Form-A-Feed

Risk Assessment and Management

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Drowning in a sea of opportunity as the weather forecast dries out

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August 2019

The legal stuff

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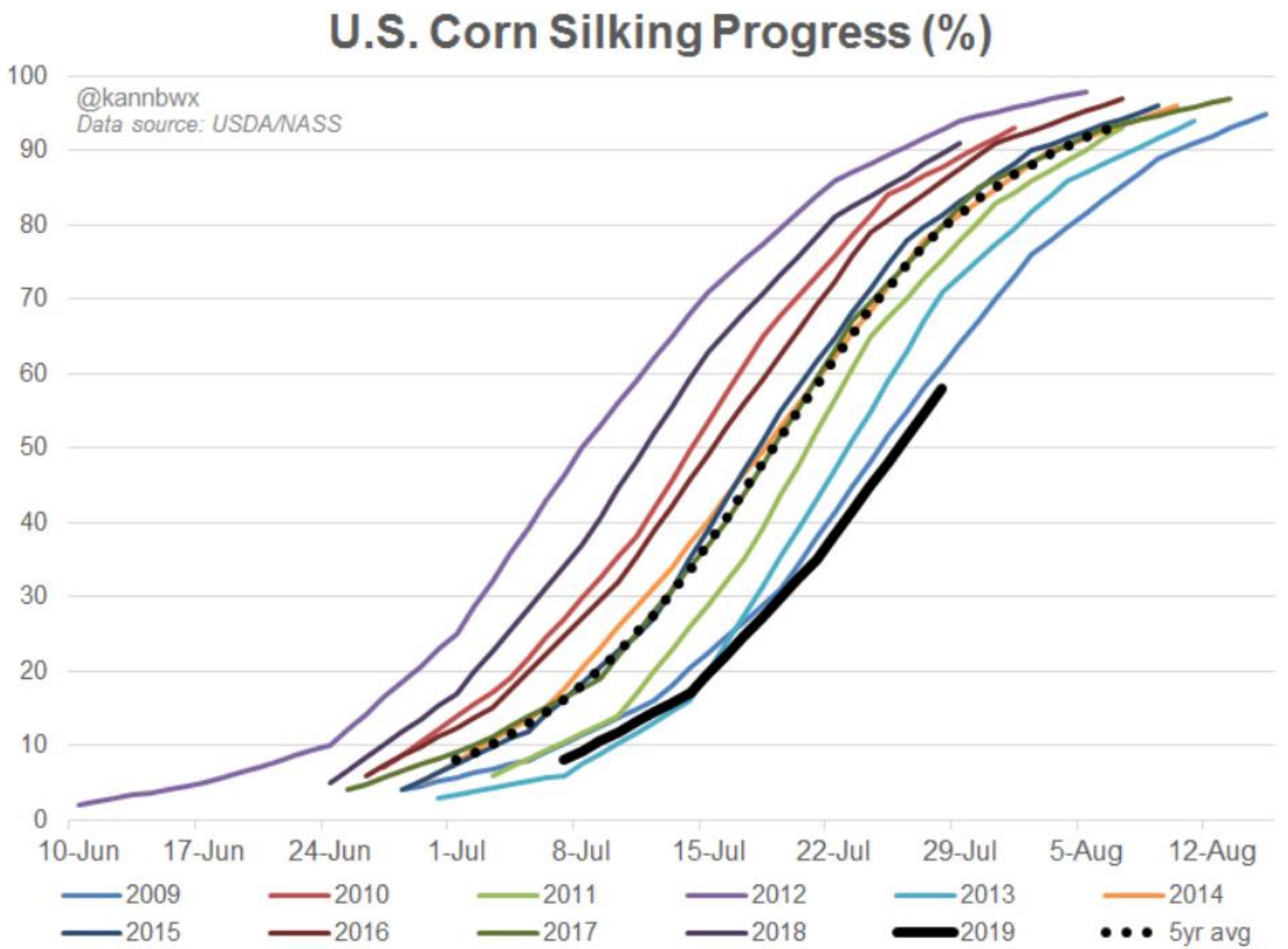
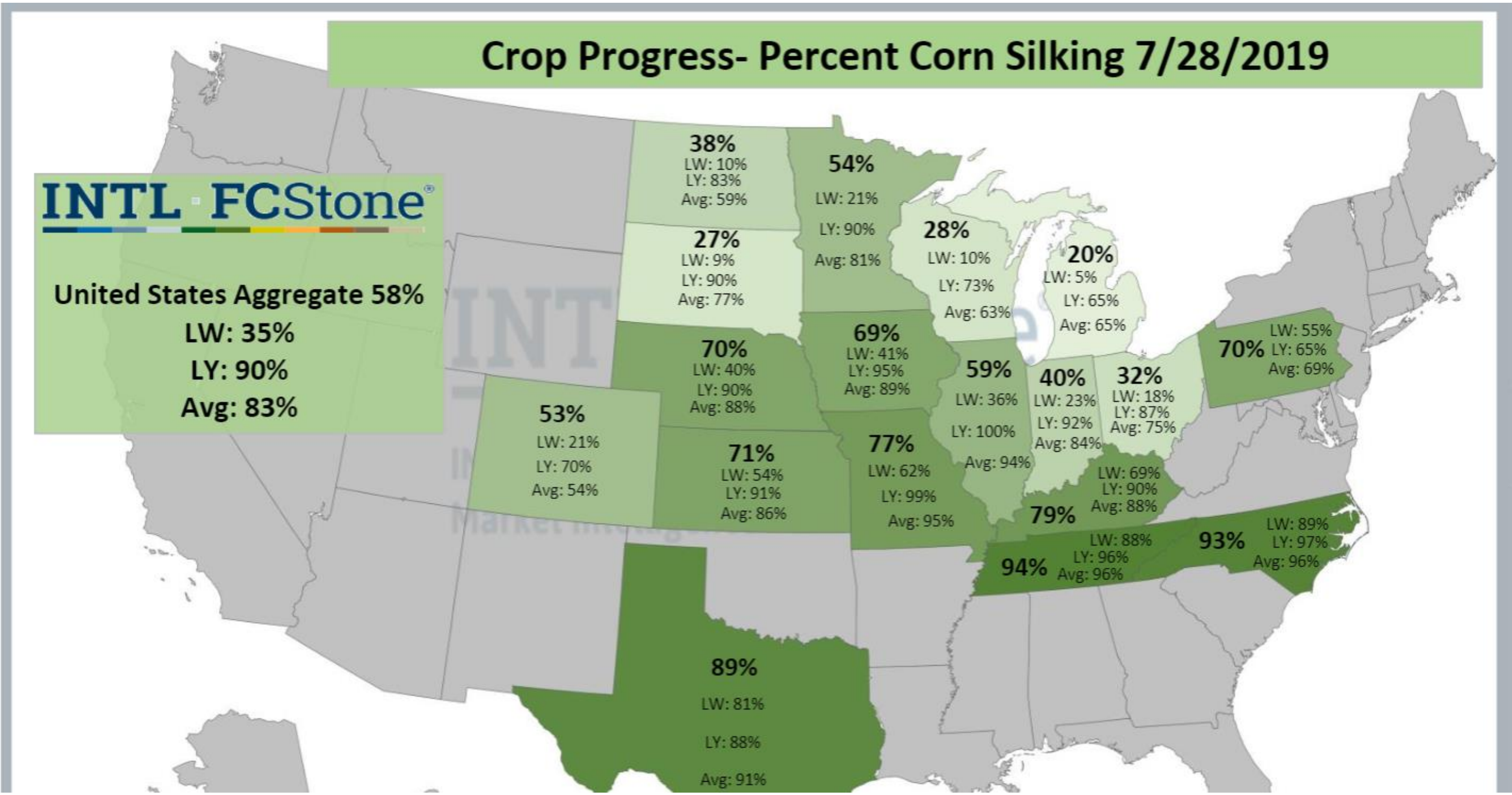


U.S. Corn Silking Progress (%)
@kannbwx
Data source: USDA/NASS
100
90
80
70
60
50
40
30
20
10
0
10-Jun
17-Jun
24-Jun
1-Jul
8-Jul
15-Jul
22-Jul
29-Jul
5-Aug
12-Aug
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
5yr avg



Crop Progress- Percent Corn Silking 7/28/2019
United States Aggregate 58%
LW: 35%
LY: 90%
Avg: 83%
38%
LW: 10%
LY: 83%
Avg: 59%
54%
LW: 21%
LY: 90%
Avg: 81%
27%
LW: 9%
LY: 90%
Avg: 77%
28%
LW: 10%
LY: 73%
Avg: 63%
20%
LW: 5%
LY: 65%
Avg: 65%
70%
LW: 40%
LY: 90%
Avg: 88%
69%
LW: 41%
LY: 95%
Avg: 89%
59%
LW: 36%
LY: 100%
Avg: 94%
40%
LW: 23%
LY: 92%
Avg: 84%
32%
LW: 18%
LY: 87%
Avg: 75%
70%
LW: 55%
LY: 65%
Avg: 69%
53%
LW: 21%
LY: 70%
Avg: 54%
71%
LW: 54%
LY: 91%
Avg: 86%
77%
LW: 62%
LY: 99%
Avg: 95%
79%
LW: 69%
LY: 90%
Avg: 88%
94%
LW: 88%
LY: 96%
Avg: 96%
93%
LW: 89%
LY: 97%
Avg: 96%
89%
LW: 81%
LY: 88%
Avg: 91%

USDA Quarterly Stocks (billion bushels)

	USDA June 1, 2019	Average Estimate	Range of Estimate	INTL FCStone Estimate*	USDA June 1, 2018	USDA Mar 1, 2019
Corn	5.202	5.332	5.174-5.497	5.432	5.305	8.605
Soybeans	1.790	1.861	1.700-1.962	1.921	1.219	2.716
Wheat	1.072	1.100	1.077-1.160	1.105	1.099	1.591

USDA Prospective Plantings (million acres)

	USDA June 2019	Average Estimate	Range of Estimate	INTL FCStone Estimate*	USDA March 2019	USDA 2018 Final
Corn	91.7	86.662	82.0-89.8	88.80	92.8	89.1
Soybeans	80.0	84.355	81.0-86.5	86.50	84.6	89.2
All Wheat	45.6	45.654	44.5-46.1	45.38	45.8	47.8
Winter Wheat	31.8	31.577	31.5-32.1	31.50	31.5	32.5
Spring Wheat	12.4	12.595	12.0-13.0	12.23	12.8	13.2
Durum	1.4	1.476	1.30-1.82	1.65	1.42	2.07

June 2019 Reinterview States

Max U.S. Prevent Plant Acres by Crop

(2007 – 2018)

Barley	310,765	2011
Corn	3,616,862	2013
All Cotton	649,963	2015
Oats	31,275	2011
Rice	521,248	2015
Sorghum	189,139	2011
Soybeans	2,231,881	2015
Sugar beets	11,140	2013
Sugarcane	347	2010
Wheat	4,117,096	2011

Data source: USDA/FSA

@kannbwx

Total U.S. Prevent Plant Acres: Top 5

(millions of acres; 2007 – 2018)

	TOTAL	% corn	% soy	% wheat
2011	**9.62**	31%	15%	43%
2013	**8.32**	43%	20%	24%
2010	**6.89**	31%	20%	47%
2015	**6.67**	35%	33%	11%
2014	**4.37**	37%	19%	32%
2009	**4.18**	45%	22%	22%

Data source: USDA/FSA

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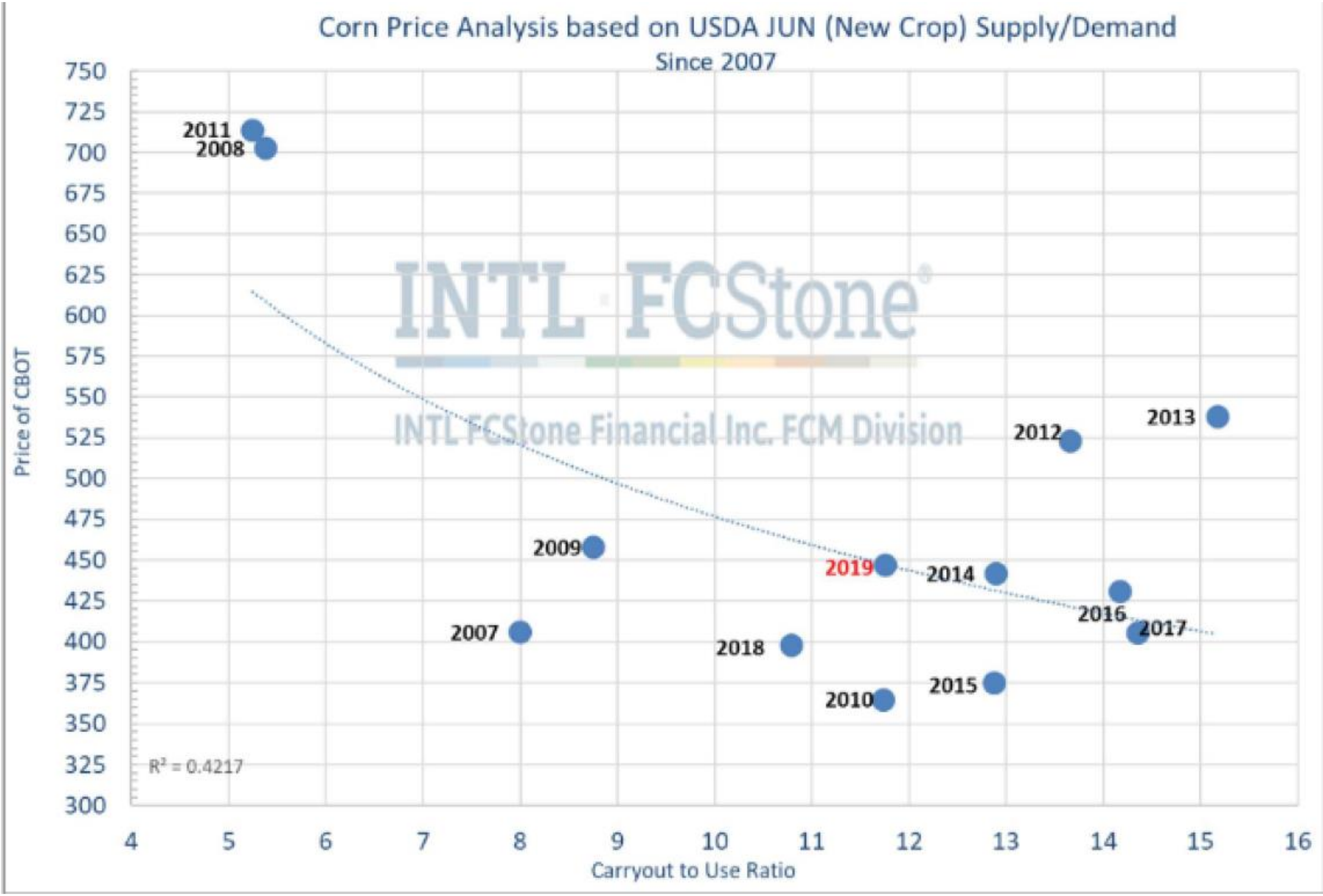
US Corn Supply and Demand

Millions of Bushels	14/15	15/16	16/17	17/18	18/19	USDA 19/20 July	what if? 19/20	what if? 19/20
Area Planted	90.6	88.0	94.0	90.2	89.1	91.7	86.7	84.7
Area Harvested	83.1	80.8	86.7	82.7	81.7	83.6	78.9	77.1
Percent Harvested	92%	92%	92%	92%	92%	91%	91%	91%
Yield Per Acre	171.0	168.4	174.6	176.6	176.4	166.0	160.0	150.0
Beginning Stocks	1,232	1,731	1,737	2,293	2,140	2,340	2,245	2,245
Production	14,216	13,602	15,148	14,609	14,420	13,875	12,624	11,562
Imports	32	68	57	36	35	50	150	200
Total Supply	15,479	15,401	16,942	16,939	16,595	16,265	15,019	14,007
Feed and Residual	5,280	5,114	5,470	5,304	5,275	5,175	5,100	5,000
Food, Seed and Industrial	6,601	6,648	6,885	7,056	6,880	6,930	6,650	6,450
Ethanol Usage	5,200	5,224	5,432	5,605	5,450	5,500	5,200	5,000
Total Domestic	11,881	11,763	12,355	12,360	12,155	12,105	11,750	11,450
Exports	1,867	1,901	2,294	2,438	2,100	2,150	1,600	1,200
Total Demand	13,748	13,664	14,649	14,799	14,255	14,255	13,350	12,650
Ending Stocks	1,731	1,737	2,293	2,140	2,340	2,010	1,609	1,357
Stocks to Usage	12.59%	12.71%	15.65%	14.46%	16.42%	14.10%	12.50%	11.97%
Carry-Out Months of Supply	1.51	1.53	1.88	1.74	1.97	1.69	1.50	1.29
Average Farm Price	$3.70	$3.61	$3.36	$3.36	$3.60	$3.70		


Corn Price Analysis based on USDA JUN (New Crop) Supply/Demand
Since 2007
Price of CBOT
Carryout to Use Ratio
750
725
700
675
650
625
600
575
550
525
500
475
450
425
400
375
350
325
300
4
5
6
7
8
9
10
11
12
13
14
15
16
2011
2008
2013
2012
2009
2019
2014
2016
2017
2007
2018
2015
2010
$R^2 = 0.4217$
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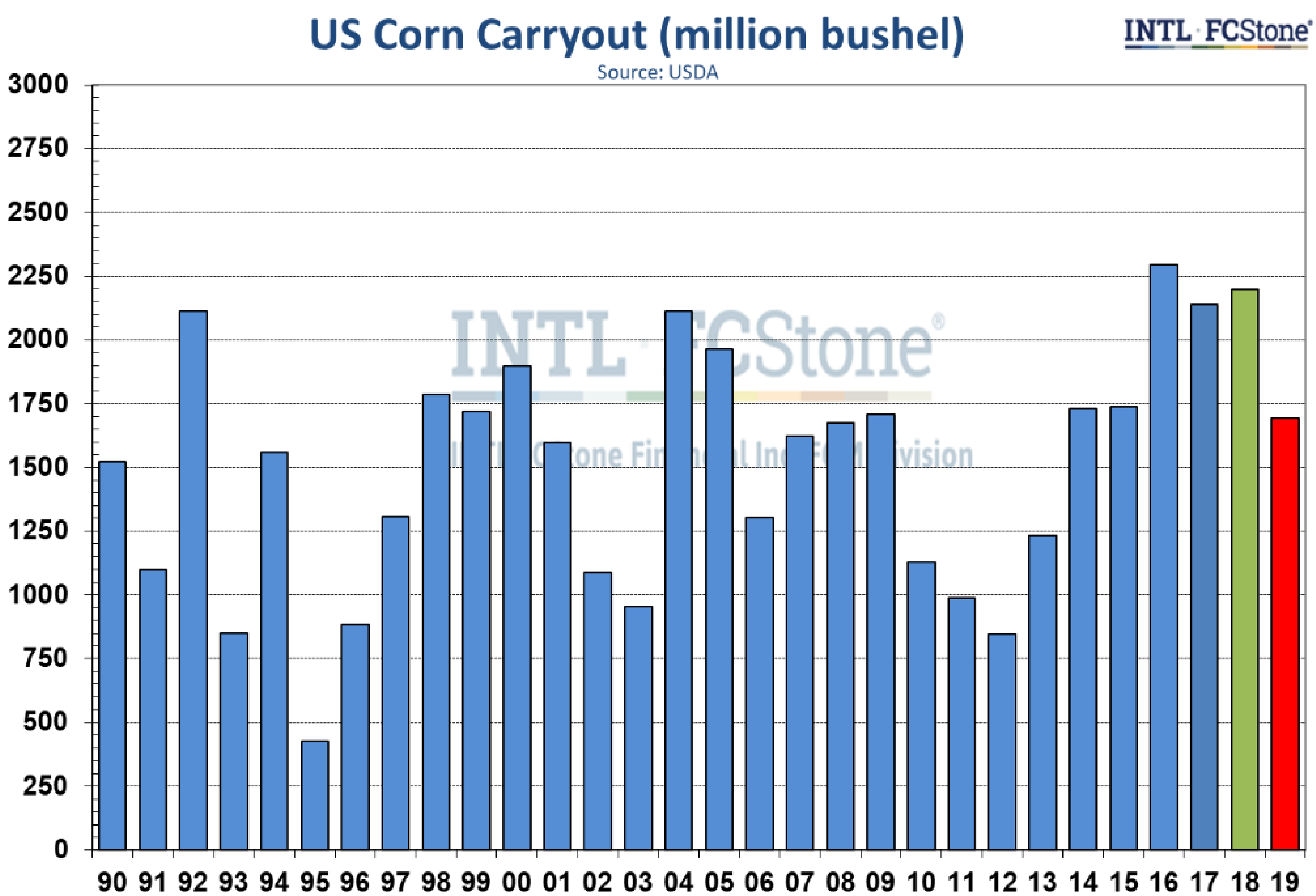
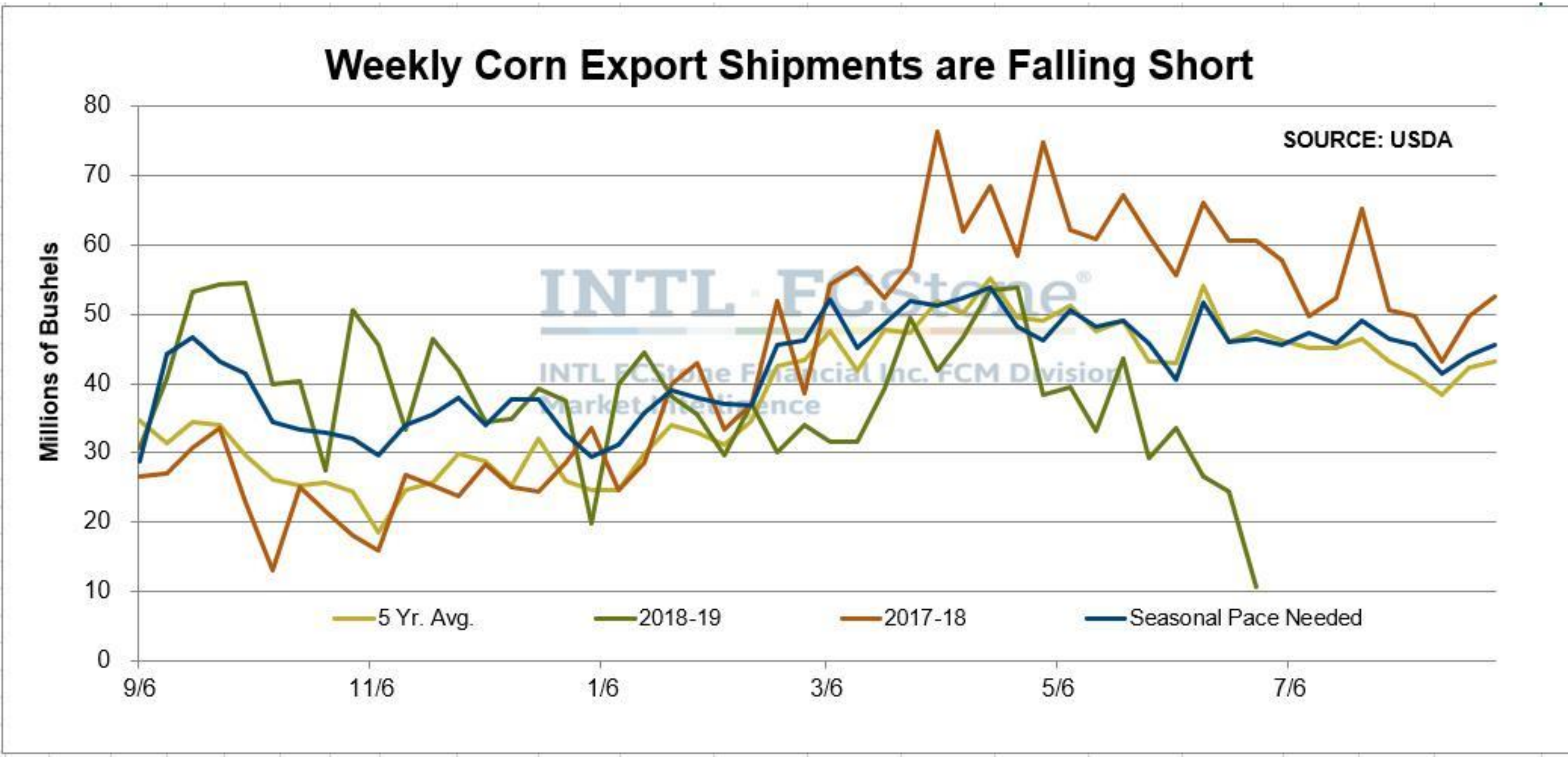
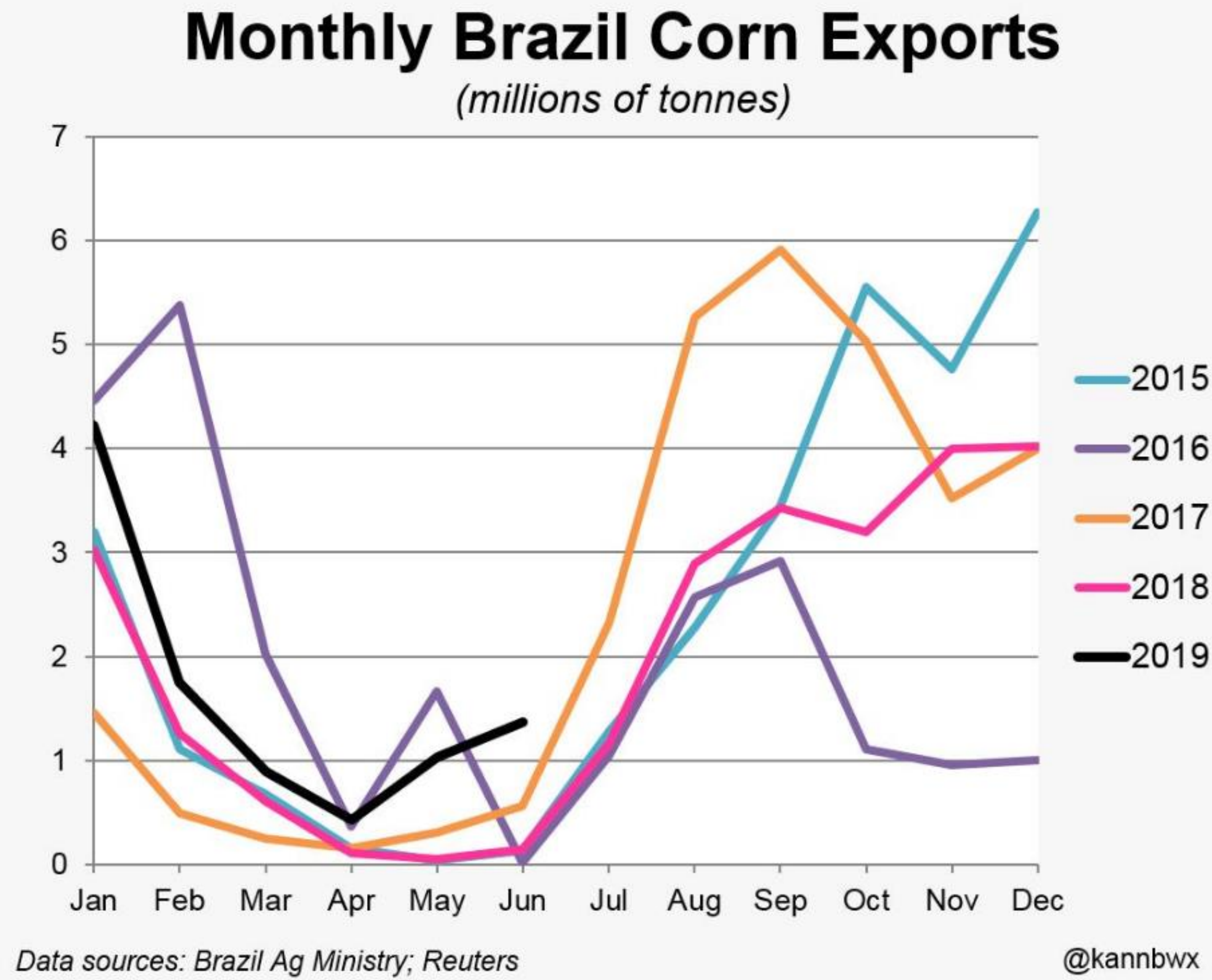


US Corn Carryout (million bushel)
Source: USDA
INTL FCStone
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19


Weekly Corn Export Shipments are Falling Short
SOURCE: USDA
INTL FCStone
INTL FCStone Financial Inc. FCM Division
Market Intelligence
Millions of Bushels
80
70
60
50
40
30
20
10
0
9/6
11/6
1/6
3/6
5/6
7/6
5 Yr. Avg.
2018-19
2017-18
Seasonal Pace Needed



Monthly Brazil Corn Exports
(millions of tonnes)
7
6
5
4
3
2
1
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2015
2016
2017
2018
2019
Data sources: Brazil Ag Ministry; Reuters
@kannbwx

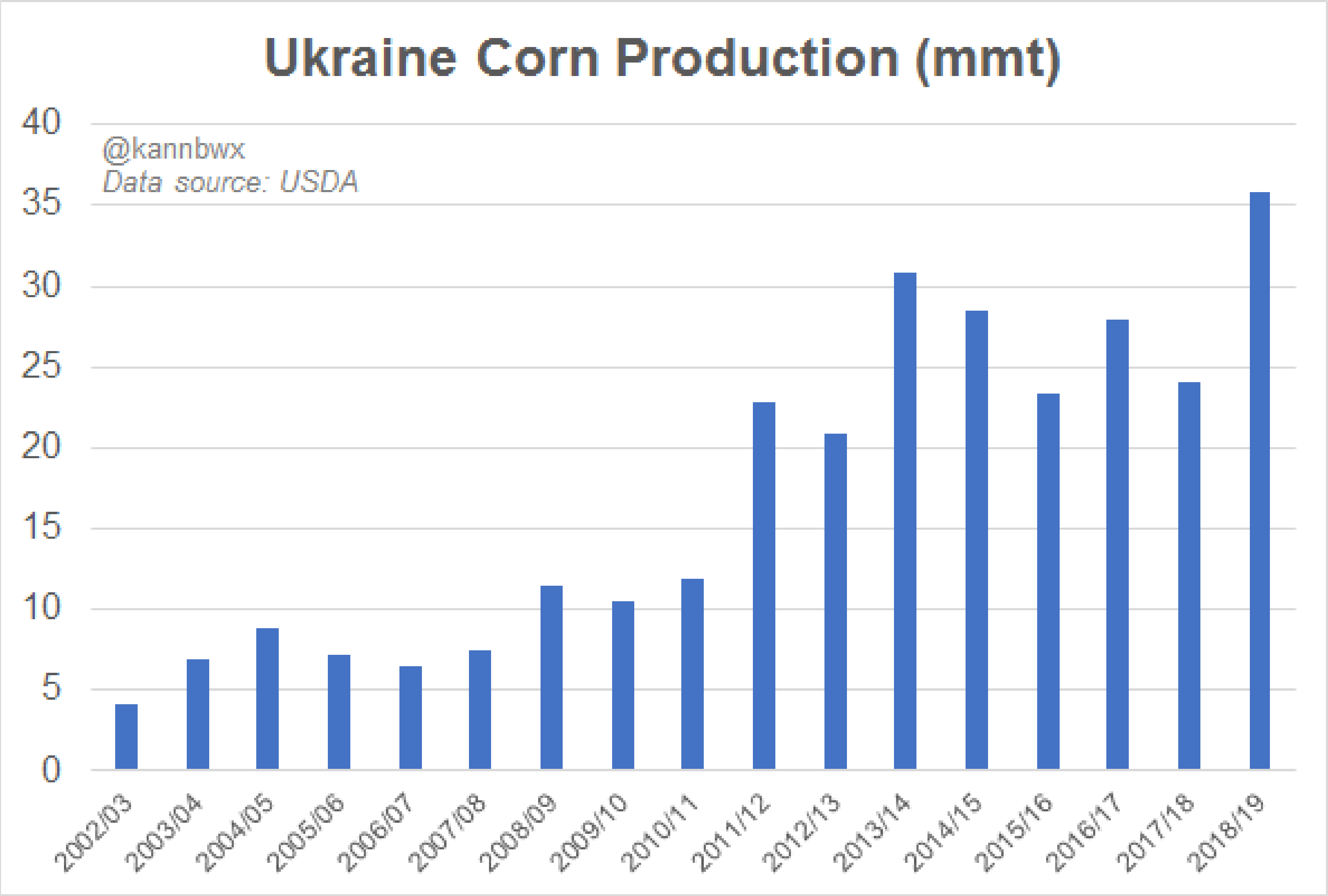
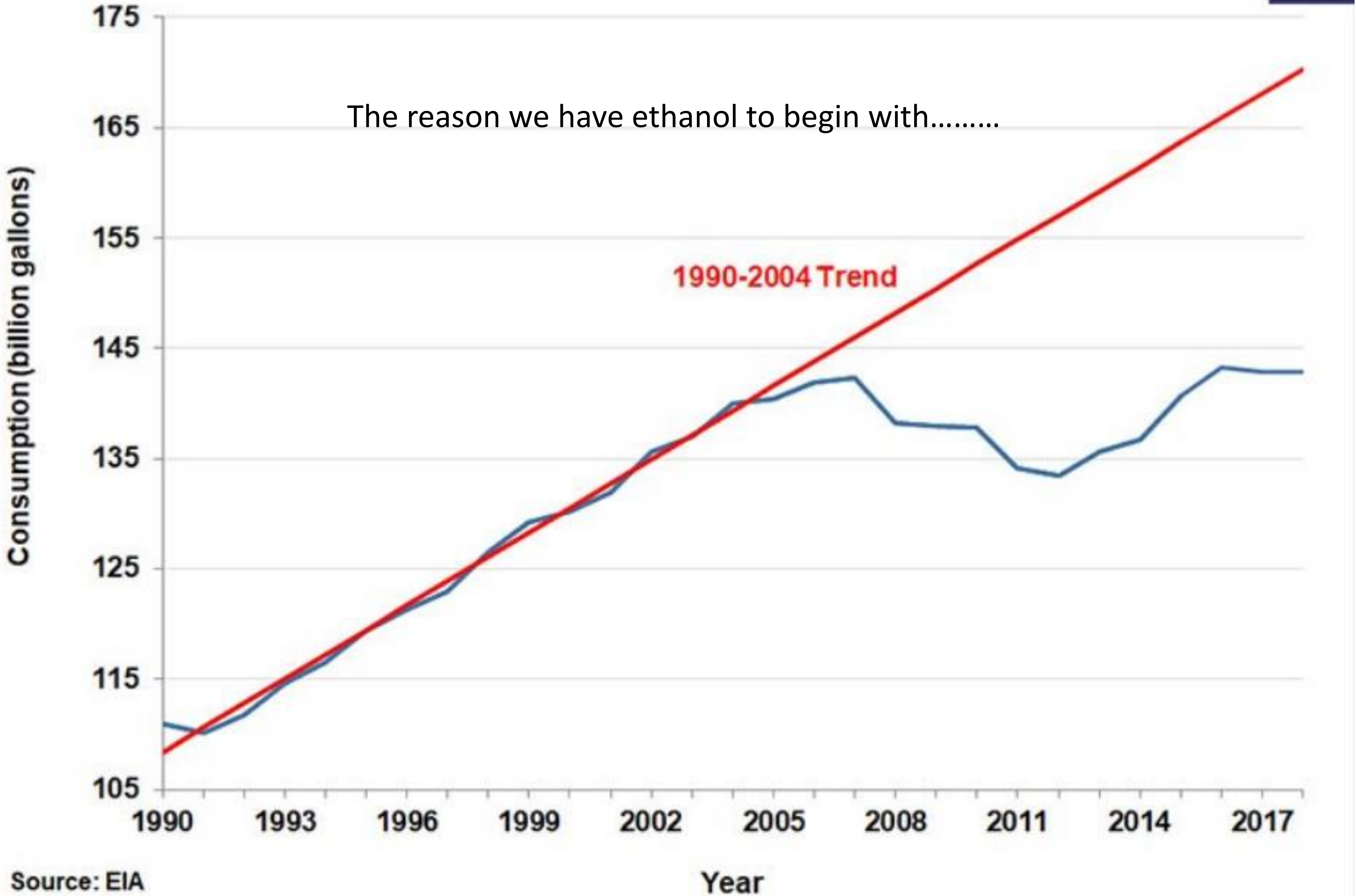
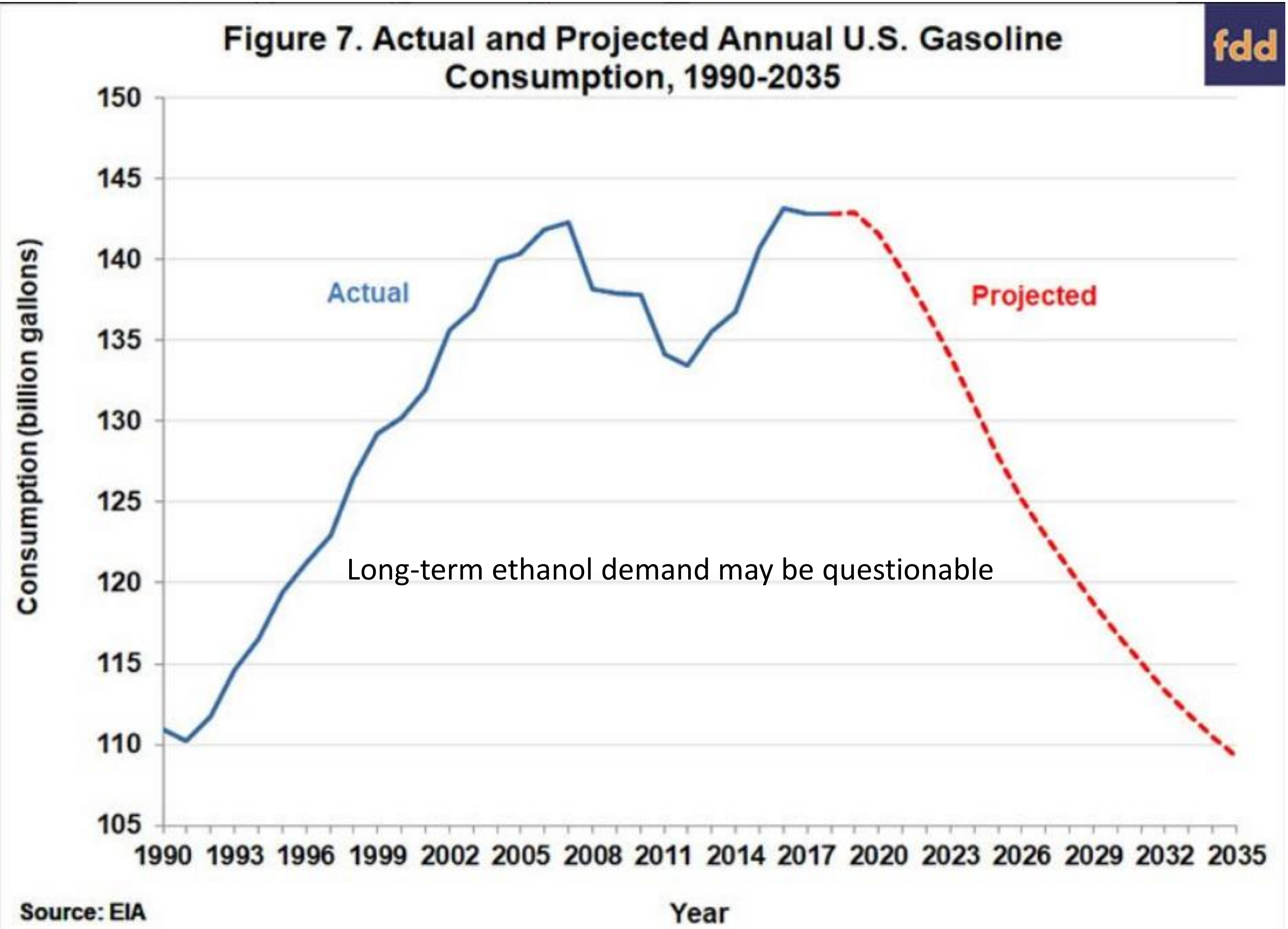

Ukraine Corn Production (mmt)
@kannbwx
Data source: USDA
40
35
30
25
20
15
10
5
0
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19

Figure 4. Annual U.S. Gasoline Consumption, 1990-2018



The reason we have ethanol to begin with………



Long-term ethanol demand may be questionable

Dec 2019 Corn

July 31, 2019

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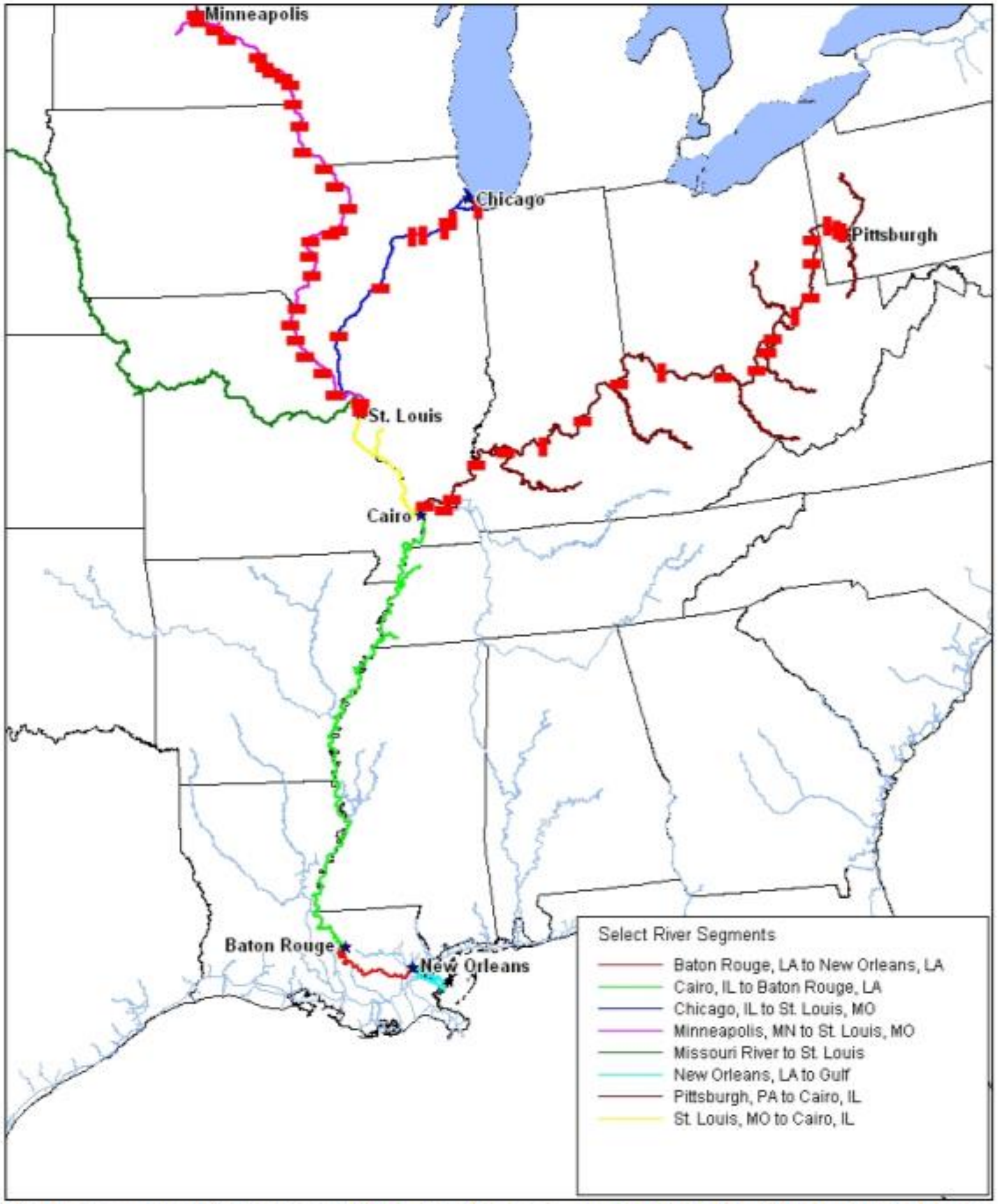
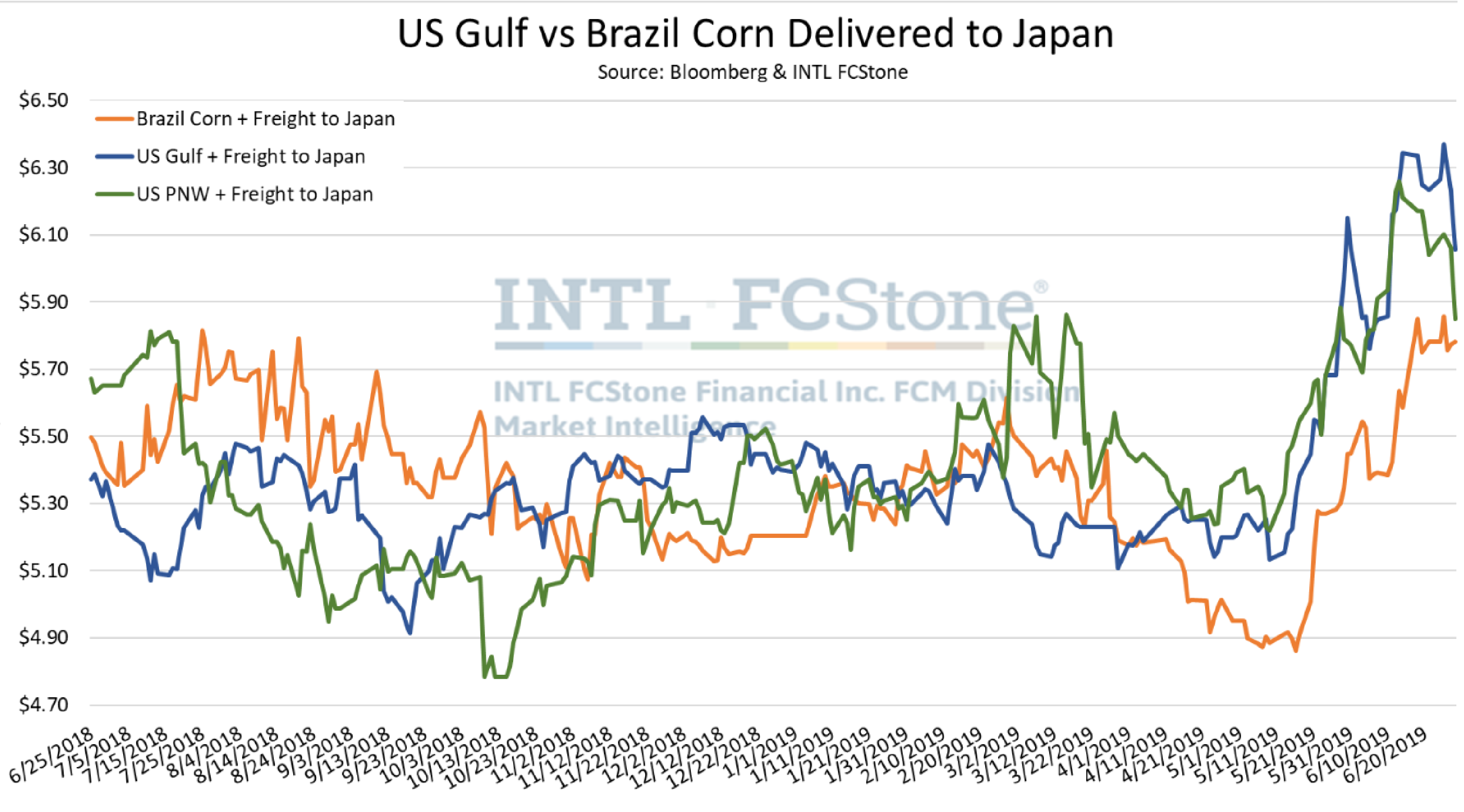
- Remember, our CME is an export based derivative.
  - Importing country value
  - Ocean freight
  - Barge freight

- We "back into" Chicago values, then basis does the rest

Figure 1: Major Navigable Inland River System and Waterway Segments



Notes: The eight river segments represent the main areas occupying river transport of corn, soybean and wheat.


US Gulf vs Brazil Corn Delivered to Japan
Source: Bloomberg & INTL FCStone
Brazil Corn + Freight to Japan
US Gulf + Freight to Japan
US PNW + Freight to Japan
$6.50
$6.30
$6.10
$5.90
$5.70
$5.50
$5.30
$5.10
$4.90
$4.70
6/25/2018
7/5/2018
7/15/2018
7/25/2018
8/4/2018
8/14/2018
8/24/2018
9/3/2018
9/13/2018
9/23/2018
10/3/2018
10/13/2018
10/23/2018
11/2/2018
11/12/2018
11/22/2018
12/2/2018
12/12/2018
12/22/2018
1/1/2019
1/11/2019
1/21/2019
1/31/2019
2/10/2019
2/20/2019
3/2/2019
3/12/2019
3/22/2019
4/1/2019
4/11/2019
4/21/2019
5/1/2019
5/11/2019
5/21/2019
5/31/2019
6/10/2019
6/20/2019
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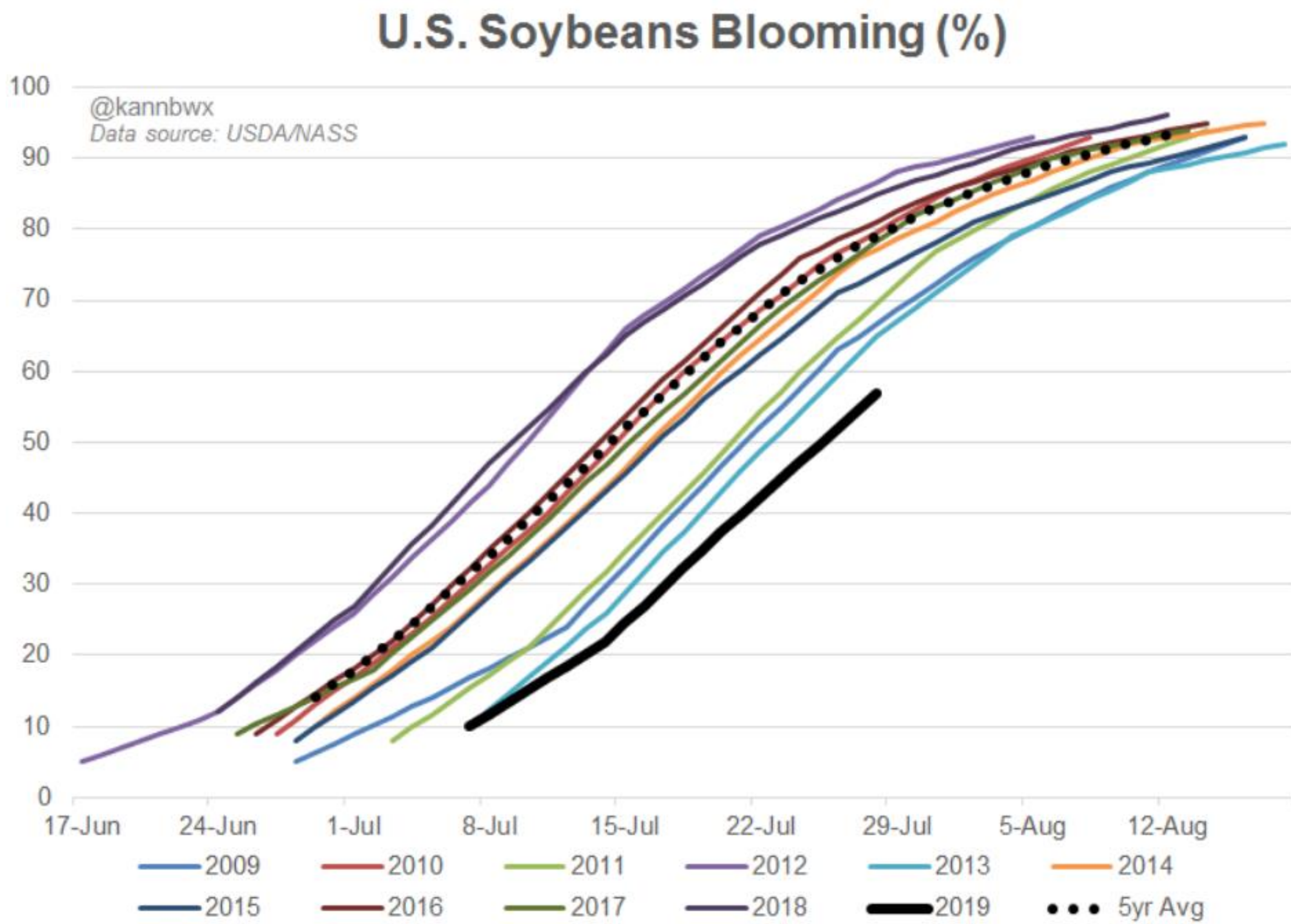
INTL FCStone Financial Inc. FCM Division
Market Intelligence


U.S. Soybeans Blooming (%)
@kannbwx
Data source: USDA/NASS
100
90
80
70
60
50
40
30
20
10
0
17-Jun
24-Jun
1-Jul
8-Jul
15-Jul
22-Jul
29-Jul
5-Aug
12-Aug
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
5yr Avg

U.S. Soybean Progress 2019

(percent blooming)

	July 28	5yr Avg	*delta*	*July 14 delta*
Arkansas	**82**	89	*-7*	*-9*
Illinois	**52**	83	*-31*	*-42*
Indiana	**37**	79	*-42*	*-44*
Iowa	**65**	84	*-19*	*-26*
Kansas	**40**	66	*-26*	*-20*
Kentucky	**51**	57	*-6*	*-7*
Louisiana	**95**	96	*-1*	*-4*
Michigan	**42**	76	*-34*	*-30*
Minnesota	**69**	85	*-16*	*-34*
Mississippi	**88**	88	*0*	*1*
Missouri	**38**	62	*-24*	*-22*
Nebraska	**66**	83	*-17*	*-26*
North Carolina	**45**	56	*-11*	*-10*
North Dakota	**71**	85	*-14*	*-31*
Ohio	**41**	76	*-35*	*-28*
South Dakota	**53**	80	*-27*	*-18*
Tennessee	**68**	74	*-6*	*-3*
Wisconsin	**48**	75	*-27*	*-33*
U.S. TOTAL	**57**	79	*-22*	*-27*

Data source: USDA/NASS

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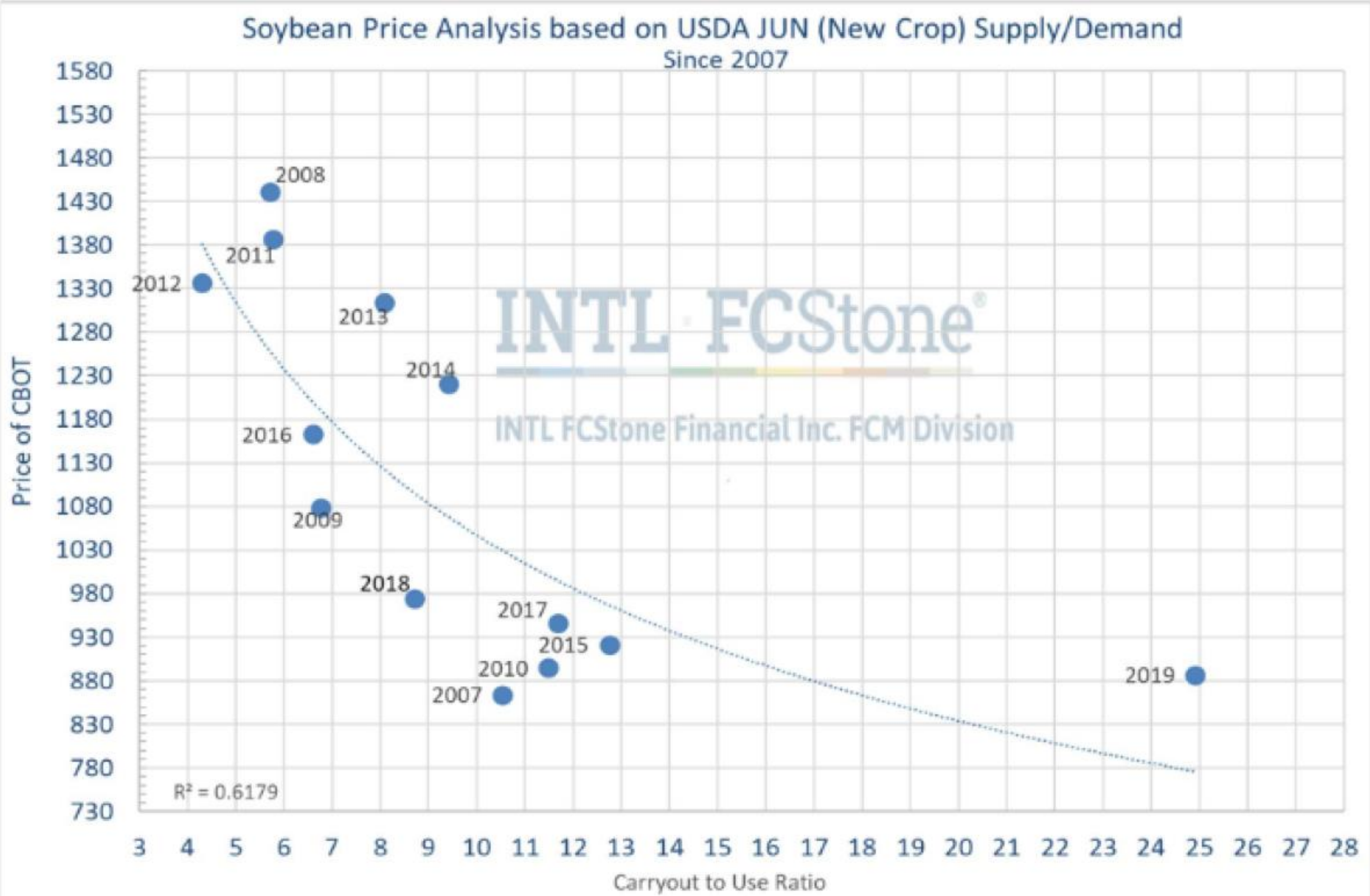
US Soybean Supply and Demand

Millions of Acres Millions of Bushels	14/15	15/16	16/17	17/18	18/19	19/20 USDA Proj July
Acres Planted	83.3	82.7	83.5	90.2	89.2	80.0
Acres Harvested	82.6	81.7	82.7	89.5	88.1	79.3
Percent Harvested	99%	99%	99%	99%	99%	99%
Yield Per Harvested Acre	47.5	48.0	52.0	49.3	51.6	48.5
Beginning Stocks	92	191	197	302	438	1,050
Production	3,927	3,926	4,296	4,412	4,544	3,845
Imports	33	24	22	22	17	20
Total Supply	4,052	4,140	4,515	4,735	4,999	4,914
Crushings	1,873	1,886	1,901	2,055	2,085	2,115
Exports	1,842	1,942	2,166	2,129	1,700	1,875
Seed	96	97	105	104	93	96
Residual	50	18	41	9	72	34
Total Demand	3,862	3,944	4,213	4,297	3,949	4,120
Ending Stocks	191	197	302	438	1,050	795
Average Farm Price	$10.10	$8.95	$9.47	$9.33	$8.50	$8.40
Stocks to Usage	4.95%	4.99%	7.17%	10.20%	26.58%	19.29%



Soybean Price Analysis based on USDA JUN (New Crop) Supply/Demand
Since 2007
Price of CBOT
Carryout to Use Ratio
2008
2011
2012
2013
2014
2016
2009
2018
2017
2015
2010
2007
2019
R² = 0.6179
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Value of U.S. Agricultural Products Exported to China in 2017

(millions of U.S. dollars)

Soybeans	$12,253
Forest Products (lumber, logs, etc)	$3,194
Fish Products (salmon, cod, etc)	$1,232
Cotton	$978
Hides & Skins	$945
Sorghum	$839
Pork & Pork Products	$662
Dairy Products (whey, milk, etc)	$577
Intermediate Products (starch, flour, oils, etc)	$424
Wheat	$351
Everything else	$2,564
GRAND TOTAL	**$24,019**

Data source: U.S. Census Bureau

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Value of U.S. Agricultural Products Exported to China in 2018

(millions of U.S. dollars)

Soybeans	$3,145
Forest Products (lumber, logs, etc)	$2,868
Fish Products (salmon, cod, etc)	$1,054
Cotton	$924
Hides & Skins	$607
Pork & Pork Products	$571
Sorghum	$530
Dairy Products (whey, milk, etc)	$500
Intermediate Products (starch, flour, oils, etc)	$473
Tree Nuts	$328
Everything else	$2,207
GRAND TOTAL	**$13,208**

Data source: U.S. Census Bureau

@kannbwx

U.S. Soybean Exports: Sept to Feb

(Top destinations; 1,000 tonnes)

	2018/19	**YOY**
China	3,941	-85%
Mexico	2,515	36%
Argentina	2,050	n/a
Netherlands	1,909	74%
Spain	1,733	137%
Egypt	1,675	150%
Indonesia	1,307	20%
Japan	1,280	15%
Taiwan	1,212	27%
Thailand	1,105	-4%
Pakistan	1,008	15%
European Union	*6,199*	*132%*
Non-China	23,455	69%
TOTAL	**27,396**	**-31%**

Data source: U.S. Census Bureau

@kannbwx

Nov Soybeans

July 31, 2019

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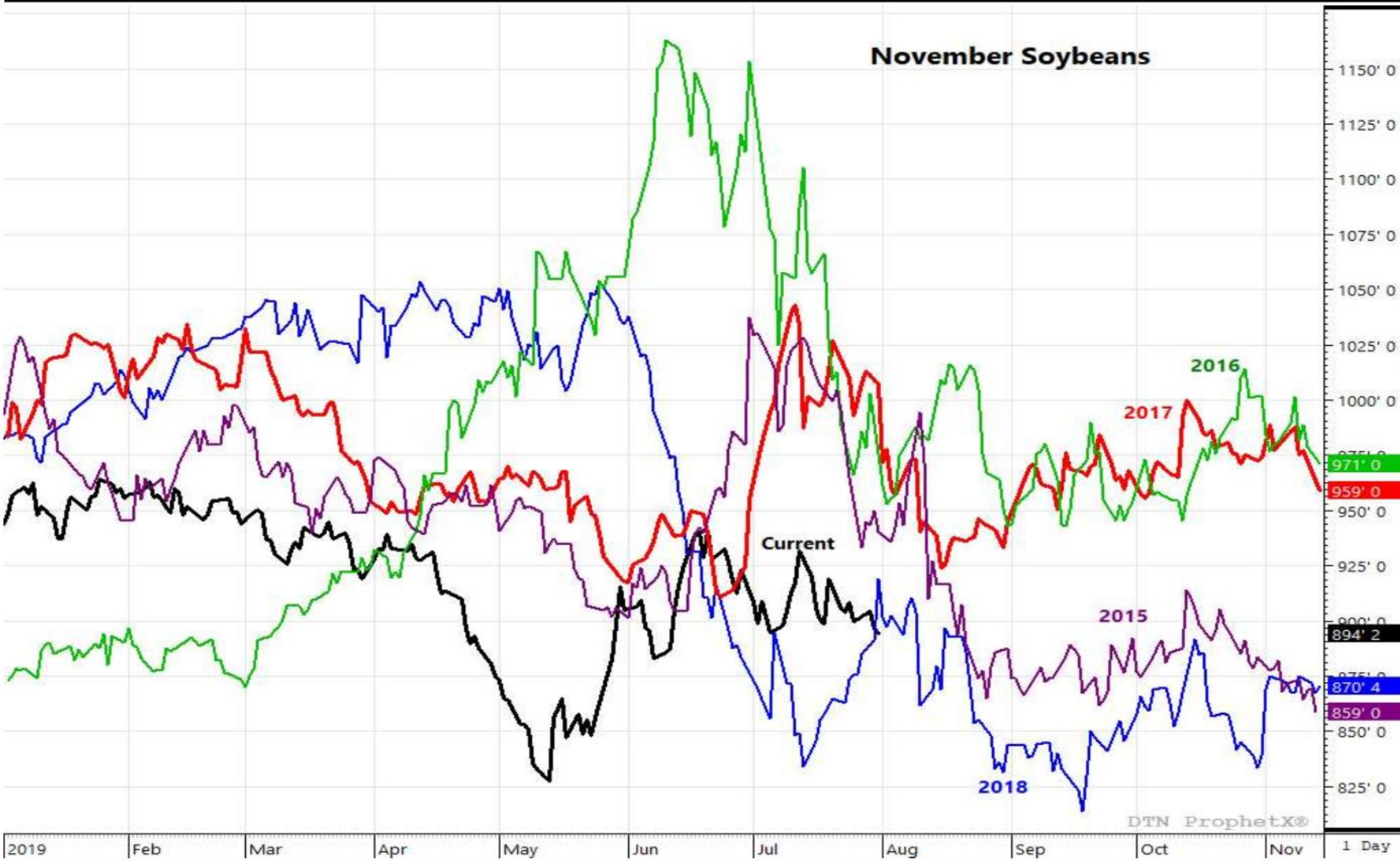

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Sep 2019 Soymeal

July 31, 2019

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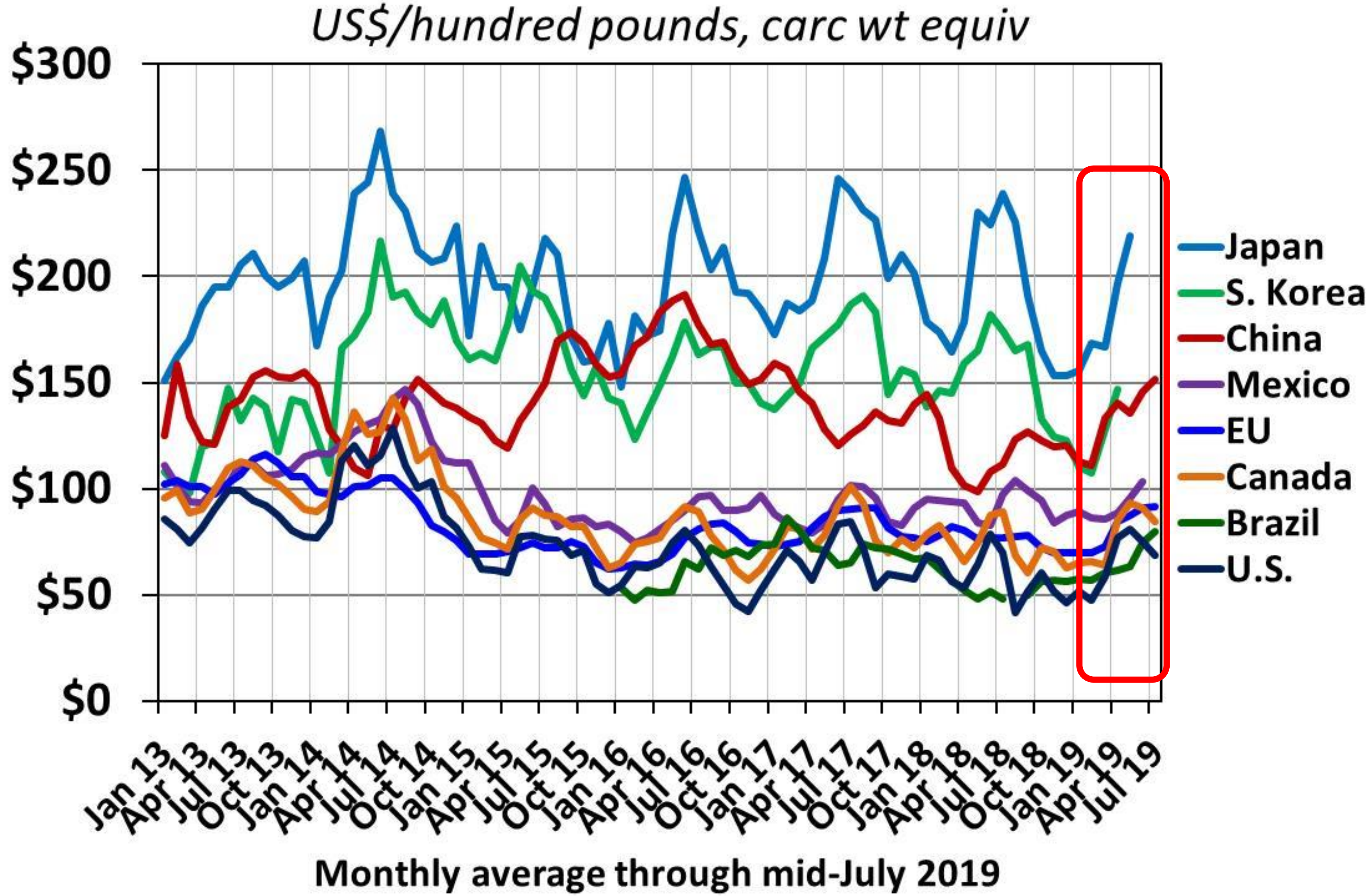
Let’s do some cowboy math...........

,000 MMT

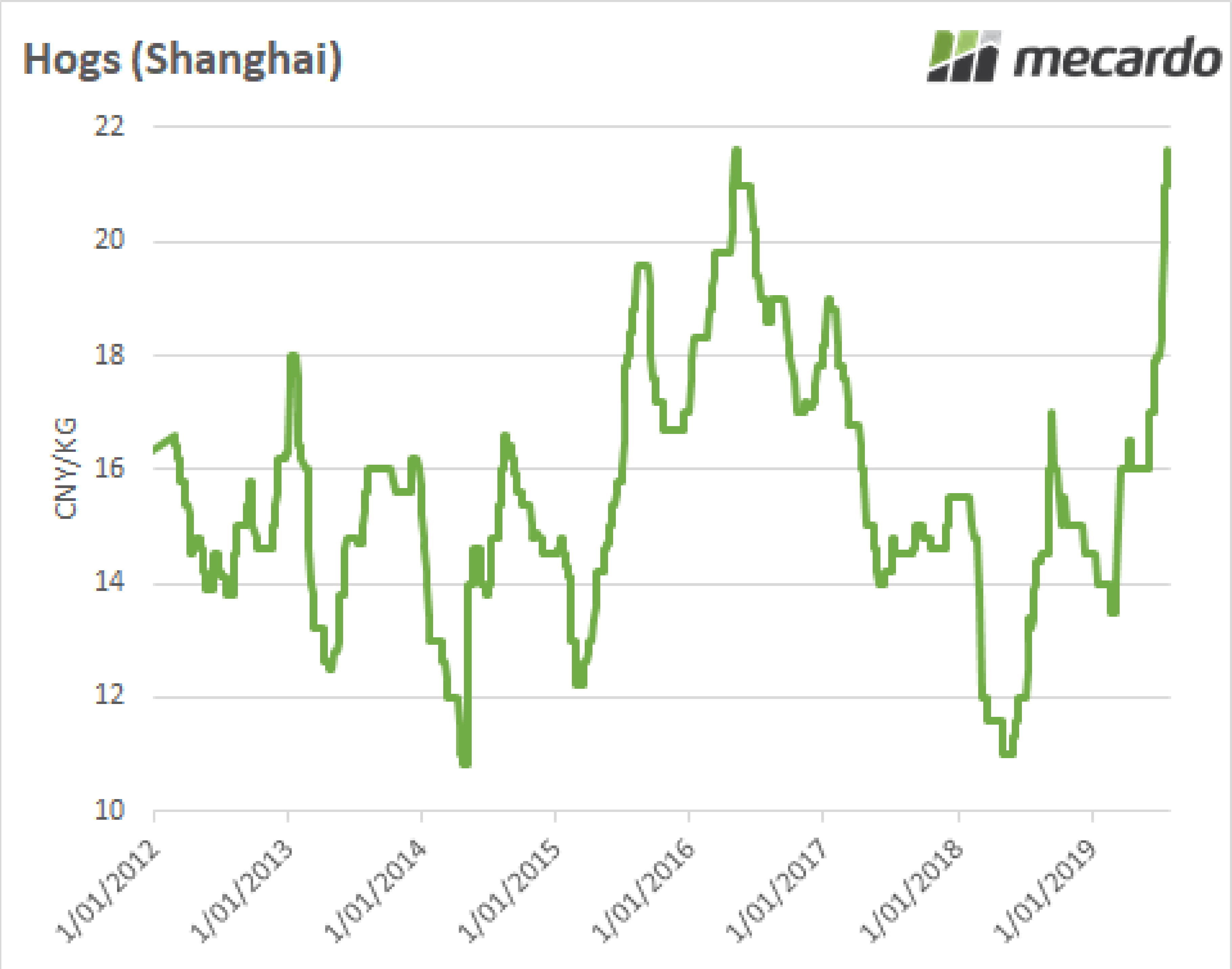
Chinese Production	55,000
World Pork Trade	9,000
World Beef Trade	11,000
World Chicken Trade	12,000
Chinese production loss	25% = 14,000
	40% = 22,000
25% of world	8,000
50% of world	16,000
75% of world	24,000

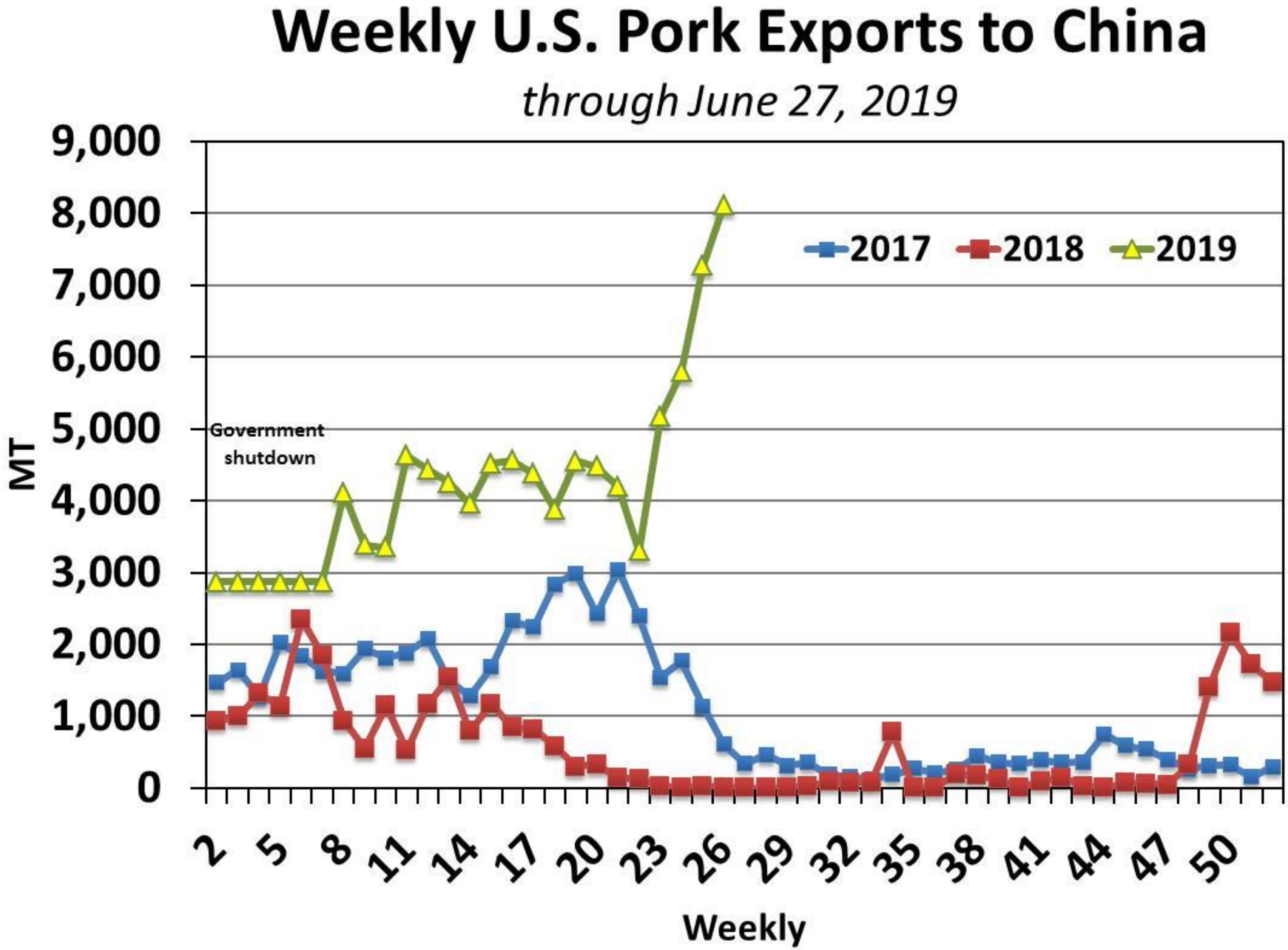
No matter how you allocate trade, it is difficult to solve the Chinese shortfall, I just do not think we have felt it............yet

Global Hog Prices

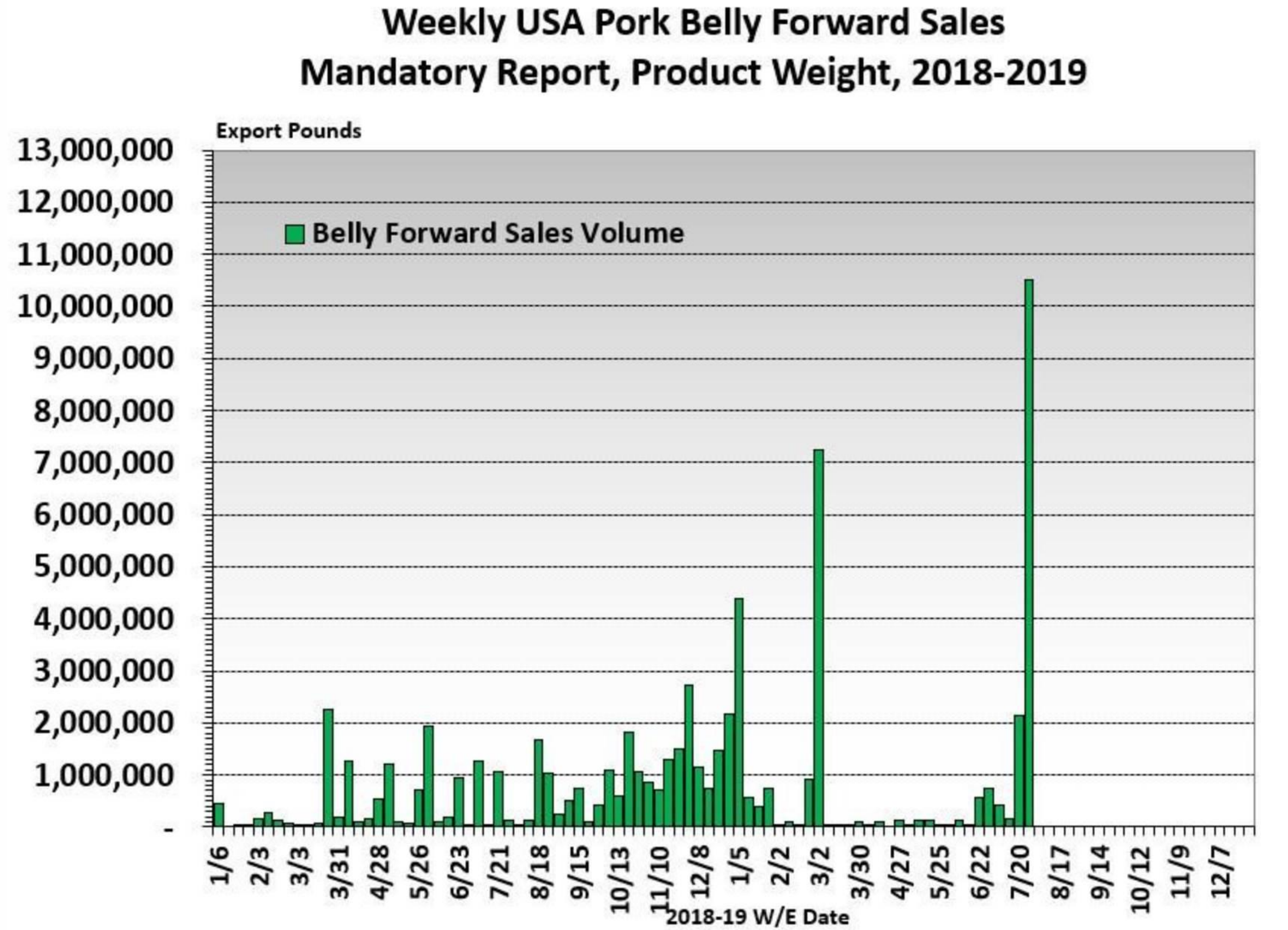


Source: China MARA, JCI, KMTA, ALIC, BPEX, USDA, Porcimex, Cepea,


Hogs (Shanghai)
mecardo
22
20
18
16
14
12
10
CNY/KG
1/01/2012
1/01/2013
1/01/2014
1/01/2015
1/01/2016
1/01/2017
1/01/2018
1/01/2019



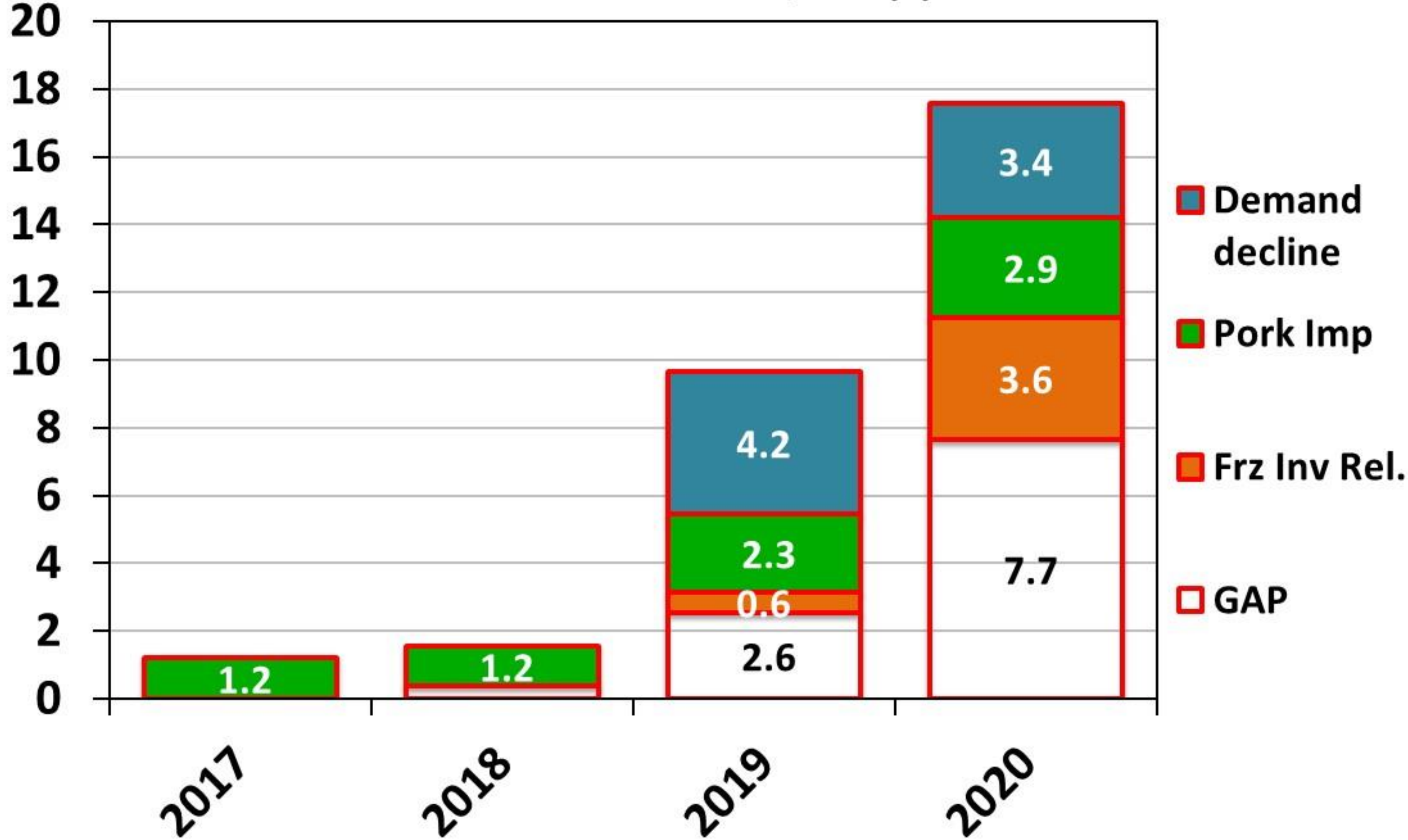
Source: USDA Weekly Export Sales data



Weekly USA Pork Belly Forward Sales
Mandatory Report, Product Weight, 2018-2019
Export Pounds
Belly Forward Sales Volume
13,000,000
12,000,000
11,000,000
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
1/6
2/3
3/3
3/31
4/28
5/26
6/23
7/21
8/18
9/15
10/13
11/10
12/8
1/5
2/2
3/2
3/30
4/27
5/25
6/22
7/20
8/17
9/14
10/12
11/9
12/7
2018-19 W/E Date

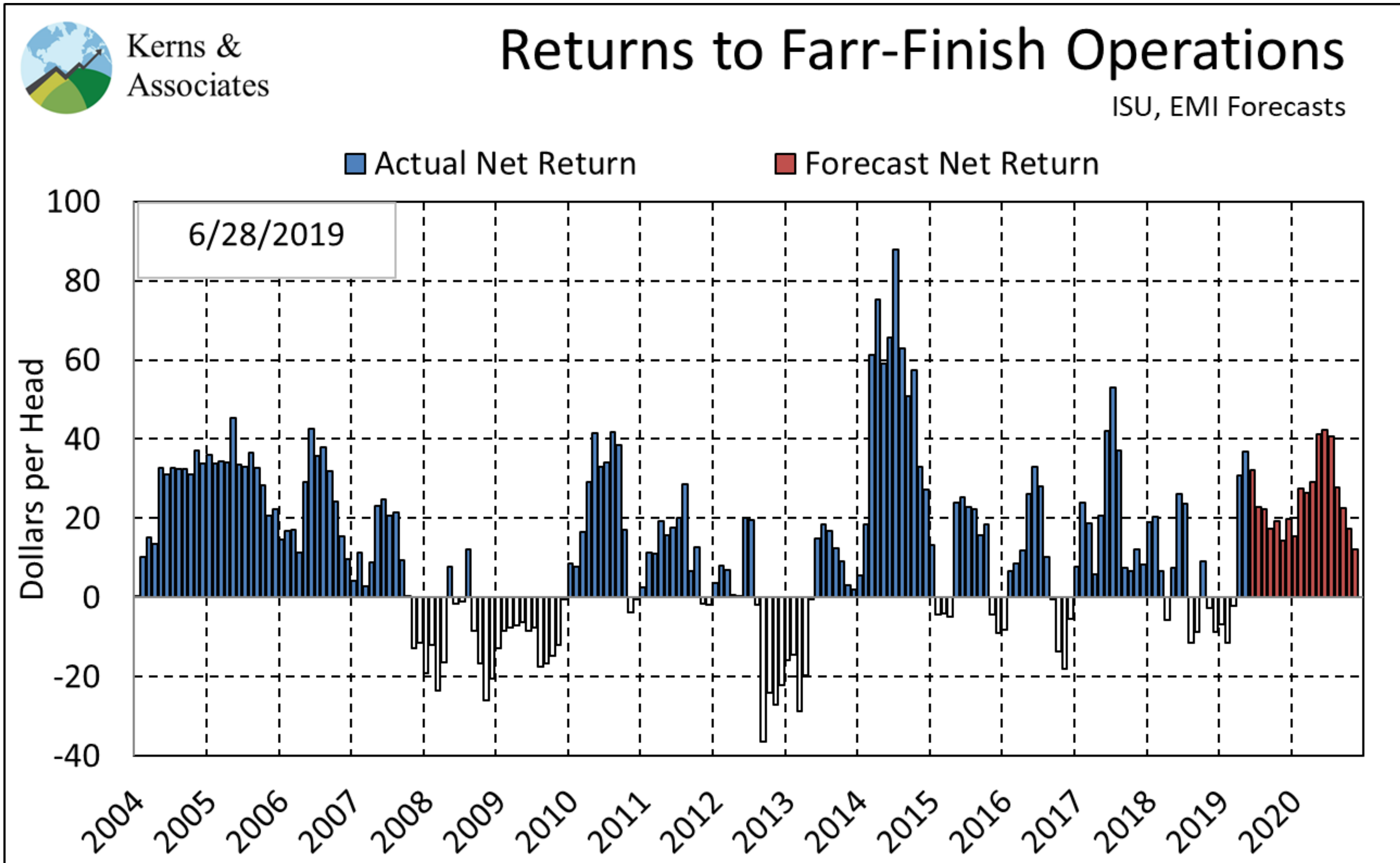
China Pork Production GAP

million metric tons, shipped wt



Source: USDA/FAS 2017, AgriTrends forecasts

Are we too greedy? – ’19 and ‘20 total is near $500; ’04-’05 and ’14 were ~$600

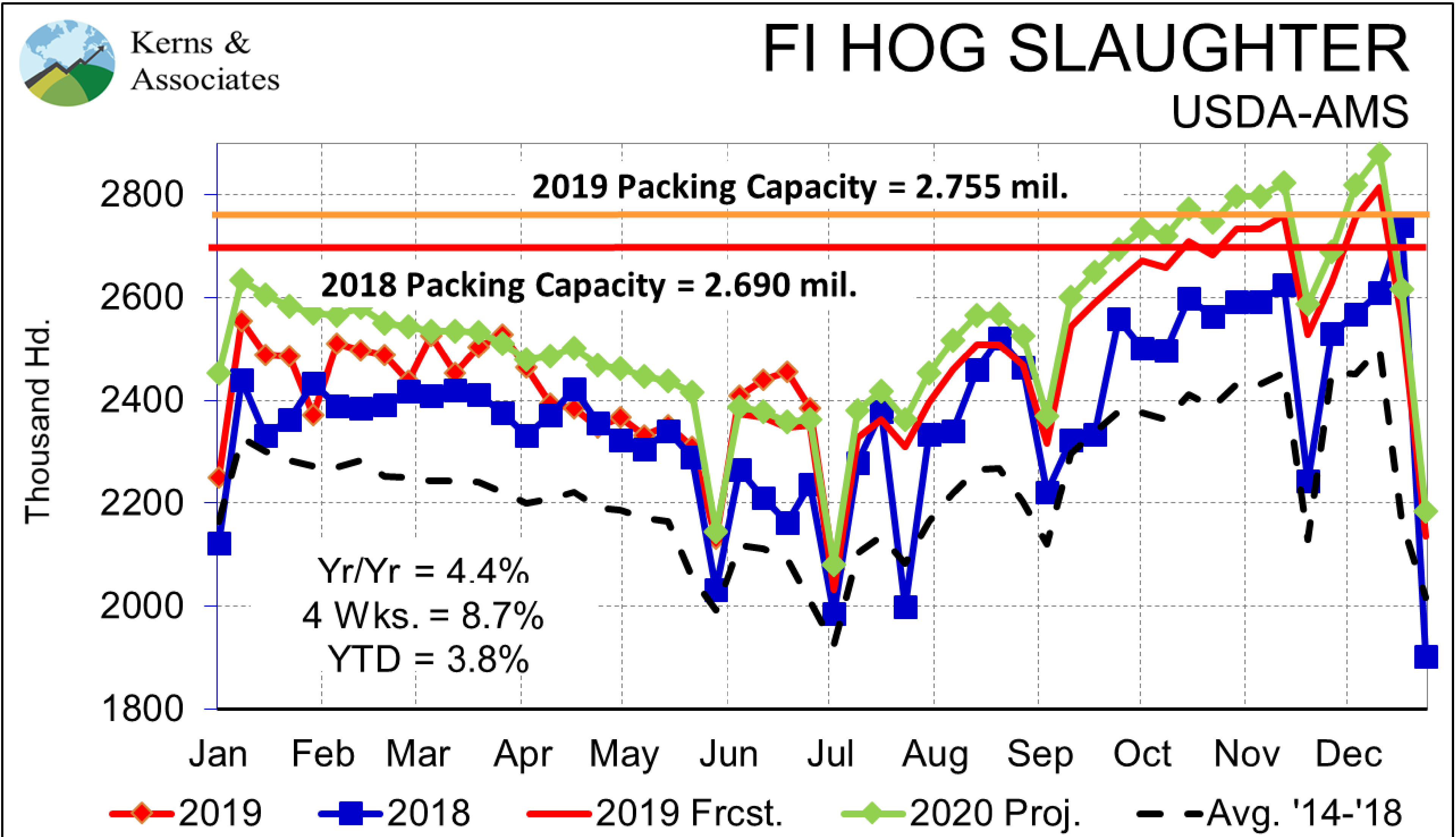


Calculation is based on selling one pig per month each month

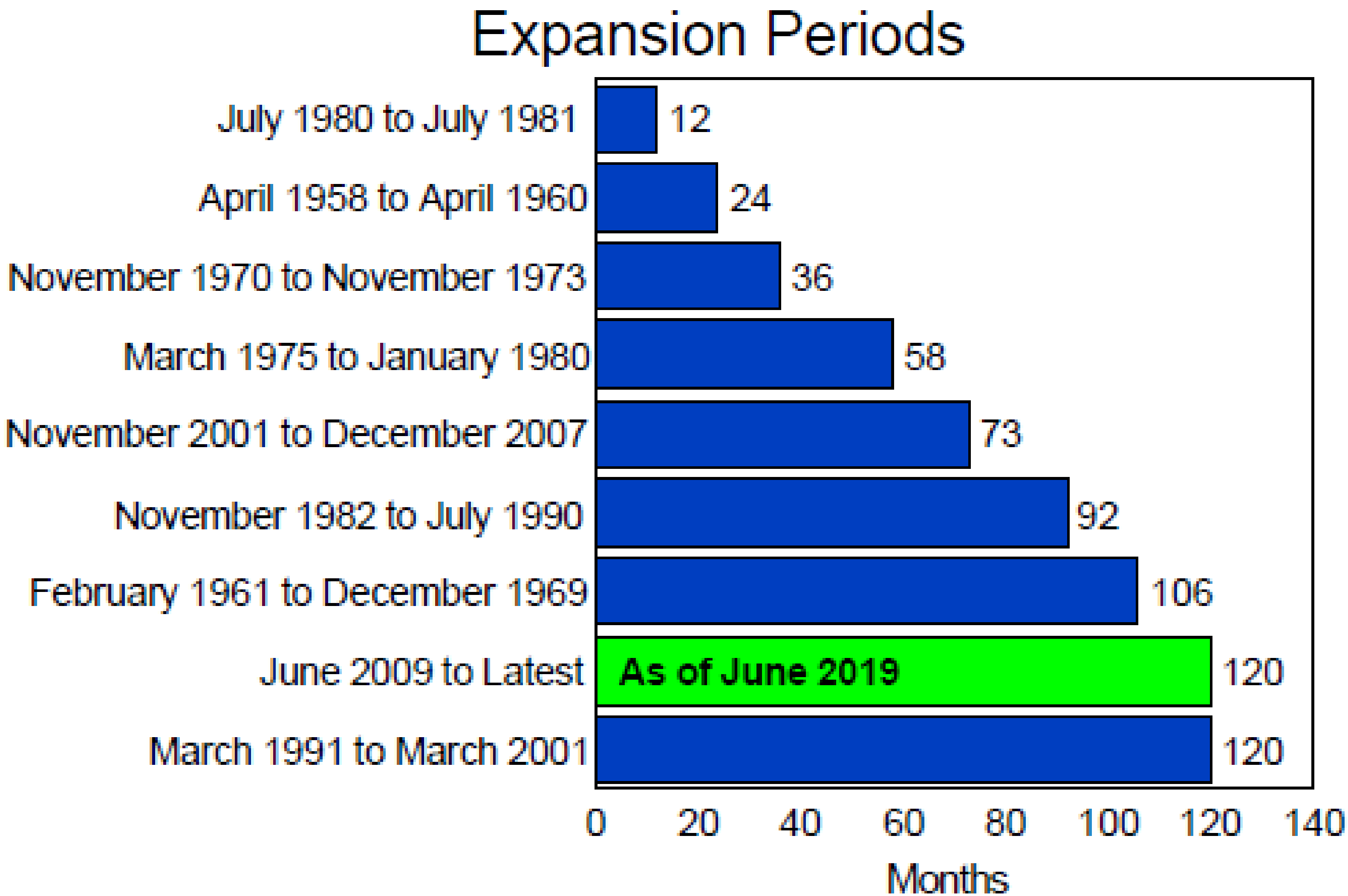
June Hogs & Pigs: USDA apparently caught the anomalies . . .

USDA QUARTERLY HOGS & PIGS REPORT					
June 27, 2019					
Category	**2018**	**2019**	**'19 as pct of '18**	**Pre-Report Est's[1]**	**Actual minus Est.**
Inventories on June 1					
All hogs and pigs	72,866	75,520	103.6	103.0	0.6
Kept for breeding	6,320	6,410	101.4	102.1	-0.7
Kept for marketing	66,546	69,111	103.9	103.1	0.8
Under 50 lbs.	21,327	22,019	103.2	102.6	0.6
50-119 lbs.	19,083	19,606	102.7	102.8	-0.1
120-179 lbs.	13,988	14,427	103.1	103.2	-0.1
180 lbs. and over	12,147	13,059	107.5	104.6	2.9
Farrowings					
Mar-May sows farrowed	3,100	3,108	100.3	101.7	-1.4
Jun-Aug Intentions	3,200	3,185	99.5	101.3	-1.8
Sep-Nov Intentions	3,174	3,175	100.0	102.1	-2.1
Mar-May Pig Crop	32,942	34,177	103.7	102.6	1.1
Mar-May pigs saved per litter	10.63	11.00	103.5	100.8	2.7
*Thousand head ** Thousand Litters			[1]Source: Urner Barry		

New packing capacity will "save" us this year and next



THIS RECOVERY: A GOODIE BUT OLDIE!



Keys to success

- Recognize we are in a binary scenario
  - No ASF in the US = happy days
  - ASF in the US = liquidation
- Get on the right pricing matrix
  - NOT the 602
  - not a COP
  - I like the ISM or WCB or basis
  - I like big grids for bigger animals
- Right-size your system
  - ADG will come back into play
  - Racto where you can, alternatives when you can't
  - Saving the marginal pig will be more important
  - Wean pig values firm

Questions?

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