



United States Department of Agriculture

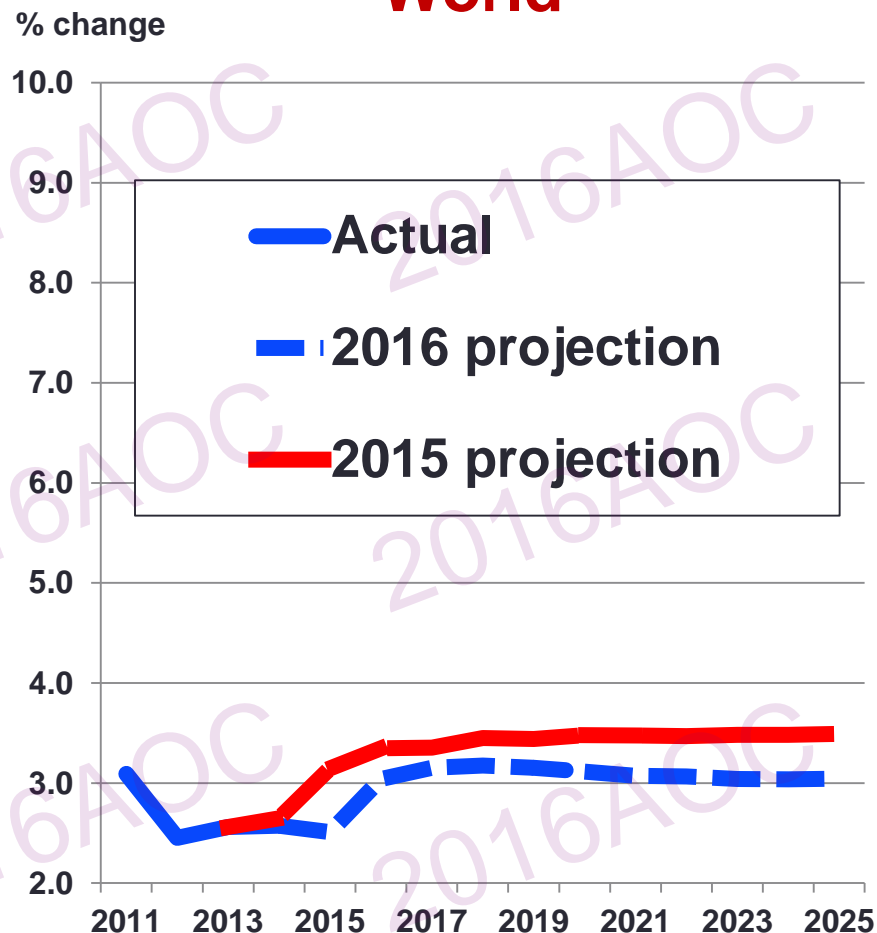
OUTLOOK FOR US AGRICULTURE

Robert Johansson
Chief Economist

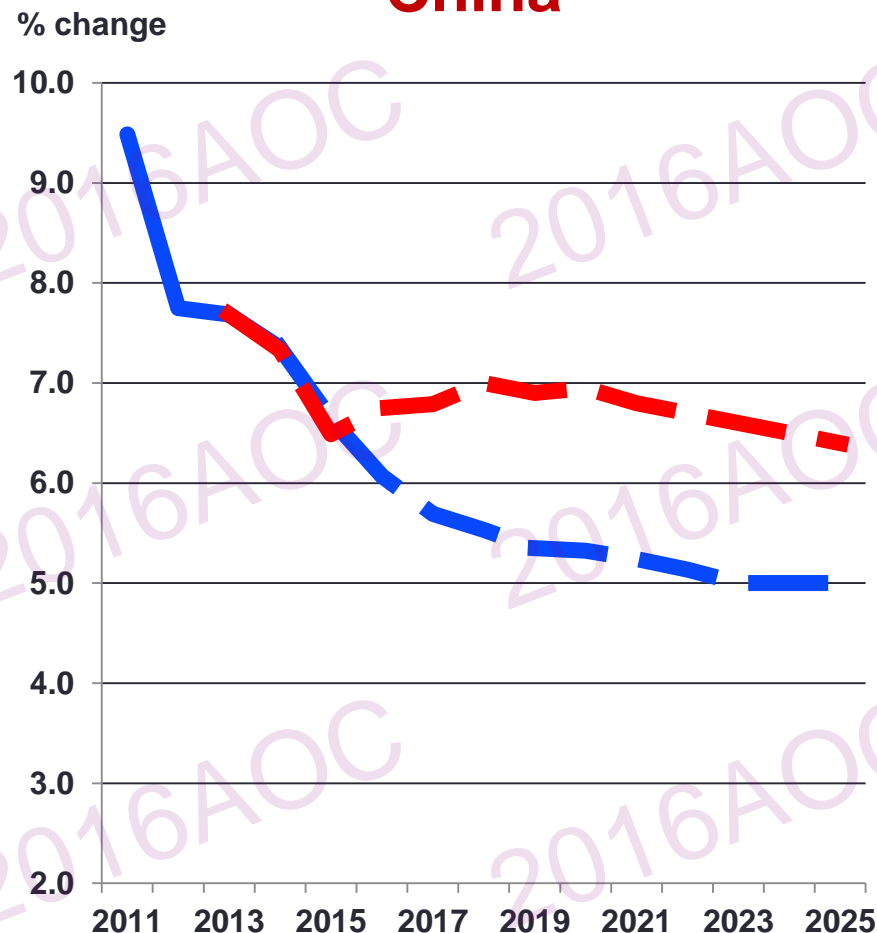
Beijing, China
April 2016

World GDP growth slows, compared to last year's projections, most notably in China

World



China

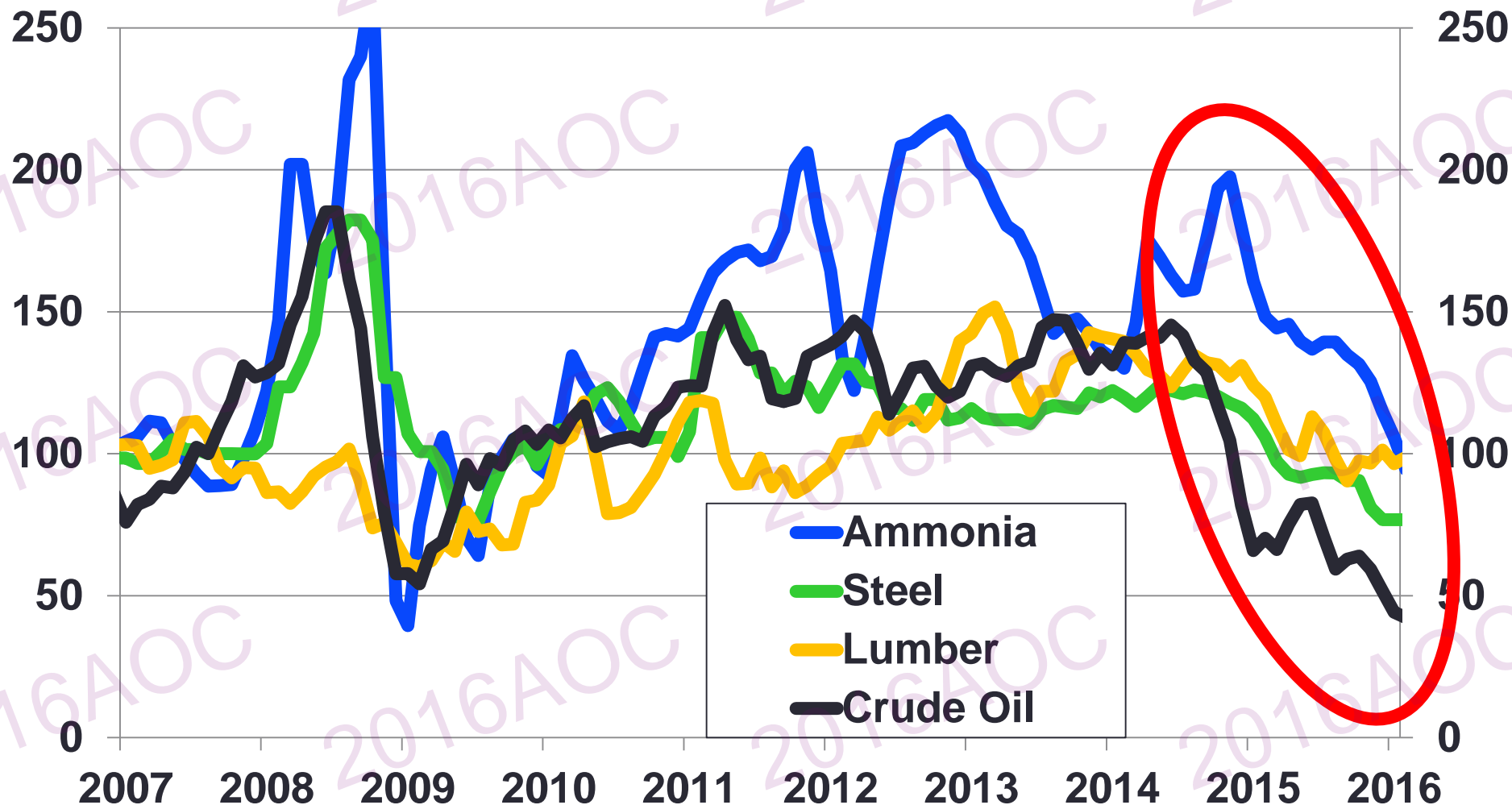


Source: USDA.

Falling prices for primary inputs

2007=100

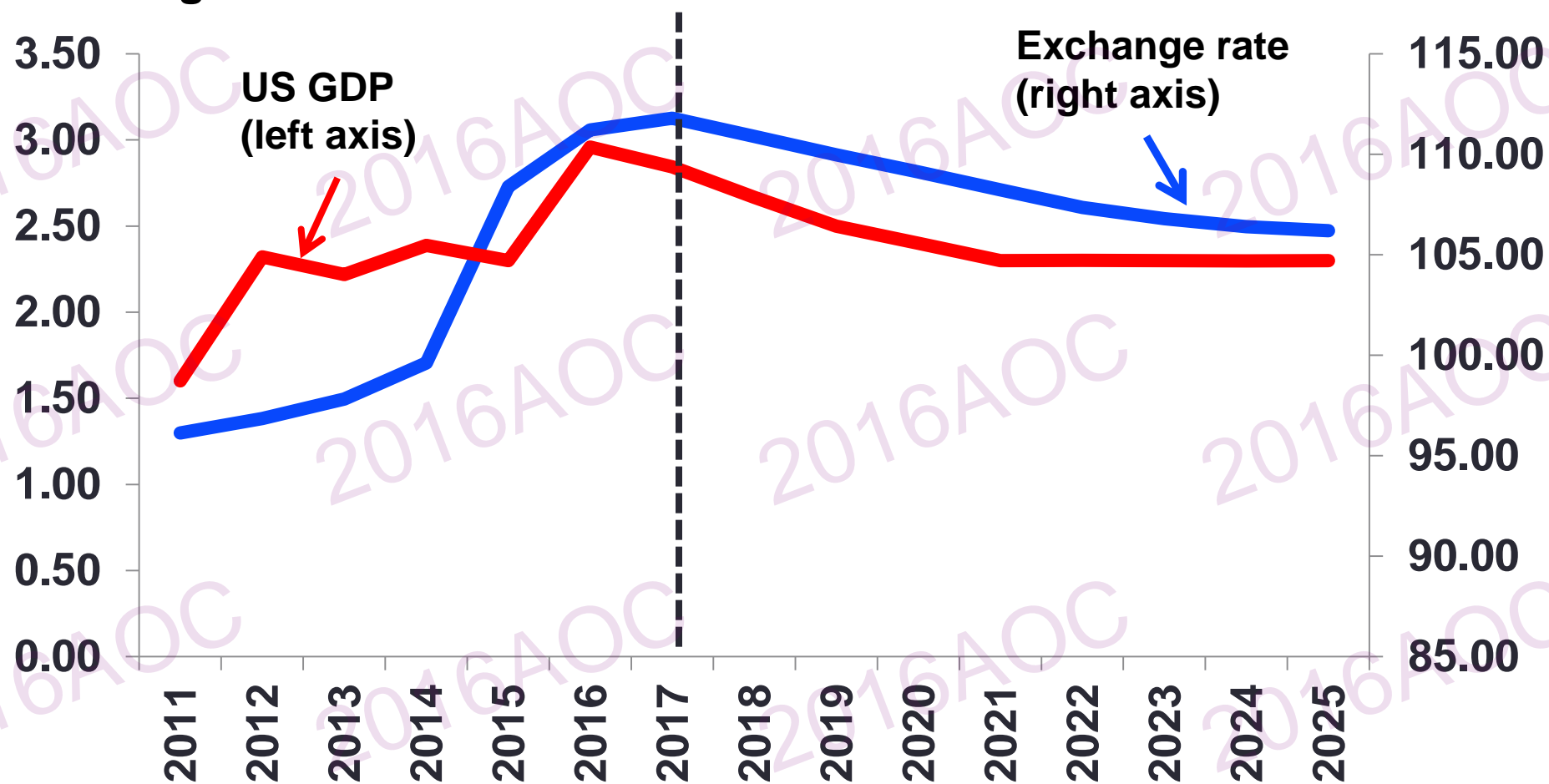
2007=100



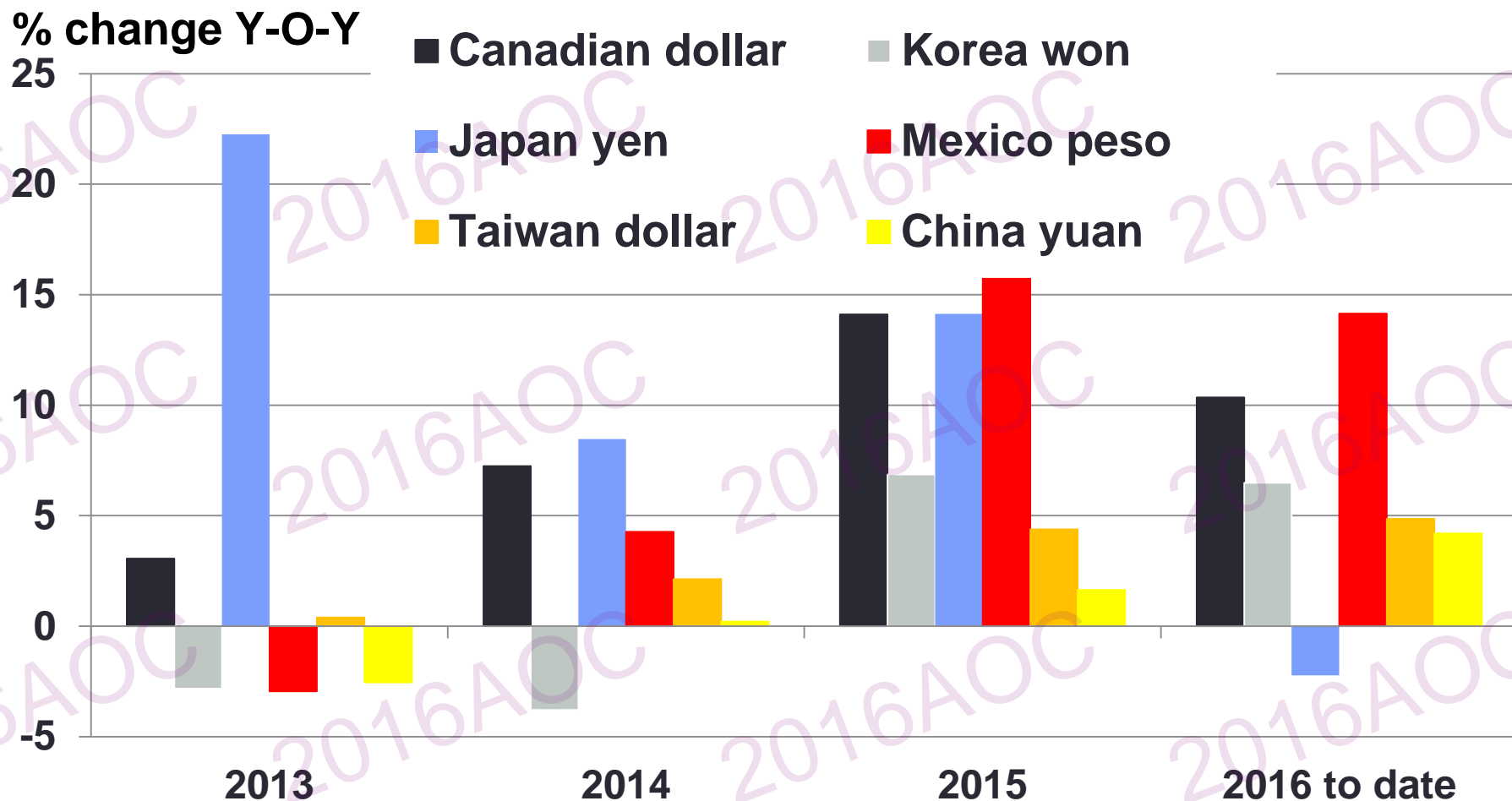
U.S. GDP growth and real ag trade-weighted exchange rate up through 2017

% change

2010 = 100

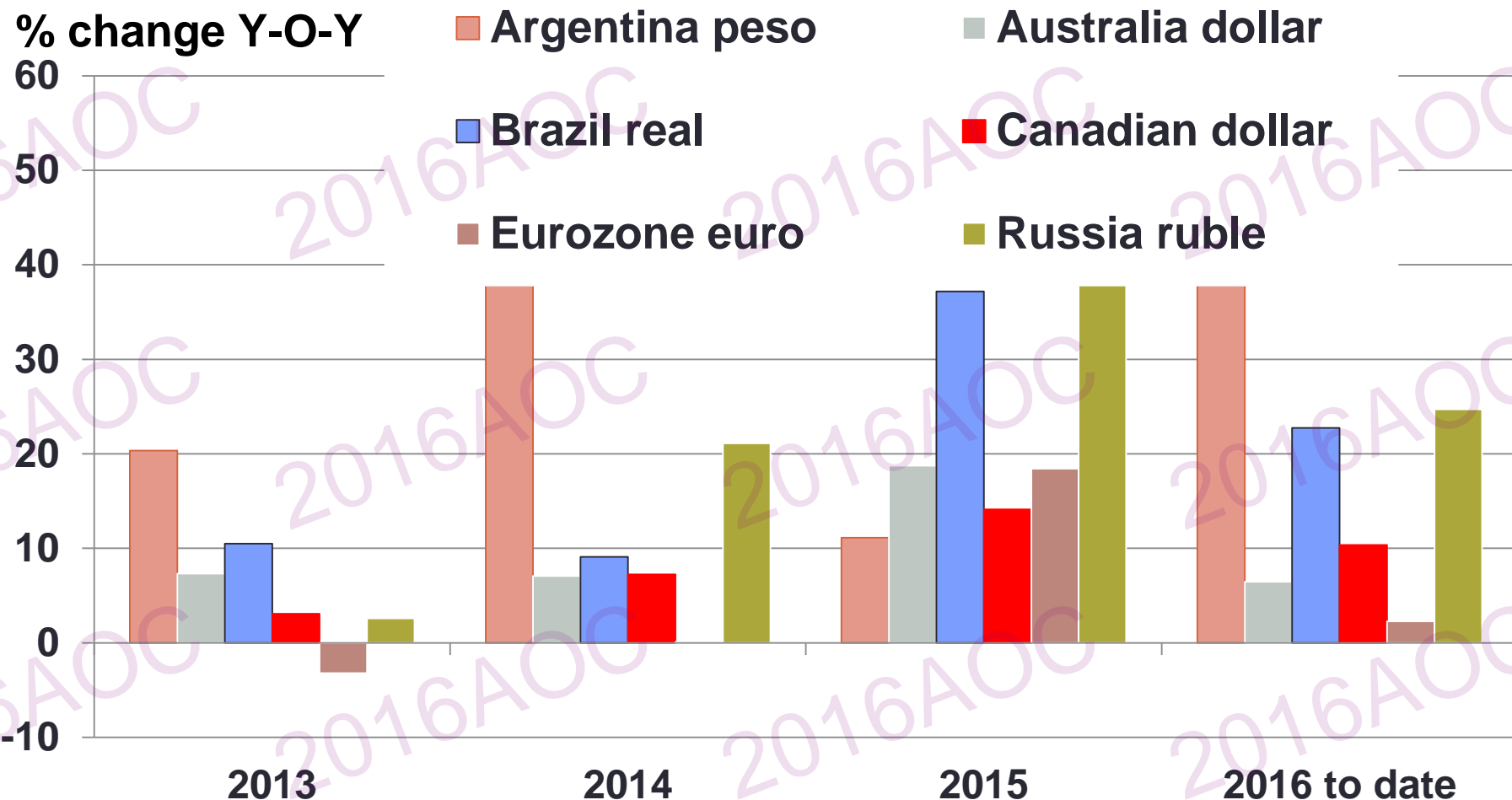


Dollar has appreciated against currencies of its customers, especially in 2015 and early 2016



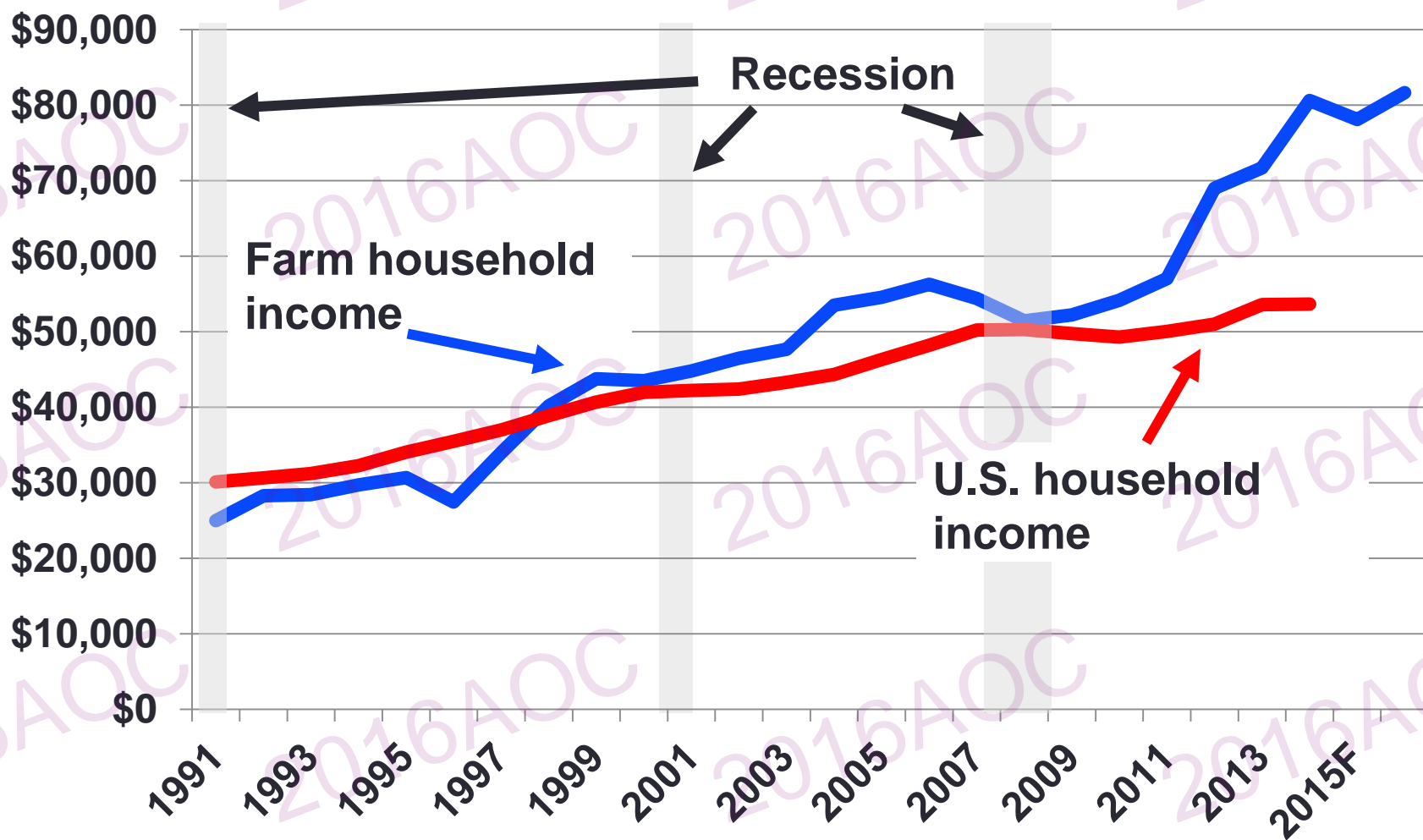
Source: Eikon/Datastream. Positive change indicates U.S. dollar appreciation, annual averages.

Dollar has appreciated against competitor currencies, 2014-2016

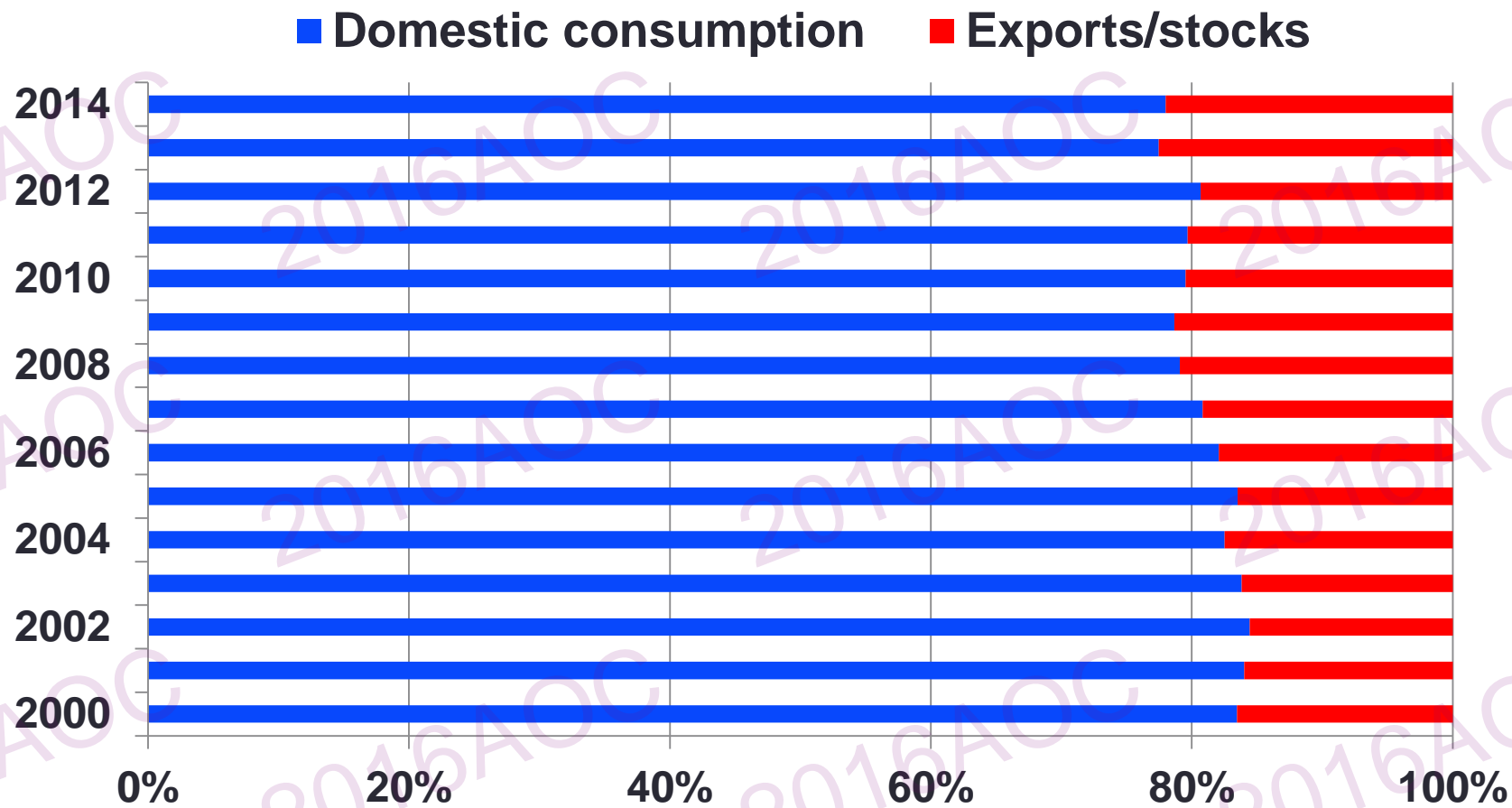


Source: Eikon/Datastream. Positive change indicates U.S. dollar appreciation, annual averages.

Median household income growth rises more rapidly for farm households



Domestic consumption of agricultural products

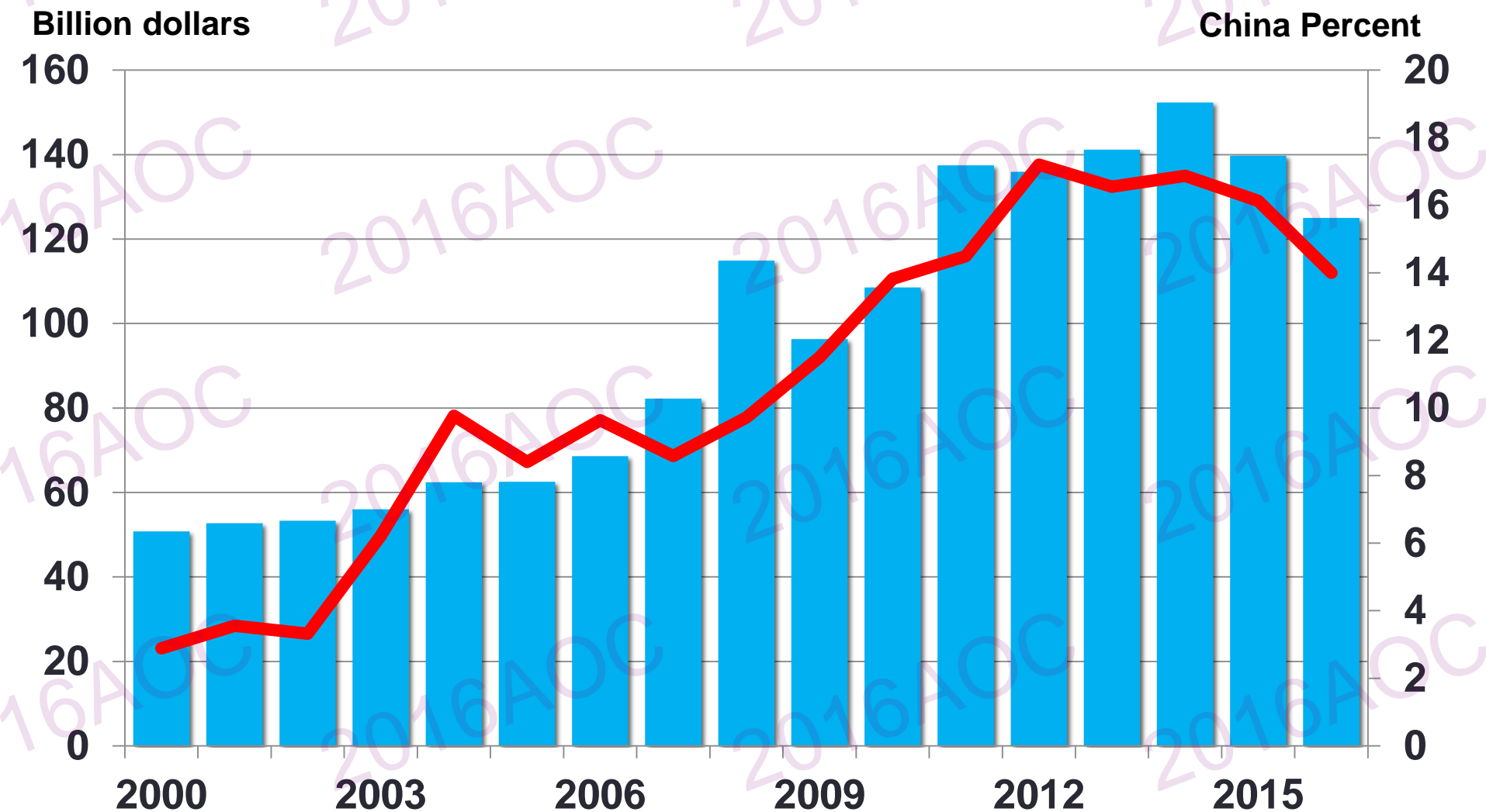


Source: OECD Producer and Consumer Support Estimates database, using USDA production and consumption data.



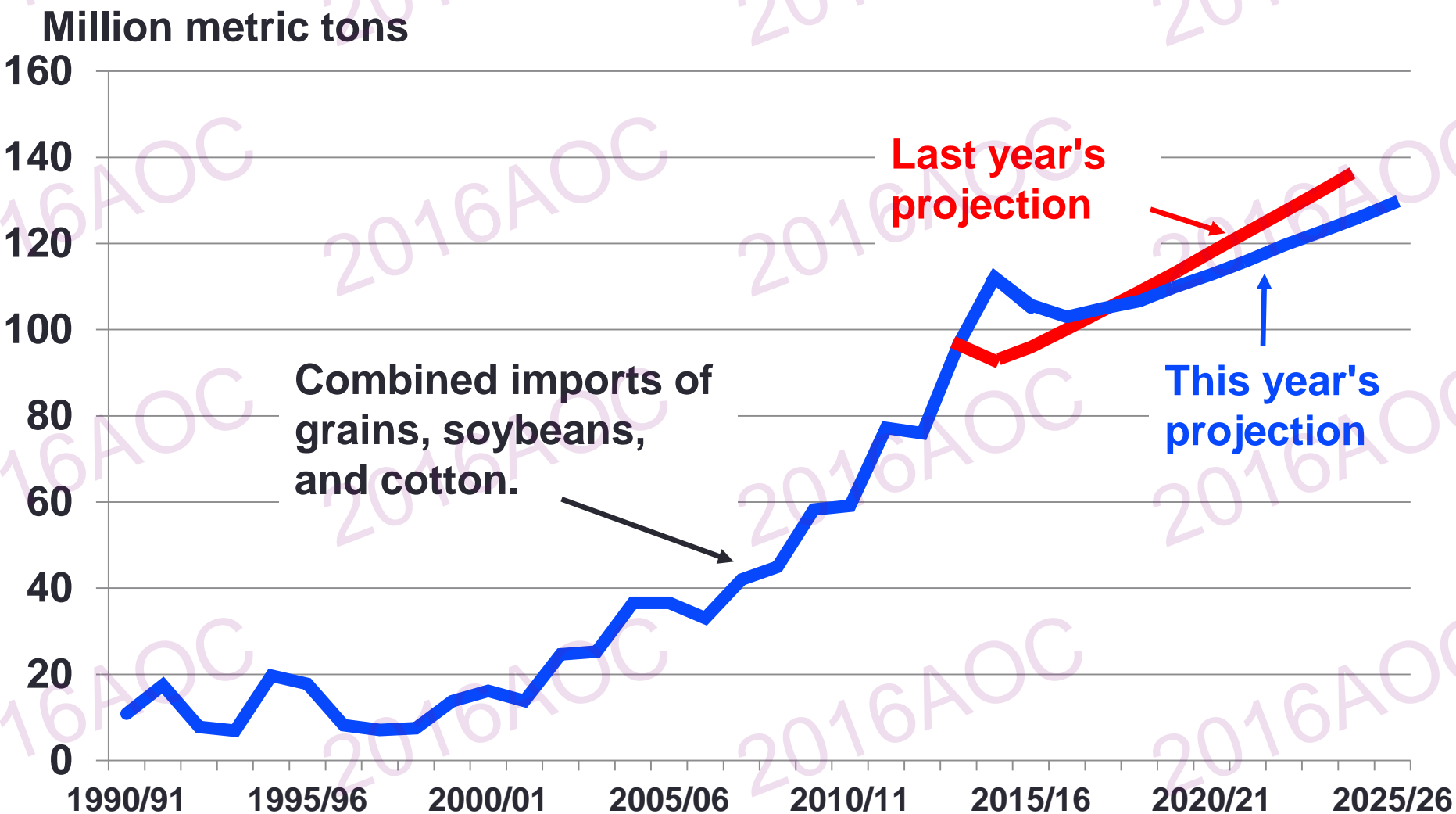
Ag Trade Outlook

Decline in agricultural exports expected in 2016 --- China share falls in value



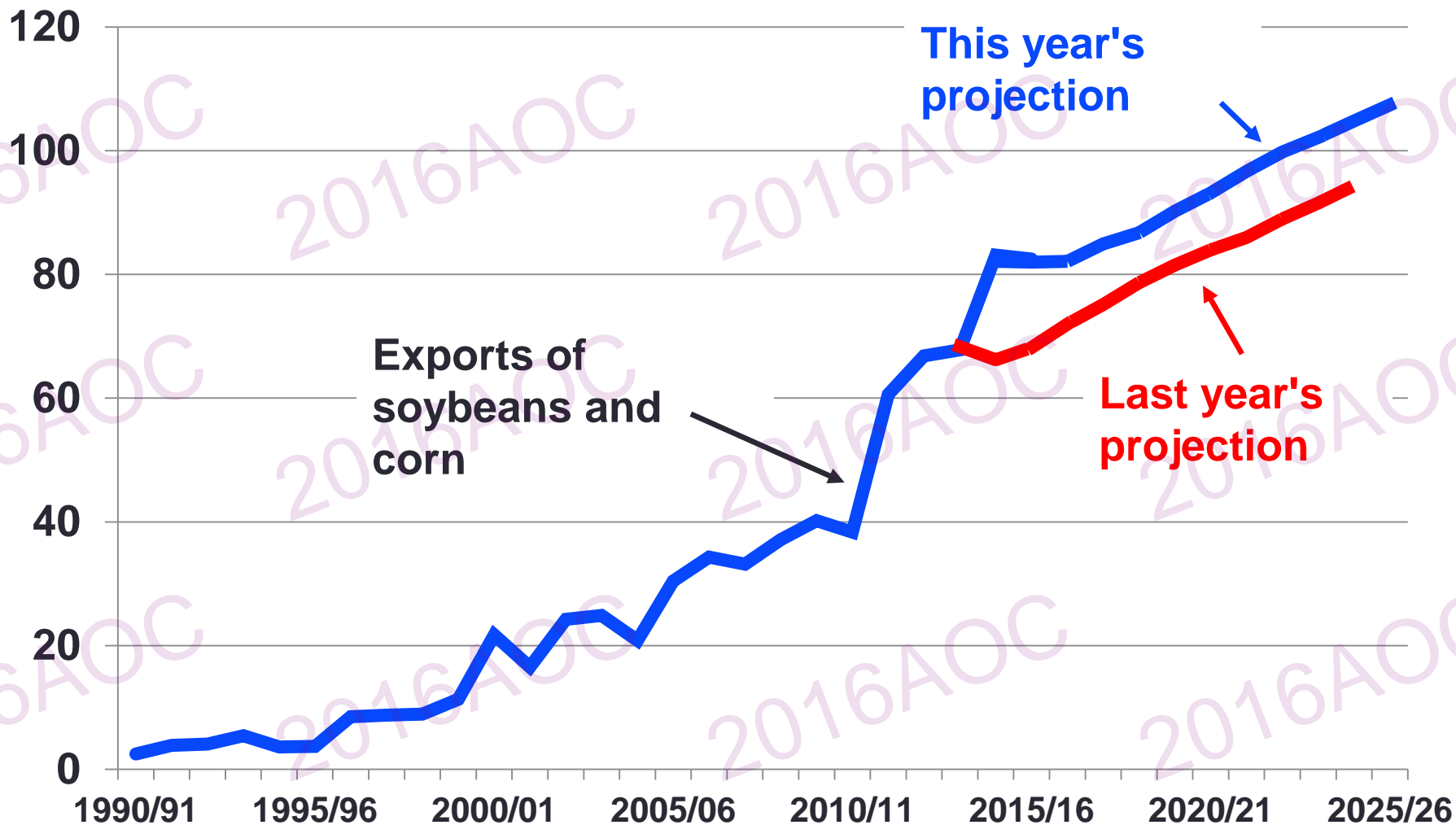
Source: USDA. Data are fiscal year.

China imports to rise, but more slowly than last year: soybeans up, grains down, cotton down



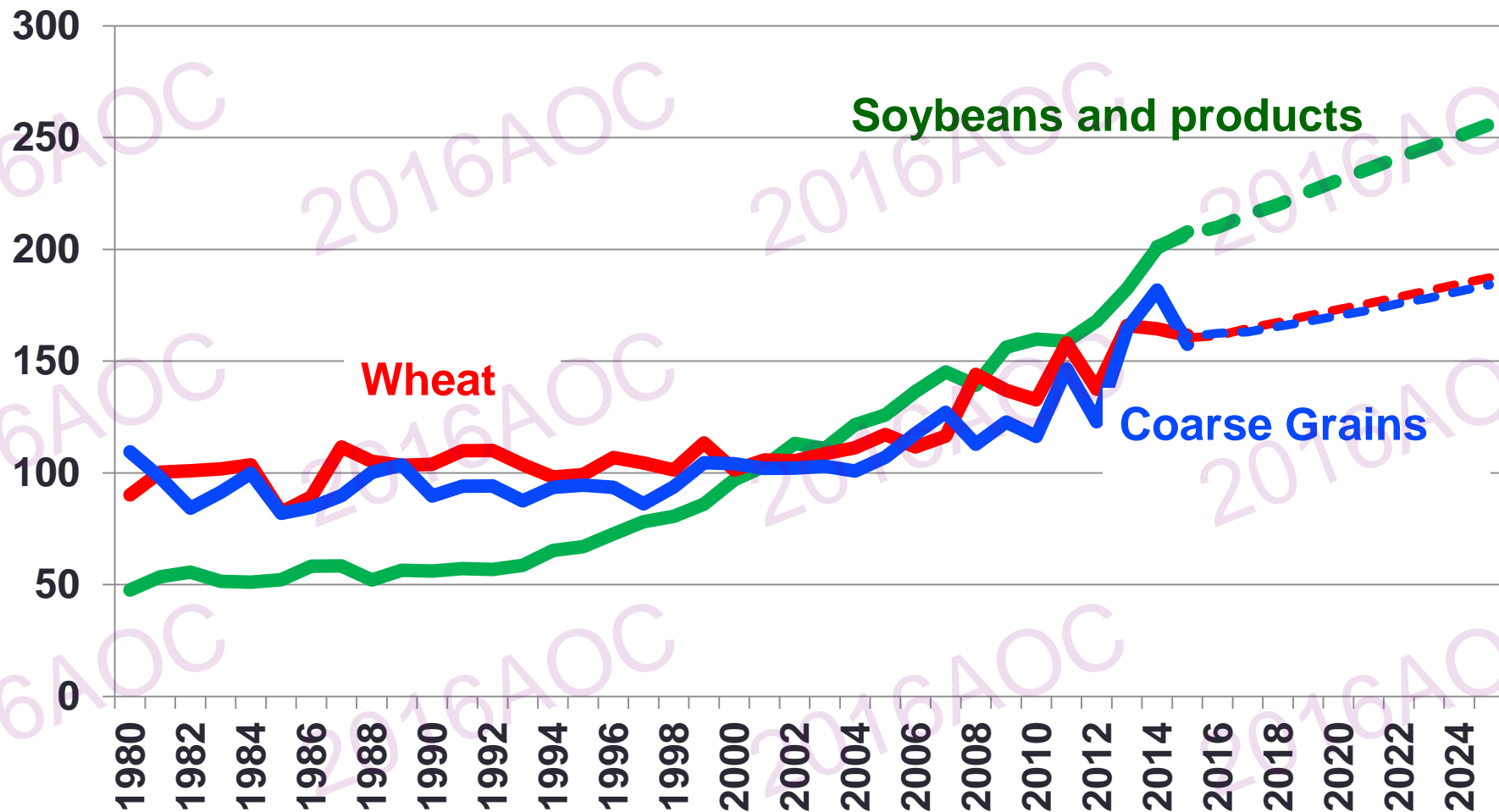
Projections for Brazil's exports for corn and soybeans both increase from last year

Million metric tons



Global trade growth is expected to continue

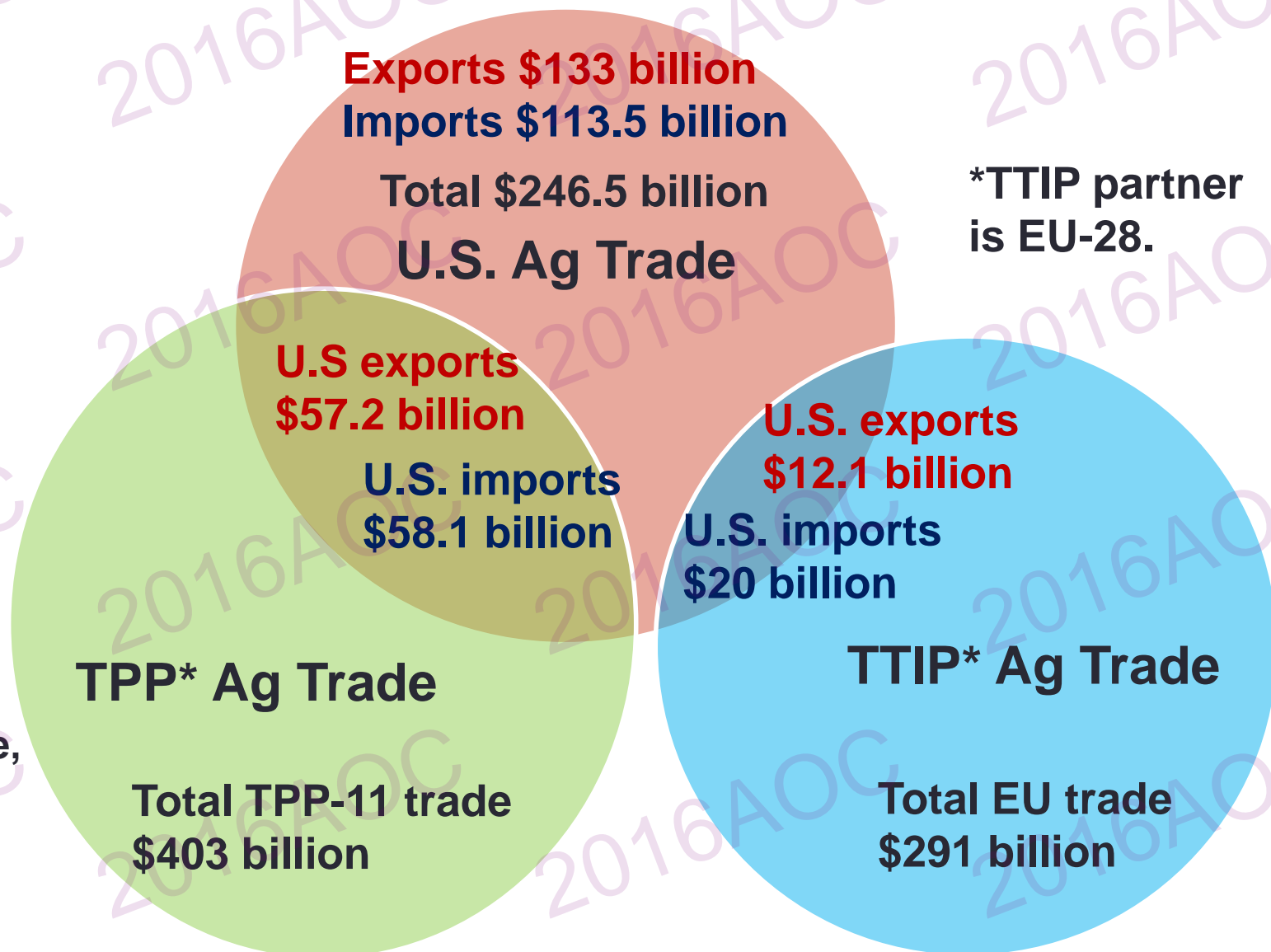
Million metric tons



Expanding U.S. ag exports through FTAs

***TPP**
partners
include
Australia,
Brunei,
Canada,
Chile,
Japan,
Malaysia,
Mexico,
New
Zealand,
Peru,
Singapore,
and
Vietnam.

***TTIP partner
is EU-28.**

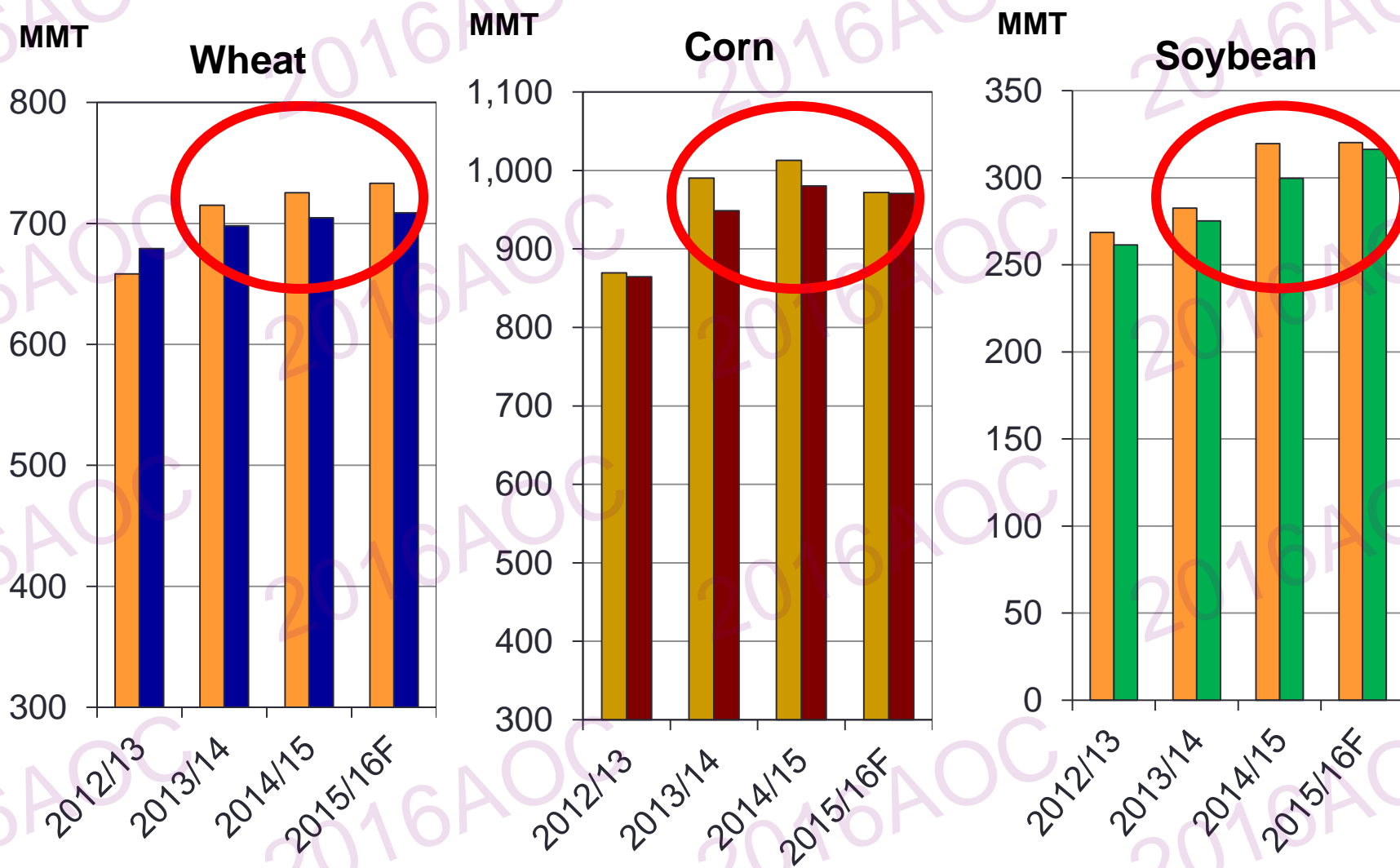


Source: USDA, European Commission. CY2014/2015 trade data.

Outlook for Crops



Global production outstripping consumption



Source: USDA-OCE.

Global ending stocks edge up

Davs of Use

Davs of Use

400

400

350

350

300

300

250

250

200

200

150

150

100

100

50

50

0

0

1985

1990

1995

2000

2005

2010

2015

2020

Cotton

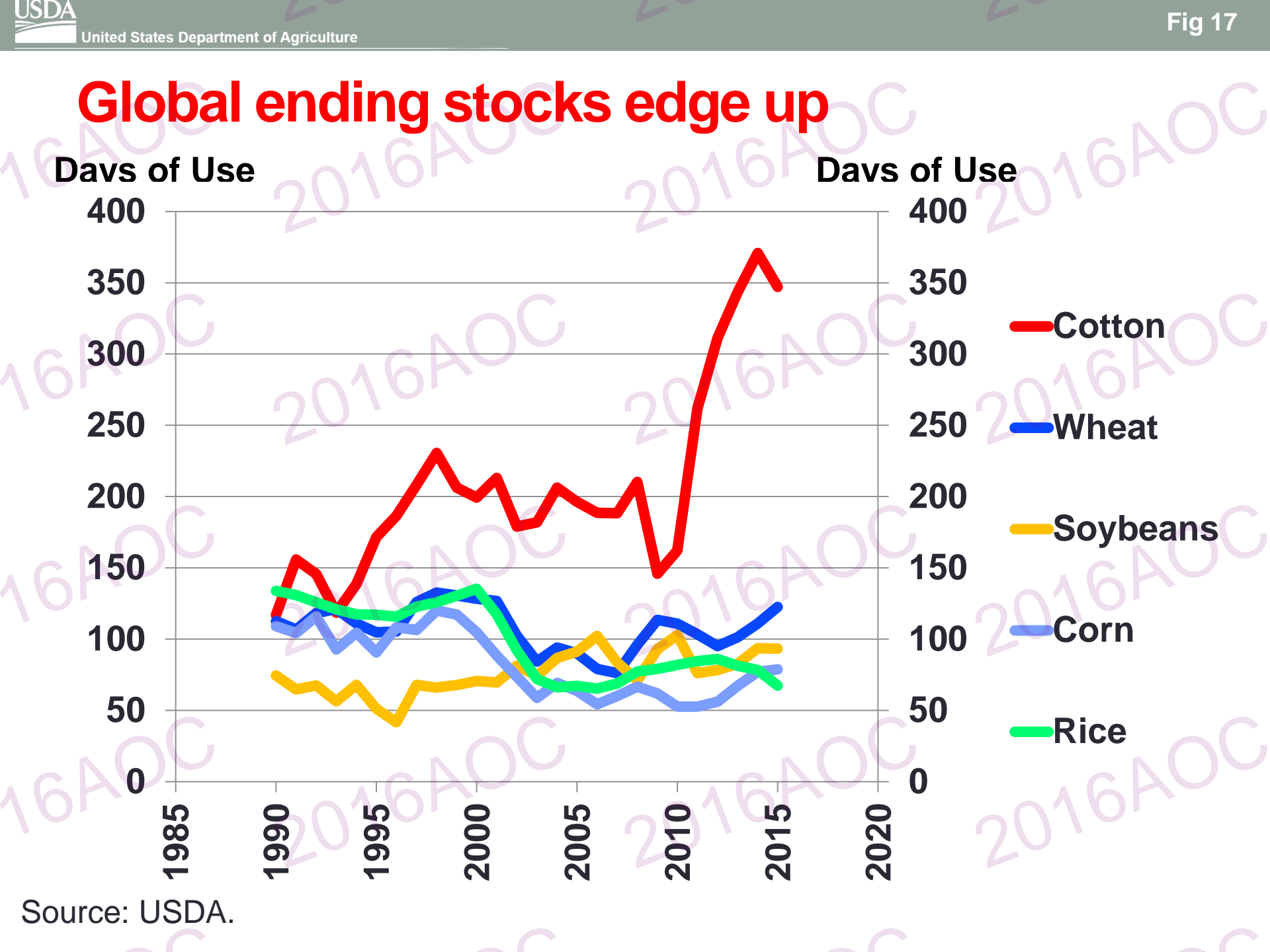
Wheat

Soybeans

Corn

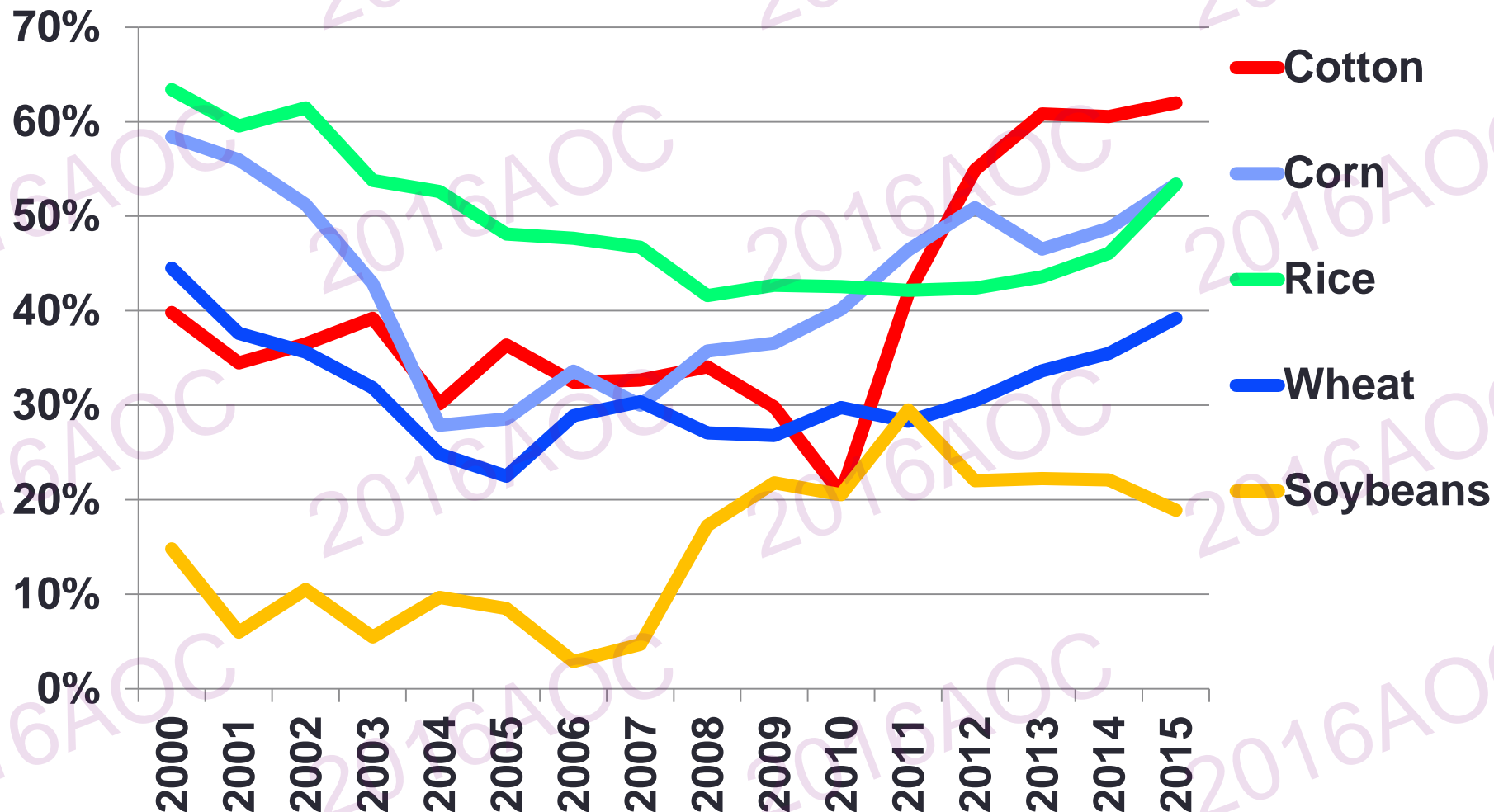
Rice

Source: USDA.



China policies build stocks

Percent of Global Stocks



Source: USDA, PSD database

Corn, wheat, and soybean prices soften, but still above 2000-2003 average

Crop	Ave 2000-03	2011	2012	2013	2014	2015F	2016F
Wheat	3.1	7.2	7.8	6.9	6.0	5.0	4.20
Corn	2.1	6.2	6.9	4.5	3.7	3.6	3.45
Soybeans	5.5	12.5	14.4	13.0	10.1	8.8	8.50
Upland Cotton	46.5	88.3	72.5	77.9	61.3	59.5	58.0
All Rice	5.6	14.5	15.1	16.3	13.3	12.9	12.90

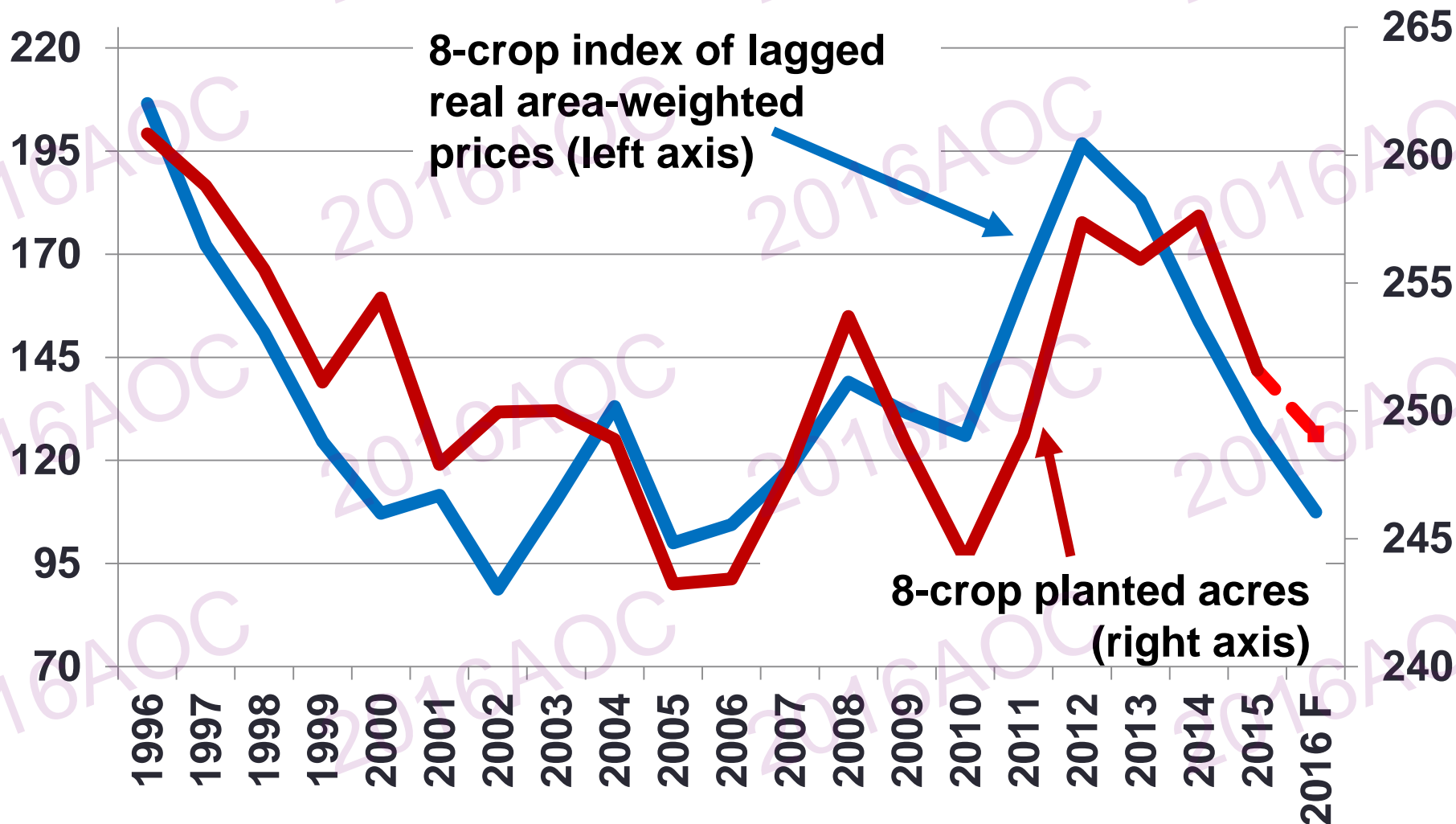
Source: USDA-NASS, OCE.

Red denotes record high.

Last year's prices point towards a fall in area

Price Index (2004 = 100)

Million Acres Planted



Cropland area expected to remain high in 2016, but down again from last year

Crop (mil. Acres)	2011	2012	2013	2014	2015	2016F	% change
Corn	91.9	97.3	95.4	90.6	88.0	93.9	6.4%
Soybeans	75.0	77.2	76.8	83.3	82.7	82.2	-0.5%
Wheat	54.3	55.3	56.2	56.8	54.6	49.6	-9.3%
All cotton	14.7	12.3	10.4	11.0	8.6	9.6	11.4%
M. feedgrains	10.4	12.6	14.6	12.9	15.1	13.1	-13.2%
Rice	2.7	2.7	2.5	3.0	2.6	3.0	17.2%
Total 8 crops	249.0	257.4	255.9	257.6	251.6	251.1	-0.2%
CRP	31.1	29.5	26.8	25.5	24.2	23.7	-2.1%
8 crops + CRP	280.2	286.9	282.8	283.2	275.8	274.8	-0.3%

Source: USDA-OCE. The 2016 forecasts are from *Prospective Plantings*, NASS.

¹All cotton, includes both upland and ELS cotton

Outlook for Livestock and Dairy



Beef, pork, and poultry production higher in 2016

Animal products	2011	2012	2013	2014	2015	2016F	% change
Billion Pounds							
Beef	26.2	25.9	25.7	24.3	23.7	24.6	3.8
Pork	22.8	23.3	23.2	22.8	24.5	25.0	2.2
Broilers	37.2	37.0	37.8	38.6	40.0	41.0	2.5
Total	92.8	93.0	93.3	92.2	94.6	97.4	2.9
Billion Pounds							
Milk	196.3	200.6	201.2	206.0	208.5	211.9	1.6

Source: USDA.

Data in red denote record levels.

Meat exports expected to increase

1000 MT

3,500

3,000

2,500

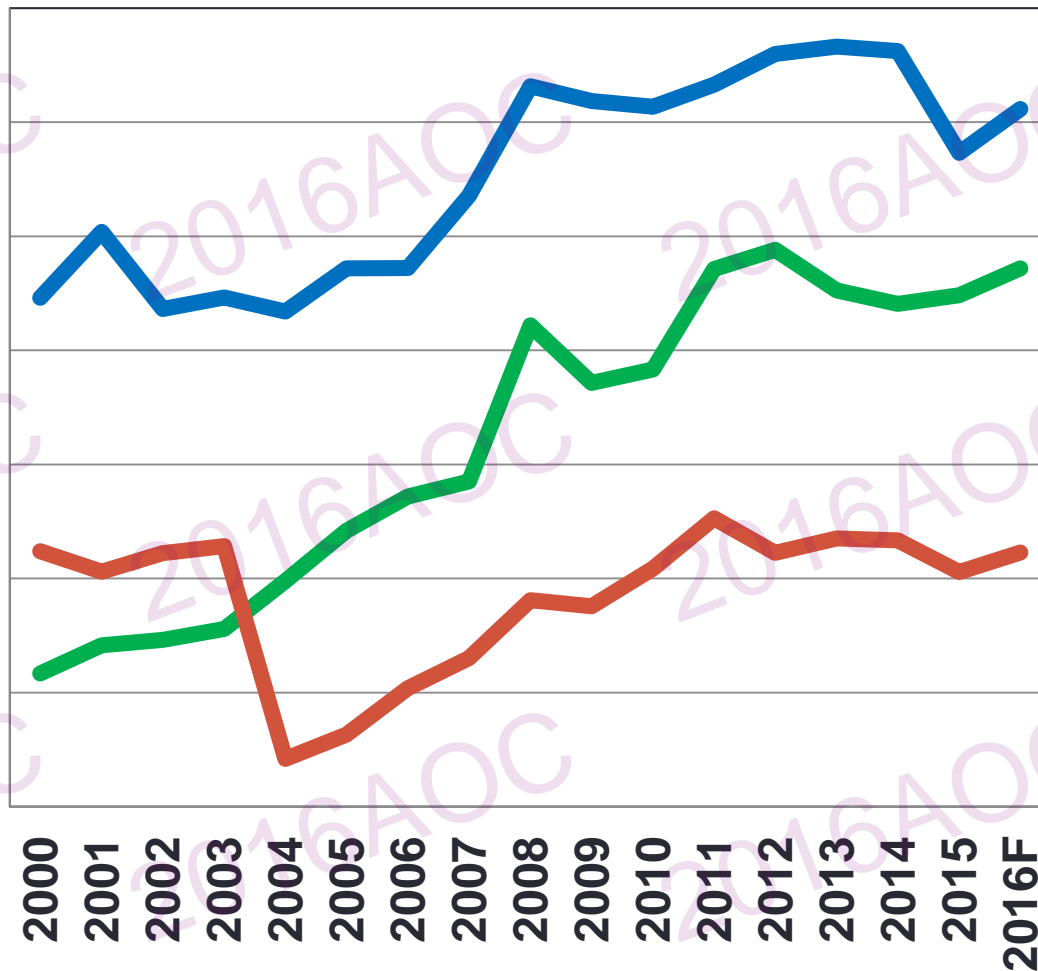
2,000

1,500

1,000

500

0



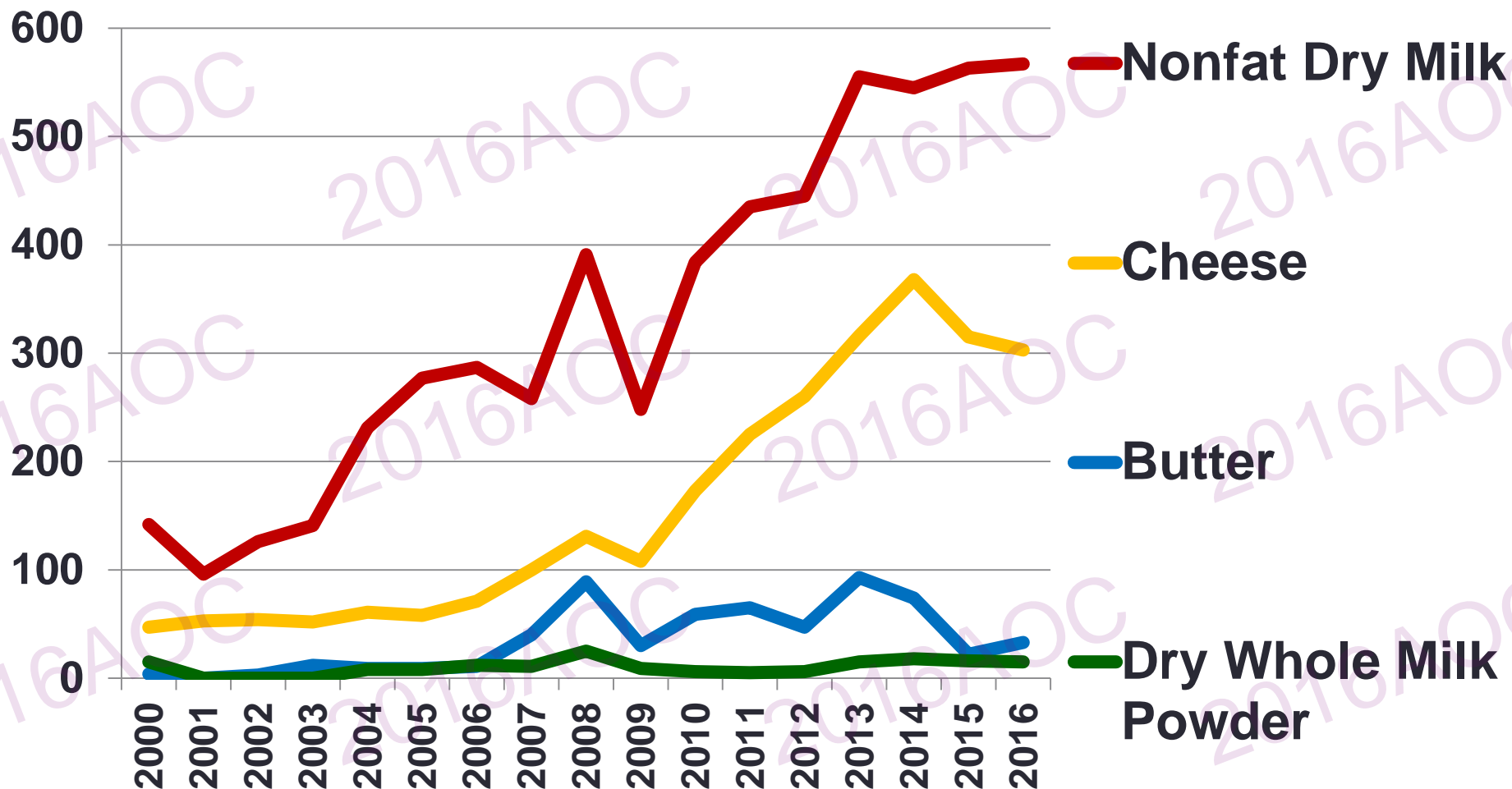
— Broilers

— Pork

— Beef and veal

Dairy exports reflect continued demand weakness and large global supplies

1000 MT



Cattle, Hog, dairy, and broiler prices expected to come down from 2015

Animal products	2011	2012	2013	2014	2015	2016F	% change
	Dollars per cwt						
Steers	114.7	122.9	125.9	154.6	148.1	137.3	-7.3
Hogs	66.1	60.9	64.1	76.0	50.2	47.3	-5.9
Broilers	79.9	86.6	99.7	104.9	90.5	87.5	-3.3
Milk	20.1	18.5	20.1	24.0	17.1	15.7	-8.4

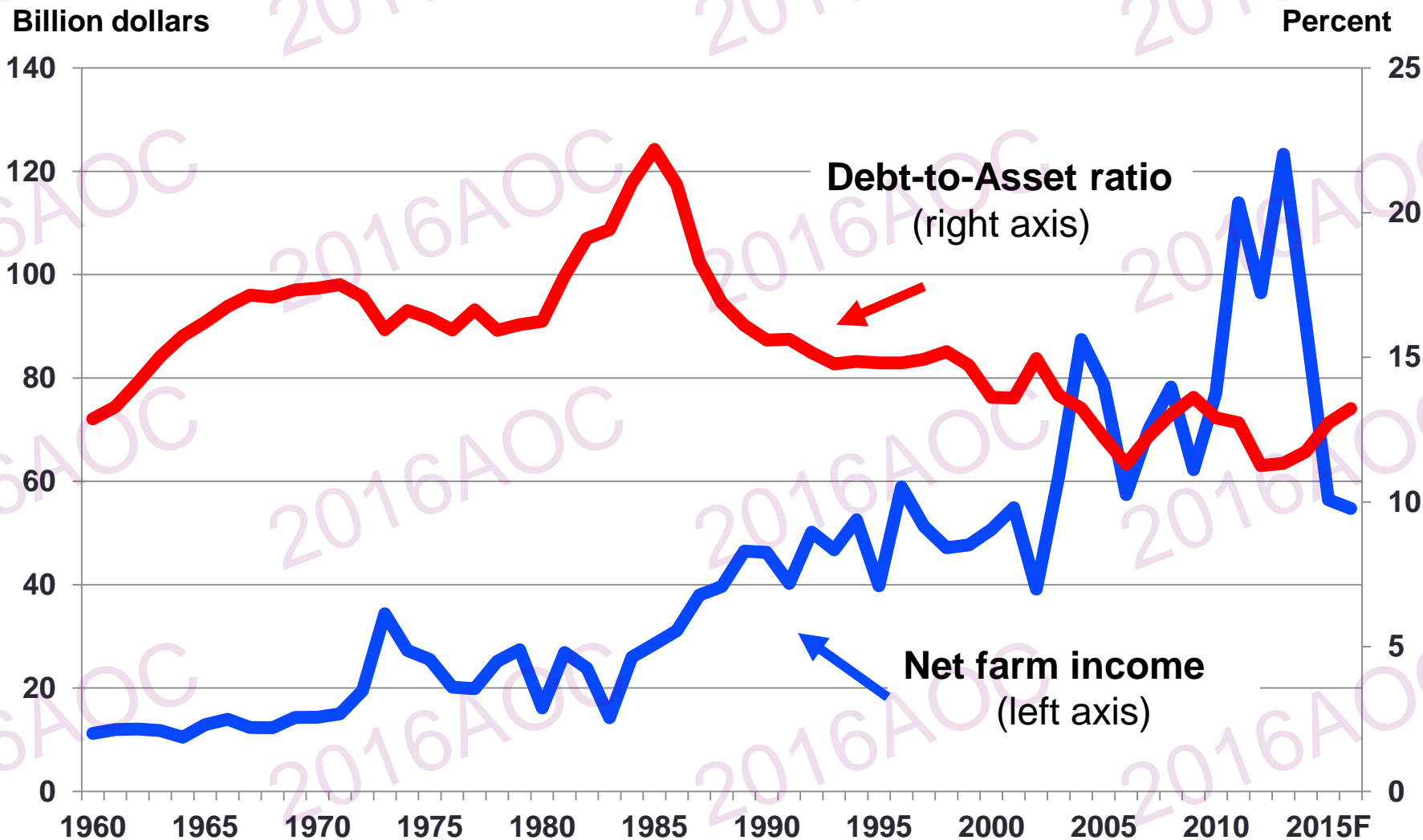
Source: USDA-OCE.

Prices in red denote record levels.

Outlook for the Farm Sector



Net farm income is down, but debt-to-asset ratio remains low



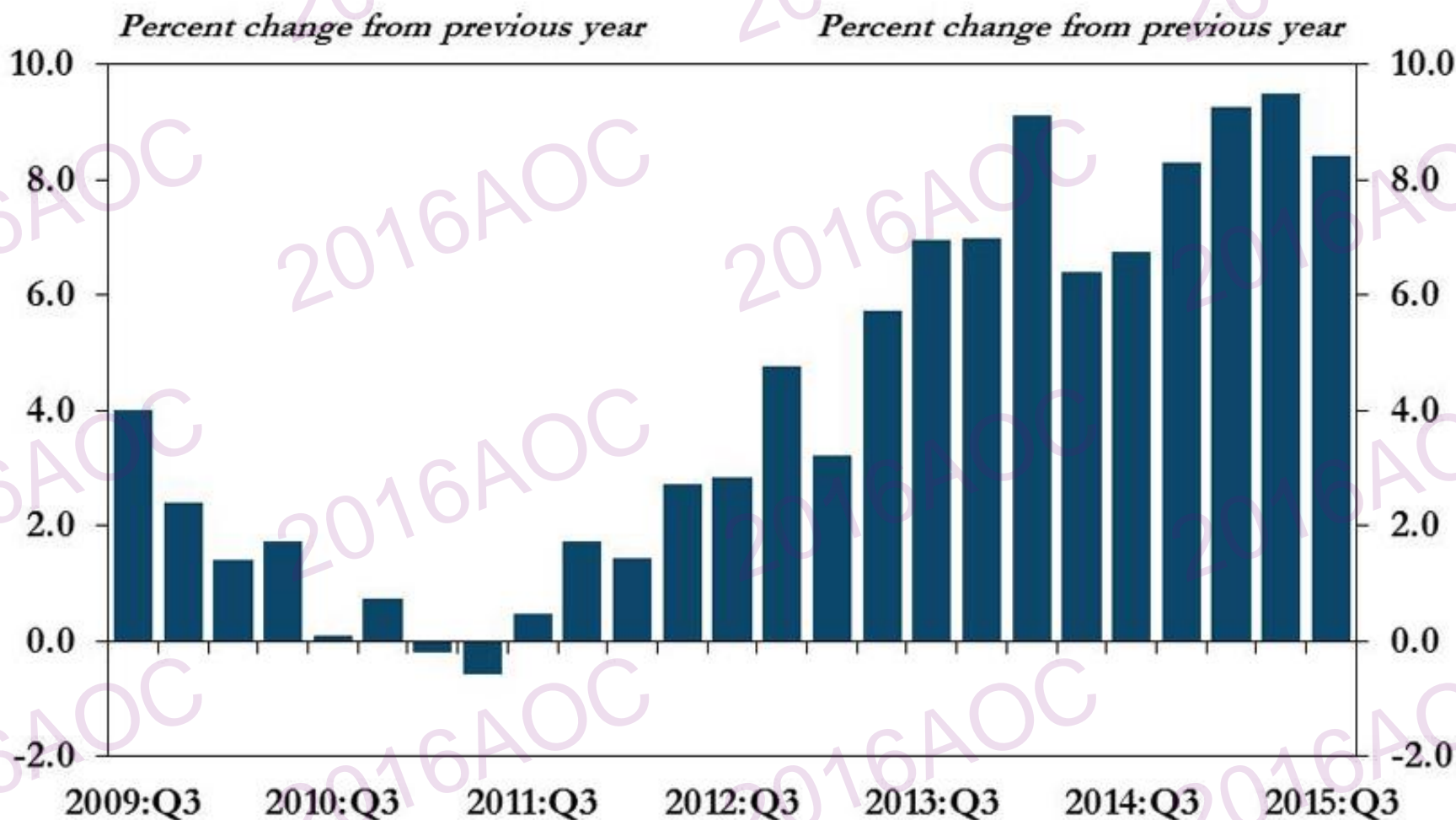
Data: USDA-ERS.

Illinois case shows crop budgets tightening

	Corn After Soybeans	Soybeans After Corn
Fertilizers and pesticides	\$190.00	\$75.00
Seed	\$122.00	\$76.00
Crop insurance and other direct costs	\$55.00	\$23.00
Machinery and power	\$124.00	\$113.00
Total non-land costs	\$558.00	\$348.00
Yield	201.00	58.00
Price	\$3.45	\$8.50
ARC-CO	\$30.00	\$30.00
Crop Revenue	\$723.45	\$523.00
Revenue to cover rent and salary	\$165.45	\$175.00
Cash Rent for Illinois	\$228	\$228

Source: USDA-NASS, Univ. of Illinois.

Farm debt continues to increase at commercial banks

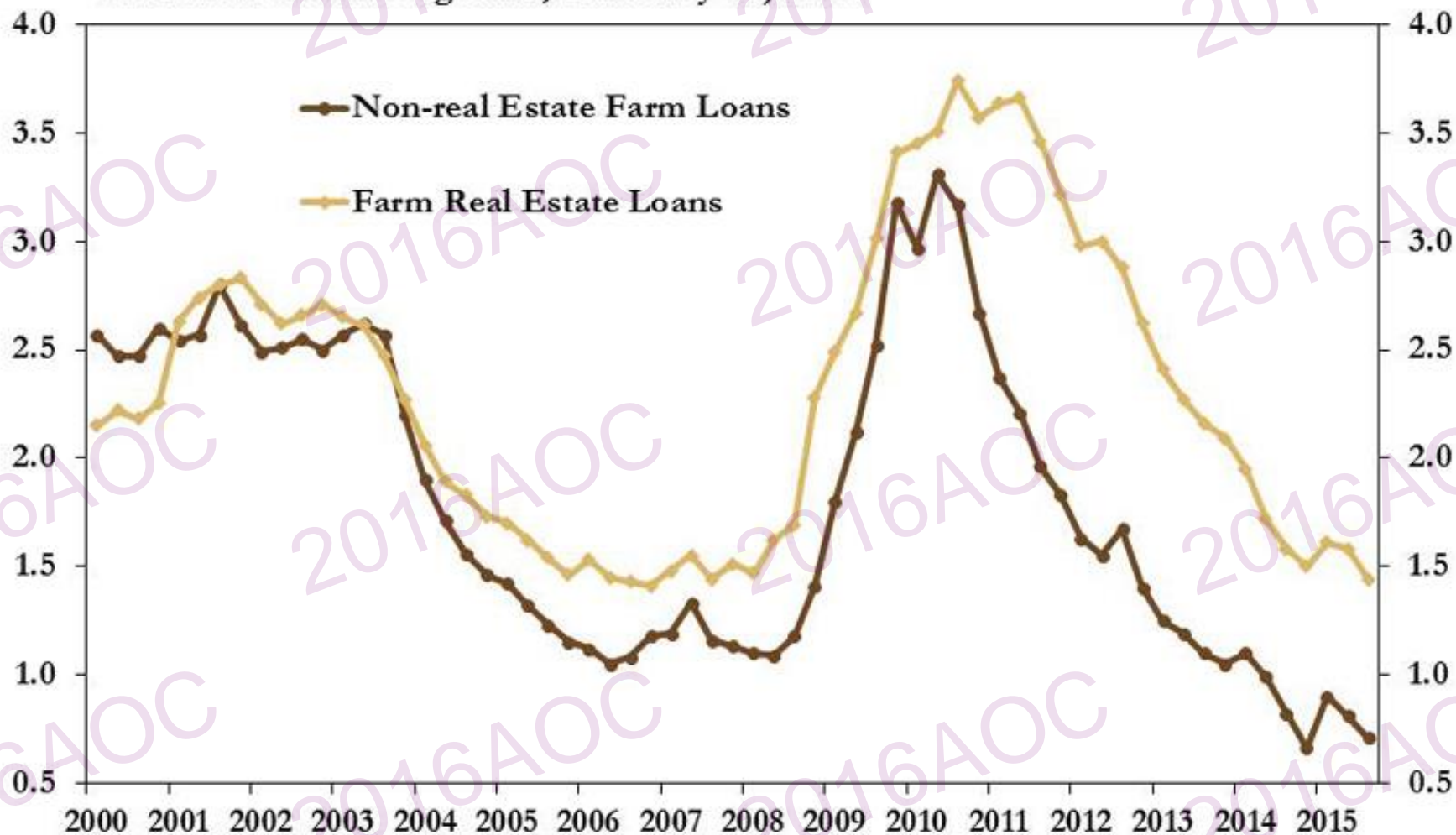


Source: Kauffman, Cowley, and Clark (2016)

Data: Federal Reserve Board of Governors.

Delinquency rates on farm loans fall

Percent of outstanding loans, seasonally adjusted



Source: Kauffman, Cowley, and Clark (2016)

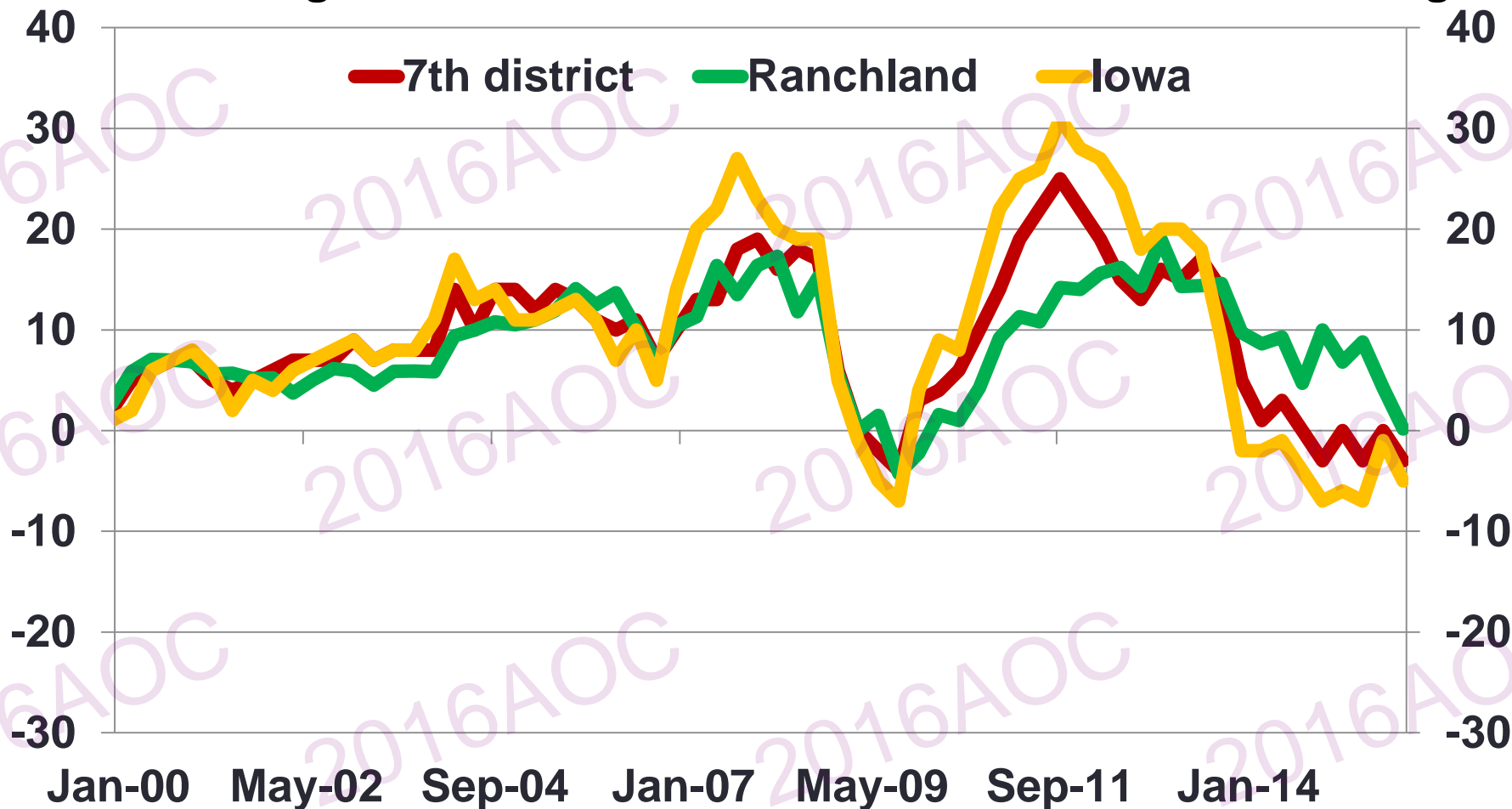
Data: Federal Reserve Board of Governors.

Land values flatten, falling in some areas

Y-o-Y % change

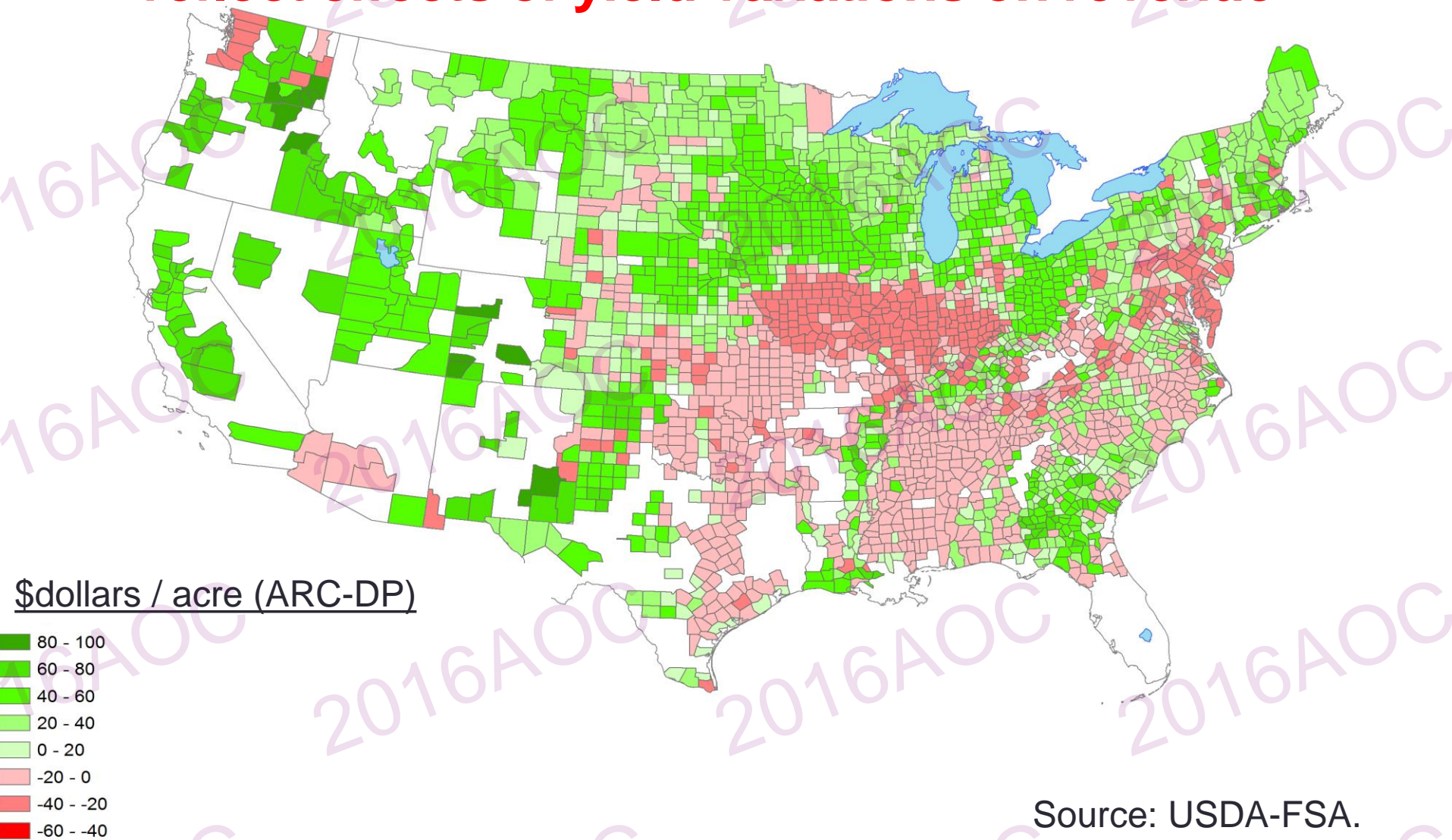
Y-o-Y % Change

7th district Ranchland Iowa



Data: 7th district and Iowa, Chicago Federal Reserve; and Ranchland, K.C. Federal Reserve

ARC-CO 2014 payment rates for corn minus 2008 Direct Payment rates reflect effects of yield variations on revenue



Crop insurance continues to play a critical role in farmers' risk management plans

2015	Percent of Planted Acres		
Crop	CAT	Buy-Up	All
Corn	3%	83%	86%
Soybeans	3%	84%	87%
Wheat	4%	80%	84%
Cotton	6%	88%	94%
Rice	17%	65%	82%
Potatoes	42%	34%	76%
Grain Sorghum	4%	70%	74%
Peanuts	9%	82%	91%
Barley	6%	66%	72%

Source: RMA

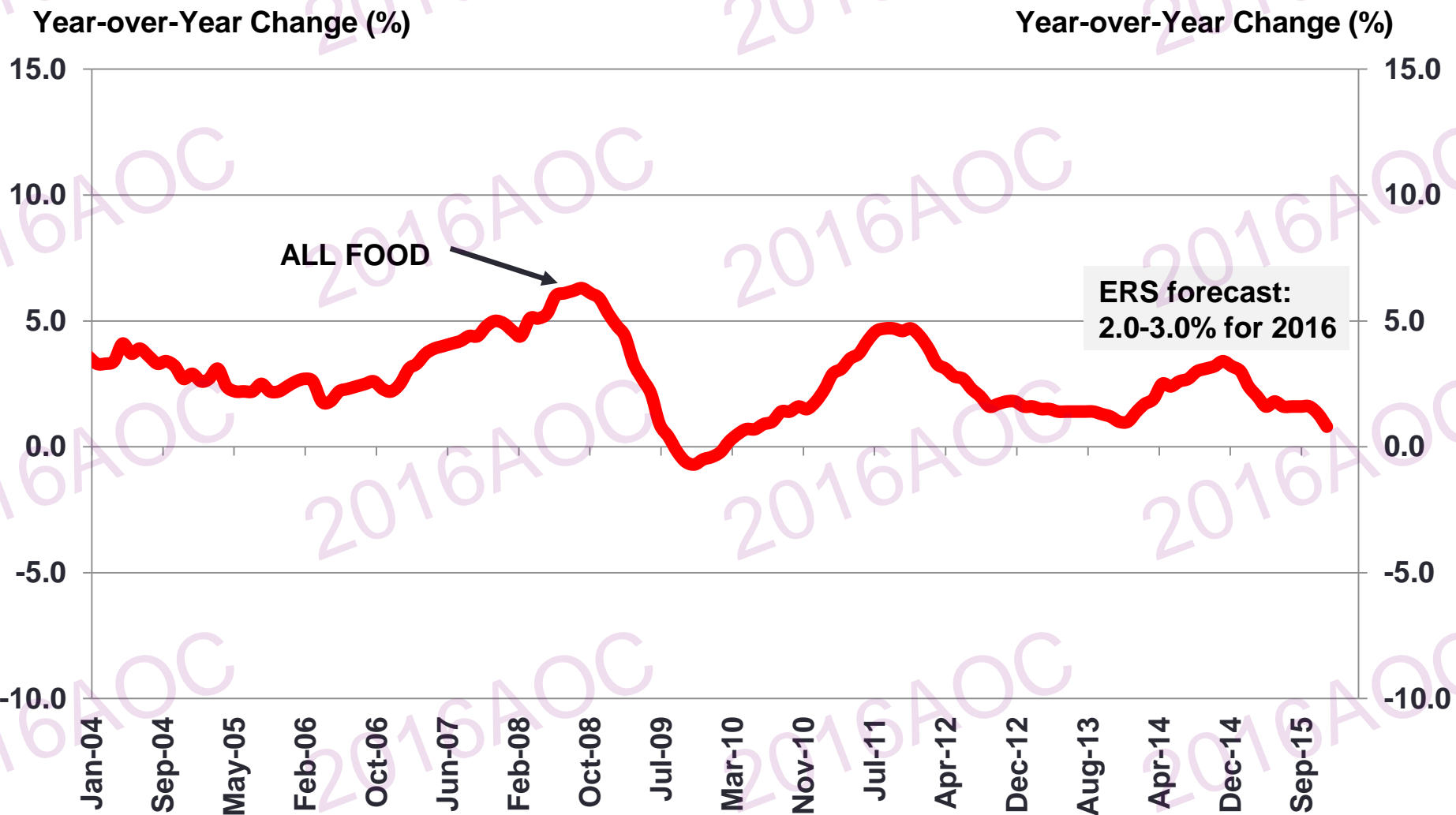
Outlook for Food Prices



Green Onions
(Scallions)
\$0.99
lb.

Bulk Baby Spinach
\$4.99
lb.

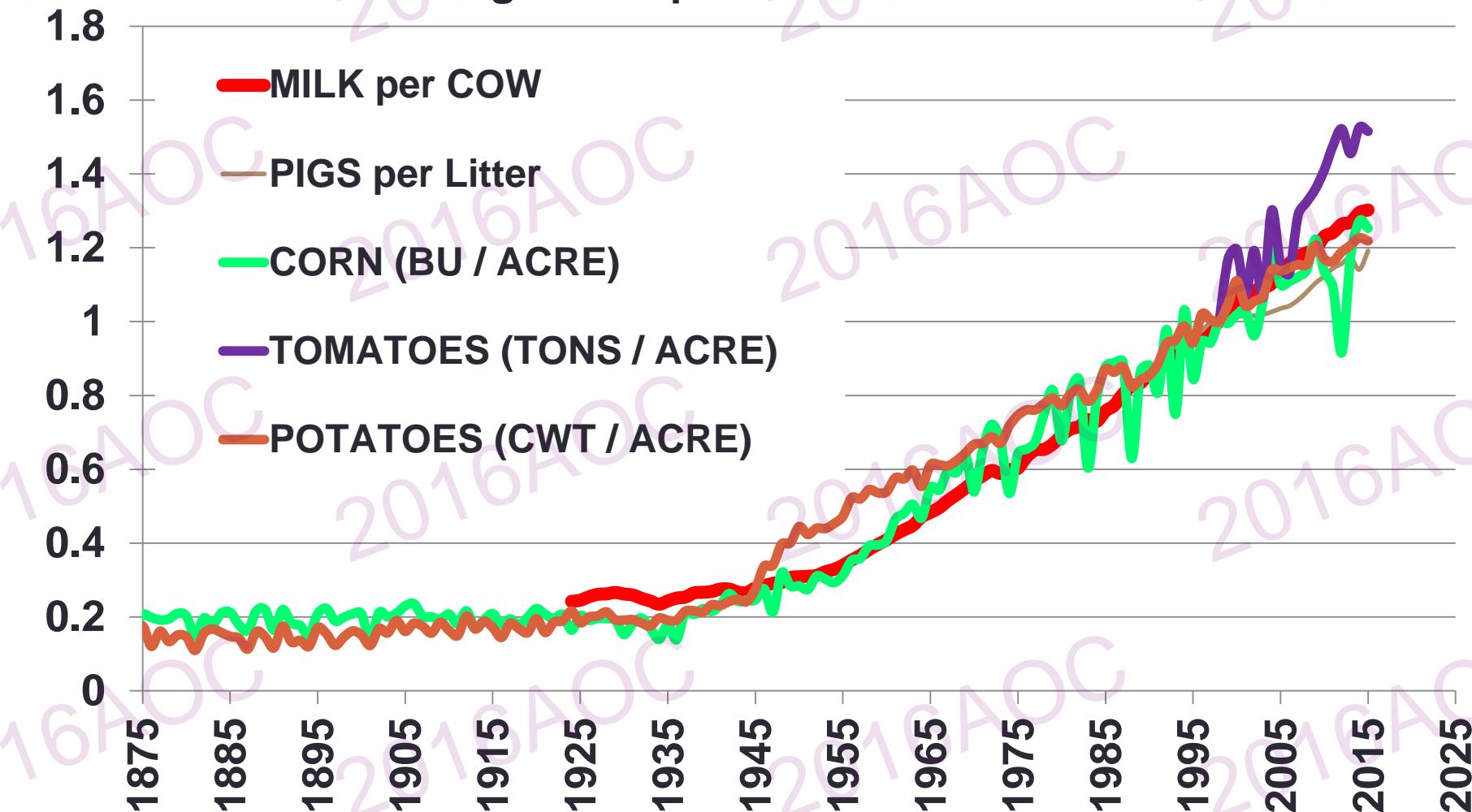
Food CPI remains low



Data: BLS.

Productivity growth continues long rise

1998 = 1 Index of change in output



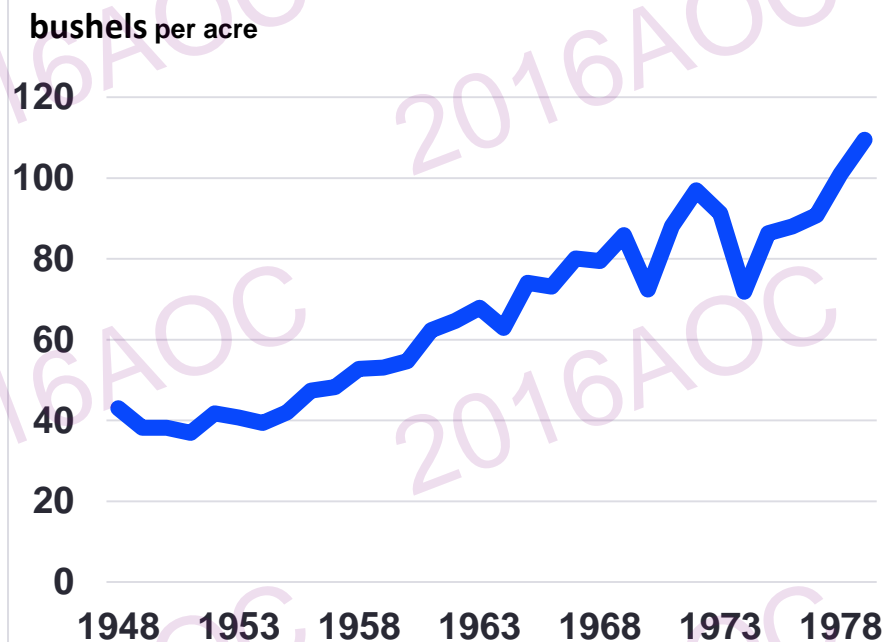
Data: USDA-NASS.



Productivity growth & US policy evolution

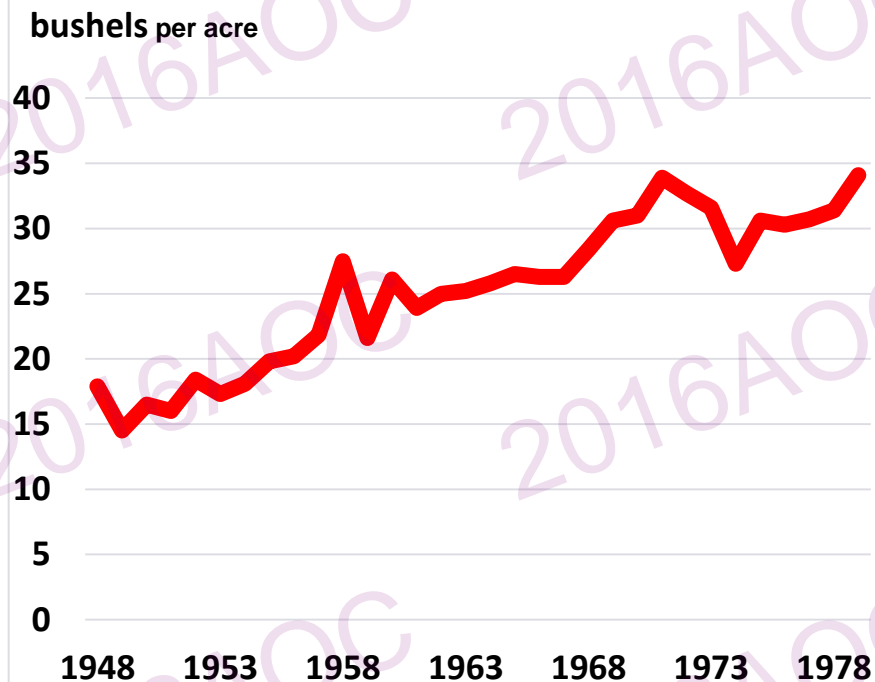
Rapid productivity growth first seen in mid-20th century: yield growth

Corn yields



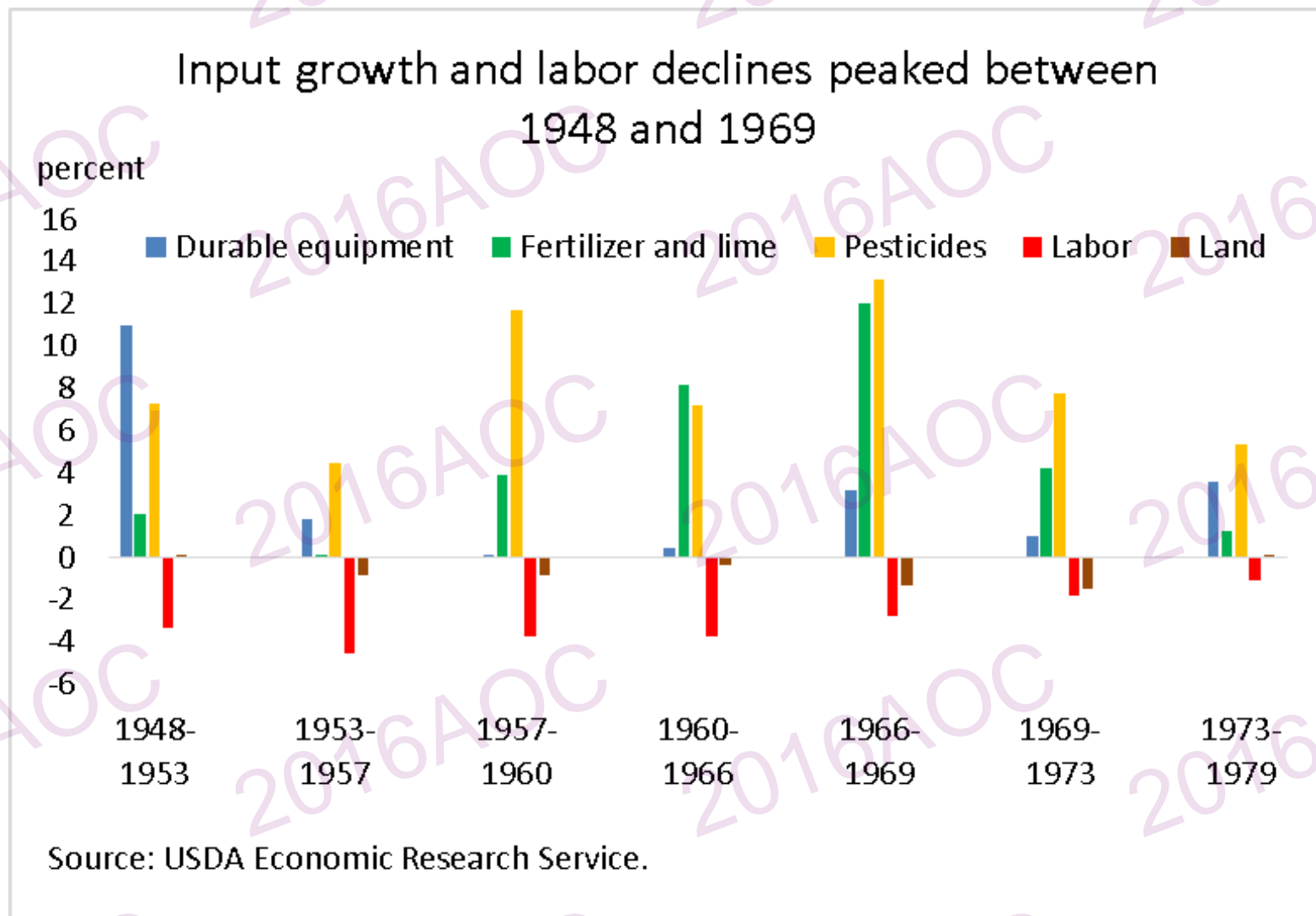
Source: USDA Economic Research Service, Feed Grains database.

Wheat yields



Source: USDA Economic Research Service, Feed Grains database.

Rapid productivity growth first seen in mid-20th century: input use

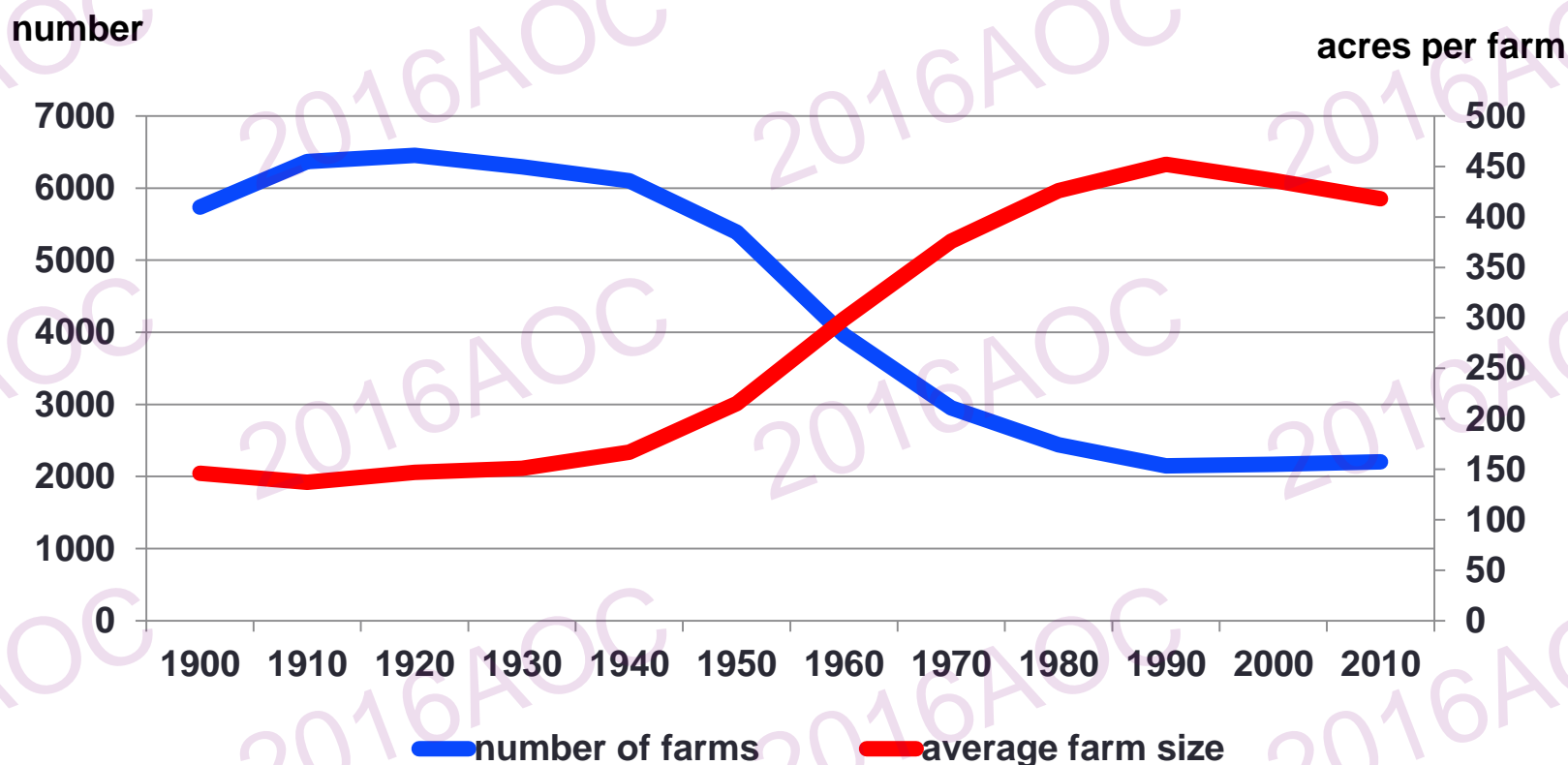


Productivity growth influences policy evolution...

- **Securing against post-war price declines**
 - High market price supports
- **Adjusting to explosive productivity gains**
 - Target prices & deficiency payments
 - Food aid distribution of surplus stocks
 - Increasing acreage reductions
- **Responding to global productivity growth**
 - End price supports & acreage controls
 - Move toward decoupled risk management

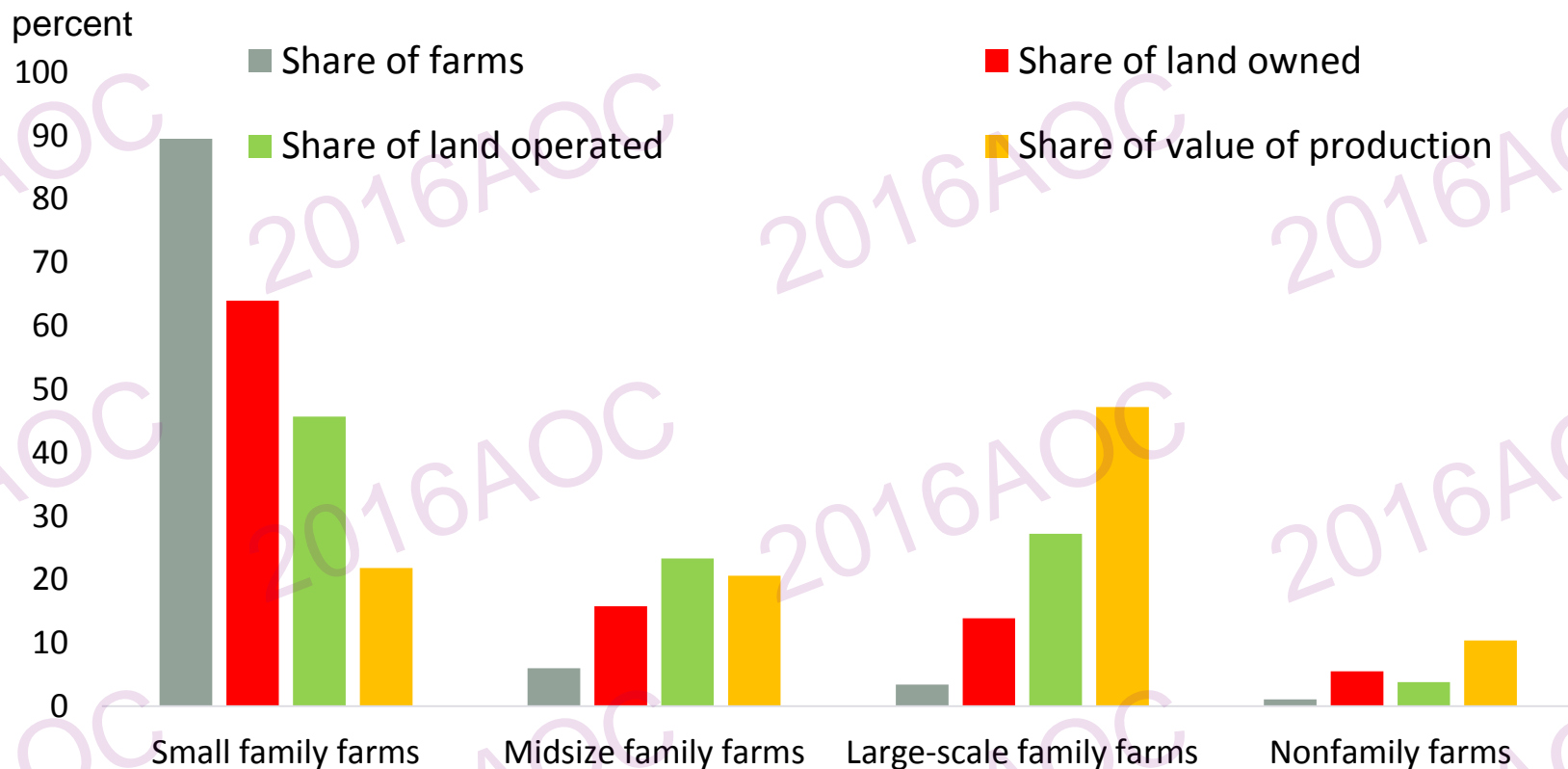
...as well as average farm size and farm/rural population

As number of farms declined, average size increased



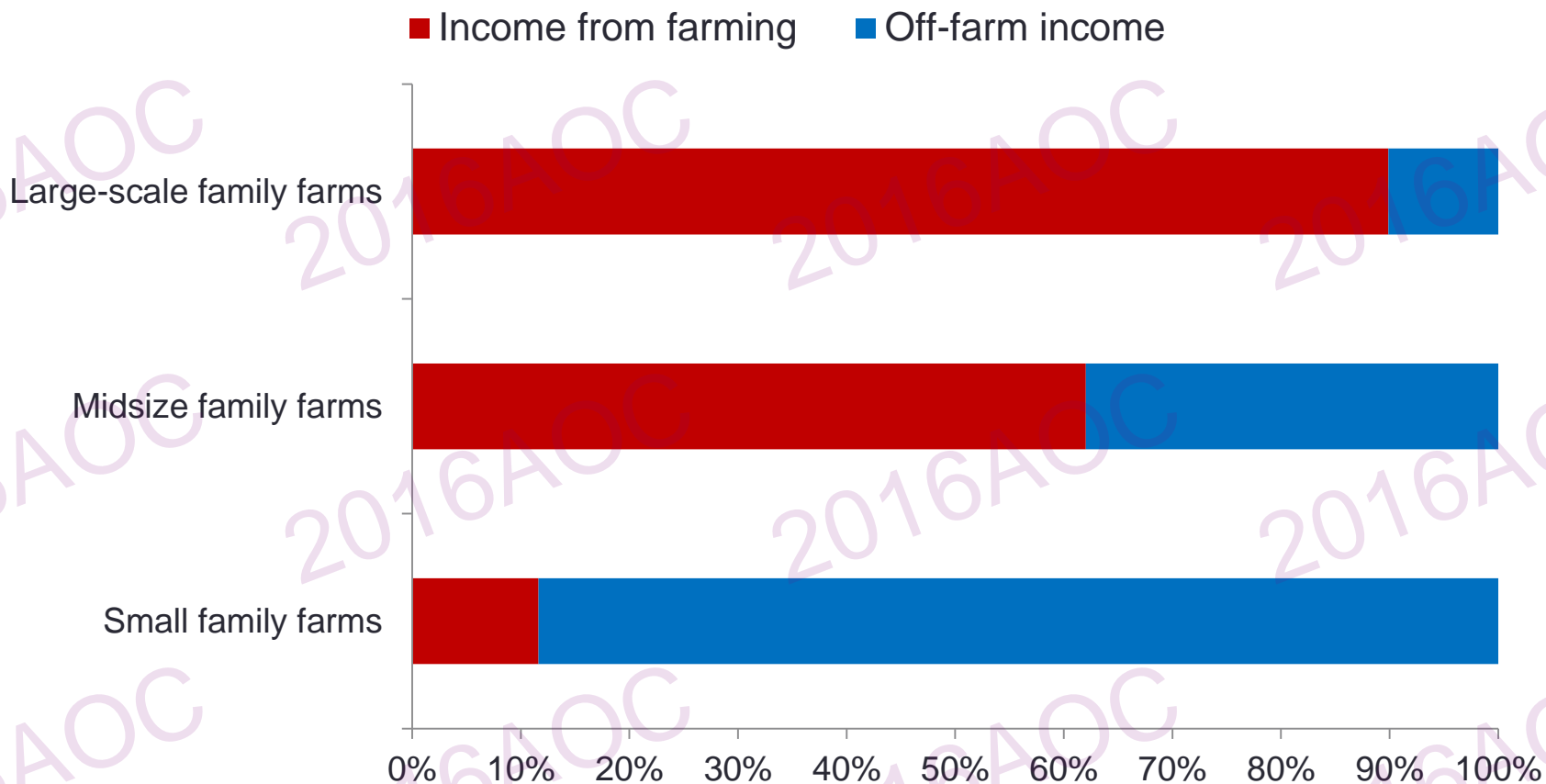
Source: USDA, Economic Research Service, using Census of Agriculture data.

U.S. farms still family owned, but vary widely by size and role in farm economy



Source: USDA, National Agricultural Statistics Service, Economic Research Service, 2014 Agricultural Resource Management Survey.

On smaller scale farms, off-farm income provides the bulk of household income



Source: USDA National Agricultural Statistics Service and Economic Research Service, 2014 ARMS.