

2018-19 / 2019-20 SOYBEAN OUTLOOK

August 15, 2019

Cincinnati, OH

Midwest Outlook Conference

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Outline

- Weather
- Planted
- Crop progress and condition
- Soybean outlook
- Risk Management for soybeans
- Balance sheet sensitivity analysis

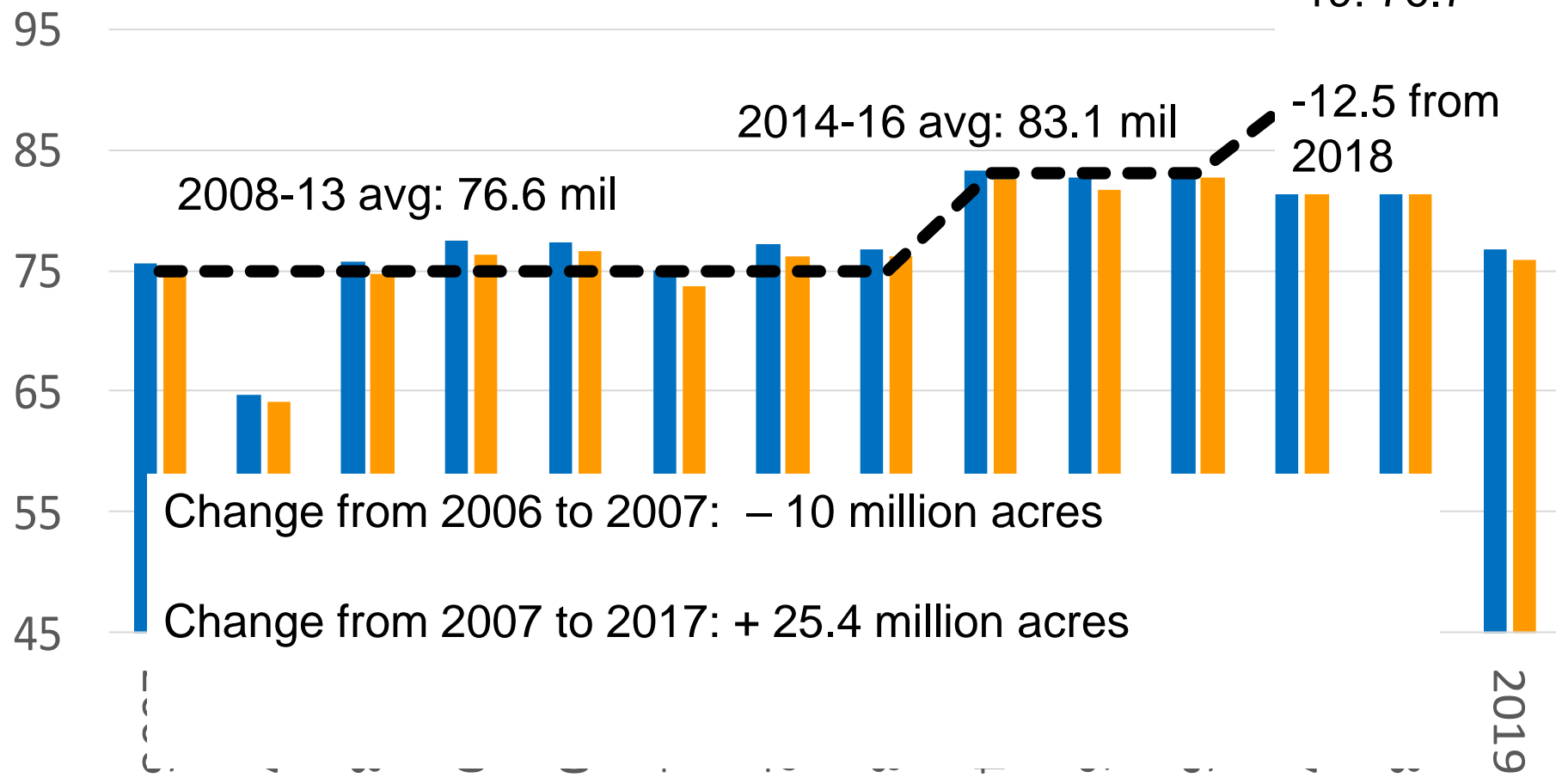
U.S. Soybean Planted and Harvested Area (Million Acres)

■ Planted ■ Harvested — Average

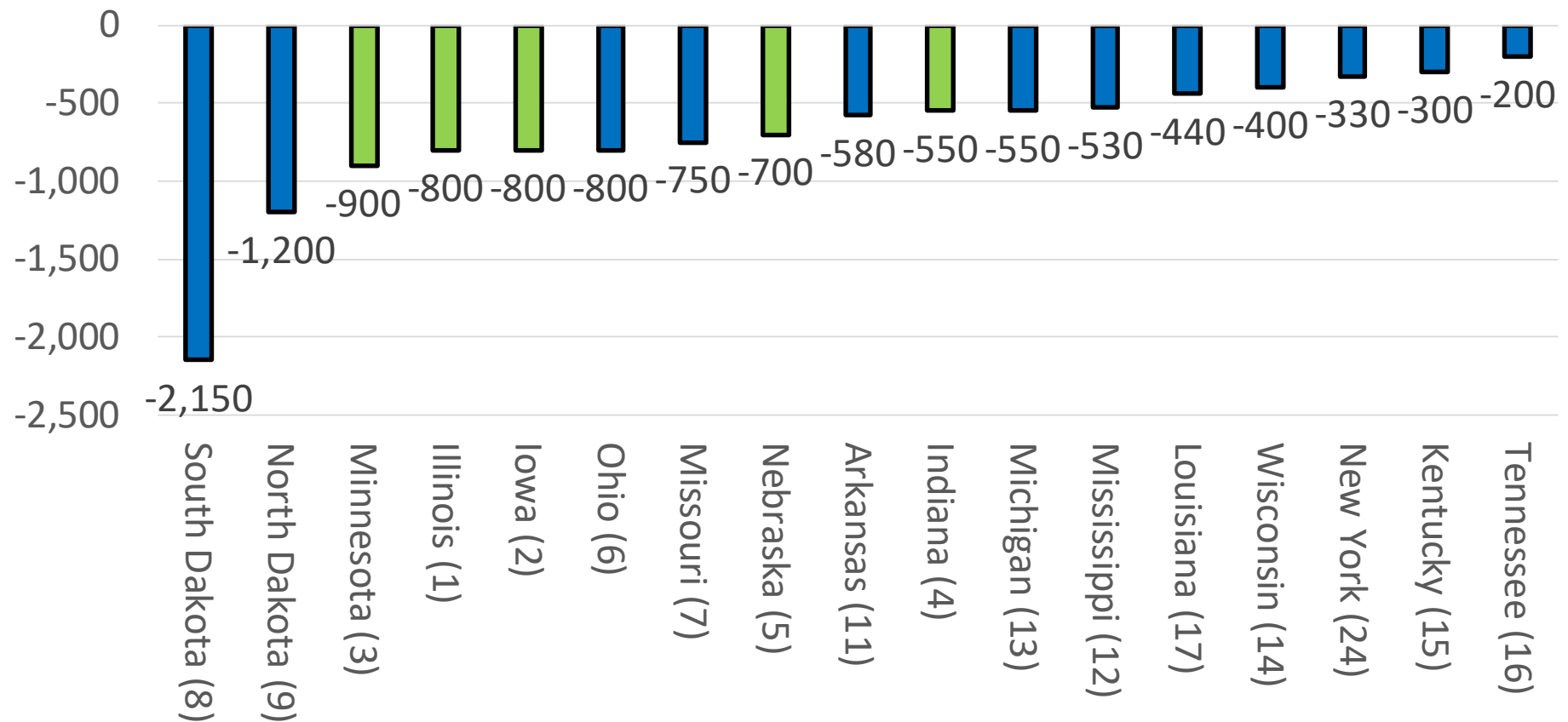
'17: 90.1

'18: 89.2

'19: 76.7



Change in Soybean Planted Area (1,000 Acres) from 2018 to 2019



ND+SD = 3.35 mil (27%)

Top 5 = 3.75 mil (30%)

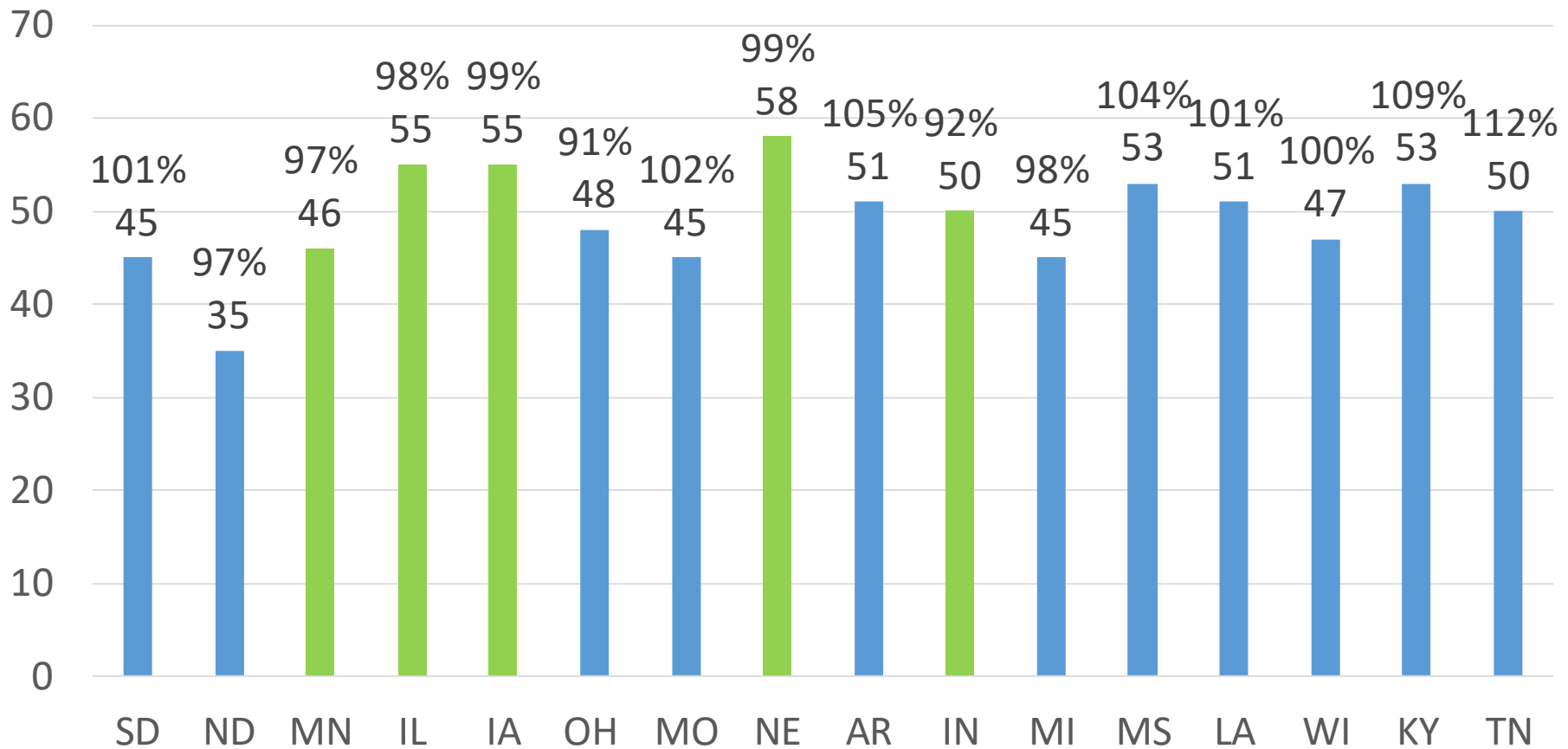
Soybean Setting Pods (Aug 11, 2019)

	Aug 11, 2018	Aug 4, 2019	Aug 11, 2019	2014-2018 Average	Change from 5-Year Average	Change from 2018
	%	%	%	%	%	%
Arkansas (#11)	94	74	80	87	-7	-14
Illinois (#1)	89	30	49	79	-30	-40
Indiana (#4)	84	19	34	78	-44	-50
Iowa (#2)	88	33	56	81	-25	-32
Kansas (#10)	72	22	39	58	-19	-33
Kentucky (#15)	65	37	47	58	-11	-18
Louisiana (#17)	100	91	96	95	+1	-4
Michigan (#13)	67	20	31	72	-41	-36
Minnesota (#3)	90	53	74	84	-10	-16
Mississippi (#12)	93	76	81	87	-6	-12
Missouri (#7)	65	16	38	52	-14	-27
Nebraska (#5)	78	51	66	76	-10	-12
North Carolina (#18)	53	38	51	52	-1	-2
North Dakota (#9)	88	43	62	82	-20	-26
Ohio (#6)	82	20	35	72	-37	-47
South Dakota (#8)	79	33	47	76	-29	-32
Tennessee (#16)	77	54	66	71	-5	-11
Wisconsin (#14)	78	29	50	76	-26	-28
18-States	83	37	54	76	-22	-29

Soybean Condition: 2018 vs. 2019 (Aug 11, 2019)

	Very Poor + Poor	Good + Excellent	Change in Very Poor + Poor	Change in Good + Excellent	2018 Yield	2019 Aug Yield
	Illinois (#2)					
2018	7%	74%	+16%	-35%	65	55
2019	23%	39%				
	Indiana (#5)					
2018	8%	69%	+20%	-35%	58.5	50
2019	28%	34%				
	Iowa (#1)					
2018	7%	72%	+1%	-9%	57	55
2019	8%	63%				
	Minnesota (#4)					
2018	7%	73%	+1%	-14%	50.5	46
2019	8%	59%				
	Nebraska (#3)					
2018	7%	80%	-2%	-7%	59	58
2019	5%	73%				
	Kentucky (#14)					
2018	6%	70%	+2%	+1%	52	53
2019	8%	71%				
	U.S. 18-State Ranking					
2018	10%	66%	+3%	-12%	51.6	48.5
2019	13%	54%				

Aug 2019 Soybean Yield vs. 2019 Soybean Trend Yield (Bushels and % of Trend Yield)

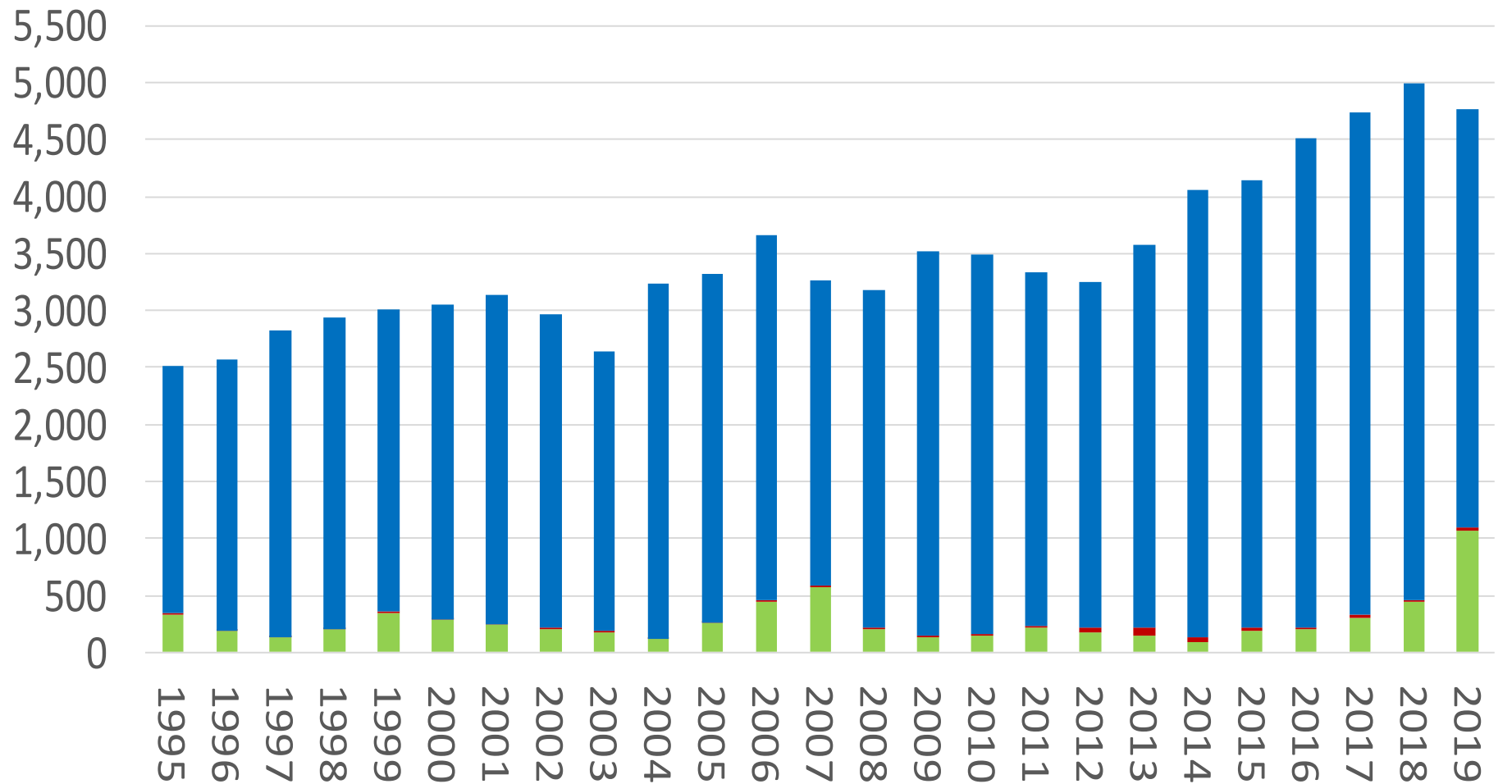


	2016-17	2017-18	2018-19 Estimated	2019-20 Projected	Change from 18-19
Planted Area (million)	83.4	90.2	89.2	76.7	-12.5
Harvested Area (million)	82.7	89.5	88.1	75.9	-12.2
Yield (bushels/acre)	52	49.3	51.6	48.5	-3.1
	----- Million Bushels -----				
Beginning Stocks	197	302	438	1,070	+632
Production	4,296	4,412	4,544	3,680	-864
Imports	<u>22</u>	<u>22</u>	<u>17</u>	<u>20</u>	<u>+3</u>
Total Supply	4,515	4,735	4,999	4,771	-228
Crushings	1,901	2,055	2,065	2,115	+50
Exports	2,174	2,129	1,700	1,775	+75
Seed	105	104	89	96	+7
Residual	<u>34</u>	<u>9</u>	<u>75</u>	<u>30</u>	<u>-45</u>
Total Use	4,213	4,297	3,929	4,016	+87
Ending Stocks	302	438	1070	755	-315
Stocks/Use	7.2%	10.2%	27.2%	18.8%	-8.4%
Days of Stocks	26	37	99	69	-30.8
U.S. Marketing-Year Average Price (\$/bu)	\$9.47	\$9.33	\$8.50	\$8.40	-\$0.10

Source: August 2019 WASDE - USDA: WAOB.

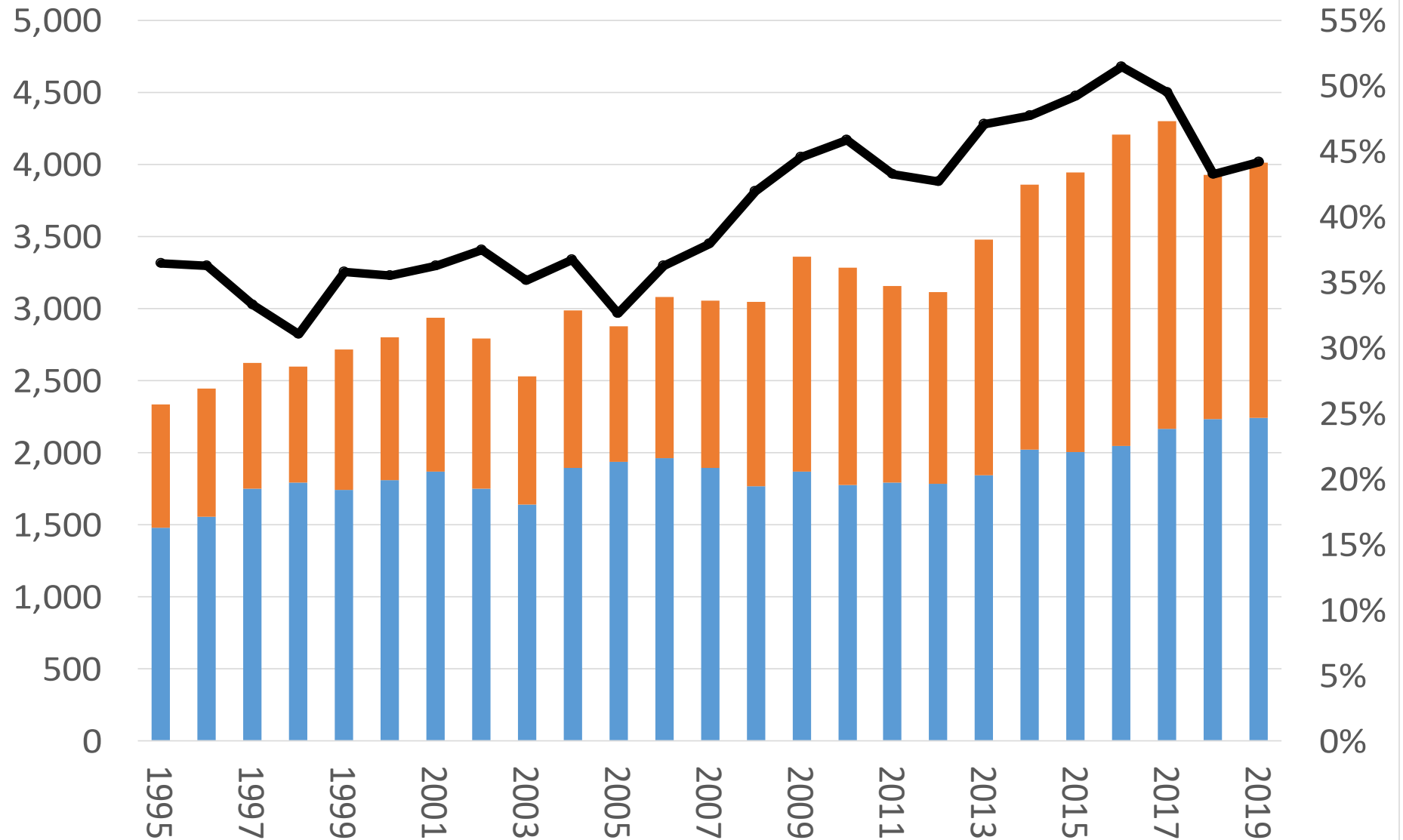
U.S. Soybean Beginning Stocks, Imports and Production (Million Bushels)

Beginning Imports Production

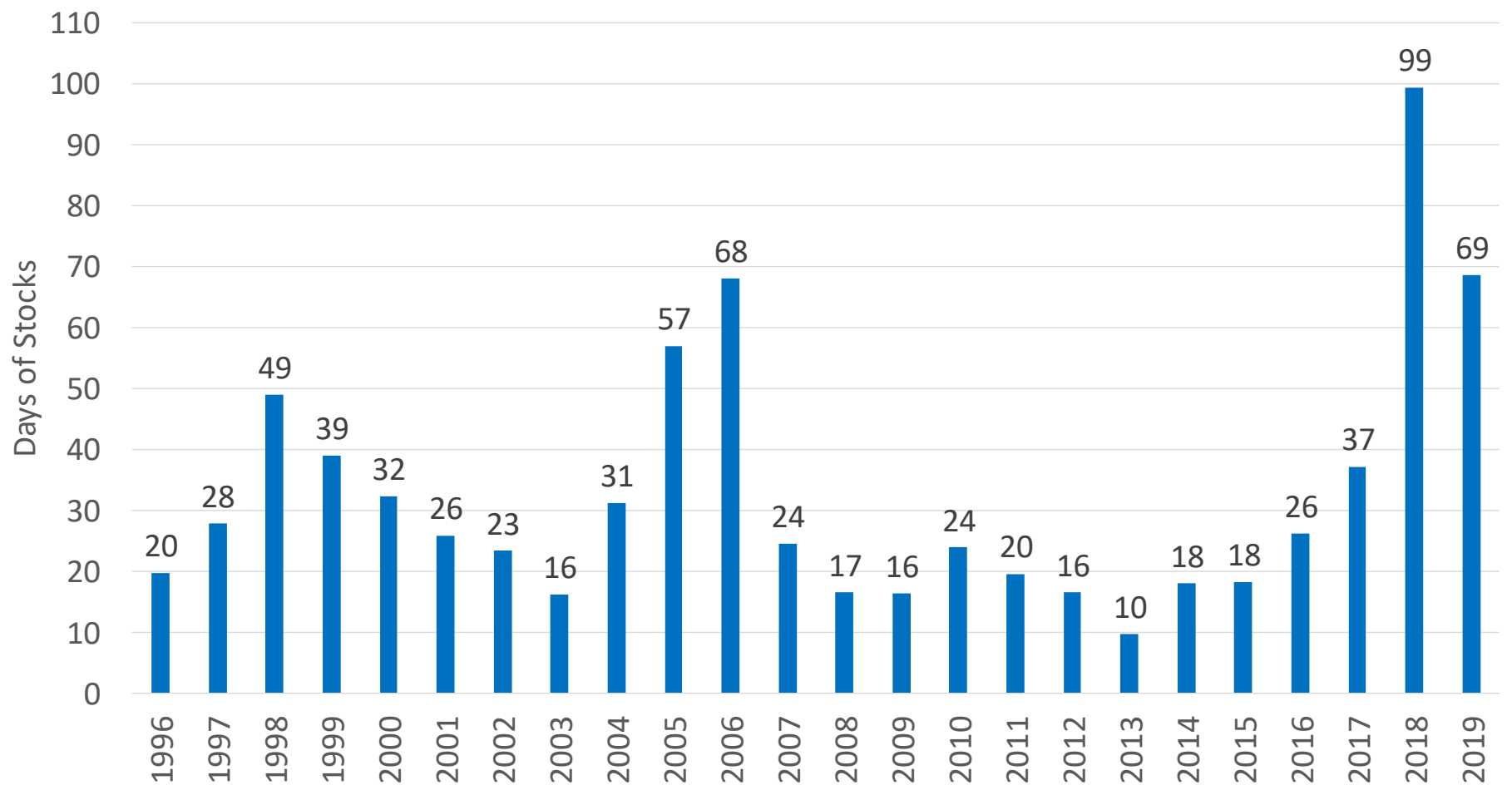


Total Domestic and Export Use

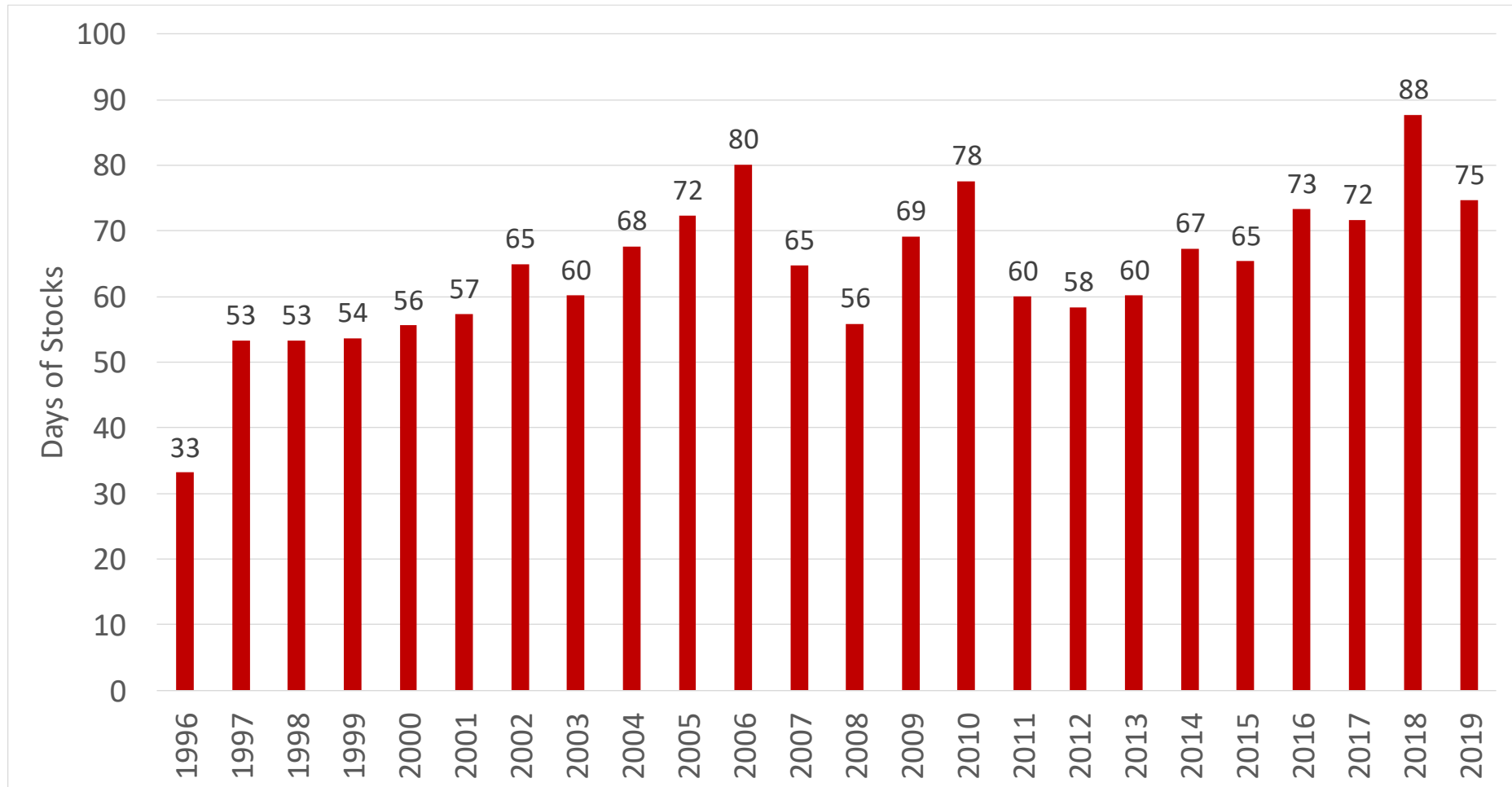
Domestic Exports % Exports



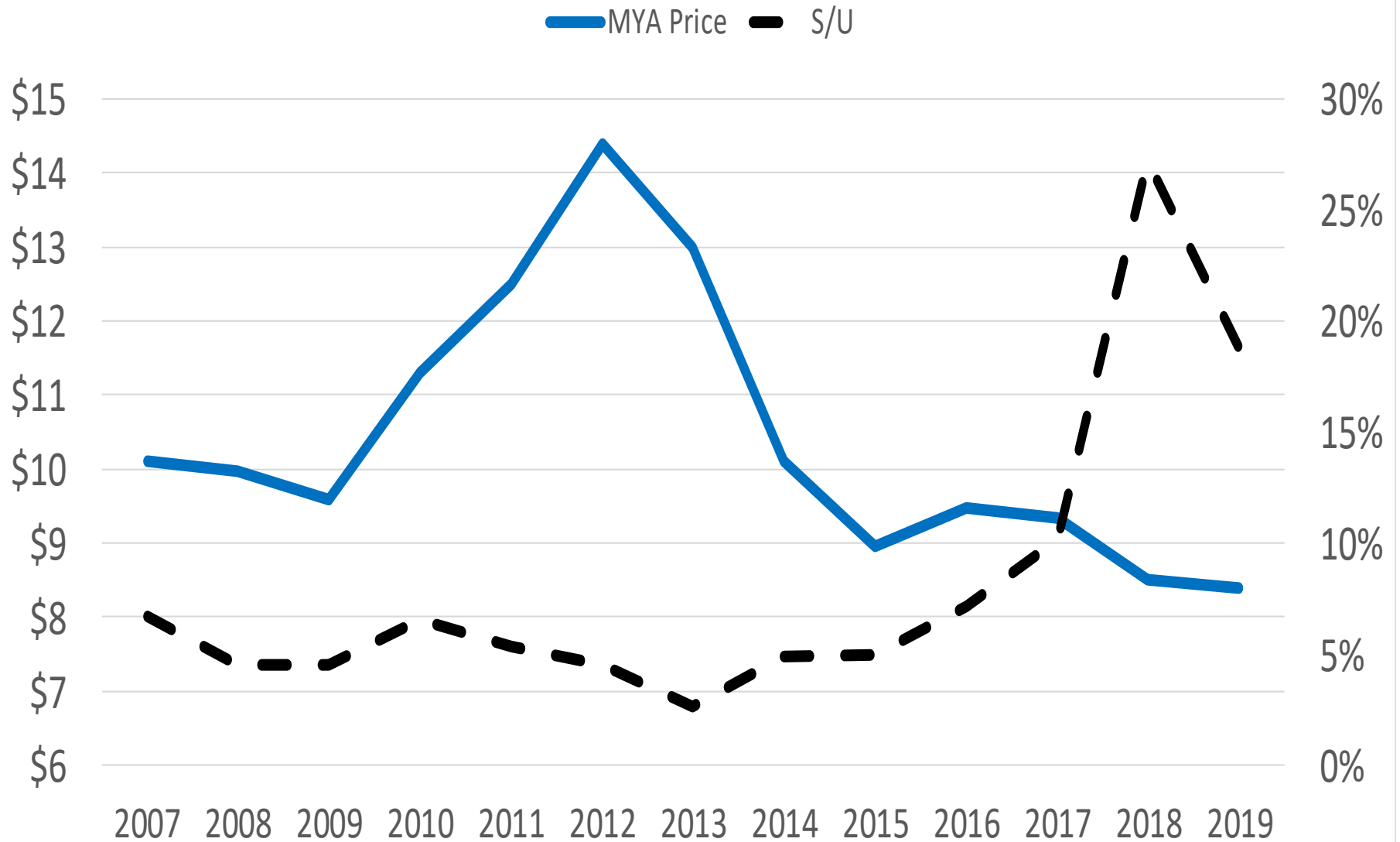
US Days of Soybean Stocks



World Days of Soybeans Stocks

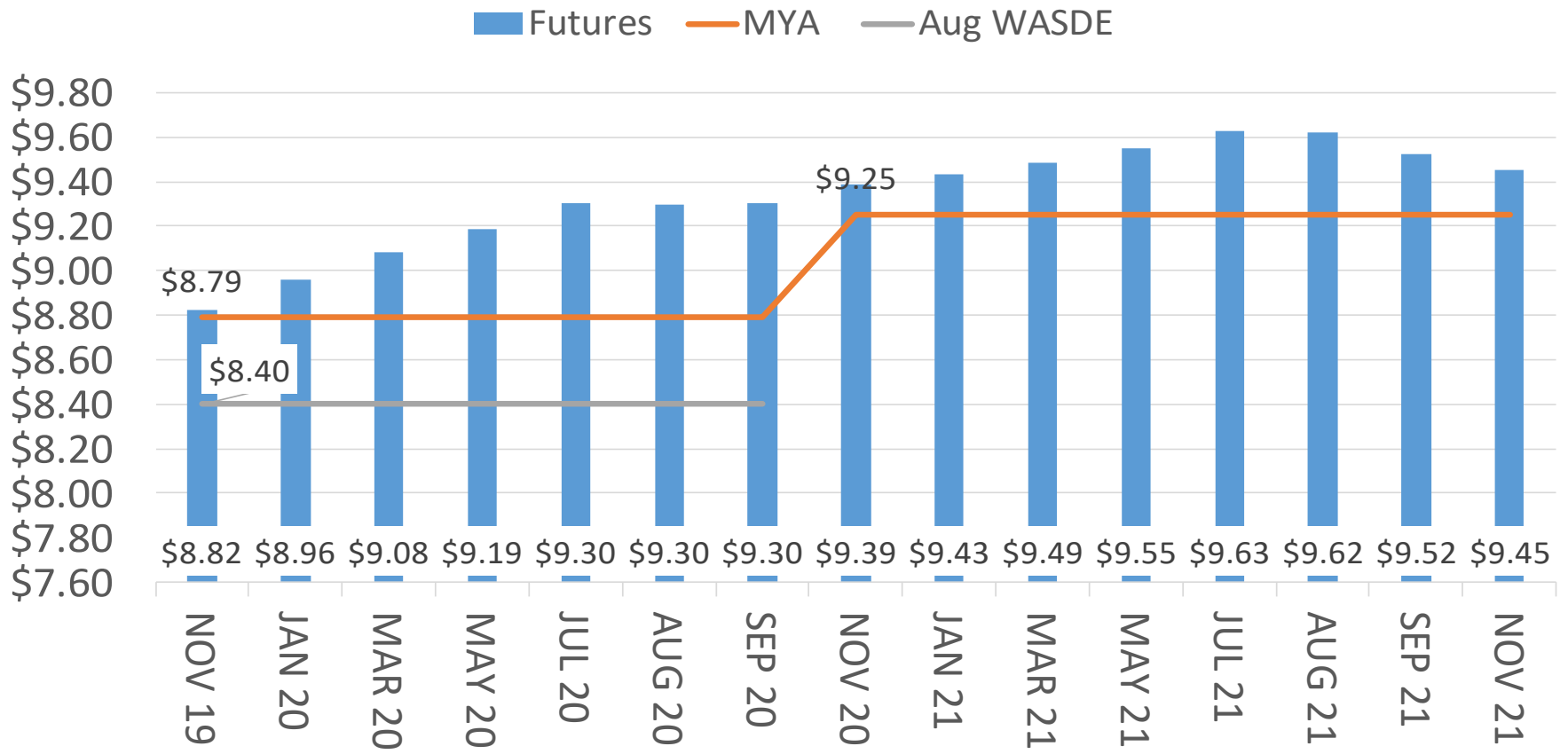


U.S. Soybeans MYA Price and Stocks-to-Use Ratio for 1995 to 2019 (F)



Futures Market Implied MYA Price – Soybeans (8/14/19)

Soybeans Futures Implied Marketing Year Average
Price - Aug 14, 2019



2019 Soybeans Pre-Harvest Risk Management

Risk Management Alternatives for 2019 Western Kentucky Soybeans for Various Yield Objectives.

Yield	<u>45</u>	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>
TVC+Rent+Overhead+Family Living (\$/acre)	\$522	\$522	\$522	\$522	\$522
TVC+Rent+Overhead+Family Living (\$/bu)	\$11.60	\$10.44	\$9.49	\$8.70	\$8.03
Hedge @ \$8.82 + -\$0.50 basis = \$8.32	-\$3.28	-\$2.12	-\$1.17	-\$0.38	+\$0.29
Forward Contract at \$8.30	-\$3.30	-\$2.14	-\$1.19	-\$0.40	+\$0.27
Put: \$8.80 strike @\$0.24 = \$8.06 floor	-\$3.54	-\$2.38	-\$1.43	-\$0.64	+\$0.03
Strategies Evaluated on:	August 14, 2019				

2019 Soybeans Pre-Harvest Risk Management

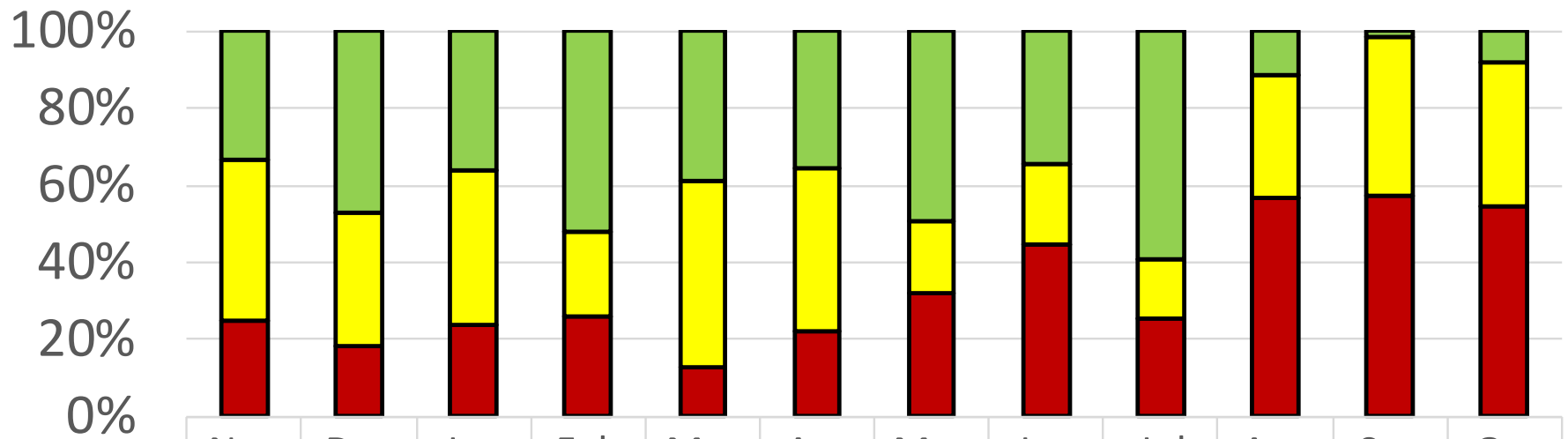
Table 9. Risk Management Alternatives for 2019 Western Kentucky Double-Crop Soybeans for Various Yield Objectives.

Yield	<u>35</u>	<u>40</u>	<u>45</u>	<u>50</u>	<u>55</u>
TVC+Rent+Overhead+Family Living (\$/acre)	\$393	\$393	\$393	\$393	\$393
TVC+Rent+Overhead+Family Living (\$/bu)	\$11.21	\$9.81	\$8.72	\$7.85	\$7.14
Hedge @ \$8.82+ -\$0.50 basis = \$8.32	-\$2.90	-\$1.50	-\$0.40	+\$0.47	+\$1.18
Forward Contract at \$8.30	-\$2.91	-\$1.51	-\$0.42	+\$0.45	+\$1.16
Put: \$8.80 strike @\$0.24 = \$8.06 floor	-\$3.16	-\$1.75	-\$0.66	+\$0.21	+\$0.92
Strategies Evaluated on:	August 14, 2019				

Hitting the Top 1/3 (and Avoiding the Bottom 1/3) for November Soybean Futures

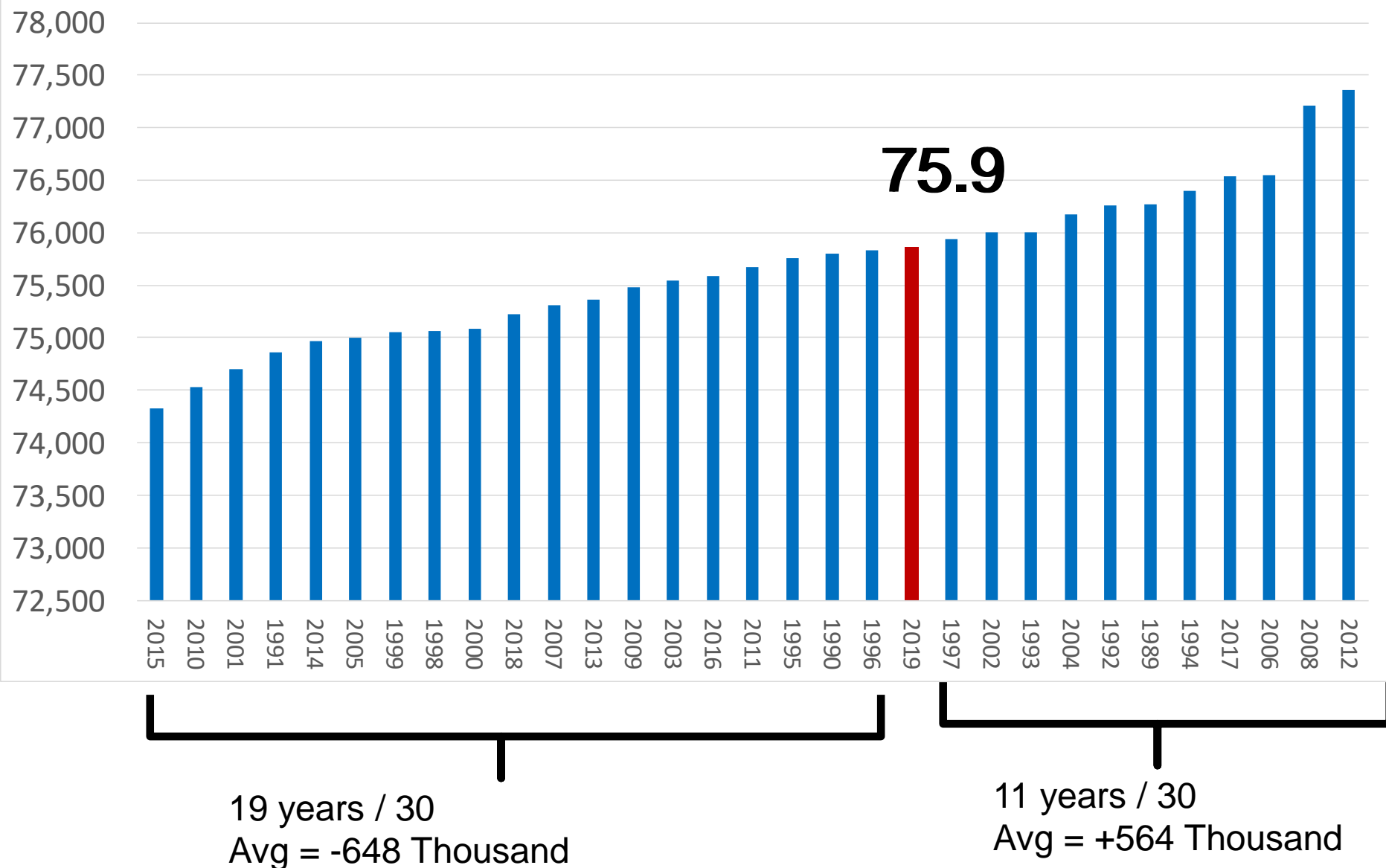
NOV Soybean Futures Price Distribution Thirds by Month for 2015 to 2018 Crop Years

■ Bottom 1/3
 ■ Middle 1/3
 ■ Top 1/3

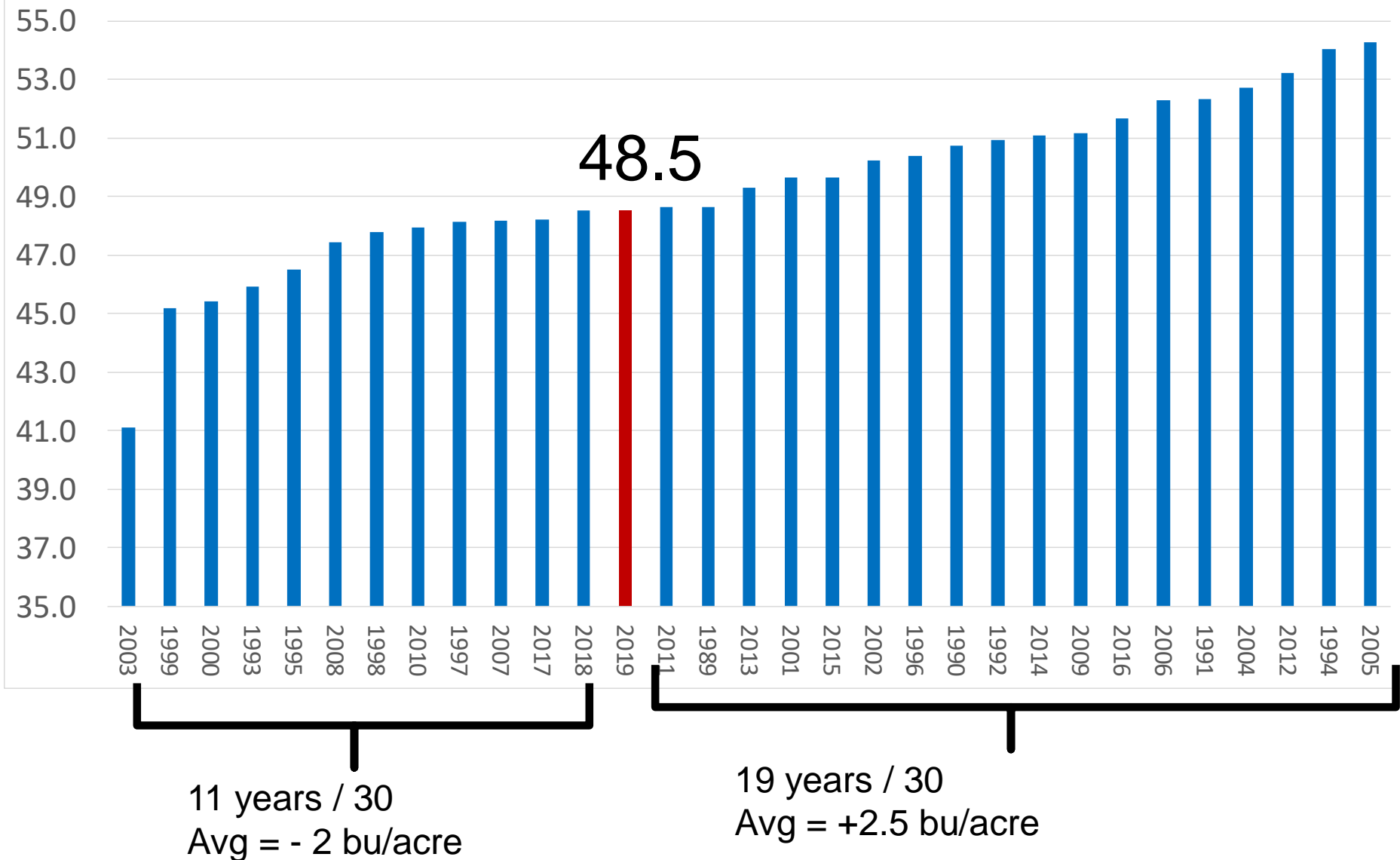


	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Top 1/3	33%	47%	36%	52%	39%	35%	49%	34%	59%	11%	1%	8%
Middle 1/3	42%	34%	40%	22%	49%	43%	19%	21%	16%	32%	41%	38%
Bottom 1/3	25%	18%	24%	26%	13%	22%	32%	45%	25%	57%	57%	55%

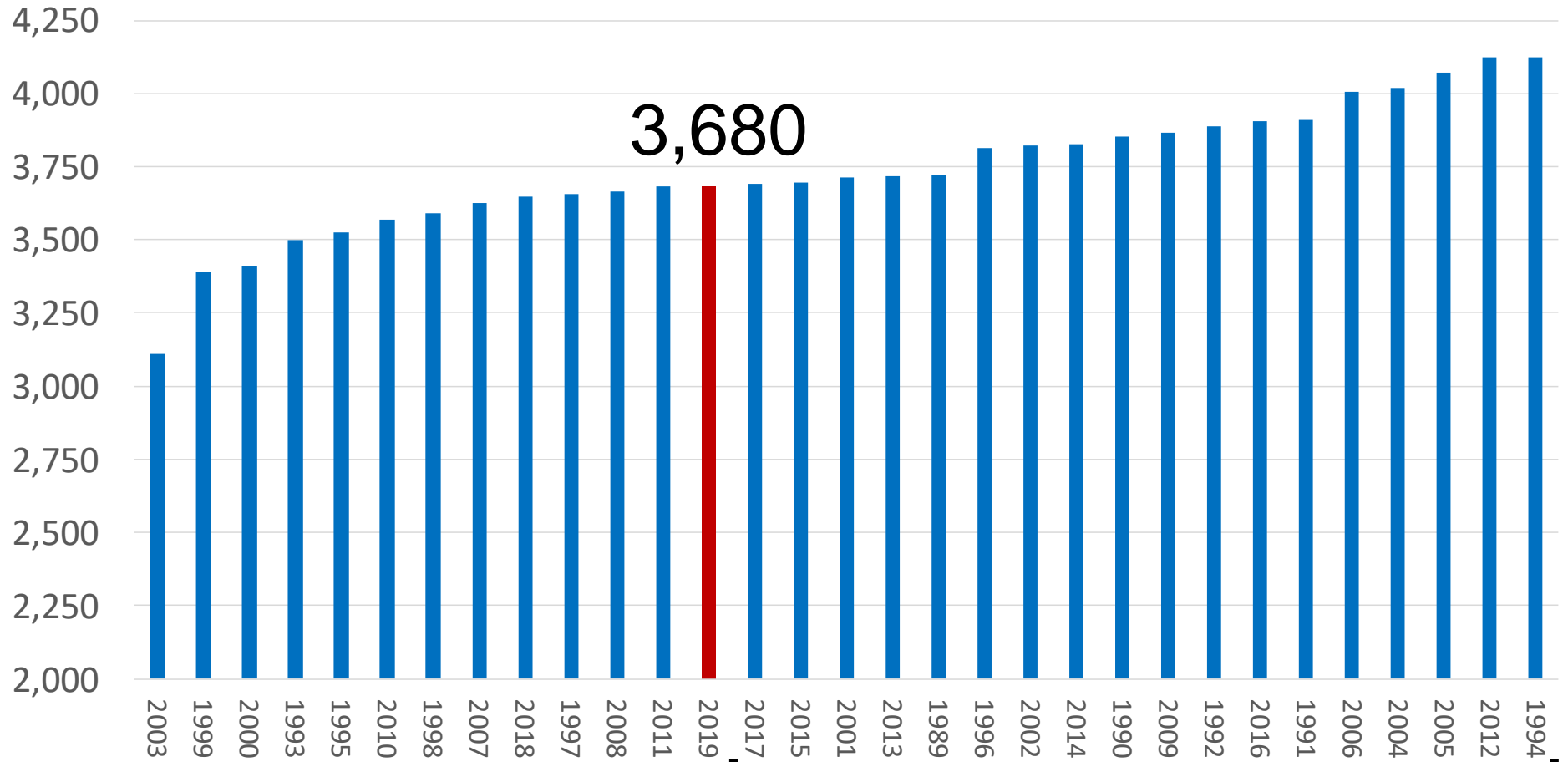
2019 Implied Harvested Area (1,000 Acres) based on Historical Change from August to January from 1989-2019



2019 Implied Soybean Yield (bu/acre) based on Historical Change from August to January from 1989-2019



2019 Implied Soybean Production (million bushels) based on Historical Change from August to January from 1989-2019



11 years / 30
Avg = - 163 mil bu

19 years / 30
Avg = +185 mil bu

2019-20 U.S. Soybean Production/Stocks

Carry-in	1,070	mil bu	
Imports	20	mil bu	
Total Use	4,016	mil bu	

Total Production (Million Bushels)

Harvested	Yield (bu/acre)		
Area (million)	46.5	48.5	50.5
76.5	3,557	3,710	3,863
75.9	3,529	3,681	3,833
75.3	3,501	3,652	3,803

Ending Stocks (Million Bushels)

Harvested	Yield (bu/acre)		
Area (million)	46.5	48.5	50.5
76.5	631	784	937
75.9	603	755	907
75.3	575	726	877

3.5 bil is implied 1993

Potential U.S. Soybean Stocks/Use and U.S. Marketing Year Average Price

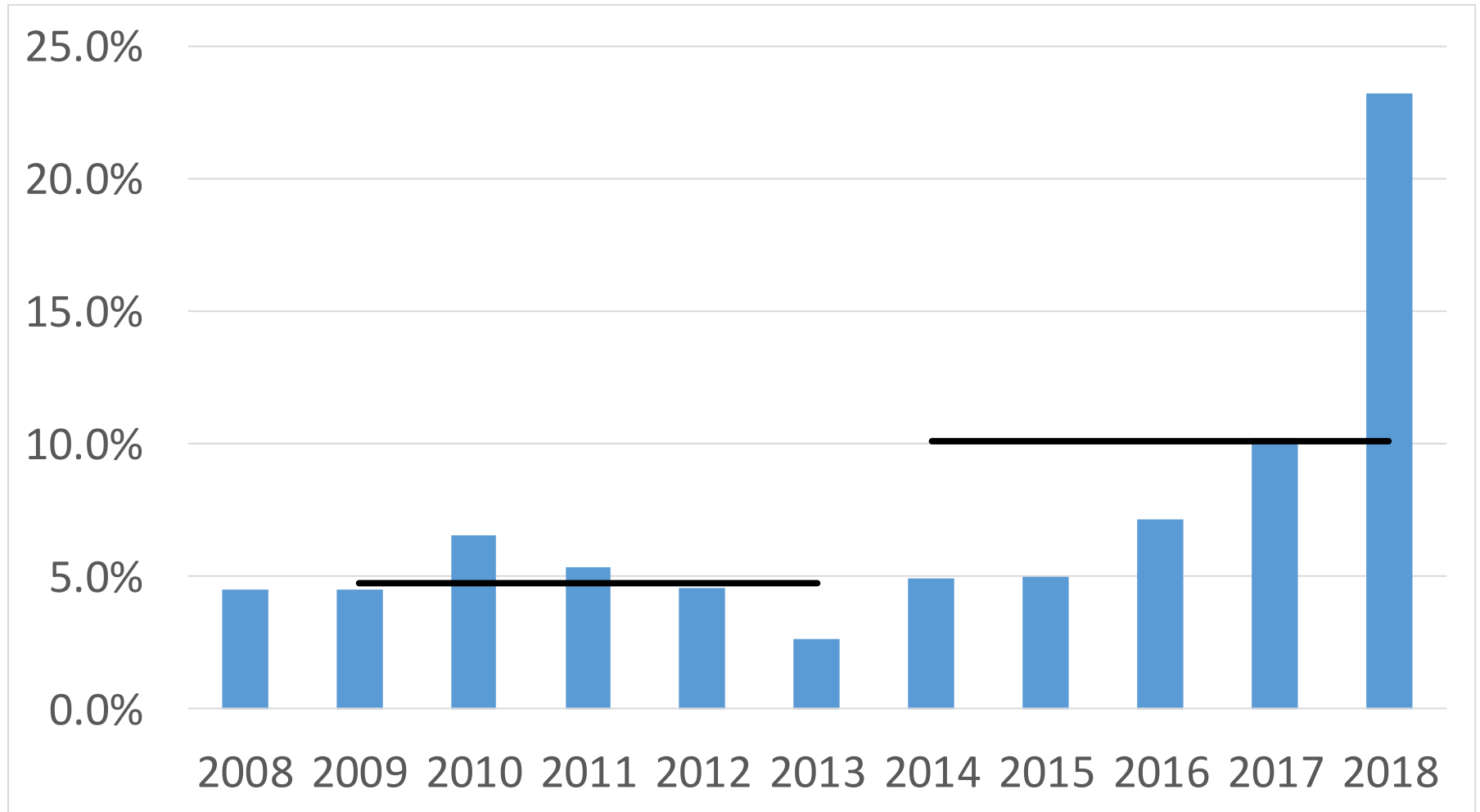
Stocks-to-Use Ratio			
Harvested	Yield (bu/acre)		
Area (million)	46.5	48.5	50.5
76.5	15.7%	19.5%	23.3%
75.9	15.0%	18.8%	22.6%
75.3	14.3%	18.1%	21.8%

stocks-to-use	26%	24%	22%	20%	18%	16%	14%	12%	10%	8%
MYA Price	\$7.50	\$7.75	\$8.00	\$8.24	\$8.50	\$8.85	\$9.25	\$9.65	\$10.00	\$10.60

Summary and Conclusions

- Weather market will continue until crop escapes pod set and frost
- Harvested area and yield uncertainty likely debated until January
- Soybeans really needs the reduced acreage. A below-trend yield is bitter medicine that will help cure the excess stocks (for one year).
- Unfortunately, will expose financial stress hidden by above-trend yields

Soybean Stocks-to-Use Recent History



2009-13 = 4.7%

2014-18 = 10.1%

What if....

- Spread sheet quick calculations, if achieve 2020 trend yield of 50-bu and Total Use of 4 billion bushels, Planted area would have to decline by another 3.3 million acres to get a 10% stocks-to-use
- To get to a 8% stocks-to-use, planted area would have to be -4.9 million acres below 2019 planted area.
- No (legal) crop has profit potential to keep soybean area reduced. 2020 will likely increase stocks.
- South America production problems would be helpful

THANK YOU!

I would be happy to answer any questions that you may have.

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For updated information, look at my monthly newsletter

[Crops Marketing and Management Update](http://www.uky.edu/Ag/AgEcon/extmkt.php)

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