United States Department of Agriculture

U.S. Farm Income and Financial Outlook for 2016

Fertilizer Outlook and Technology Conference
November 15, 2016

Presented by
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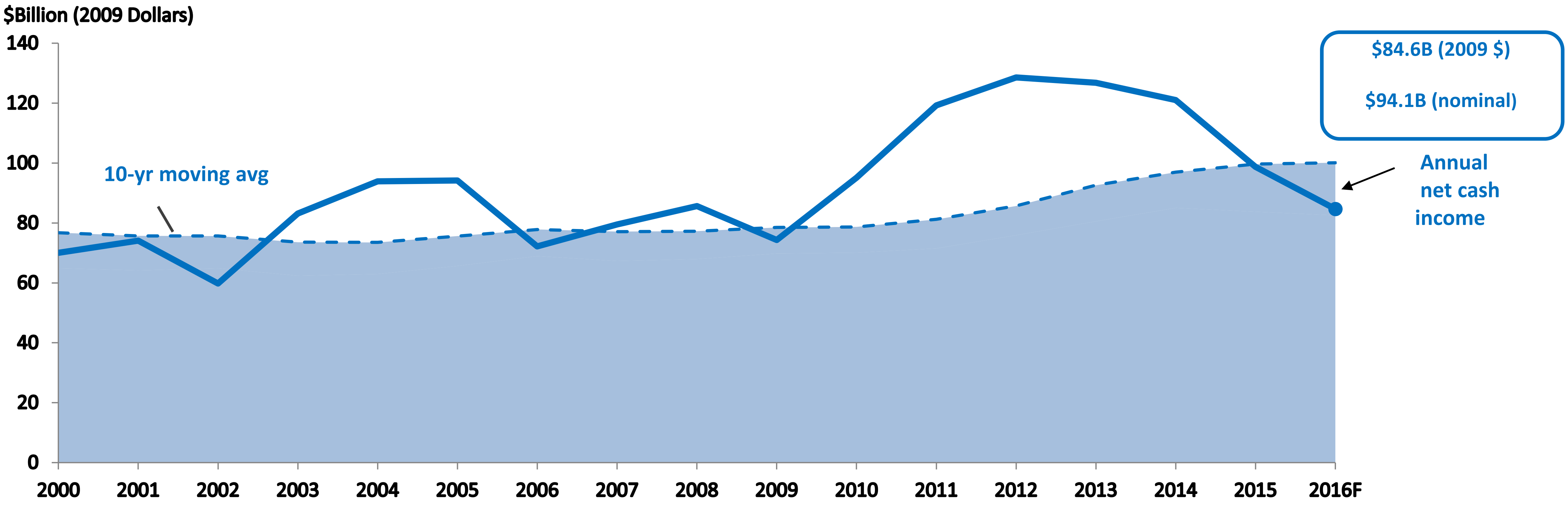
Summary

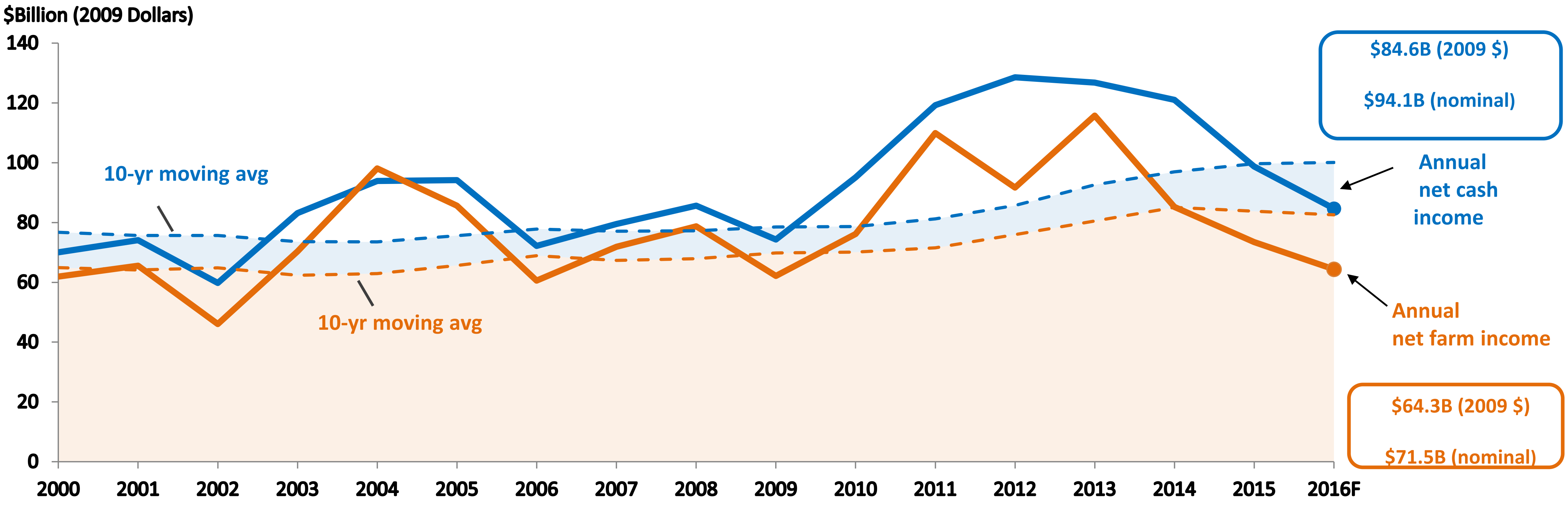
- **Net cash farm income** forecast **down 11.5 percent** relative to 2015.
- **Yield and production** are expected to grow to record or near record levels for many commodities, including corn and soybeans in 2016, driven by higher planted acres and favorable weather conditions.
- **Crop cash receipts** are expected to **decrease by 3.7 percent** ($7.1 billion) in 2016.
- **Livestock cash receipts** are expected to **fall by 9.8 percent** ($18.7 billion) in 2016.
- **Government payments** are projected to **rise 24.8 percent** to $13.5 billion in 2016:
  Price Loss Coverage (up 171.5 percent) and Agricultural Risk Coverage (up 50.8 percent).
- **Federal insurance indemnities** net of farmer’ share of premiums forecast **down 20.7 percent** to $3.7 billion.
- **Total production expenses** are forecast to **fall 2.8 percent**, and for the second year in a row, led by declines in livestock/poultry expenses and in manufactured inputs such as fertilizers and fuel.
- Declining farm sector assets (down 2.2 percent) and stable debt (down 0.8 percent) are forecast to **erode equity by 2.4 percent**.

Net cash farm income forecast to fall below 10-year moving averages



F=forecast
The GDP chain-type price index is used to convert the current-dollar statistics to real (inflation adjusted) amounts (2009=100)
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of August 30, 2016.

Net cash farm income and net farm income forecast to fall below their 10-year moving averages



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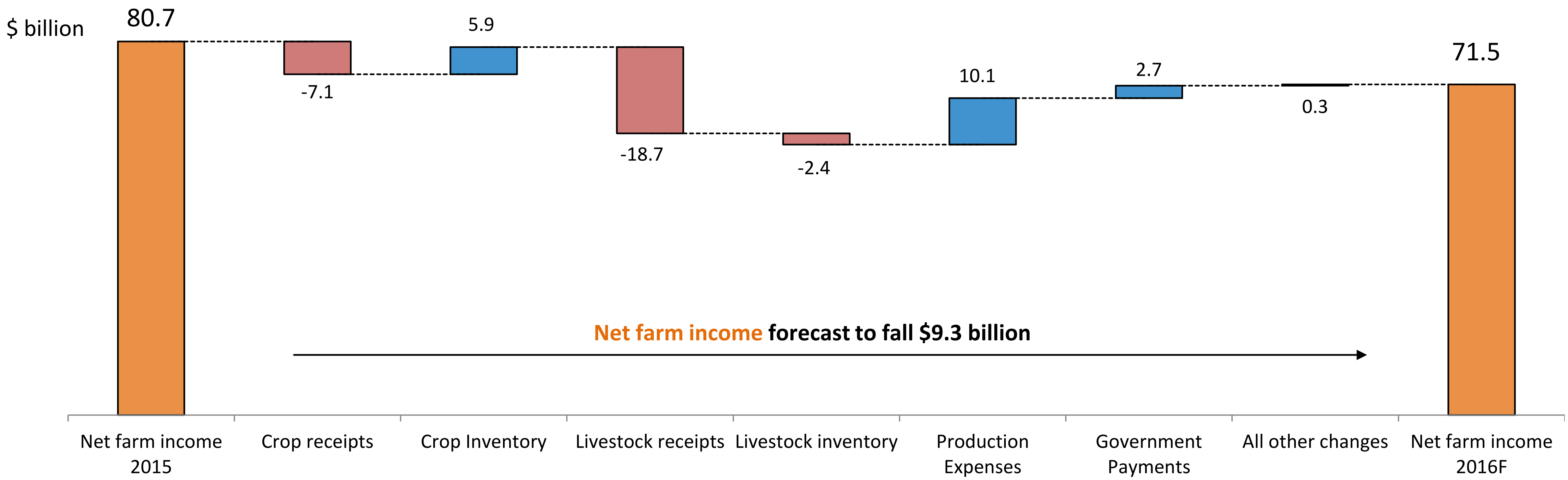
Net farm income driven lower by commodity receipts, partially offset by higher government payments and lower expenses, relative to 2015



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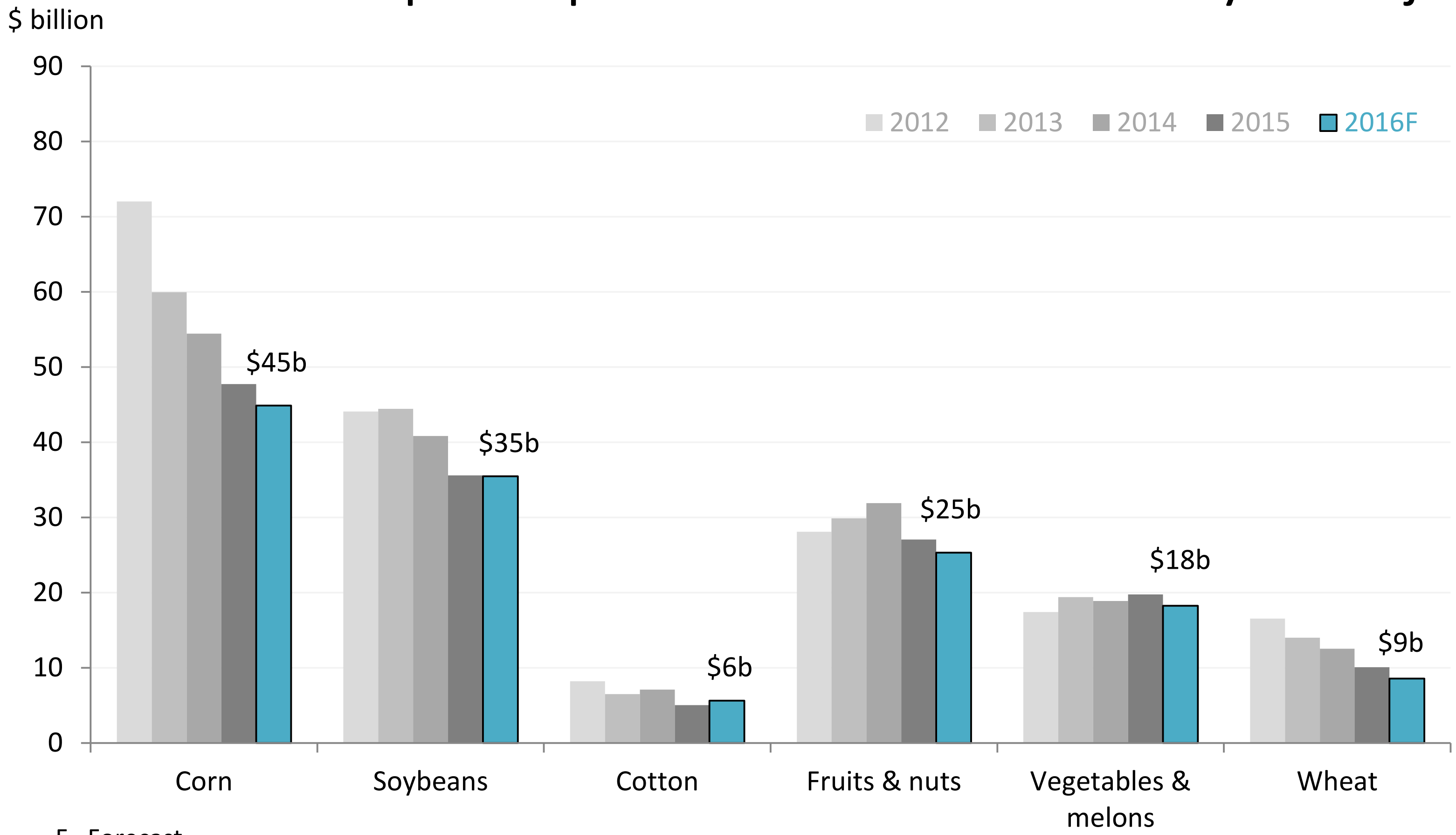
Source: USDA, Economic Research Service, Farm Income & Wealth Statistics.
Data as of August 30, 2016

Crop receipts forecast down for nearly all major crops in 2016



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Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
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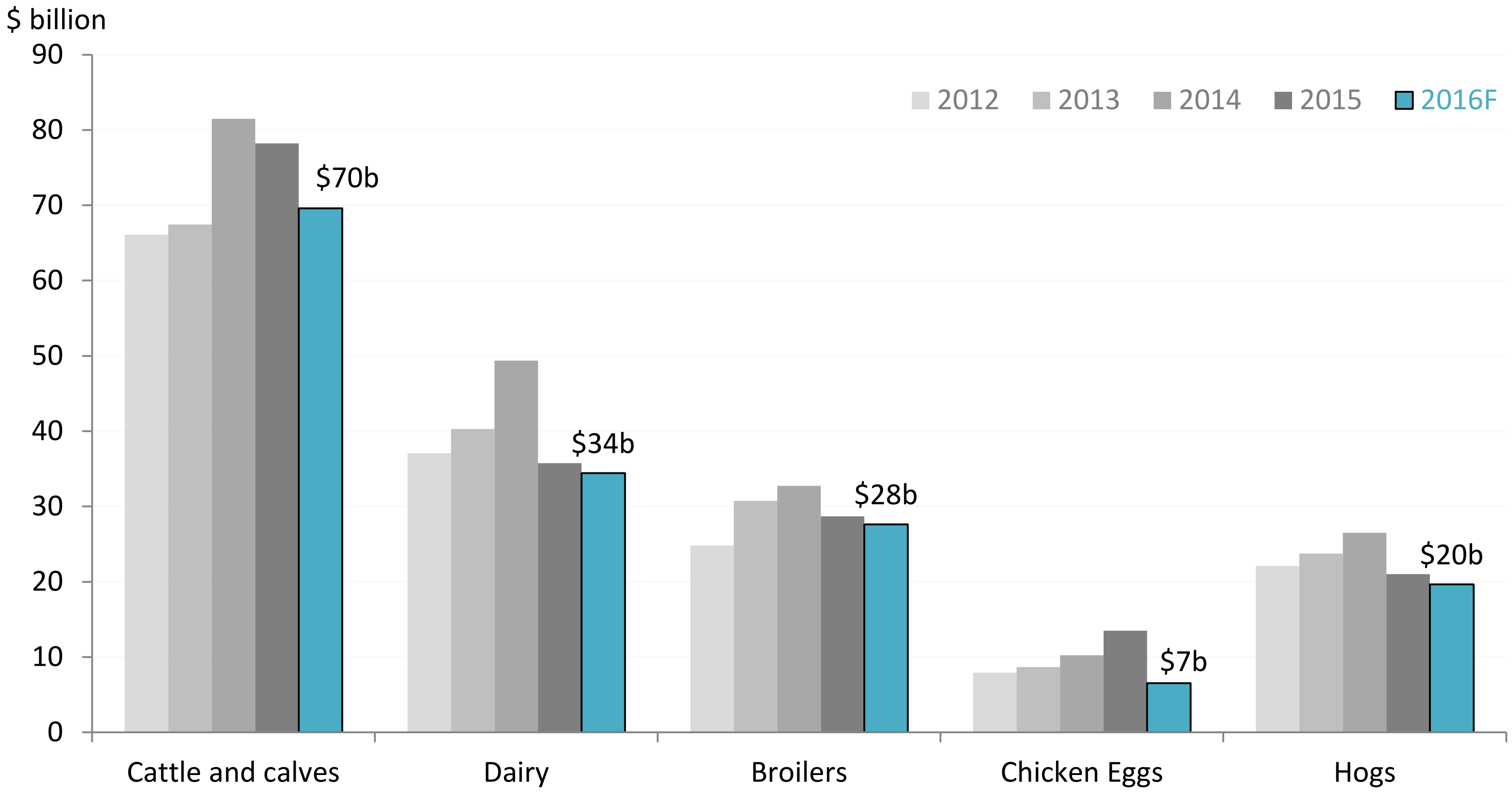
Crop cash receipts forecast **down 3.7%**.

Corn cash receipts **down 37.7%** relative to 2012 high.

Higher levels of production and stocks drive lower prices, leading cash receipts lower in 2016.

Cattle/calves and chicken eggs forecast lead declines in cash receipts in 2016



F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
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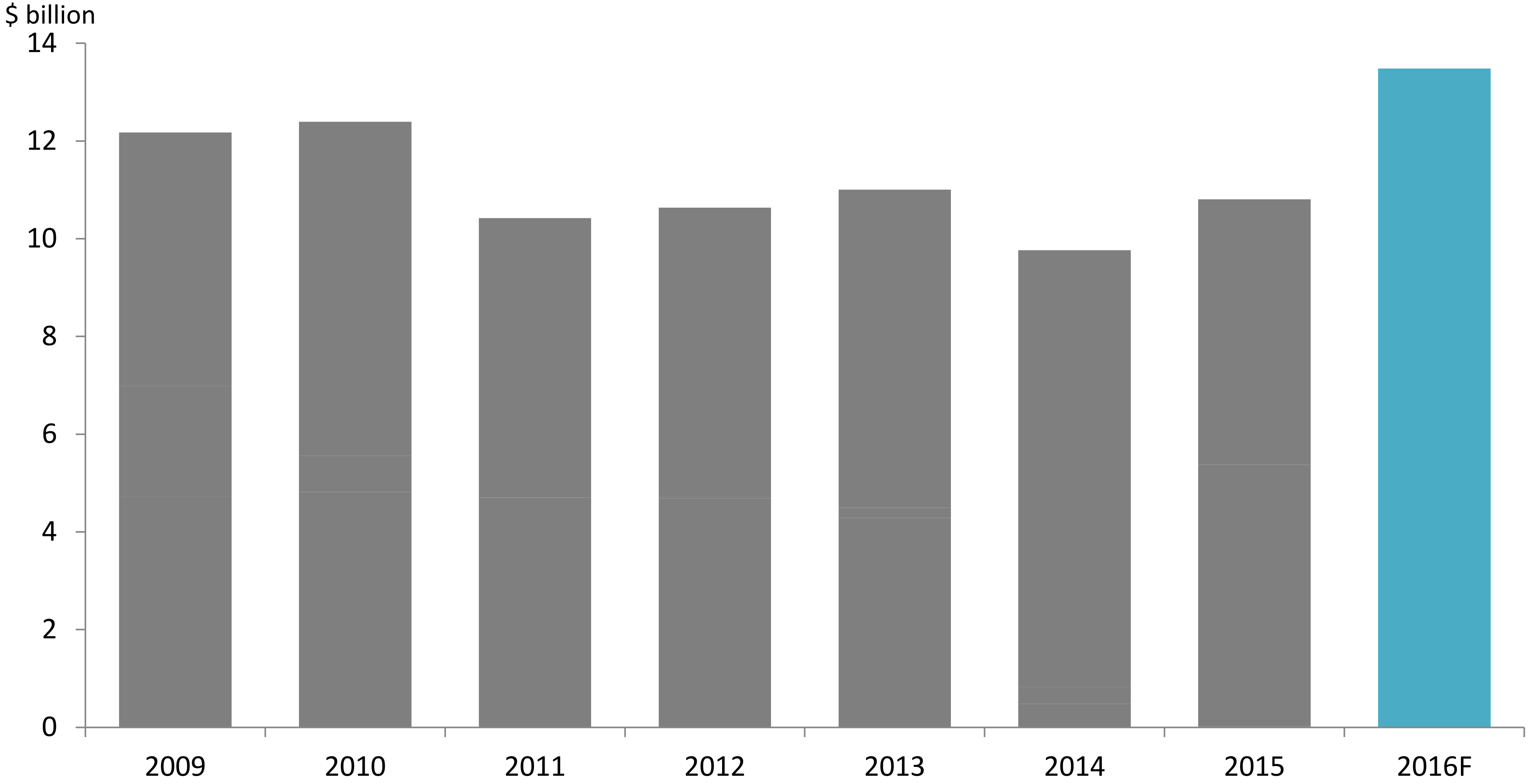
Animal/product cash receipts **down 9.8%** in 2016.

All major categories expected to decline, led by **cattle/calves down 11%** and **dairy down 3.6%**.

Egg prices expected down, leading to a **51.7% drop** in cash receipts.

Government payments forecast to increase 24.8 percent to $13.5 billion in 2016

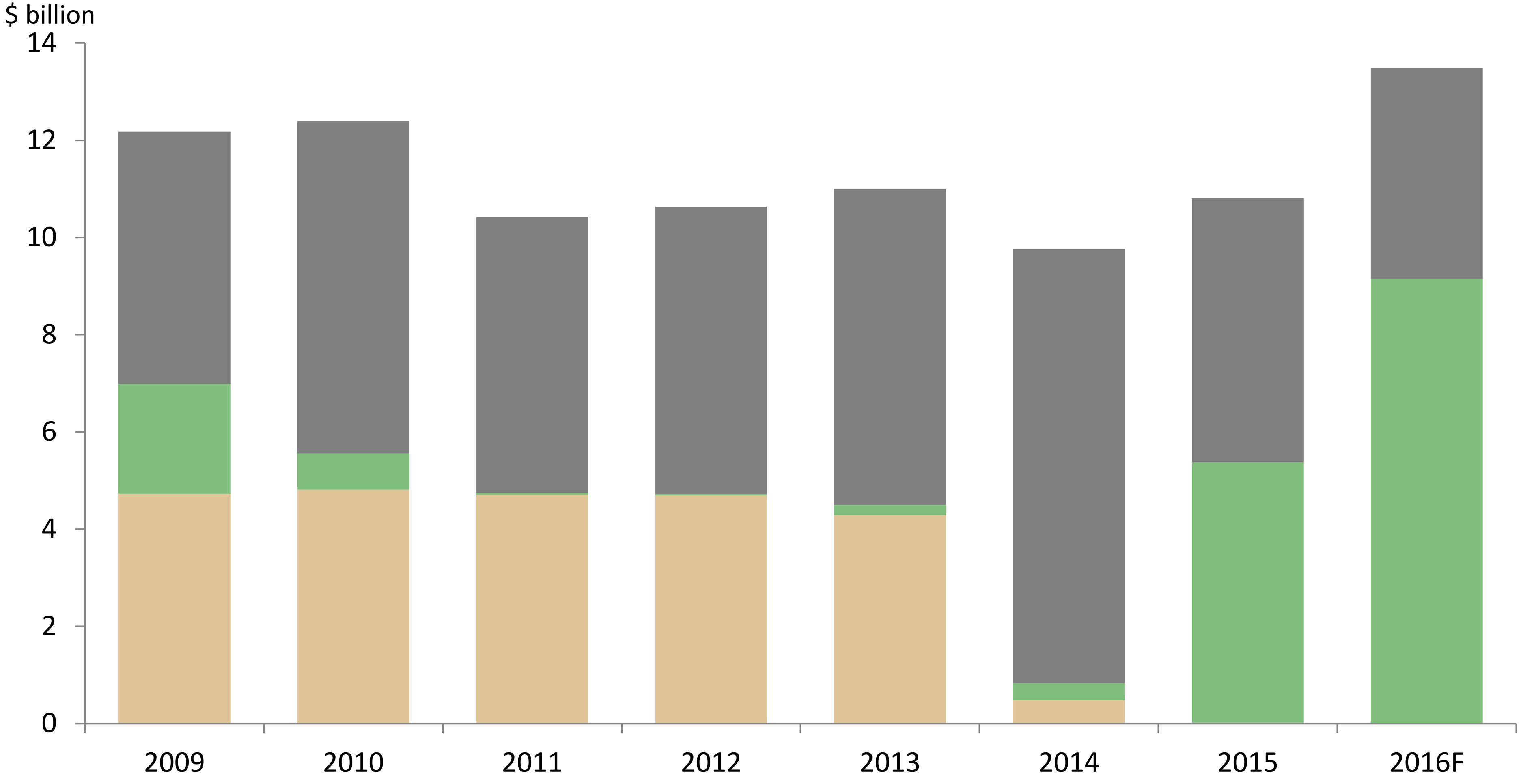


This would be the highest **Federal Government payments** to farmers in **10 years**.

F= Forecast.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics using FSA, NRCS, and CCC data. Data as of August 30, 2016.

Federal Government payments transition from fixed to price based



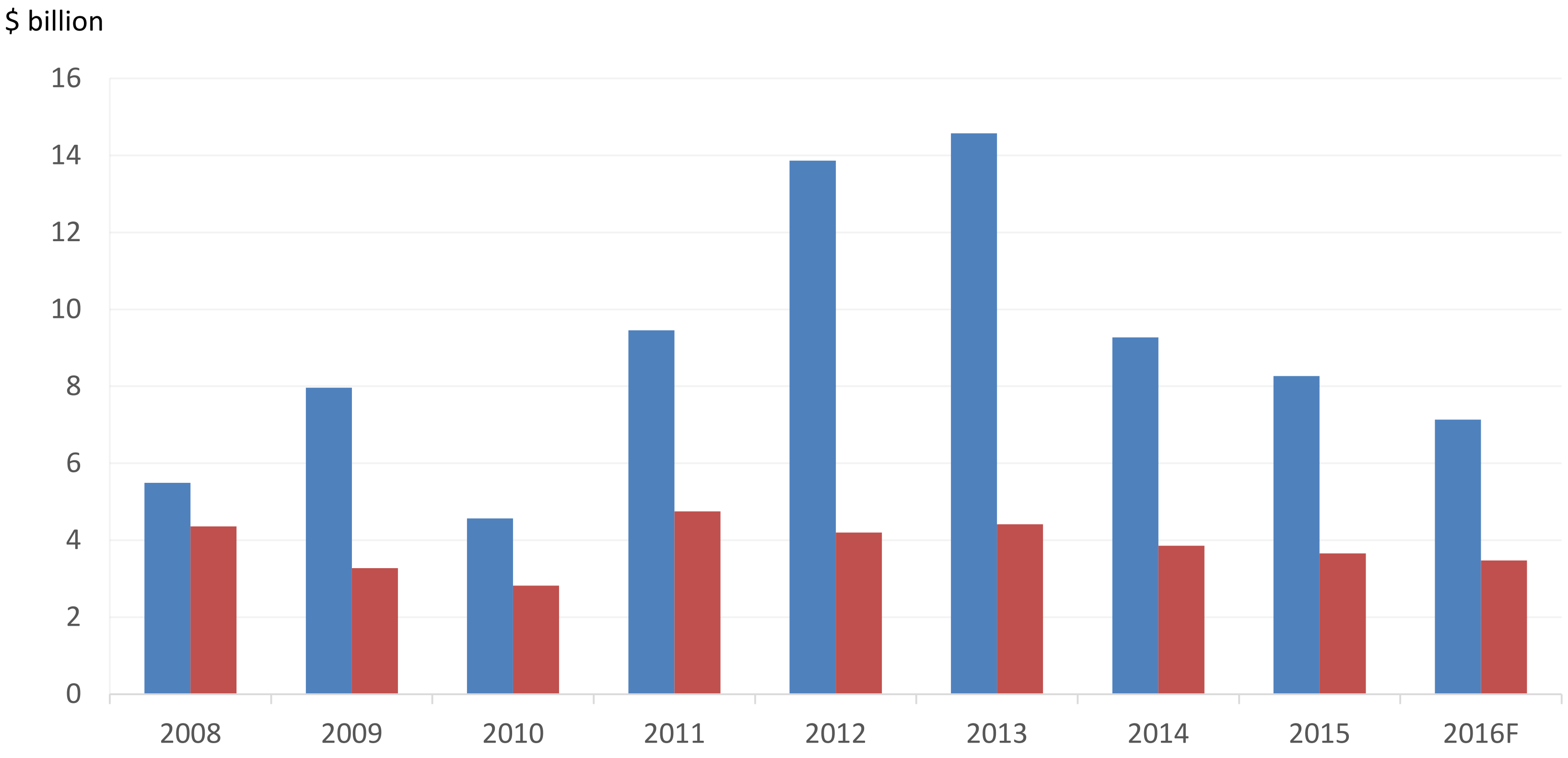
Price loss coverage (PLC) payments forecast for peanuts, wheat, long-grain rice, corn, and grain sorghum base acres.

Agricultural risk coverage (ARC) payments primarily expected for corn, soybeans, and wheat.

All other payments
Function of crop price payments
Fixed direct payments

F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics using FSA, NRCS, and CCC data. Data as of August 30, 2016.

Federal commodity insurance indemnities down sharply since 2013

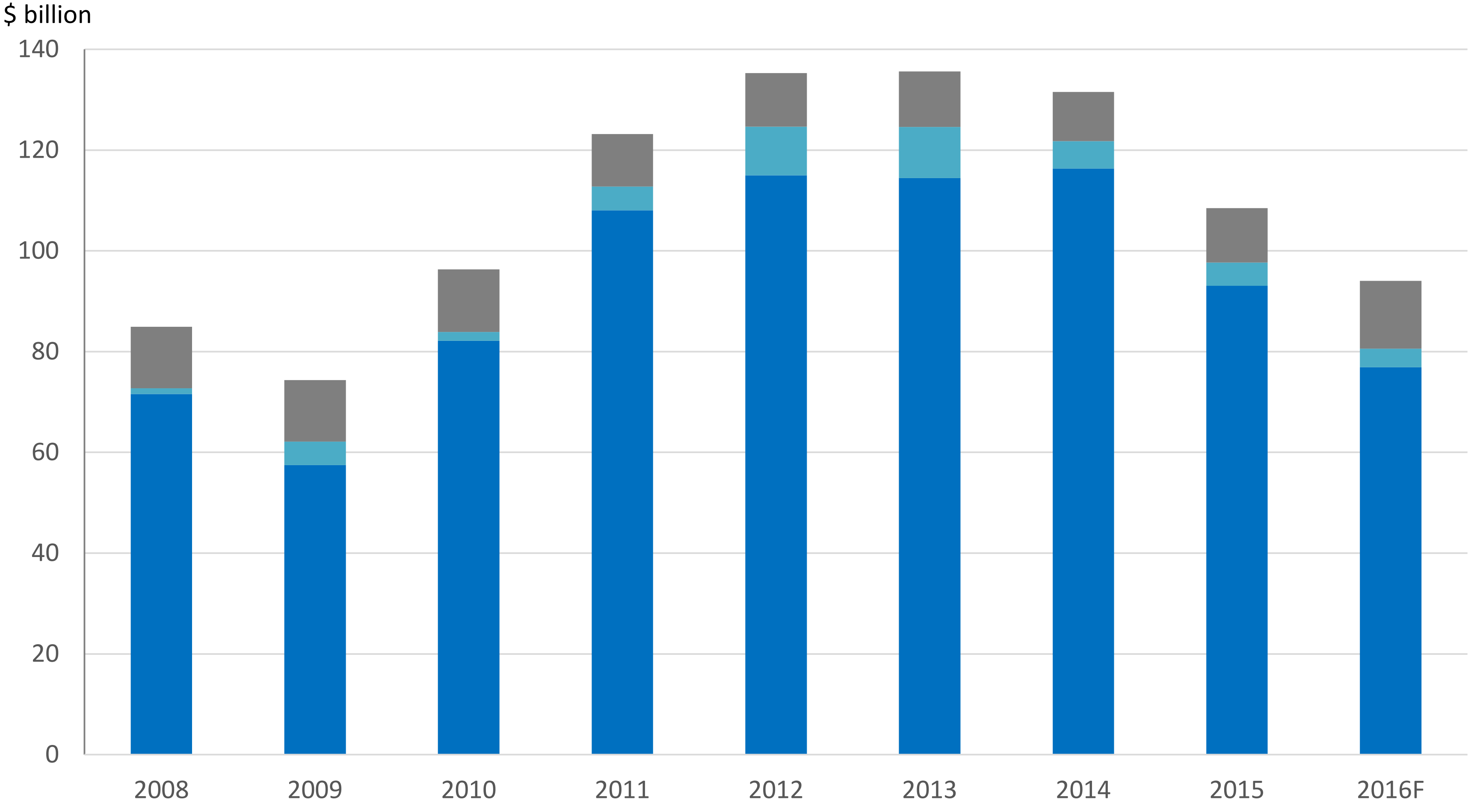


2016 **Federal commodity insurance indemnities** are forecast **down 14%** ($1.1 billion) from 2015. Since 2013, indemnities have fallen 51%.

The farmers' share of **Federal commodity insurance premiums** forecast to **decline 5%** ($0.2 billion).

F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
Data as of August 30, 2016

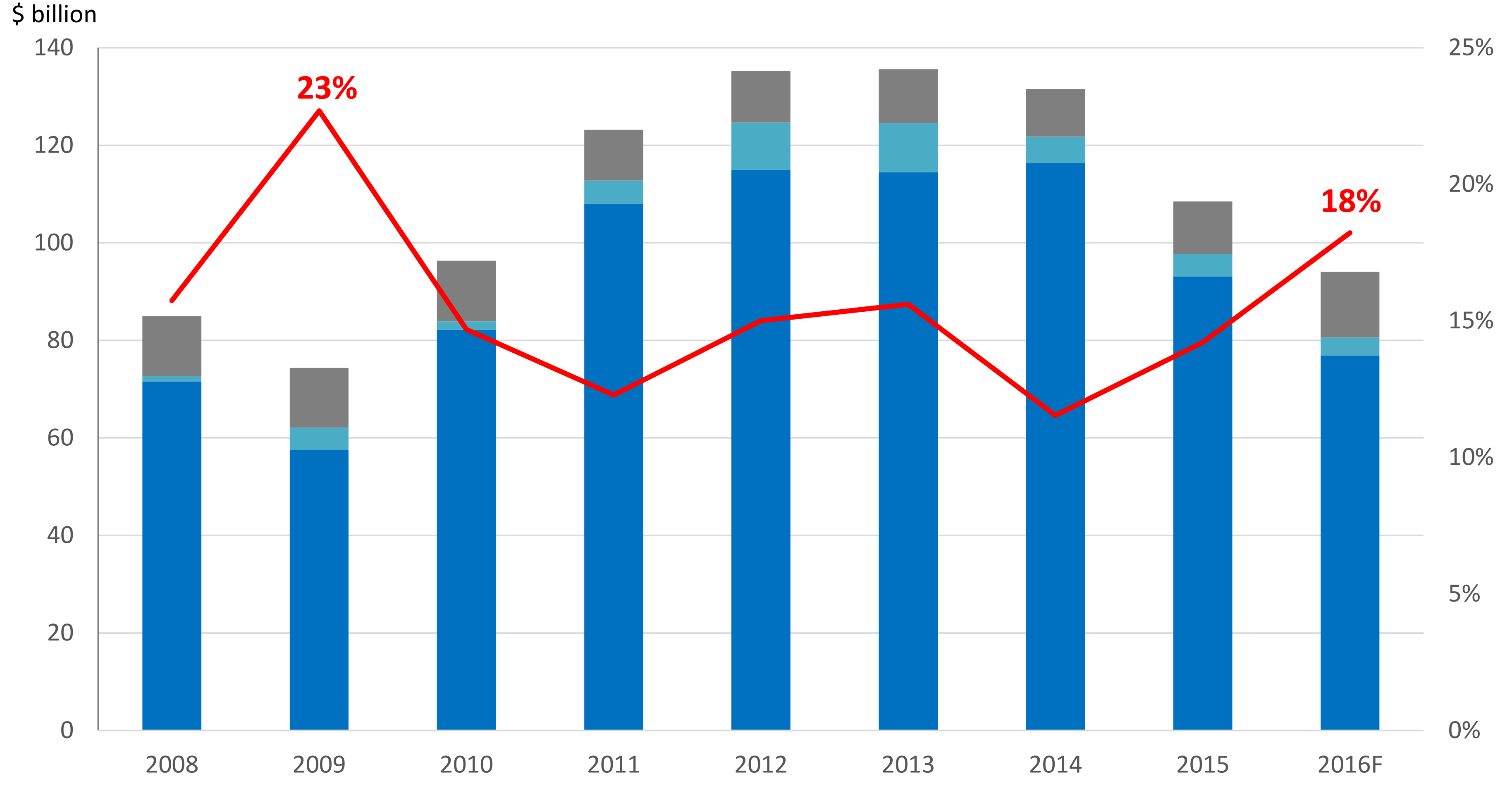
Federal Government payments and net Federal insurance indemnities contribute relatively small percentage of net cash farm income



Net cash farm income (NCFI) measures resources available to pay down debt and support household spending.

F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
Data as of August 30, 2016

But during low net cash farm income years, Federal Government payments and net Federal insurance indemnities have greater impact



Percent of net cash income

Government payments and net Federal insurance indemnities comprise 18% of NCFI in 2016.

F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
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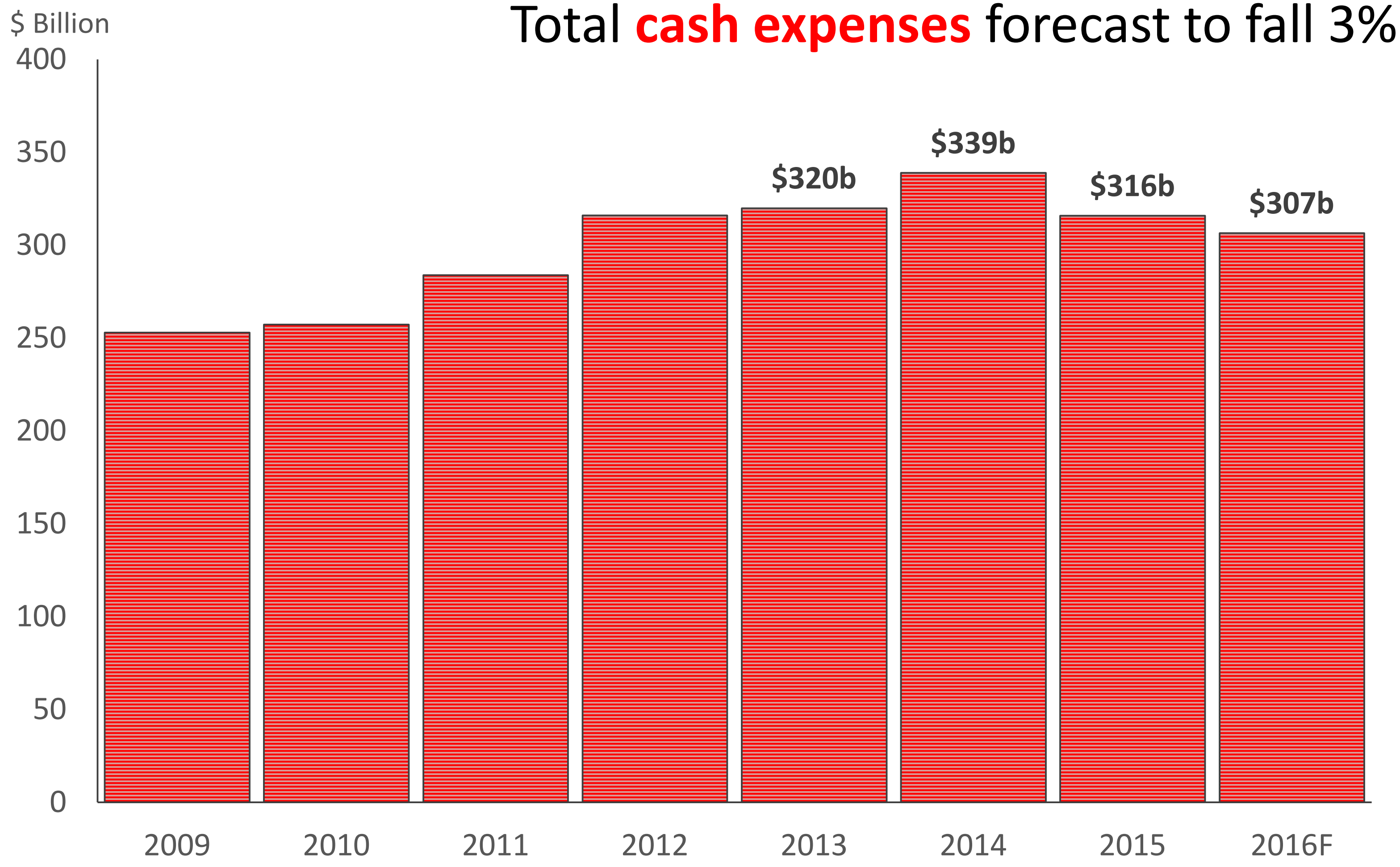
Total **cash expenses** forecast to fall 3% in 2016

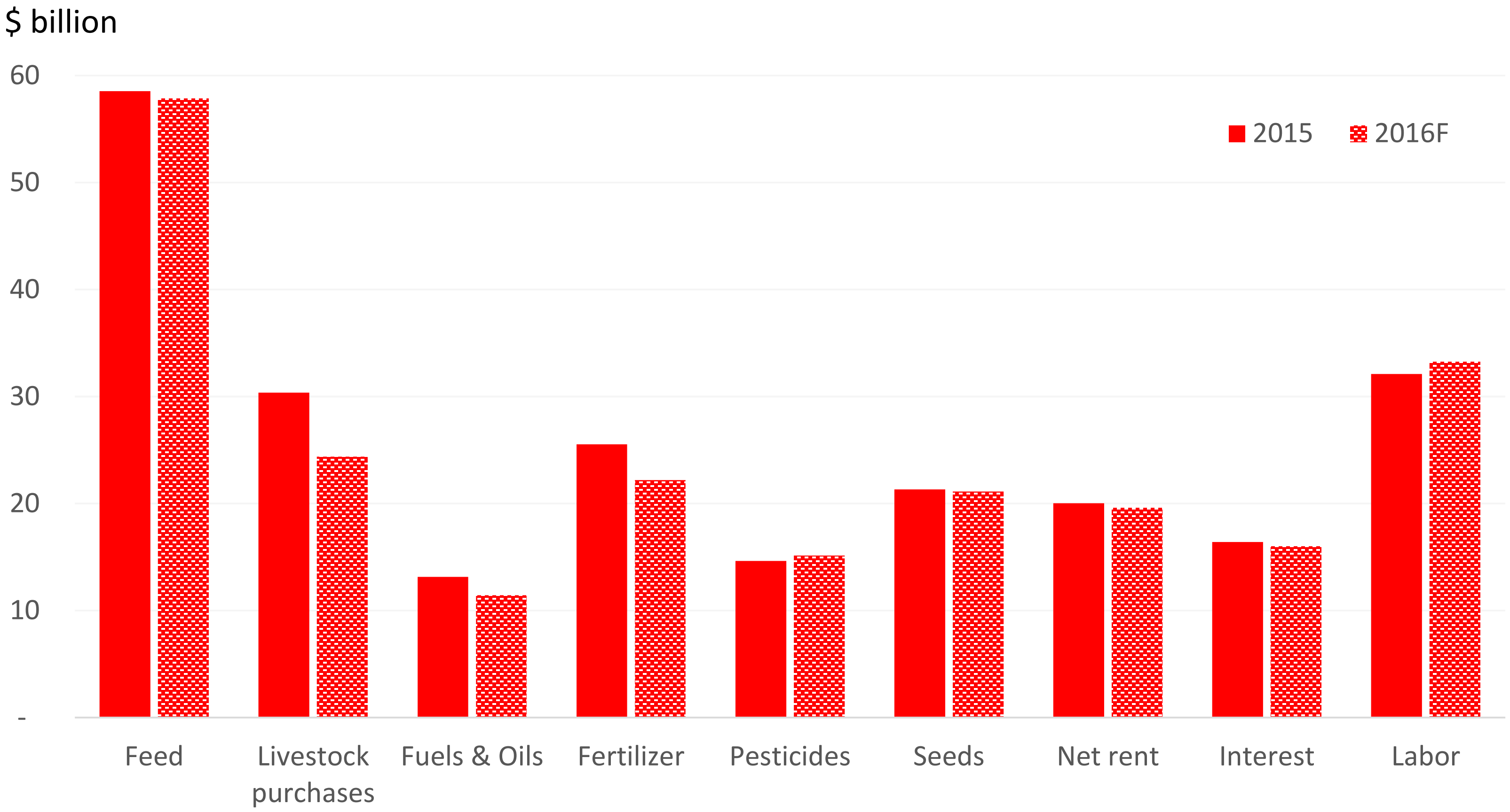


Second year of decline in **cash expenses**;

Cash expenses grew by 7.1% on average from 2010 to 2014 and has shrunk by 4.9% on average from 2014 to 2016.

F= Forecast.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
Data as of August 30, 2016

Reduced spending on livestock purchases and fertilizer projected to lead cash expenses lower



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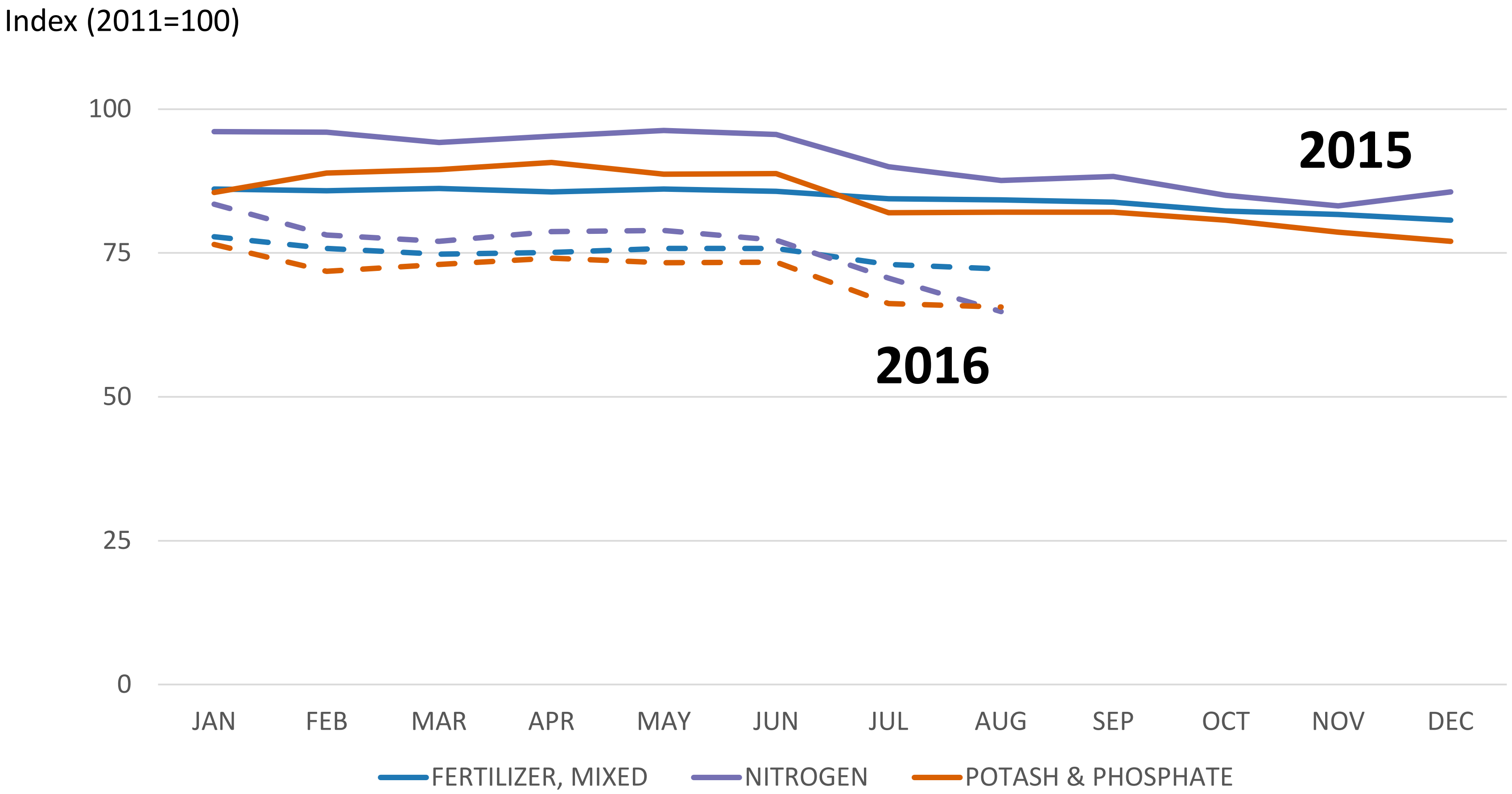
Drop in expenses for inputs that traditionally come from the farm sector, including feed, feeder cattle, and barrows/gilts.

Lower interest paid on debt secured by real estate partly offset by a modest increase in interest paid on nonreal estate debt leads to 2.4% decline in total interest expenses.

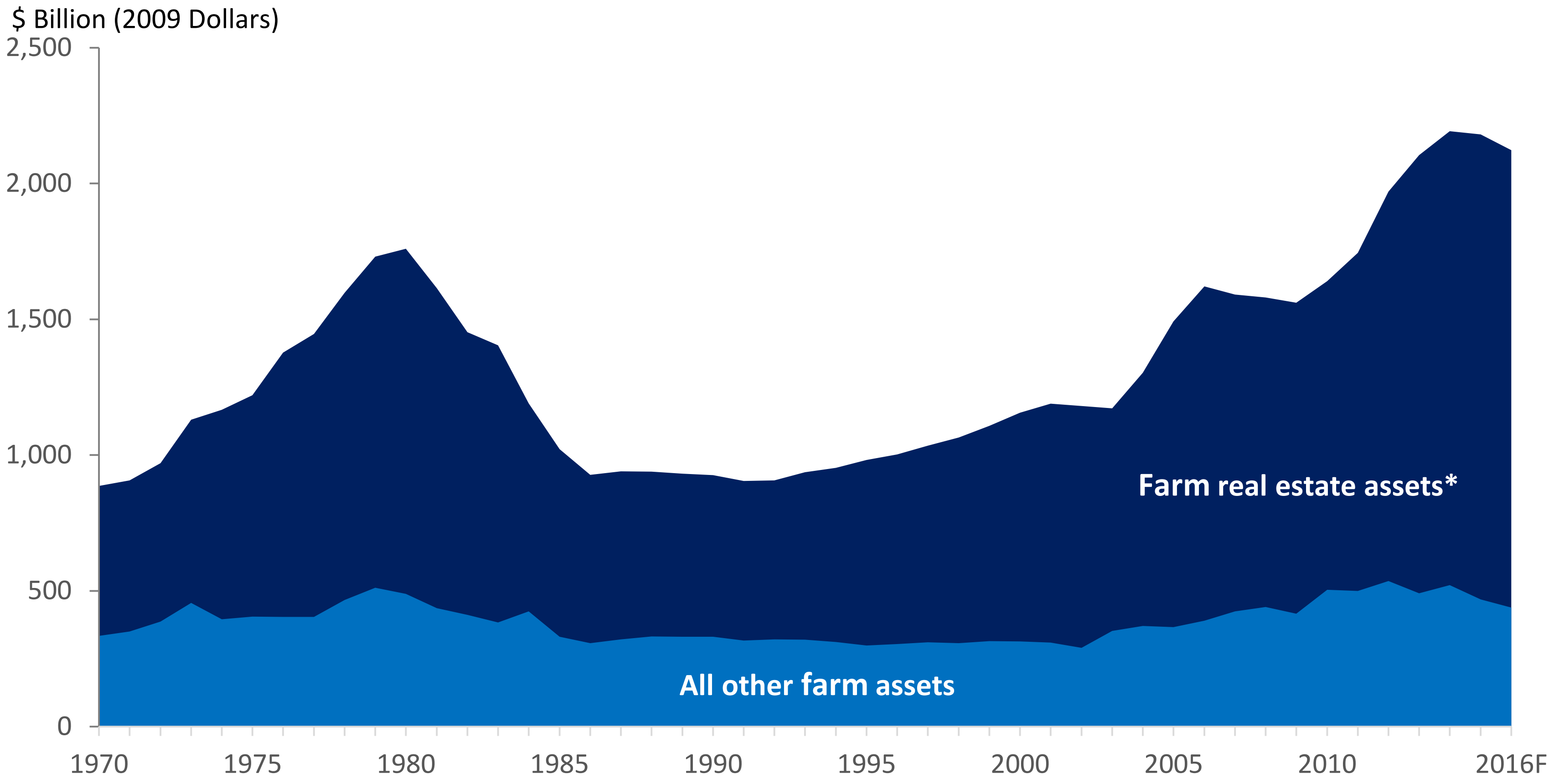
So far, fertilizer prices in 2016 below 2015 levels



Lower fertilizer expense forecast driven by lower fertilizer prices.

Source: USDA, NASS
Data as of August 30, 2016

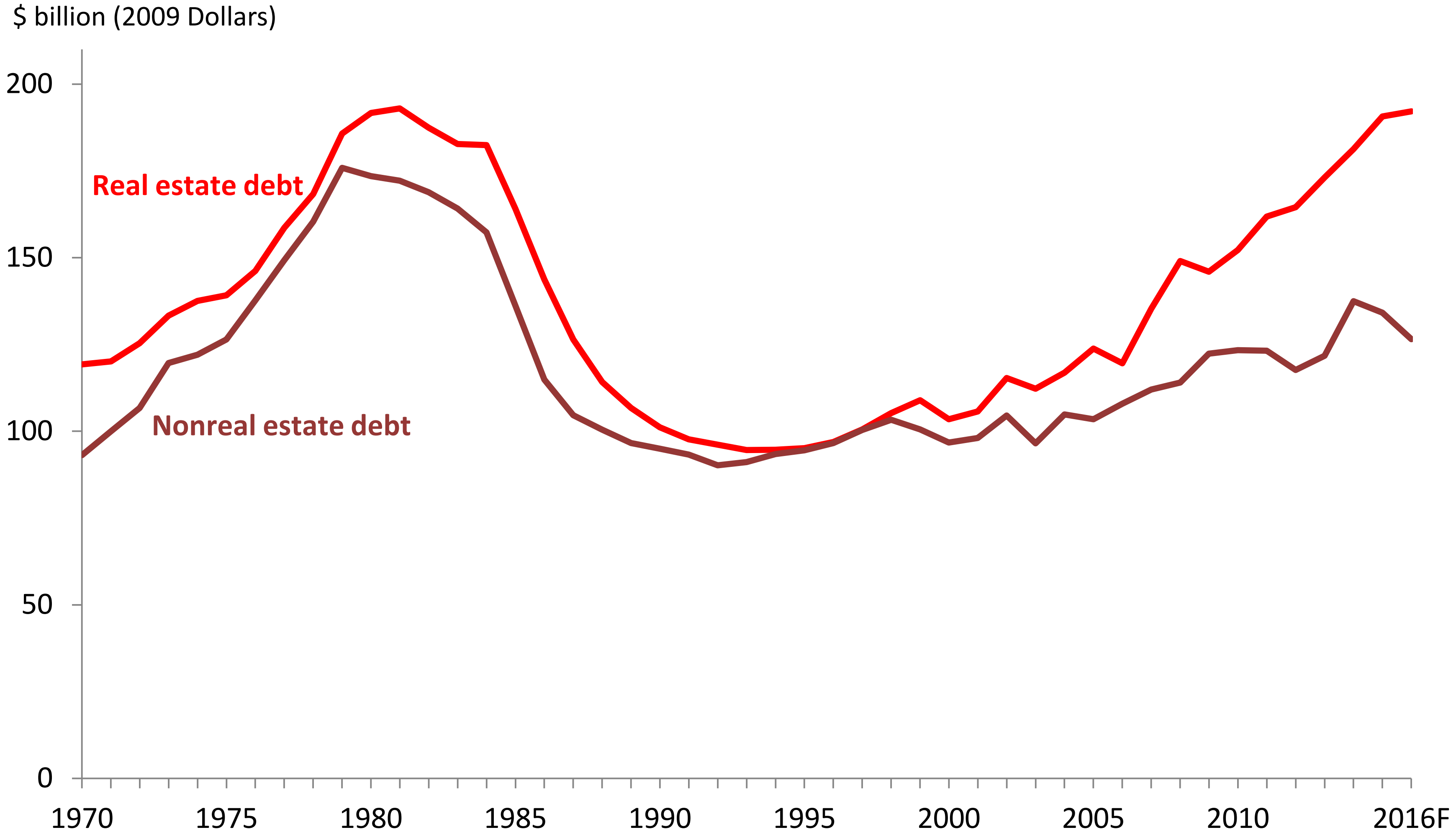
Farm real estate* represents the majority of the sector's assets



Inflation-adjusted value of farm assets forecast down 3.3% relative to 2015, including real estate (down 2.7%)

F= Forecast. Values are adjusted using the chain-type GDP deflator, 2009=100.
*Real estate includes the value of land and buildings
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of August 30, 2016.

Farm **real estate debt** expected to grow slowly in 2016

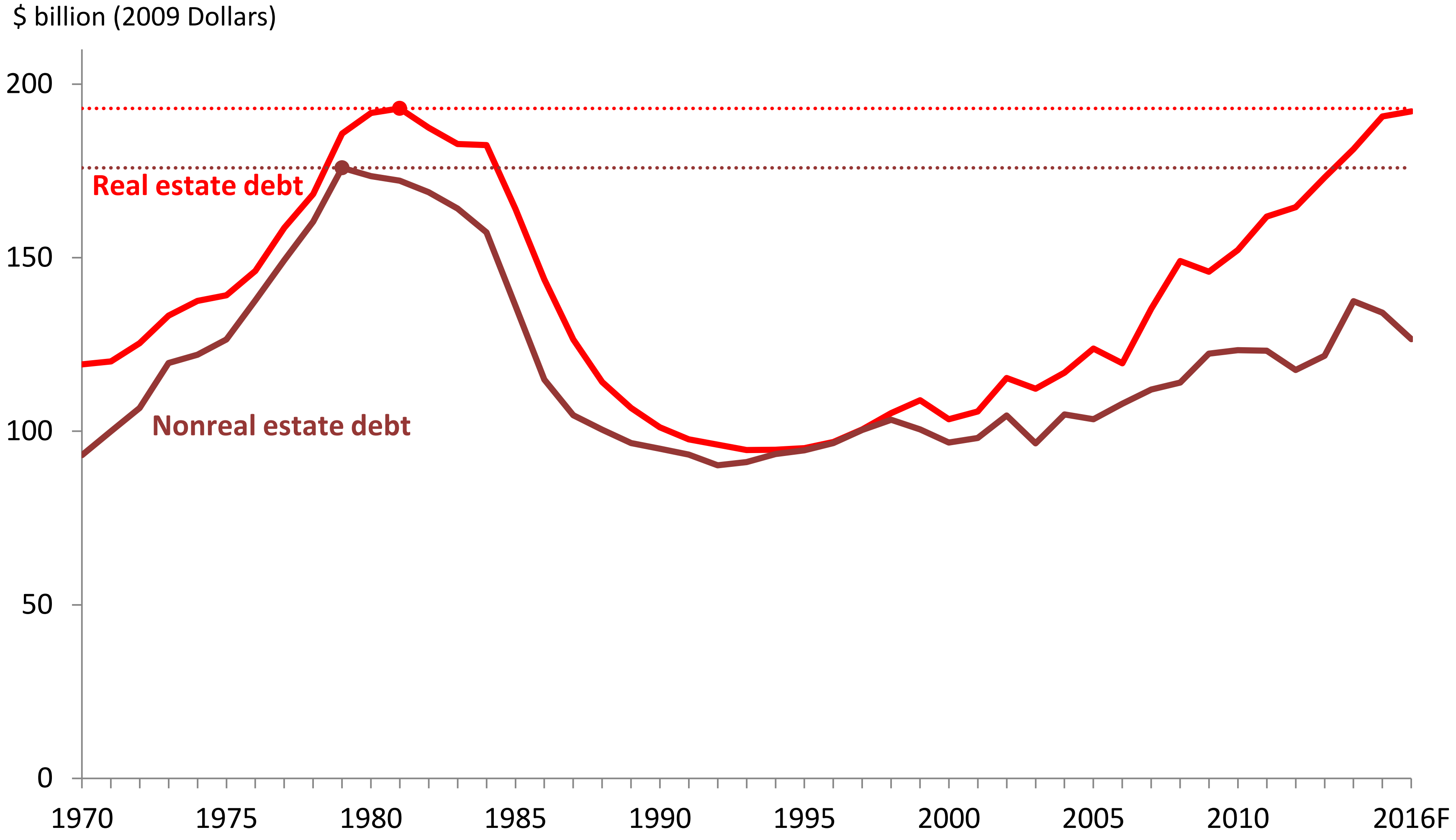


Nonreal estate debt peaked in 2014, declined in 2015 and is expected to continue to decline in 2016.

F= Forecast. Values are adjusted using the chain-type GDP deflator, 2009=100.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of August 30, 2016.

Farm **real estate debt** approaching early 80's peak



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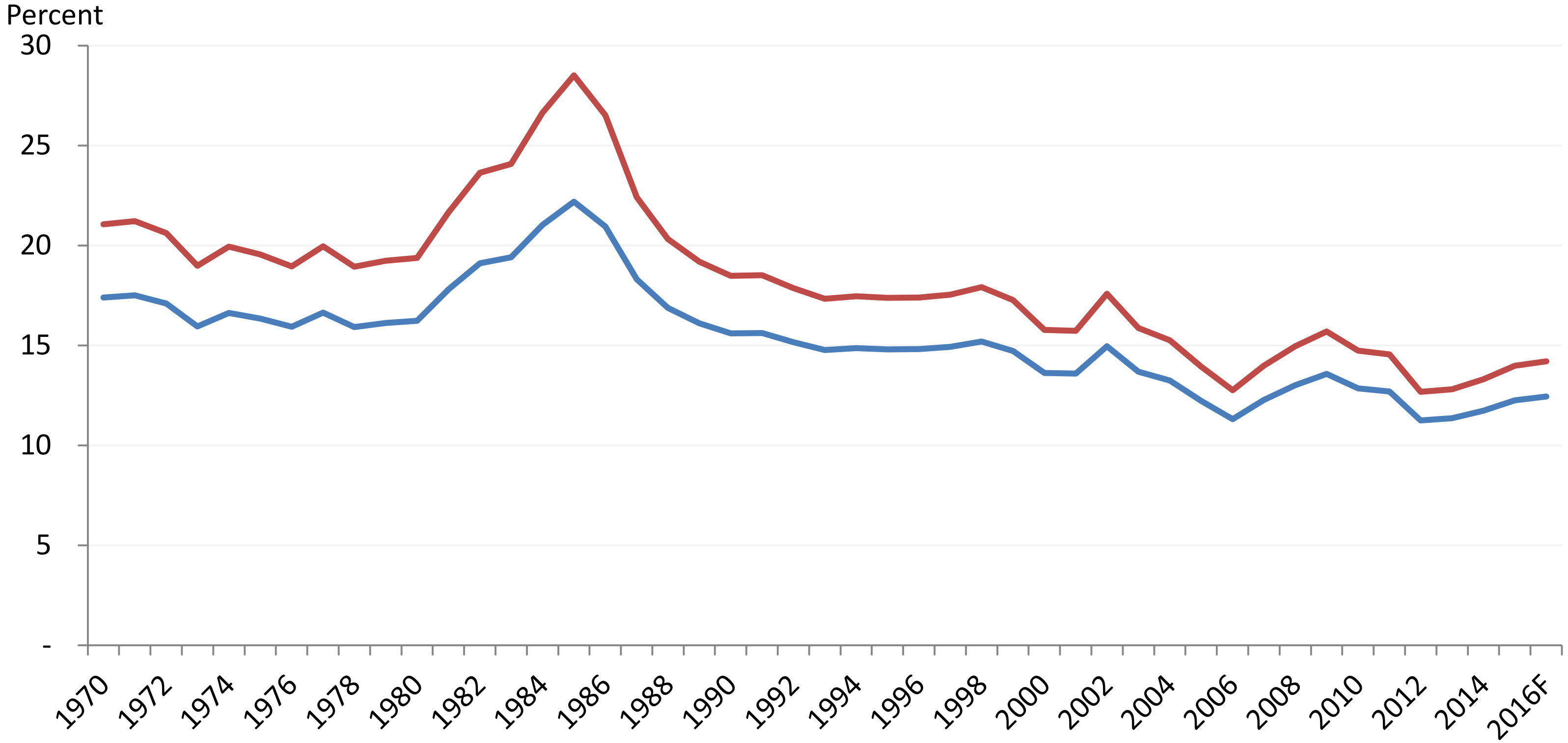
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of August 30, 2016.

However, interest rates farmers face are much different than in the 1980's.

	1981	2016
Real estate	9.4%	4.2%
Nonreal estate	13.3%	4.6%

$$Interest\ rate_t = \frac{Interest\ expense_t}{(Debt_t + Debt_{t-1})/2}$$

Farm sector **debt-to-asset** and **debt-to-equity** ratios expected to rise slightly in 2016



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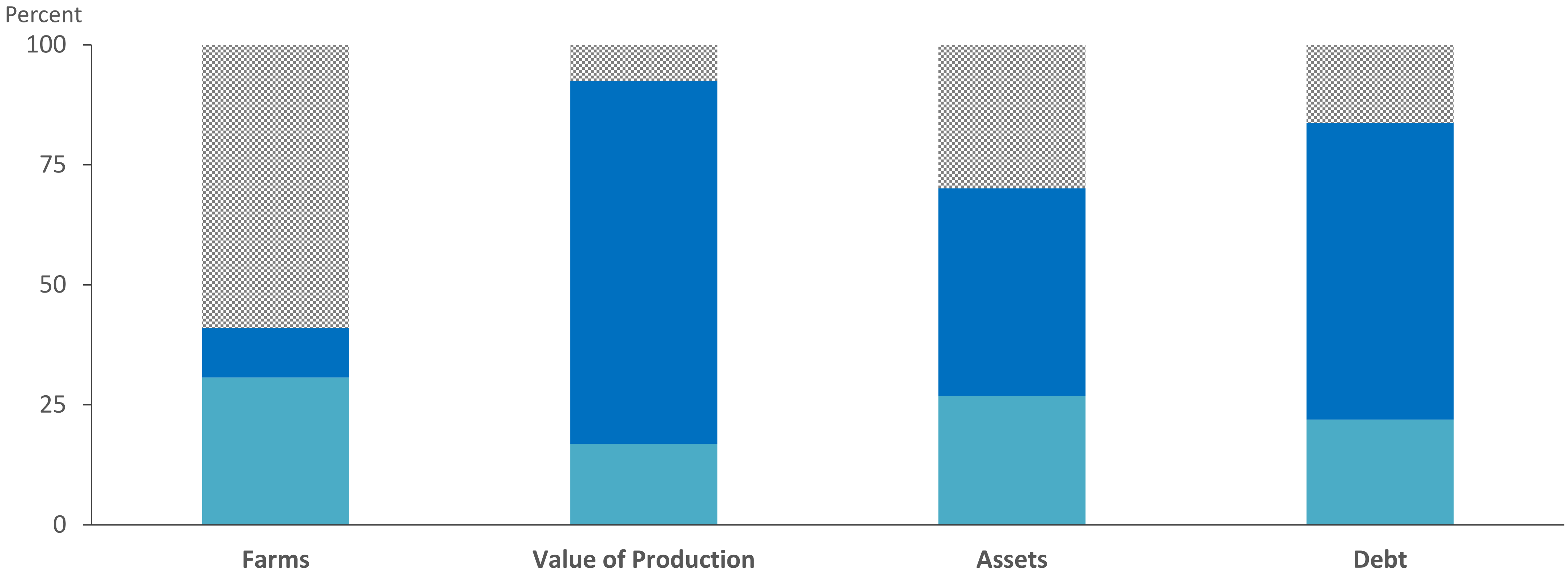
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics
Data as of August 30, 2016

Debt-to-asset (D/A) and **debt-to-equity (D/E)** are solvency ratios. Higher ratios indicate higher likelihood of default and decreased ability to overcome adverse financial events.

For the fourth straight year, both farm sector **D/A** and **D/E** ratios are forecast to rise, but remain low by historical standards (since 1970).

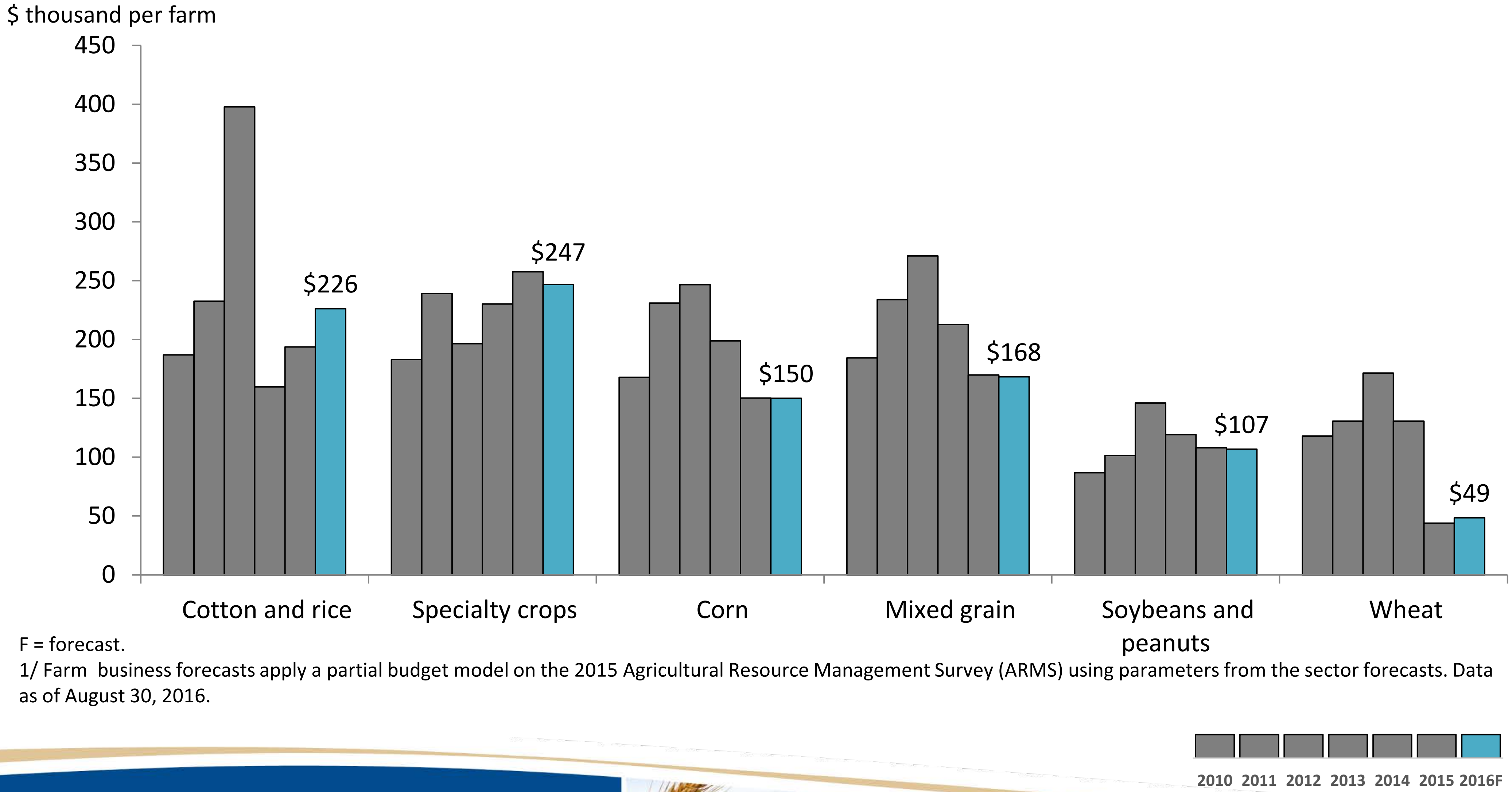
Farm businesses account for 41% of farms, but over 90% of value of production



	Farm Businesses	
Residence	**Intermediate**	**Commercial**
Operators report they are retired or have a major occupation other than farming.	*Gross cash farm income less than $350,000 and operators report farming as their major occupation.*	*Gross cash farm income greater than $350,000 or farms organized as nonfamily corporations or cooperatives.*

Source: 2014 Agricultural Resource Management Survey (ARMS)

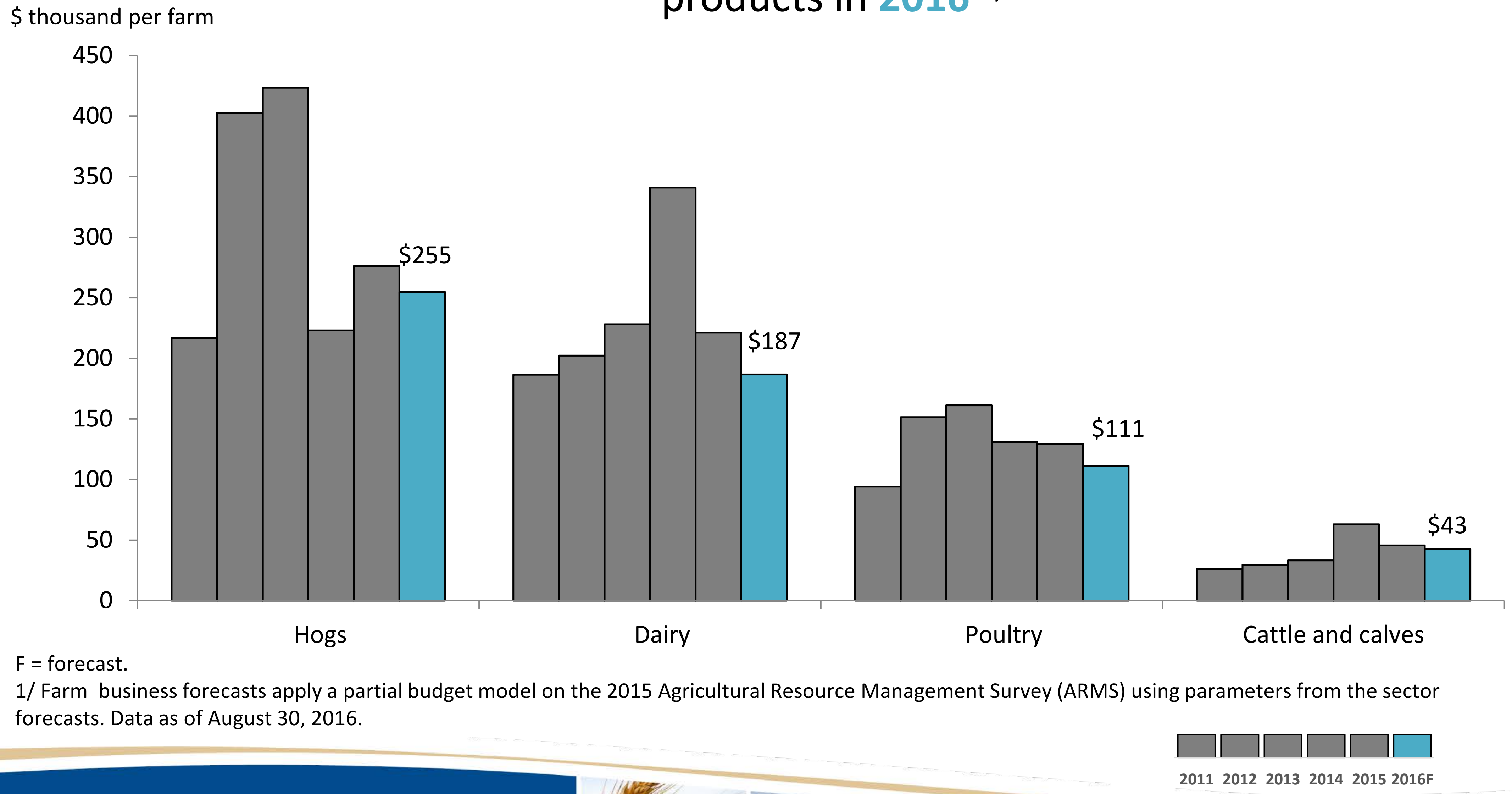
Average net cash farm income flat or down for most crop farm businesses except cotton, rice, and wheat in 2016 1/



F = forecast.

1/ Farm business forecasts apply a partial budget model on the 2015 Agricultural Resource Management Survey (ARMS) using parameters from the sector forecasts. Data as of August 30, 2016.

Average net cash income expected to fall for most farm businesses specializing in animals and products in 2016 1/



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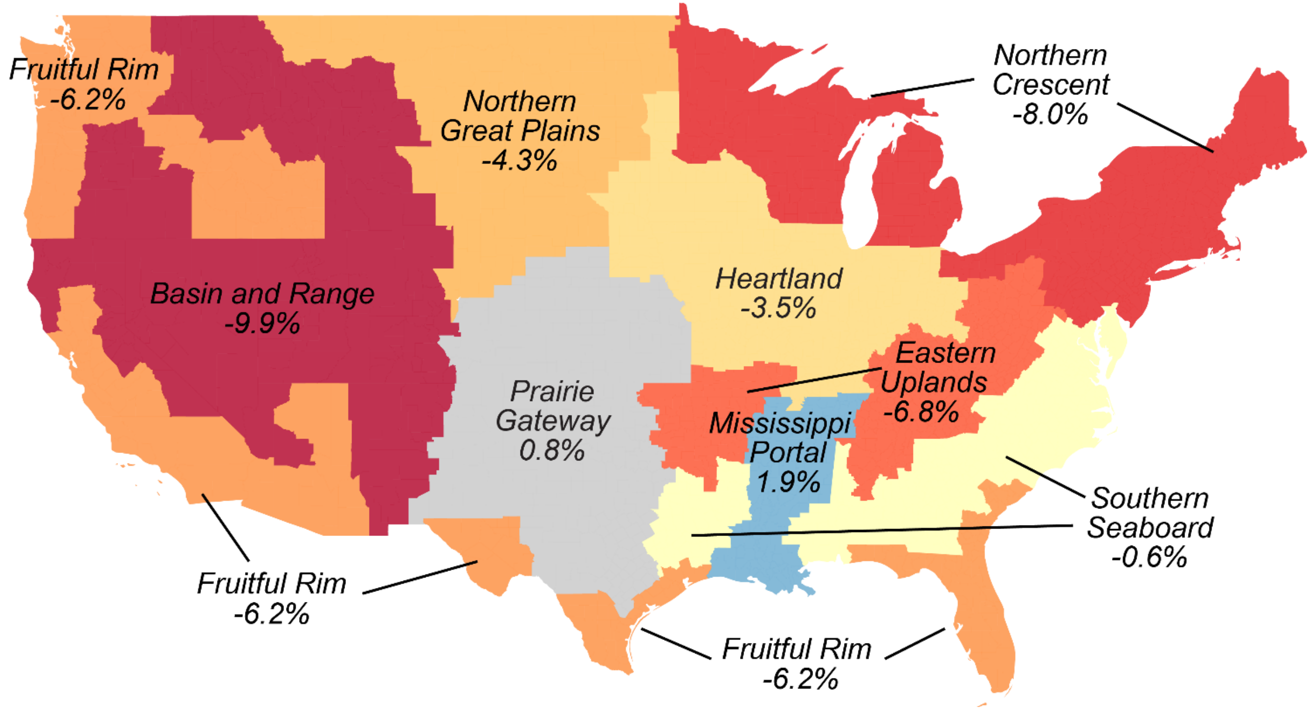
2016 net cash farm income regional impacts are mixed for farm businesses



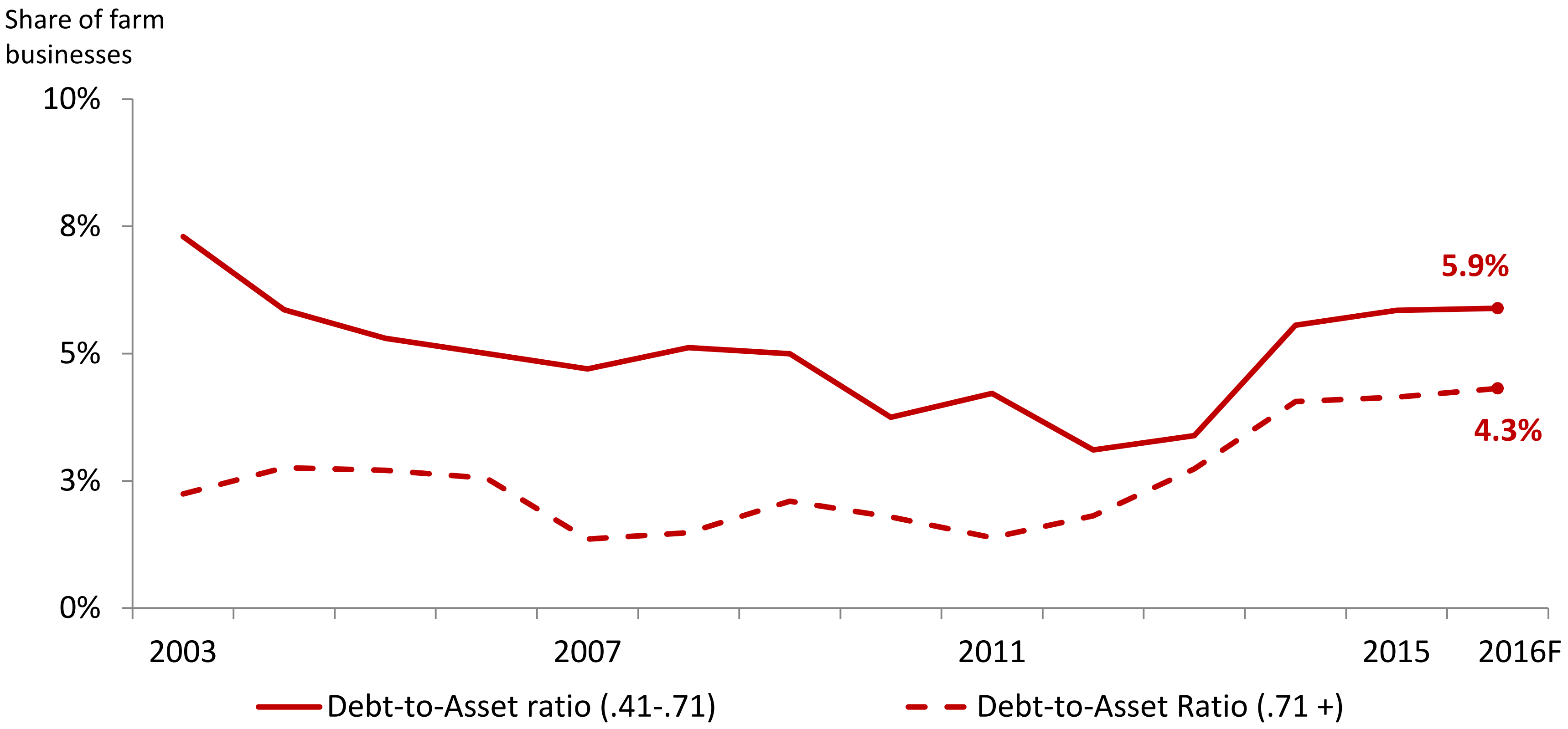
The partial budget forecast model is based on the 2015 Agricultural Resource Management Survey (ARMS) using parameters from the sector forecasts. The model is static and does not account for changes in crop rotation, weather, and other location production impacts that occurred after the base year. Data as of August 30, 2016.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Distribution of regional NCFI impacts follows forecast impact of production patterns.

Strength in rice and cotton receipts drive cash income impacts in **Mississippi Portal**

Dairy's forecast drives **Northern Crescent** and **Fruitful Rim** cash incomes lower.

More than 90 percent of **crop** farm businesses have a D/A ratio below the 0.4 threshold in 2016

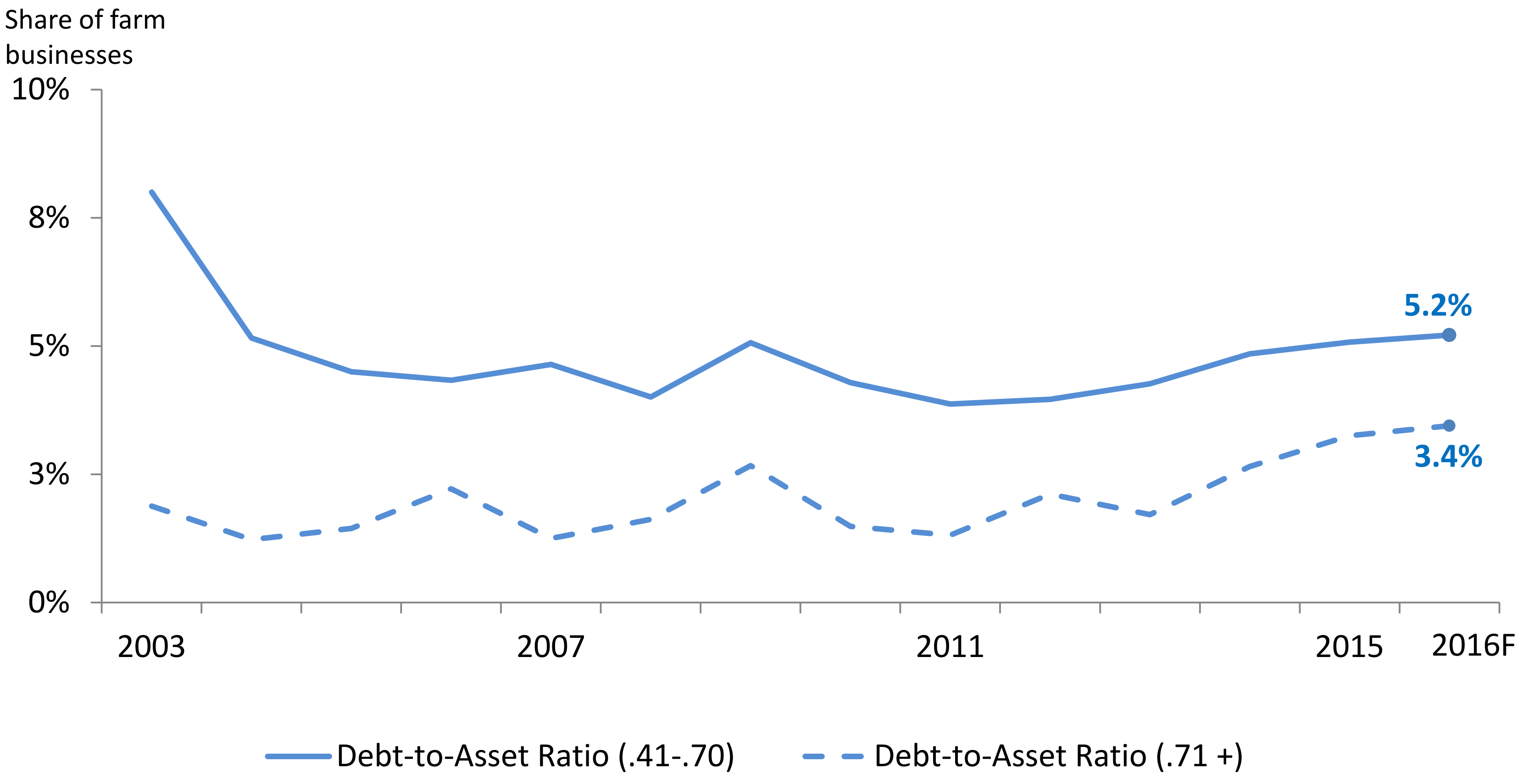


Highly leveraged **crop** farm businesses forecast at 5.9% of total businesses, trending up since 2011.

Extremely leveraged **crop** farm businesses (debt-to-asset ratio above 0.71) expected to remain stable at 4.3%.

The partial budget forecast model is based on the 2015 Agricultural Resource Management Survey (ARMS) using parameters from the sector forecasts. The model is static and does not account for changes in crop rotation, weather, and other location production impacts that occurred after the base year. Data as of August 30, 2016.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Share of highly leveraged and extremely leveraged livestock farm businesses set to rise slightly



Highly leveraged livestock farm businesses forecast at 5.2% of total businesses for 2016.

Extremely leveraged livestock farm businesses (debt-to-asset ratio above 0.71) expected to remain stable at 3.4%.

The partial budget forecast model is based on the 2015 Agricultural Resource Management Survey (ARMS) using parameters from the sector forecasts. The model is static and does not account for changes in crop rotation, weather, and other location production impacts that occurred after the base year. Data as of August 30, 2016.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Questions?

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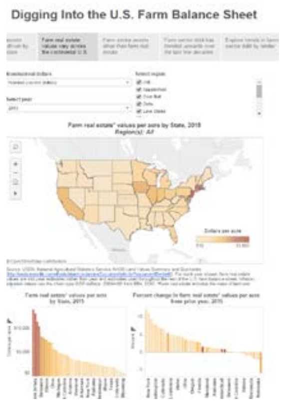
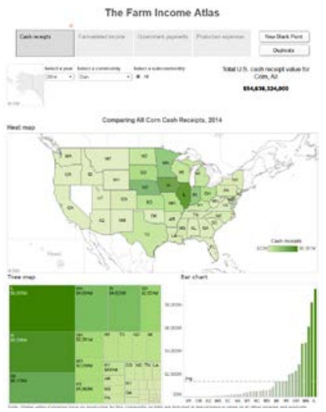


Digging into the Farm Balance Sheet



Farm Income Atlas