

Agriculture in Missouri: Policy, Outlook and Trends to Watch

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Food & Agricultural
Policy Research Institute

University of Missouri

Agenda

- Where we are and how we got here
- Implications of trade disputes for agricultural markets, farm income
- Implications of the Administration's compensation package
- Where we go from here

First an advertisement: What's FAPRI?

Food and Agricultural Policy Research Institute at the University of Missouri

Mission: Provide objective analysis of agricultural markets and policies

Signature product: 10-year outlook for the farm economy each March

Baseline outlook becomes point of reference for policy and market scenarios

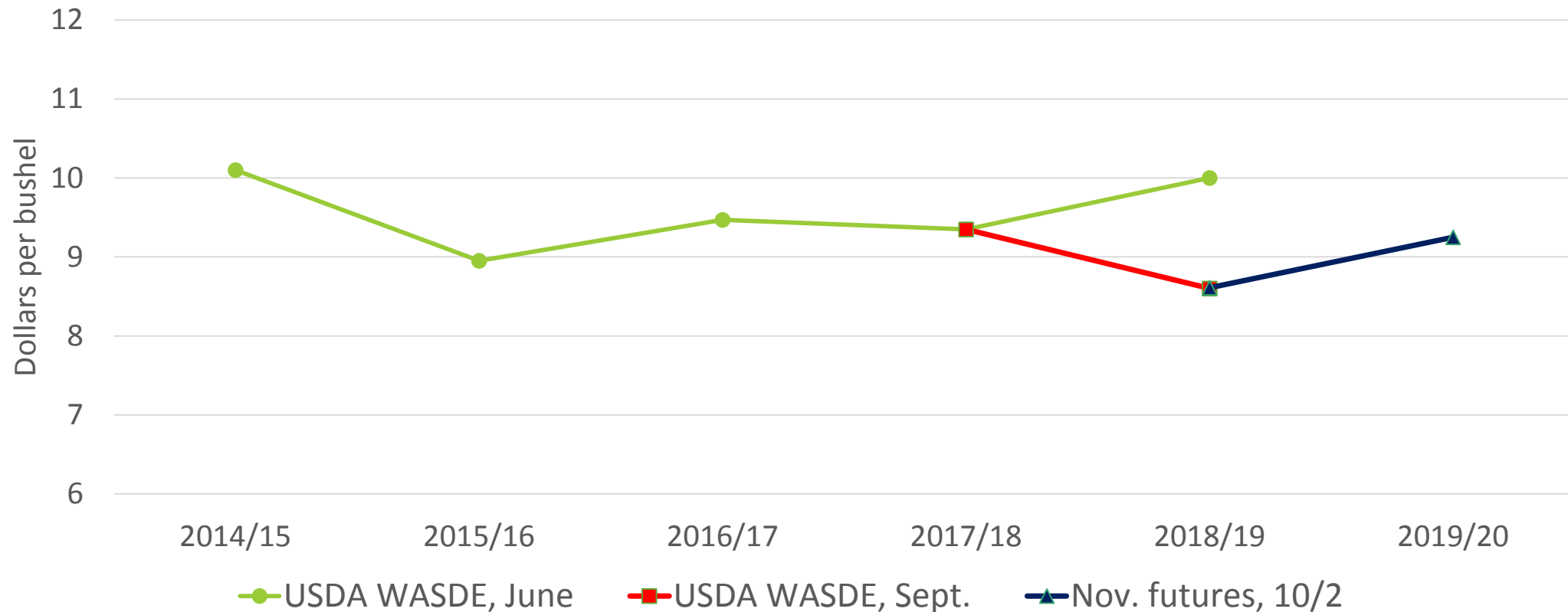
Funding from USDA's Office of the Chief Economist, other agencies & MU

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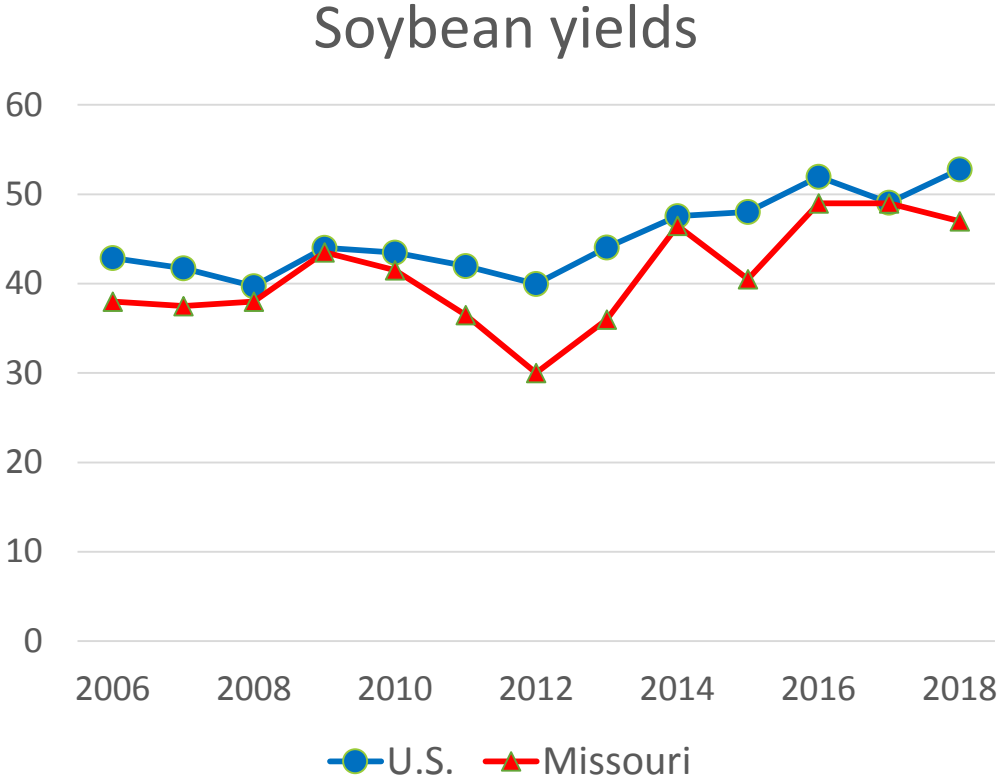
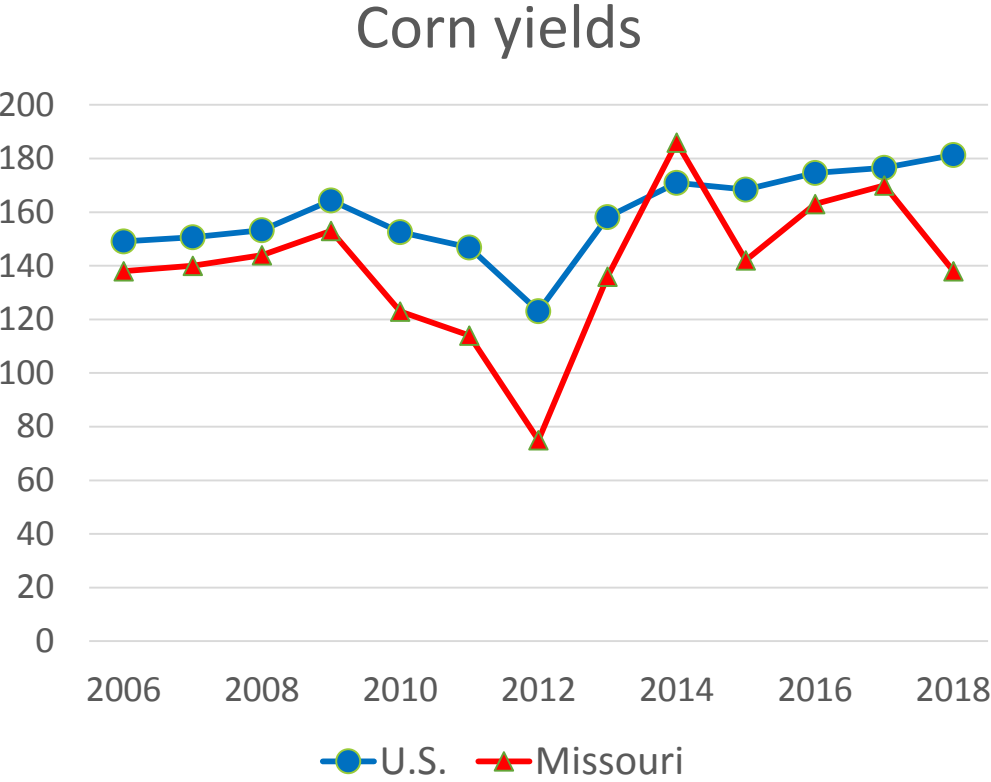
We're at www.fapri.missouri.edu and @FAPRI_MU on Twitter

Where we are: soybean price outlook



Sources: USDA World Agricultural Supply and Demand Estimates, June and Sept. 2018, and CME Nov. futures, Oct. 2, 2018

How we got here: Crop yields



Source: USDA National Agricultural Statistics Service, September 2018

How we got here: trade disputes

Steel and aluminum

- U.S. put in place tariffs on steel and aluminum imports citing national security concerns
- Trading partners from Europe to Mexico to China responded with tariffs on U.S. goods, including pork, cheese, and other agricultural products

NAFTA now replaced with USMCA

- U.S., Mexico, Canada Agreement (USMCA) reached Sept. 30
- Canada agreed to increase U.S. access to Canadian dairy markets and to limit exports of its dairy products to other countries, but retained its supply management system
- Canada also committed to increased U.S. access to its poultry markets
- Few other important changes in agricultural provisions of NAFTA
- Biggest changes to NAFTA are in rules concerning auto trade
- Congress will have to vote on agreement, probably in 2019

U.S. agricultural trade with Canada and Mexico in 2017

	U.S. exports, \$ bil.		U.S. imports, \$ bil.
To Mexico	\$18.6	From Mexico	\$24.6
(of which, corn)	\$2.7	(of which, vegetables)	\$5.5
To Canada	\$20.6	From Canada	\$22.3
(of which, dairy)	\$0.6	(of which dairy)	\$0.2
To NAFTA partners	\$39.2	From NAFTA partners	\$46.9

Source: USDA Foreign Agricultural Service, GATS data base, accessed Sep. 18, 2018.

Other major U.S. exports to Mexico include soybeans, pork and dairy products

Important trade with Canada includes U.S. exports of vegetables & fruit and imports of snack foods

How we got here: trade disputes

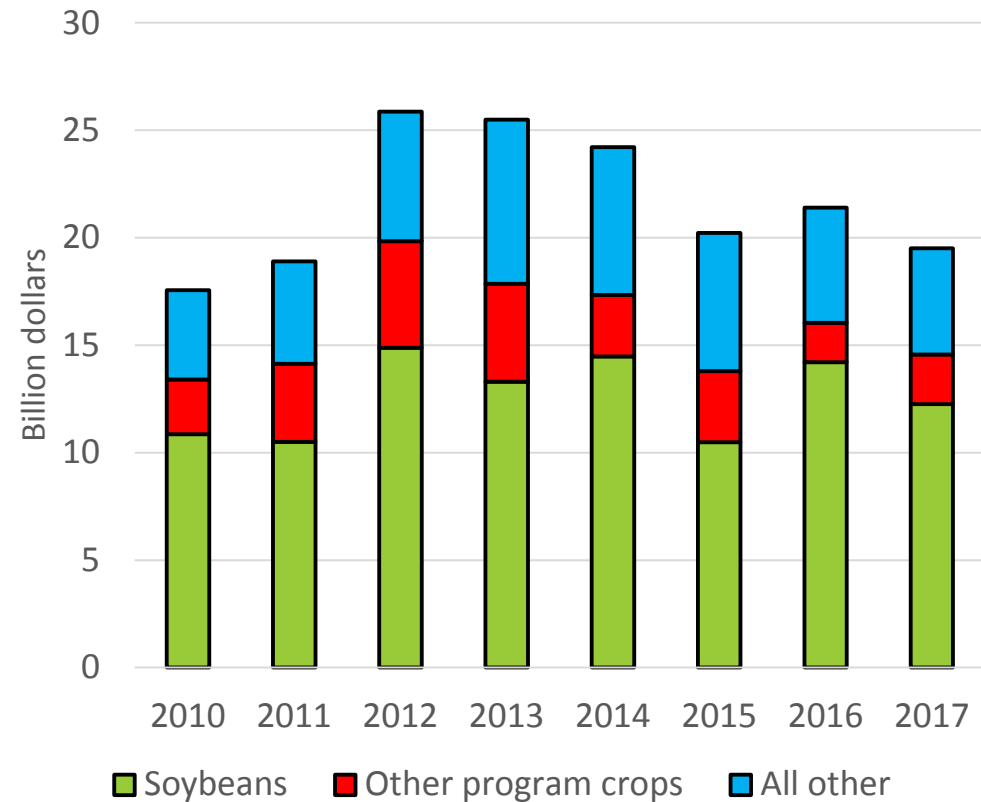
China

- Starting in July, U.S. put in place tariffs on \$50 billion of Chinese products in response to China's intellectual property practices and other policies
- China retaliated with 25% tariffs on U.S. soybeans and other products valued at \$50 billion
- Beginning September 24: 10% U.S. tariffs on another \$200 billion of imports of Chinese products, and Chinese tariffs on an additional \$60 billion of U.S. products (perhaps including soybean oil)
- President has threatened to raise the new tariffs to 25% at the end of year and to impose tariffs on all remaining U.S. imports of Chinese products

China's agricultural imports from the U.S.

Between 2010 and 2017, China's imported an annual average of:

- \$21.6 billion of U.S. agricultural products
- \$12.6 billion of U.S. soybeans (58% of total)
- \$3.2 billion of U.S. cotton, sorghum, corn, wheat, rice, and other program crops (15%)
- \$5.8 billion of other U.S. agricultural products, including pork, dairy products, distillers grains and much more (27%)



Source: USDA FAS GATS, accessed Aug. 1, 2018

Implications of China's soybean tariff

New 25% tariff on imports of U.S. soybeans...

- Pushes up prices of U.S. soybeans delivered to final users in China
- Pushes down prices of soybeans in the U.S.

These changes in U.S. and Chinese domestic soybean prices...

- Discourage sales of U.S. soybeans to China
- Encourage sales to China of soybeans from Brazil, Argentina and other exporters

Soybean prices in other exporting countries...

- Probably will increase because of higher prices in China, their major market
- Which will discourage competitor sales to the EU and other importers
- And encourage U.S. exports to those same destinations

Thus, much of the effect will be to rearrange global soybean trade patterns

Swapping who trades soybeans with whom

(May 2018 FAPRI-MU estimates for 2018/19, million metric tons)

<u>Baseline</u> exports by:	Imports by China	Imports by others	Total exports	<u>25% tariff</u> exports by:	Imports by China	Imports by others	Total exports
U.S.	38.9	23.1	62.0	U.S.	21.9	37.6	59.5
Brazil/Paraguay	56.4	18.2	74.6	Brazil/Paraguay	68.3	6.7	75.0
Argentina	6.0	0.6	6.6	Argentina	7.6	0.0	7.6
Total	101.3	41.9	143.2	Total	97.8	44.3	142.1

Note that these estimates were prepared in May based on information available at that time. In September, USDA projected total Chinese imports of 94 million tons, total U.S. exports of 60 million tons, total Brazilian and Paraguayan exports of 81 million tons, and total Argentine exports of 8 million tons. This suggests larger imports by the rest of the world than shown here.

U.S. price impacts of Chinese soybean tariffs

(May 2018 FAPRI-MU estimates)

	2018/19	2019/20
Soybean farm price (\$/bu.)	-\$0.62 (-7%)	-\$0.52 (-6%)
Soymeal, Decatur (\$/ton)	-\$14 (-4%)	-\$13 (-3%)
Soyoil, Decatur (cents/lb.)	-0.3 (-1%)	-0.2 (-1%)

Because China's new tariff applies to soybeans but not to meal and oil, U.S. soybean prices fall proportionally more than meal and oil prices.

That implies a larger margin for U.S. crushers, at the same time crush margins are squeezed elsewhere, especially in China. Thus, not only could there be major changes in who trades soybeans with whom, but there may also be changes in how much crush occurs in different countries.

Some additional issues related to China's soybean tariffs

Logistical issues

- Fewer U.S. sales to China mean fewer exports through the Pacific Northwest and more through the Gulf of Mexico
- That probably means lower prices in places like the Dakotas, where product that used to go by train to the west now needs to go south instead
- It's too late to totally rearrange global trade this year, as some S. American sales already went to non-China destinations before the tariffs were announced

Some additional issues related to China's soybean tariffs

Spillover effects on other markets

- Lower soybean prices tend to cause lower corn prices, as (U.S.) farmers shift planting intentions
- This could be moderated by shifts in the other direction in places like Brazil, where soybean prices will increase

FAPRI August baseline update

Snapshot of market situation based on information available week of August 20

Not a “forecast” in sense of a prediction of what will happen

One reason: we assumed (then-) current policies remain in place

That means

- 2014 farm bill provisions were extended
- Tariffs in China and other countries remained in place
- No trade compensation package (it was announced on August 27, after we finished)

We used USDA’s August estimates of crop production

- Newer estimates in Sept. show even bigger U.S. corn and soybean crops

Crop prices in the baseline update

(Marketing year averages of farm prices)

	2017/18 estimate (USDA, Sep.)	2018/19 projection (USDA, Sep.)	2018/19 projection (FAPRI-MU, Aug.)	2019/20 projection (FAPRI-MU, Aug.)
Corn (\$/bu.)	\$3.40	\$3.00-\$4.00	\$3.62	\$3.83
Soybeans (\$/bu.)	\$9.35	\$7.35-\$9.85	\$8.73	\$8.95
Wheat (\$/bu.)	\$4.72	\$4.70-\$5.50	\$5.12	\$5.11
Cotton (cents/lb.)	68.0	70.0-80.0	75.2	71.2
Rice (\$/cwt)	\$12.60	\$11.20-\$12.20	\$12.25	\$12.64

Sources: USDA World Agricultural Supply and Demand Estimates, September 2018 and FAPRI-MU baseline update, August 2018.

Note: Marketing year average soybean prices have not been below \$8.95 per bushel since 2006/07.

U.S. planted area (million acres)

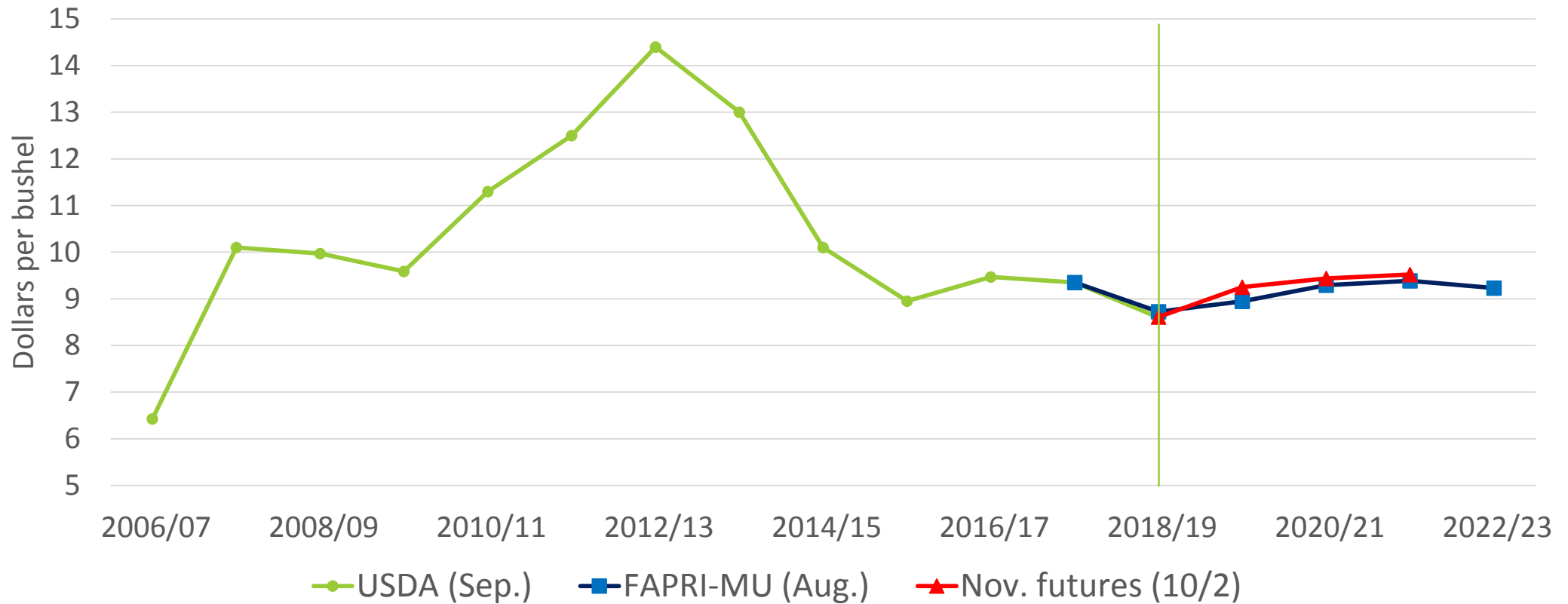
	2017	2018	2019	Change from 2018
Corn	90.2	89.1	91.1	+1.9
Soybeans	90.1	89.6	85.0	-4.6
Wheat	46.0	47.8	50.1	+2.3
Upland cotton	12.4	13.3	12.9	-0.4
9 other crops*	20.5	21.4	20.7	-0.6
13 major crops	259.2	261.2	259.8	-1.3

**Sorghum, barley, oats, rice, sunflowers, peanuts, canola, sugar beets and sugarcane*

Sources: USDA's National Agricultural Statistics Service, June 2018, for 2017 and 2018. August 2018 FAPRI-MU projections for 2019. Note that USDA revised upward the 2018 upland cotton area to 13.8 million acres in September.

U.S. soybean prices

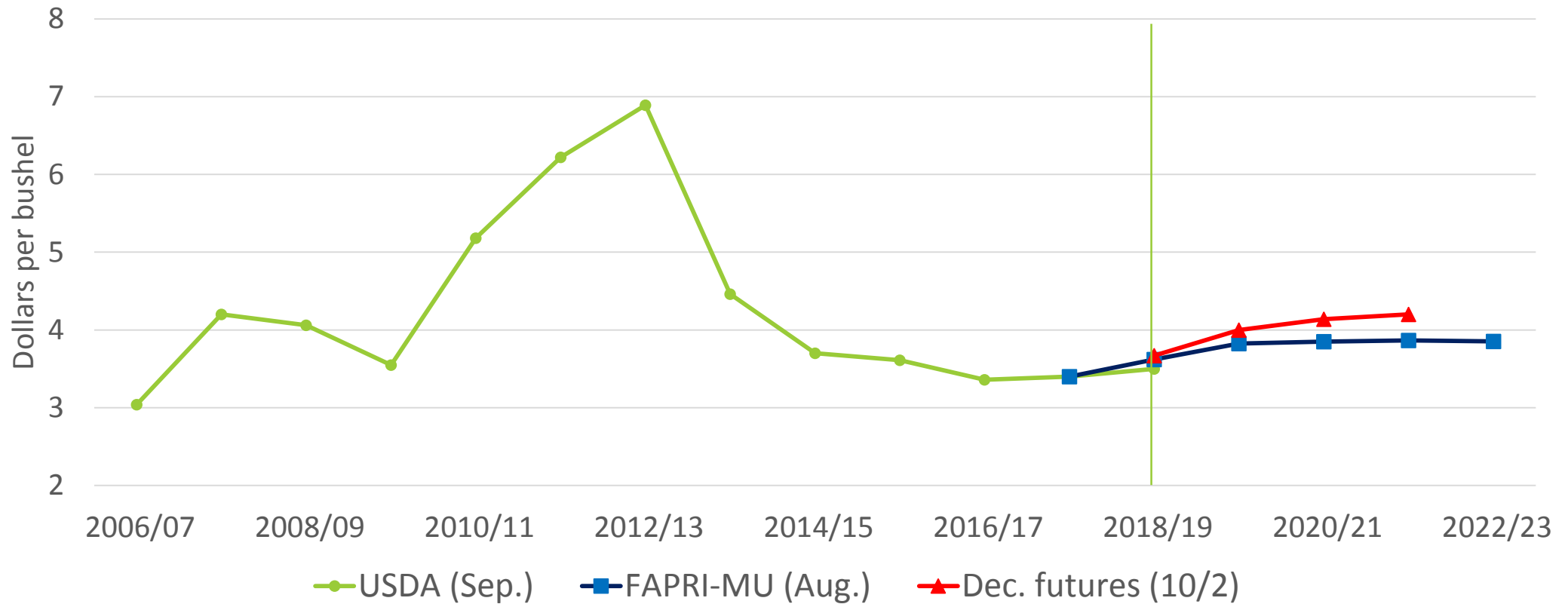
Marketing year average



Sources: USDA WASDE, Sept. 2018, FAPRI-MU baseline update, Aug. 2018, and CME Nov. futures, Oct. 2, 2018

U.S. corn prices

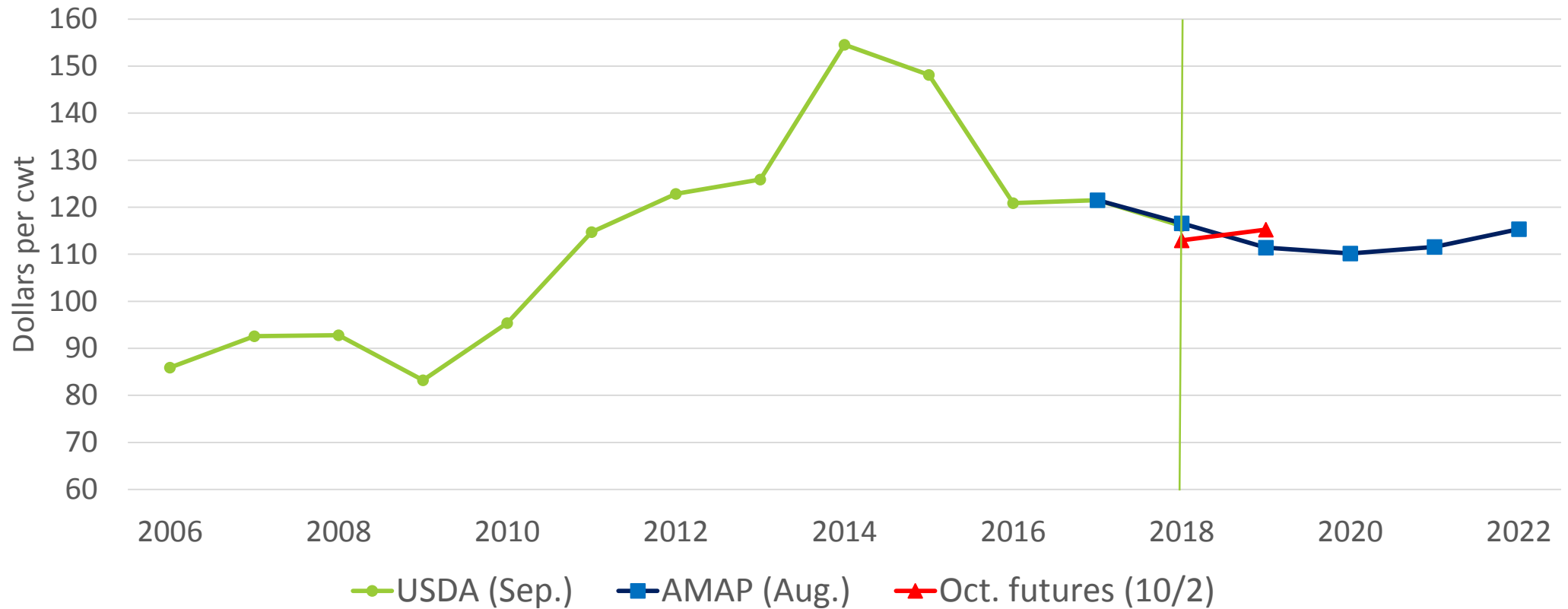
Marketing year average



Sources: USDA WASDE, Sept. 2018, FAPRI-MU baseline update, Aug. 2018, and CME Dec. futures, Oct. 2, 2018

U.S. cattle prices

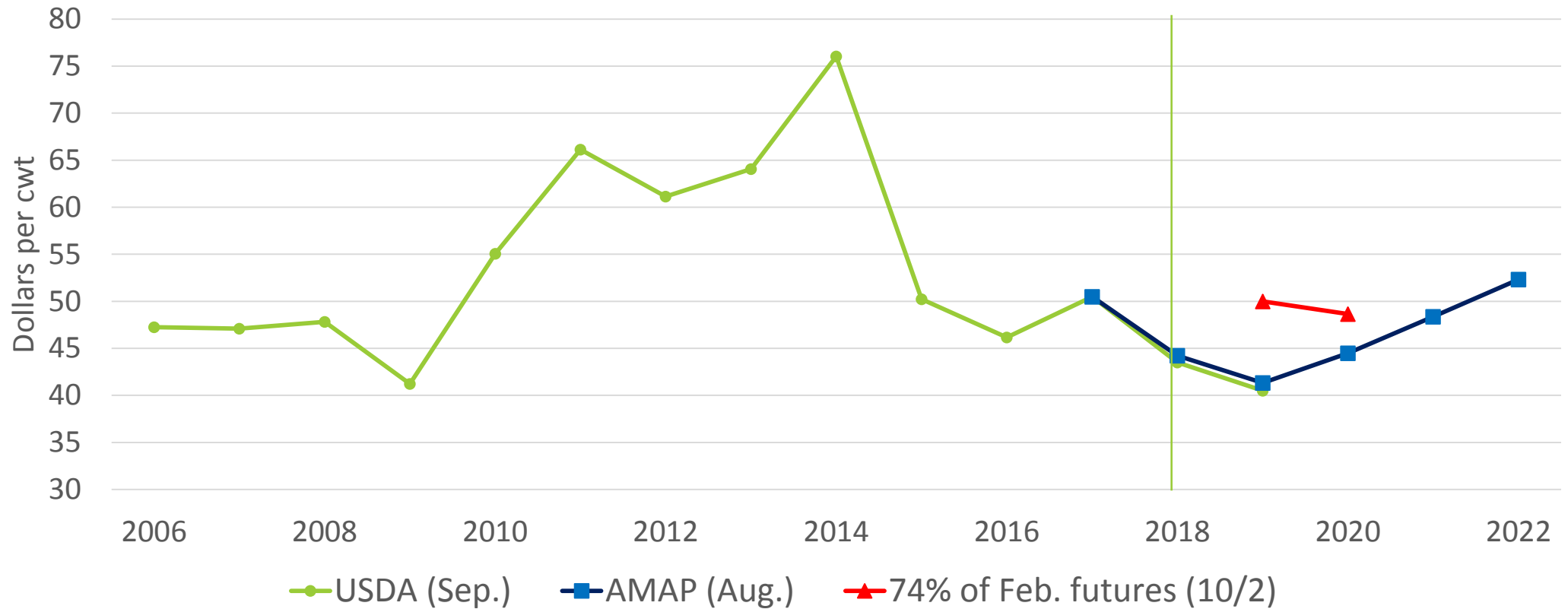
5-area direct steers



Sources: USDA WASDE, Sept. 2018, AMAP (MU) projections, Aug. 2018, and CME Oct. futures, Oct. 2, 2018

U.S. hog prices

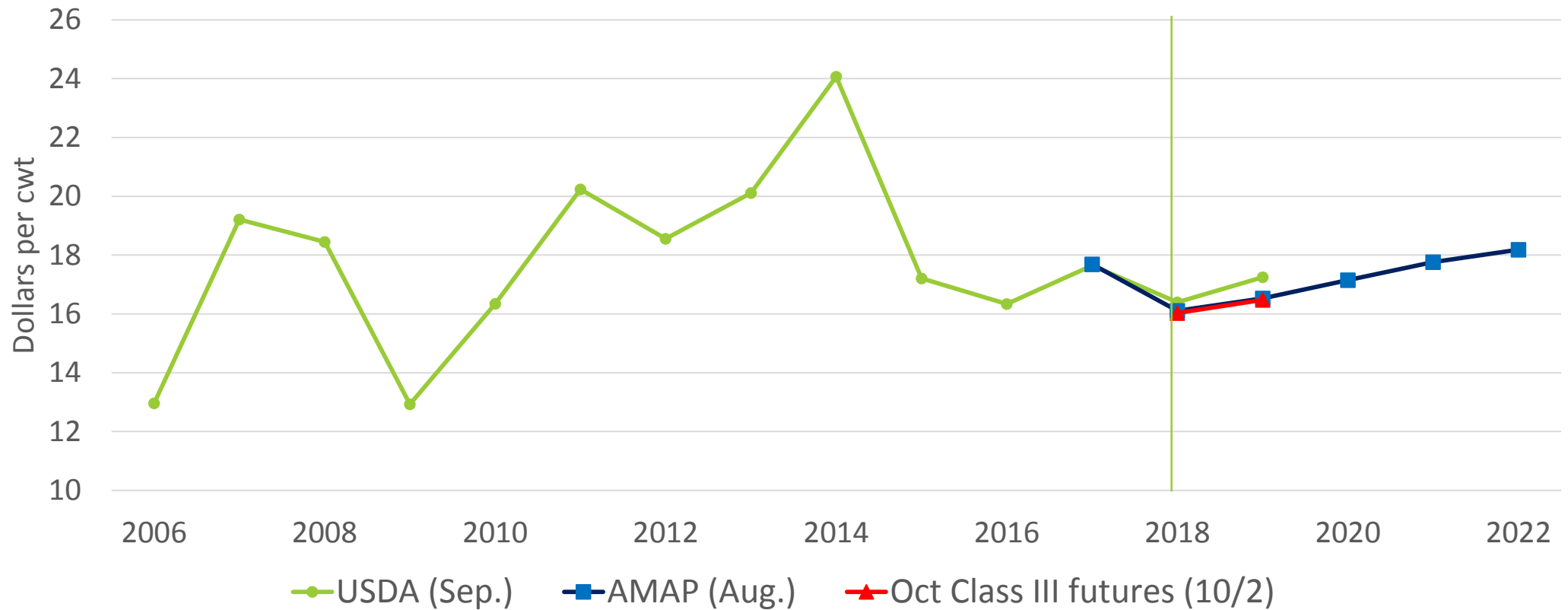
National base, live equivalent, 51-52% lean



Sources: USDA WASDE, Sept. 2018, AMAP (MU) projections, Aug. 2018, and CME Oct. futures, Oct. 2, 2018

U.S. milk prices

All milk



Sources: USDA WASDE, Sept. 2018, AMAP (MU) projections, Aug. 2018, and CME Oct. Class III milk futures, Oct. 2, 2018

What does this all mean for farm income?

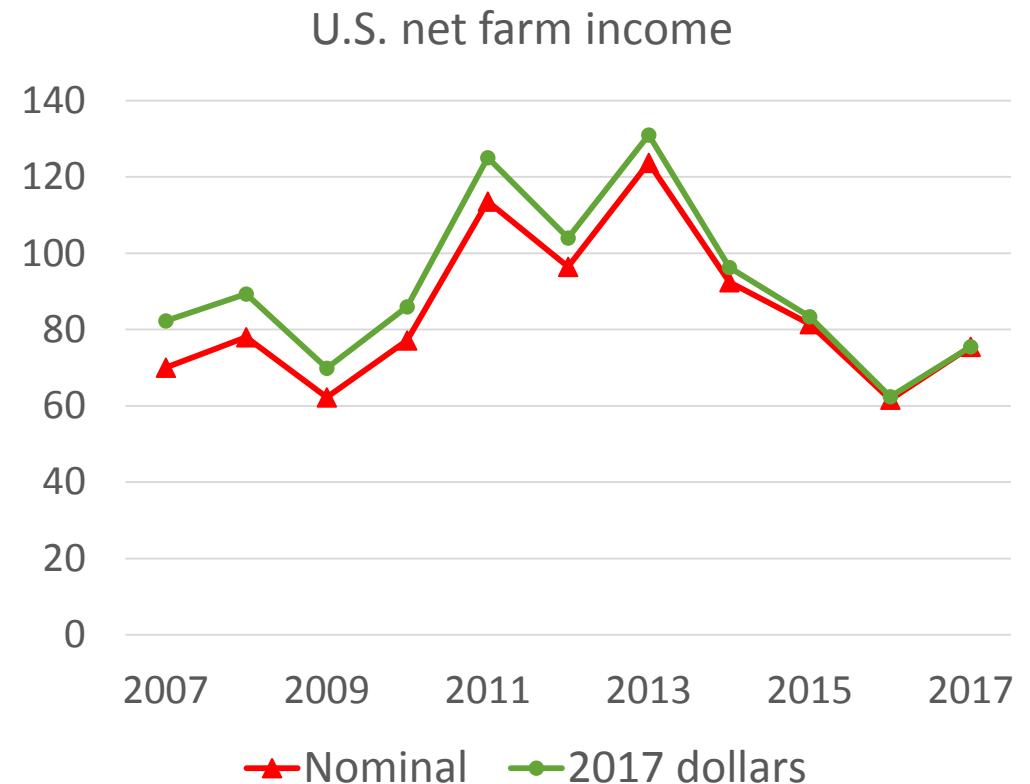
U.S. net farm income in 2016 was roughly half the record level of 2013

Prices for many commodities fell sharply from their peaks in 2013 (many crops) or 2014 (most livestock commodities)

Meanwhile, farm production expenses only declined slightly

Net farm income did increase in 2017, but was still lower than in any year between 2010 and 2015

Where do we go from here?



Crop production values

U.S.	2017	2018	Change
Production (mil. bu.)			
Corn	14,604	14,827	+1.5%
Soybeans	4,392	4,693	+6.9%
Crop year price (\$/bu.)			
Corn	\$3.40	\$3.50	+2.9%
Soybeans	\$9.35	\$8.60	-8.0%
Crop value (\$ bil.)			
Corn	\$49.7	\$51.9	+4.5%
Soybeans	\$41.1	\$40.4	-1.7%
2-crop total	\$90.7	\$92.3	+1.7%

Source: Author estimates based on Sept. 2018 USDA estimates (Crop Production, midpoint of WASDE U.S. prices)

Crop production values

U.S.	2017	2018	Change	Missouri	2017	2018	Change
Production (mil. bu.)				Production (mil. bu.)			
Corn	14,604	14,827	+1.5%	Corn	552.5	448.5	-18.8%
Soybeans	4,392	4,693	+6.9%	Soybeans	289.6	269.3	-7.0%
Crop year price (\$/bu.)				Crop year price (\$/bu.)			
Corn	\$3.40	\$3.50	+2.9%	Corn	\$3.40	\$3.50	+2.9%
Soybeans	\$9.35	\$8.60	-8.0%	Soybeans	\$9.35	\$8.60	-8.0%
Crop value (\$ bil.)				Crop value (\$ bil.)			
Corn	\$49.7	\$51.9	+4.5%	Corn	\$1.88	\$1.57	-16.4%
Soybeans	\$41.1	\$40.4	-1.7%	Soybeans	\$2.71	\$2.32	-14.5%
2-crop total	\$90.7	\$92.3	+1.7%	2-crop total	\$4.59	\$3.89	-15.3%

Source: Author estimates based on Sept. 2018 USDA estimates (Crop Production, midpoint of WASDE U.S. prices)

Trade mitigation program overview

On August 27, the Administration announced additional details of 3 programs to offset the impacts of “unjustified trade retaliation by foreign nations”

1) Market facilitation program

- FSA will make payments to producers of soybeans, sorghum, corn, wheat, cotton, dairy and hogs
- Payments will be based on actual 2018 production, with first round estimated at \$4.7 billion

2) Food Purchase and Distribution Program

- AMS will purchase pork, dairy products, apples and other commodities to support prices
- First round of purchases to total about \$1.2 billion

3) Trade Promotion Program

- FAS will administer program “to assist American agricultural exporters in identifying and accessing new markets,” with a proposed budget of \$200 million

Source: <https://www.usda.gov/media/press-releases/2018/09/04/usda-launches-trade-mitigation-programs>

Market Facilitation Program payment rates

Initial payment is on 50% of production—so soybean rate is equivalent to \$0.825 per bushel produced in 2018

Program is subject to payment limitation rules

- No more than \$125,000 per person or legal entity
- Average AGI for 2014-2016 of less than \$900,000

No guarantee that there will be a second payment or how large it might be

Secretary Perdue has said this program will not be repeated in 2019

	Initial payment rate on 50% of production	USDA estimate of initial payment
Soybeans	\$1.65/bu.	\$3.63 bil.
Hogs	\$8.00/head	\$0.29 bil.
Cotton	\$0.06/lb.	\$0.28 bil.
Sorghum	\$0.86/bu.	\$0.16 bil.
Dairy	\$0.12/cwt	\$0.13 bil.
Wheat	\$0.14/bu.	\$0.12 bil.
Corn	\$0.01/bu.	\$0.10 bil.
Total		\$4.70 bil.

MFP payments in context

(Crop value and payments in billion dollars)

U.S.	Soybeans	Corn	2-crop total	Missouri	Soybeans	Corn	2-crop total
2017 crop value	41.1	49.7	90.7	2017 crop value	2.71	1.88	4.59
2018 crop value	40.4	51.9	92.3	2018 crop value	2.32	1.57	3.89
2018 initial MFP payment	3.7	0.1	3.7	2018 initial MFP payment	0.21	0.00	0.21
2018 crop value + initial MFP	44.1	52.0	96.0	2018 crop value + initial MFP	2.53	1.57	4.10

Source: Author estimates. Crop values based on Sept. 2018 USDA estimates of crop production and marketing year average prices. MFP payment estimates are based on this formula:

*Initial MFP payment = Payment rate * Production * 0.5 * 0.95. The 0.5 reflects the plan to make initial payments on 50% of production; the 95% is a rough adjustment for payment limitations.*

More things to note about MFP

The first round of payments is on 50% of production

There may or may not be a second round of payments—USDA says an announcement might be made in December

If there is another round of payments, the payment rates and rules could change—there is no guarantee it would simply be the “other half” implied by the initial payments

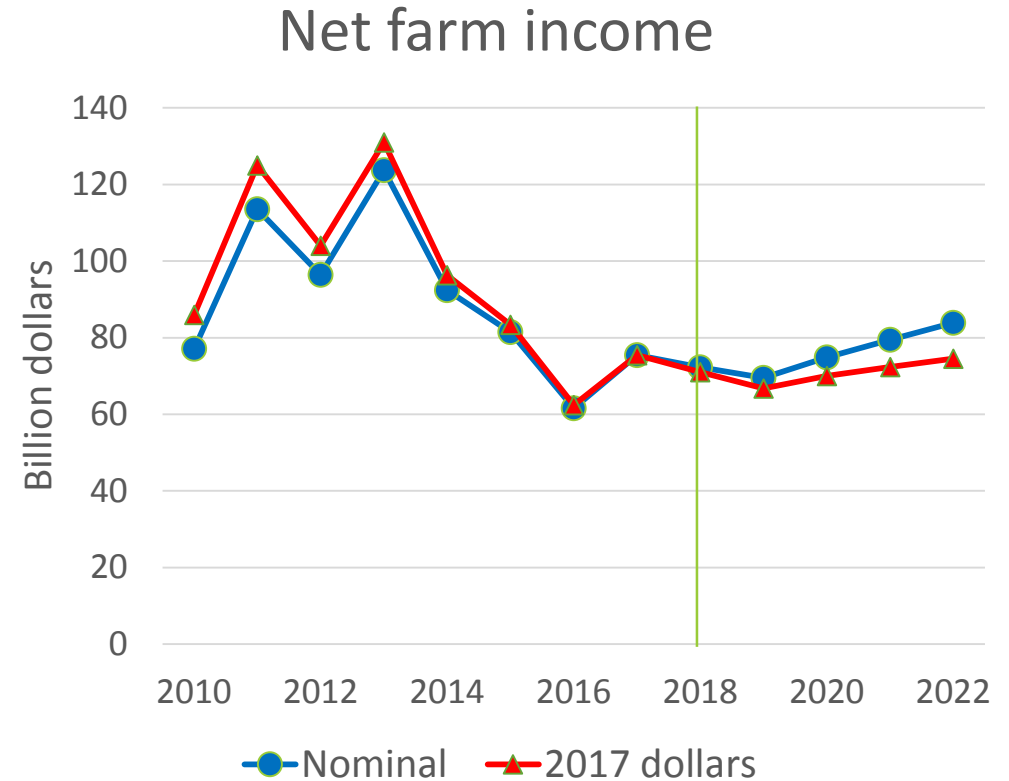
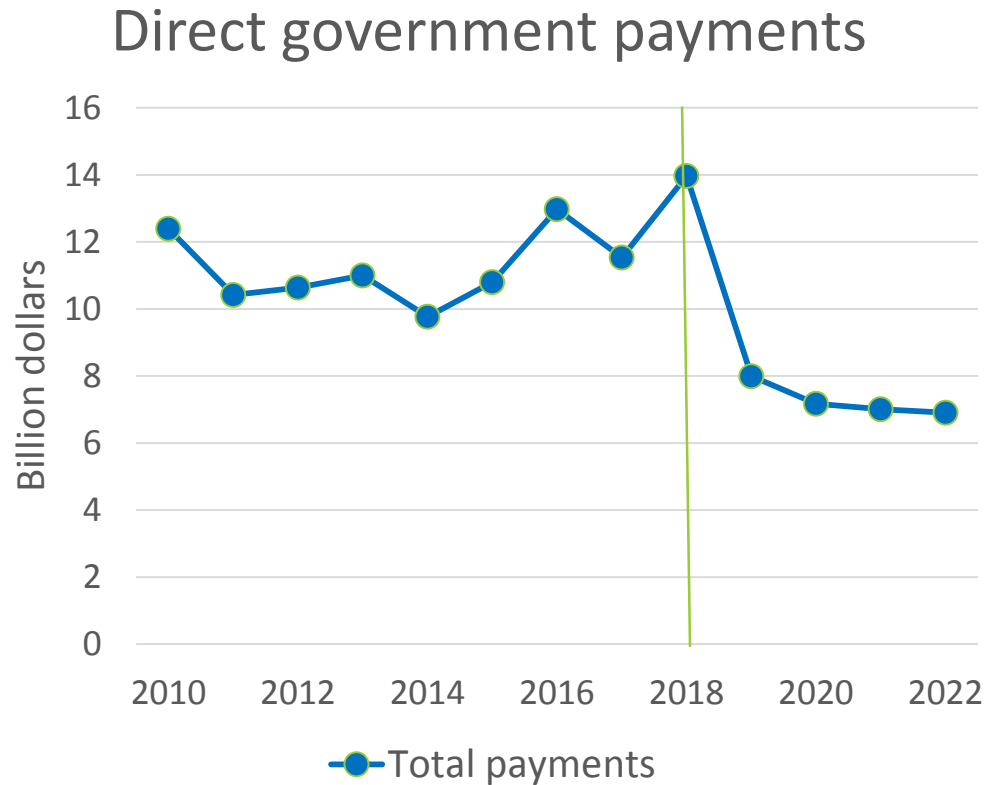
Will be pressure to take into account basis, cross-commodity effects, and other issues not considered in the first round—and no group is likely to say they got “too much” the first time

Important (hard to answer) question: how will payments affect production choices in 2019?

May depend on whether payments are seen as 1-time only

U.S. farm payment, income projections

(Based on August 2018 FAPRI-MU update)



Source: USDA and FAPRI baseline update, Aug./Sep. 2018. Note: stochastic estimates would show higher mean payments, as there is a chance prices could fall low enough to trigger large PLC payments, for example.

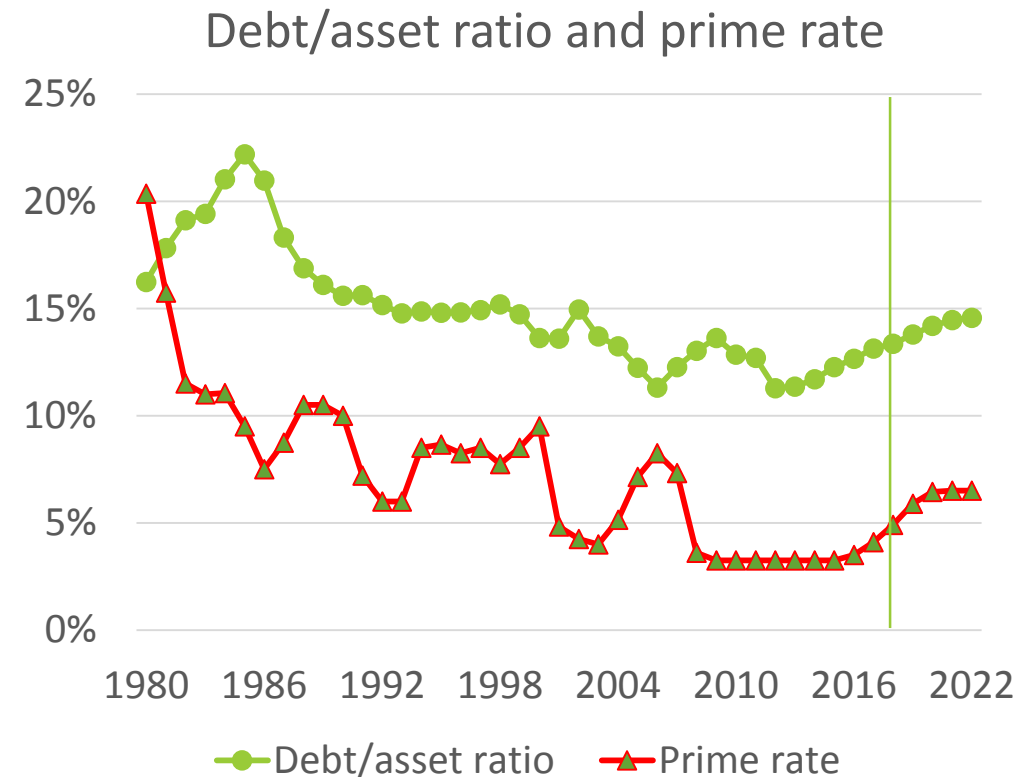
It's not the 1980s, but...

During the 1980s farm financial crisis, the farm debt/asset ratio peaked at 22%

It declined to half that level in 2012, but has been increasing since then

Besides lower levels of debts relative to assets, interest rates are far lower now than in the 1980s

But it is concerning that the debt/asset ratio continues to increase, even as interest rates are rising



Sources: Debt/asset ratio from USDA and FAPRI-MU, Sept. 2018; Prime rate from FRED and IHS Markit, July 2018

Farm bill overview

House-Senate conference negotiations on a new farm bill continue

House and Senate bills have much in common, especially with respect to commodity programs

However some important differences need to be resolved

- Biggest is probably SNAP, where the House imposes stricter work requirements and proposes other changes not accepted by the Senate
- Conservation titles include the elimination of the Conservation Stewardship Program by the House and a smaller increase in CRP acres in the Senate bill
- In Title I (commodity programs), important differences include payment limitation rules, with smaller differences in ARC and PLC formulas

Missed a Sep. 30 deadline

- Some smaller programs have expired—organic research, foreign market development...
- More “bad things” happen if no bill by Jan. 1: revert to 1949 Act for dairy, then crops in spring

ARC & PLC payments under current law

(Based on August 2018 FAPRI-MU update)

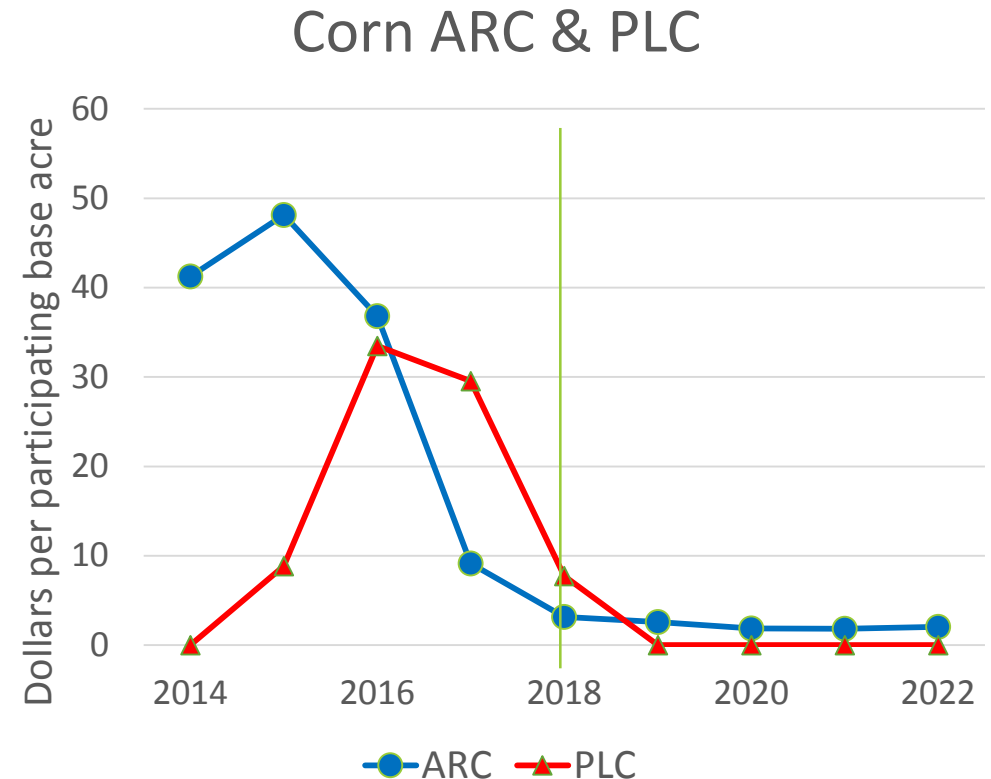
Corn ARC payments in 2017 and 2018 likely to be much lower than from 2014-2016

- Olympic average price in benchmark has fallen from \$5.29/bu. in 2014 and 2015 to \$3.70 floor

PLC payments occur when U.S. marketing year average prices drop below \$3.70/bu.

PLC likely to be more attractive option, once uncertainty is considered

- Chart shows no PLC at Aug. baseline prices, but in any given year, prices below \$3.70 possible
- We assume 70% choose PLC for corn in 2019



Source: USDA and FAPRI baseline update, Aug./Sep. 2018. Note: stochastic estimates would show higher mean payments, as there is a chance prices (or yields) could fall low enough to trigger large PLC (or ARC) payments

ARC & PLC payments under current law

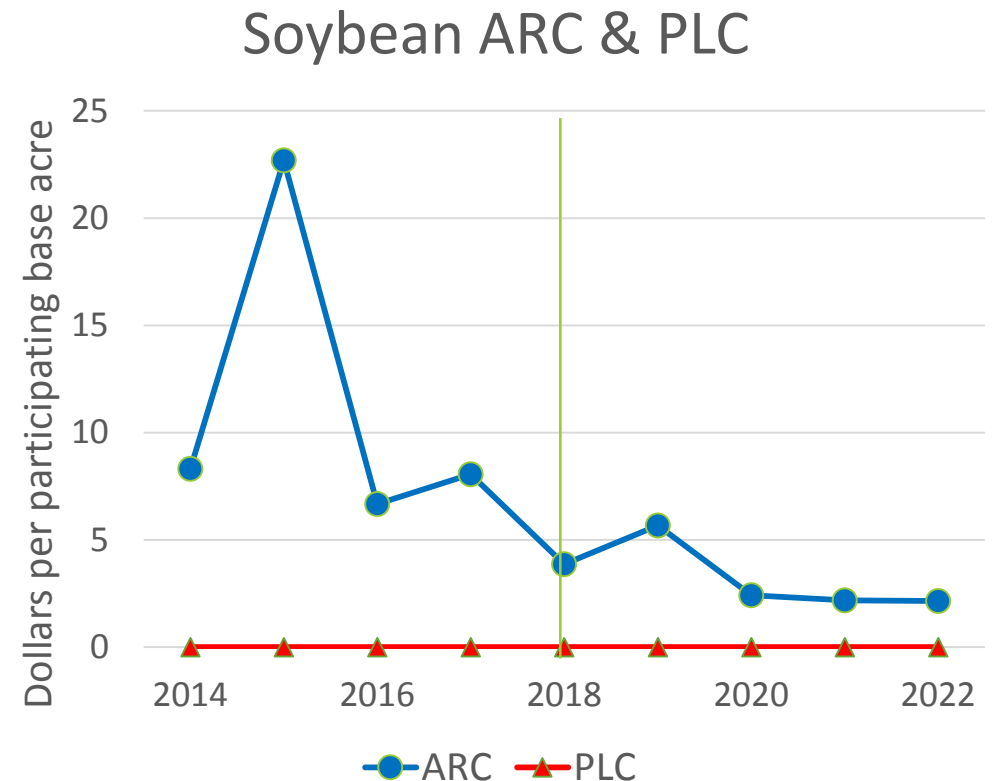
(Based on August 2018 FAPRI-MU update)

Soybean ARC payments per acre have been much lower than for other major crops

No soybean PLC payments have occurred or are projected at the \$8.40/bu. reference price

As with corn, level of support provided by ARC has declined as Olympic price has declined from \$12.27 to \$9.64 between 2014 and 2018

As with corn, expected future payments would be larger if uncertainty considered



Source: USDA and FAPRI baseline update, Aug./Sep. 2018. Note: stochastic estimates would show higher mean payments, as there is a chance prices (or yields) could fall low enough to trigger large PLC (or ARC) payments

ARC & PLC payments under current law

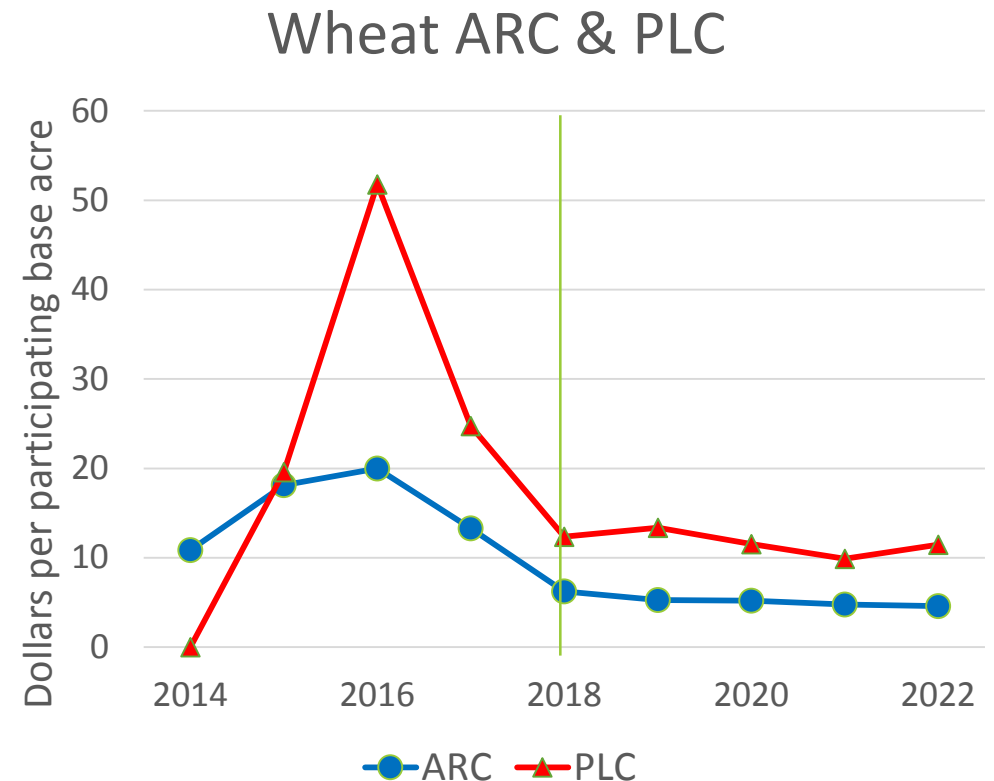
(Based on August 2018 FAPRI-MU update)

In contrast to corn and soybeans, wheat PLC payment rates have exceeded those for ARC in 3 of the first 4 years of the 2014 farm bill

Our projected wheat prices remain below the current \$5.50/bu. reference price, so PLC payments happen every year

As with other crops, considering uncertainty would increase payments under both programs, but PLC likely to be more attractive

- Currently 57% of wheat base is in ARC, but we assume 80% in PLC from 2019 forward



Source: USDA and FAPRI baseline update, Aug./Sep. 2018. Note: stochastic estimates would show higher mean payments, as there is a chance prices (or yields) could fall low enough to trigger large PLC (or ARC) payments

Crop insurance under current law

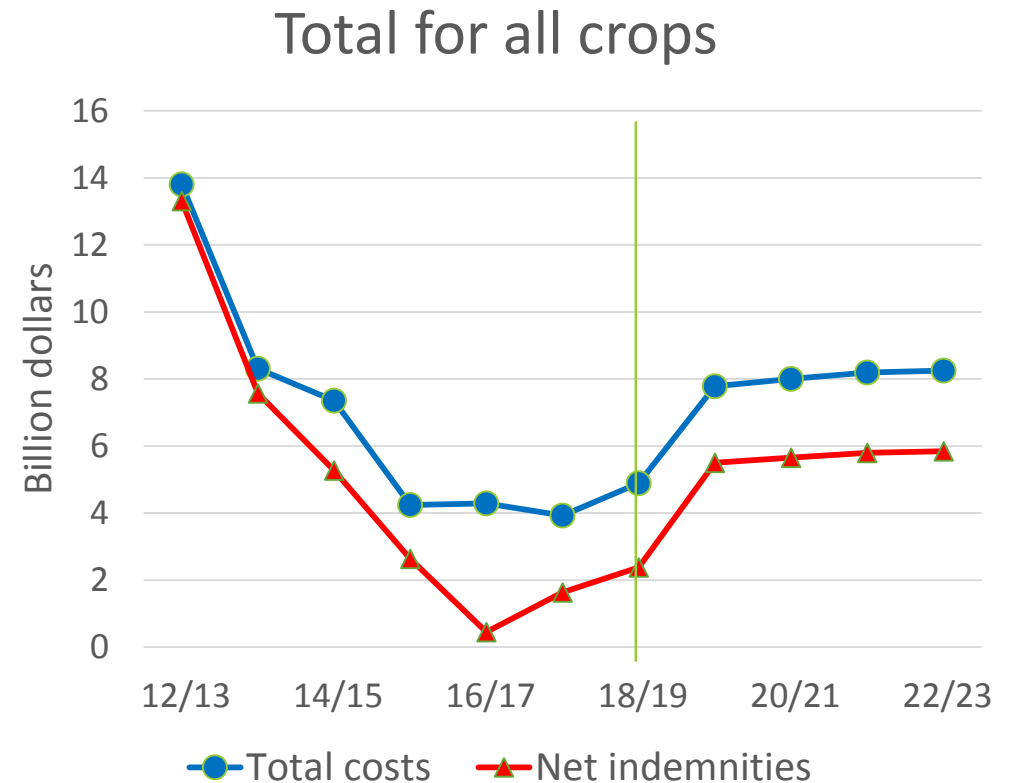
(Based on August 2018 FAPRI-MU update)

Crop insurance net indemnities (indemnities minus producer-paid premiums)

- Exceeded \$13 billion in the 2012 drought year
- Have been abnormally last 3 years, and likely again for 2018 crop

Total costs include premium subsidies, delivery costs and underwriting gains

Projected costs assume a loss ratio (indemnities/total premiums) of around 0.90 in future years



Source: USDA and FAPRI baseline update, Aug./Sep. 2018.

Some possible farm bill changes

Very few important changes on crop insurance

Relatively small changes in ARC and PLC

- Maybe use a trend yield for calculating the ARC benchmark (makes payments a little more likely)
- Maybe let some Plains producers hit by previous droughts increase PLC yields

House and Senate want to go opposite directions on payment limitations (Senate stricter)

Maybe a few more CRP acres, but at lower rental rates

What if they can't agree in 2018?

- Might need to do a short-term extension to avoid Jan. 1 “dairy cliff”
- Would a new Congress pick up where we left off, or start over?

Summary points

Trade disputes have had negative effects on market prices and U.S. farm income

MFP payments will help keep net farm income from falling as much as it otherwise would have

Weather, economic growth, oil prices and more always make agricultural markets uncertain

But trade disputes and farm bill debate mean uncertainty is especially great right now

Thanks!

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