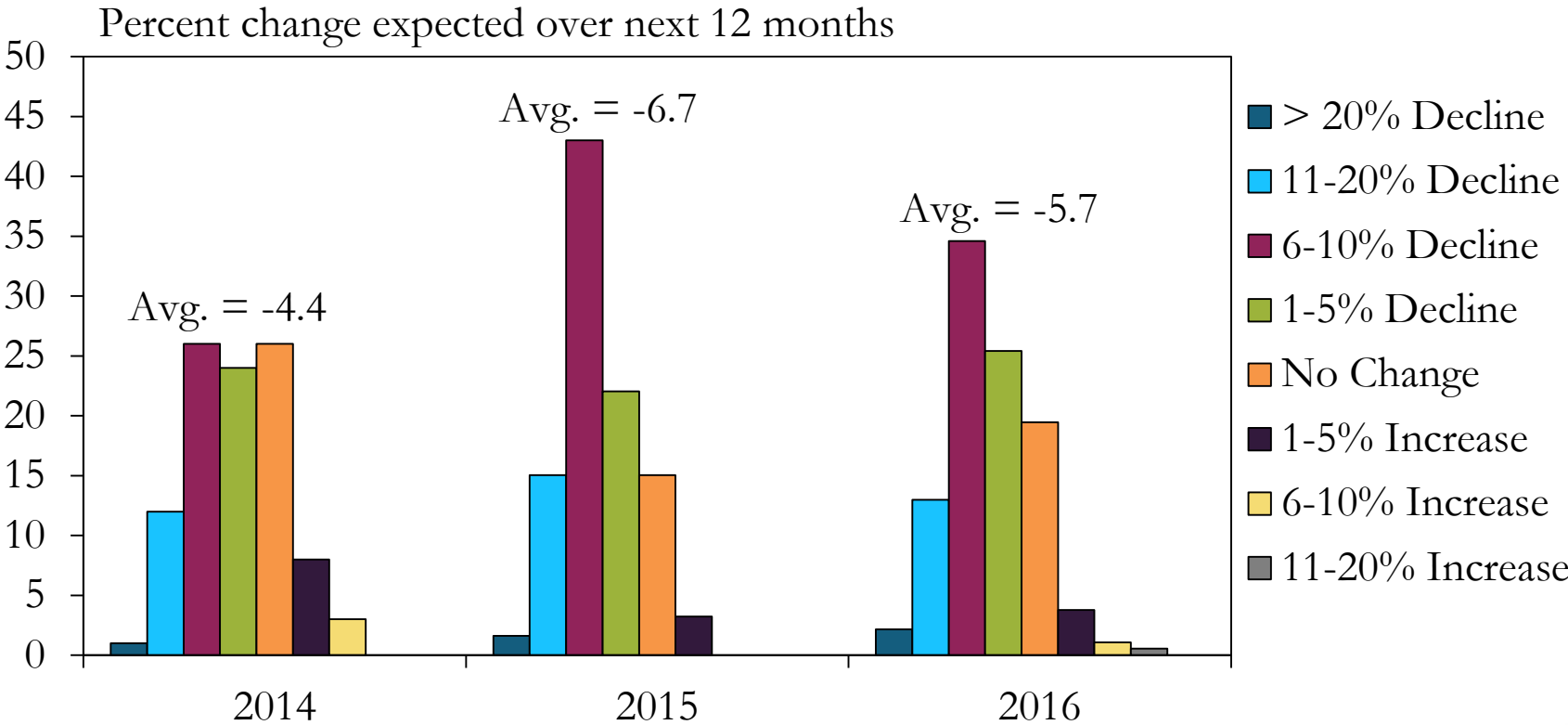
State	Peak Quarter	Percent Change from Peak
Mountain States*	2016:Q2	-27
Kansas	2013:Q4	-21
Minnesota	2013:Q1	-21
N. Dakota	2015:Q3	-19
S. Dakota	2014:Q3	-17
Iowa	2013:Q2	-17
Nebraska	2013:Q3	-11
N. Illinois	2014:Q2	-10
Missouri	2013:Q3	-9
N. Indiana	2013:Q4	-9
S. Wisconsin	2015:Q1	-9
Texas	2016:Q4	No Decline
Oklahoma	2016:Q4	No Decline

Source: Federal Reserve Bank of Kansas City.



Farmland values are still expected to trend lower.

Expected Change in Nonirrigated Cropland Values

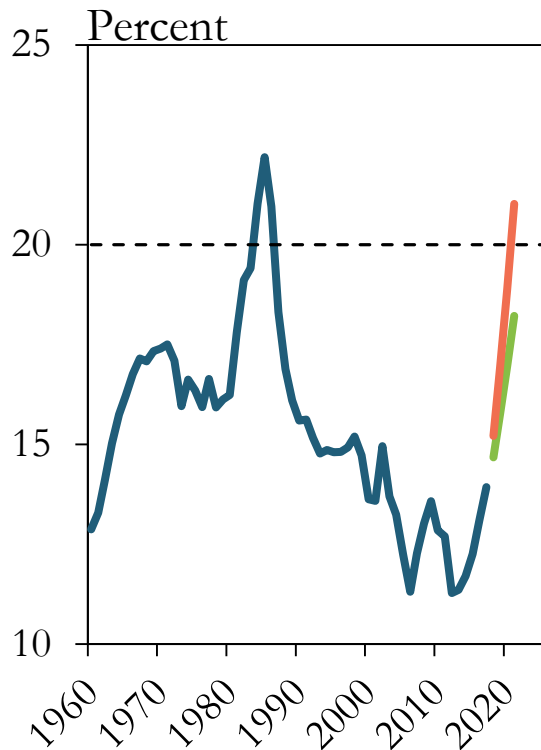


Source: Federal Reserve Bank of Kansas City.



If debt continues to grow and land values continue to fall, significant problems may still arise, but slowly.

Farm Sector Debt-to-Asset Ratio



Source: USDA and author's calculations.

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

Annual Change in Farm Debt

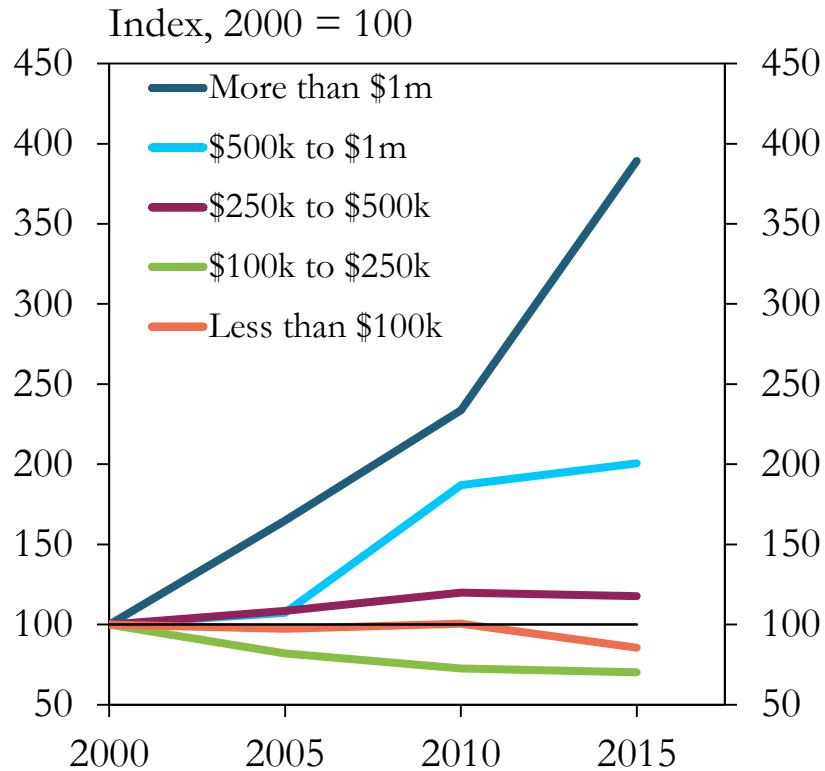
Annual Change in
Farmland Values

	0%	2%	4%	6%	8%	10%
0%	--	18.2	9.2	6.2	4.7	3.8
-2%	21.9	9.9	6.5	4.8	3.9	3.2
-4%	11.0	6.8	5.0	3.9	3.3	2.8
-6%	7.3	5.1	4.0	3.3	2.8	2.5
-8%	5.4	4.1	3.4	2.9	2.5	2.2
-10%	4.3	3.4	2.9	2.5	2.2	2.0



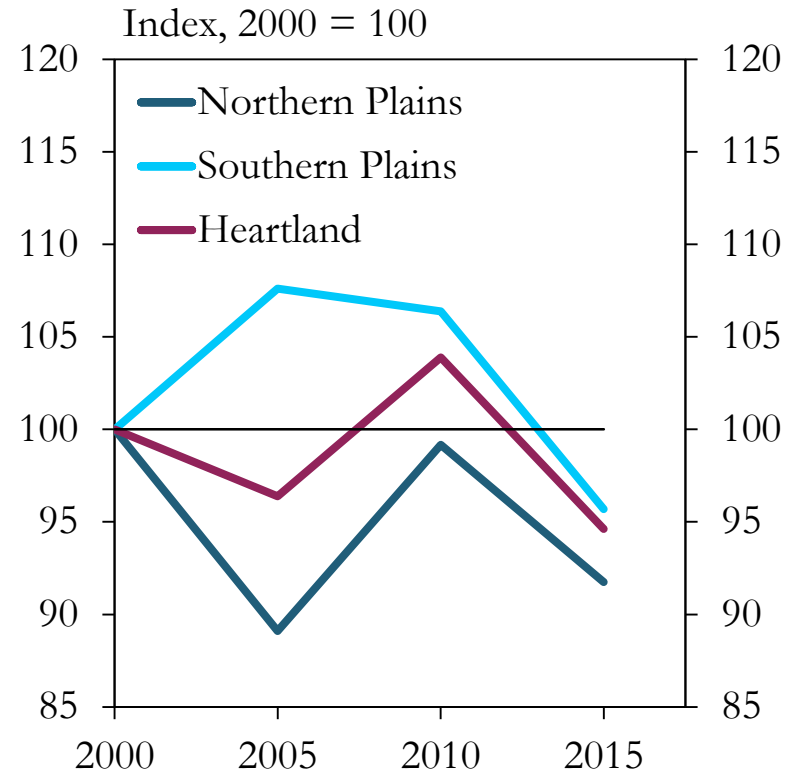
Ag and rural consolidation is a potential implication of a prolonged downturn.

Number of Farms by Economic Class



Source: USDA.

Total Number of Farms



Source: USDA.FEDERAL RESERVE BANK OF KANSAS CITY





**AGRICULTURAL
CONSOLIDATION**
CAUSES & THE PATH FORWARD

Federal Reserve Bank of Kansas City
AGRICULTURAL SYMPOSIUM
June 15-16, 2017

Concluding Remarks

- Economic growth in the U.S. continues, driven largely by urban areas concentrated in service-based industries.
- The recent downturn in the rural/ag economy would have been more severe if farmland values dropped more significantly.
- Although the outlook for ag is not a crisis, there is potential for further consolidation.



Questions?

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