Crop and Livestock Market Outlook

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Key Points

Situation

- What happened in 2019?
 - World and US economies
 - Exports and trade policy
 - African Swine Fever
 - Weather

Outlook

- What will happen in 2020?
 - Soybeans
 - Corn
 - Cattle



US and World Economies



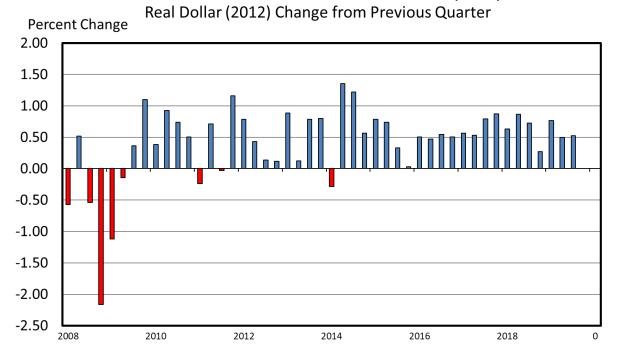
2019

- S&P increased 30%
- PBOC increased bank-lending capacity
- Major banks increasing money supply to stimulate economic growth

Macro conditions remain positive but times are changing...

- World economic growth is still positive but World Bank downgraded outlook for global economy
 - 2.7% in 2019 as opposed to 3% in 2018, 3.1% in 2017
- Real US GDP growth at 3.4% in Q3, down from 4.2% in Q2

QTRLY GROSS DOMESTIC PRODUCT (GDP)

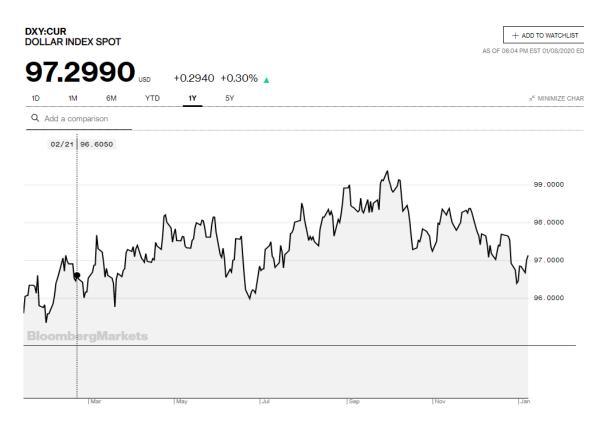


Personal Disposable Income

- RDPI increased 0.2%
- Wages are being driven by tight labor market U rate at 3.9 – well below the natural rate, up from October (3.7) which was lowest since 1969

PERSONAL SAVINGS AS A PERCENT OF DISPOSABLE PERSONAL INCOME Percent Current Dollars, Quarterly 12.0 10.0 8.0 6.0 4.0 2.0 0.0 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 #N/A —Current Dollars

USD Index



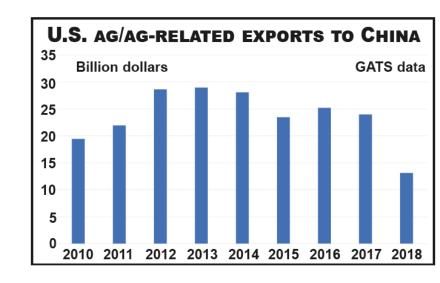
- Value of US dollar increased over last year
- Lower dollar is supportive of exports
- Last week saw index at new low
 - Shrinking interest rate differential
 - Expectations for lower US growth rate than world growth rate

Export and Trade Policies

- USMCA
 - One step closer to Senate ratification
- US/Japan Accord
 - Decrease tariffs on ag products (beef, pork, wheat, cheese, almonds)
 - Lower beef tariff from 38.5% to 9%
- US/Korea
 - Minor tweak to existing deal
- US/China Phase 1
 - To be signed Jan 15?
 - \$40 -\$50 billion in ag goods

Export and Trade Policies

- US/China Phase 1
 - \$24 billion of Chinese purchases is base
 - Record was \$29 billion (2013)
 - JCl estimates
 - \$18.7 Billion (45 MMT) in soybeans (2016 record was 12 MMT)
 - 8 MMT corn (3 MMT)
 - 5 MMT wheat (1 MMT)
 - Questions on ethanol and rice
 - Questionable if can achieve \$40B
 - All-time maximum annual purchase would be \$37.1B
 - Eliminate Hong Kong exports

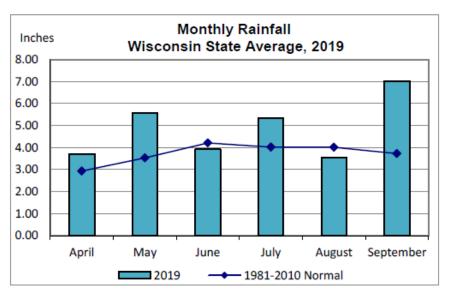


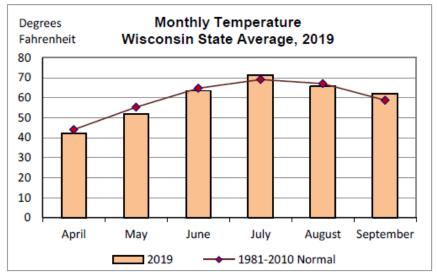
African Swine Fever

- 40% 55% YoY decline in Chinese herd
- Slower decline in 2020
- Continue to spread
 - Vietnam
 - Philippines
 - EU

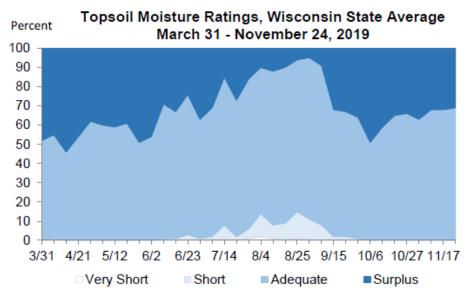


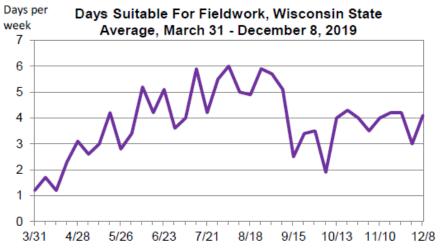
- Wet
 - 48% surplus moisture on March 31
- Cold
 - Only July and September saw above avg temp





- Soils remained wet through June
- Delayed planting and crop emergence
 - Planting through late
 June
- Wet again in September





- Corn
- 96% planted on June 30 (-3 wks avg)
 - Condition avg 62% (good to excellent)
 - Compared to 79% avg
- 2nd slowest harvest pace in 40 years
- 74% complete on 12/8
 - Moisture at 23%





Soybean

- 1% planted on 5/5
- Not complete until mid-July – 1 month behind
- Average 66% good to excellent (78% in 2018)
- 82% harvest completion on 11/24

Commodity Specific Outlook

Soybeans



USDA DECEMBER SOYBEAN WASDE

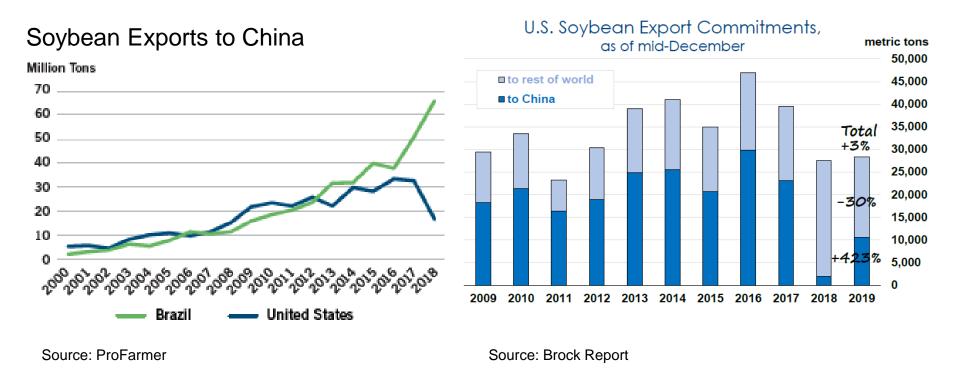
			%Change		
	2018/19	2019/20	vs 19/20	My Forecast	
		Dec		2019/20	2020/21
Acres Planted	89.2	76.5	-14.2%		
Acres Harvested	87.6	75.6	-13.7%	75.6	79.2
Yield	50.6	46.9	-7.3%	46.5	49.5
Supply					
Beg. Stocks	438	913	108.4%	913	431
Production	4428	3550	-19.8%	3515	3950
Imports	14	20	42.9%	20	20
Total Supply	4880	4483	-8.1%	4448	4401
Demand					
Crush	2092	2105	0.6%	2105	2050
Exports	1748	1775	1.5%	1784	1800
F/S/R	128	128	0.0%	128	129
Total Demand	3967	4008	1.0%	4017	3979
Ending Stocks	913	475	-48.0%	431	422
Stocks to Use Ratio	23.01	11.85		10.73	10.61
Avg. Farm Price	8.28	8.85		8.8-10.15	9.00-10.50
Soybean Oil Price	28.26	31			
Soybean Meal Price	308.28	310			

USDA DECEMBER SOYBEAN WASDE

U.S. Soybean Balance Sheet (Year Beg. Sept. 1)

			%Change		
	2018/19	2019/20	vs 19/20	My Forecast	
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Acres Planted	89.2	76.5	-14.2%		
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Soybean Exports



- 62% of Soybeans went to China in MY17, 49% in MY18, 28% in MY 19
- November usually sees US dominate soybean exports to China
 - 0 exports in November 2018 4.7 MMT in November 2017 3.2 MMT in Nov 2019

USDA DECEMBER SOYBEAN WASDE

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Highest price in October

Bullish Factors

- Chinese Trade Deal
- Seasonally behavior until late Spring
- Election year is typically bullish for Soybeans



Bearish Factors

- Brazilian Record Production
- Basis levels are firm and nearby is relatively higher than deferred contracts

Where will soybeans go in MY21?

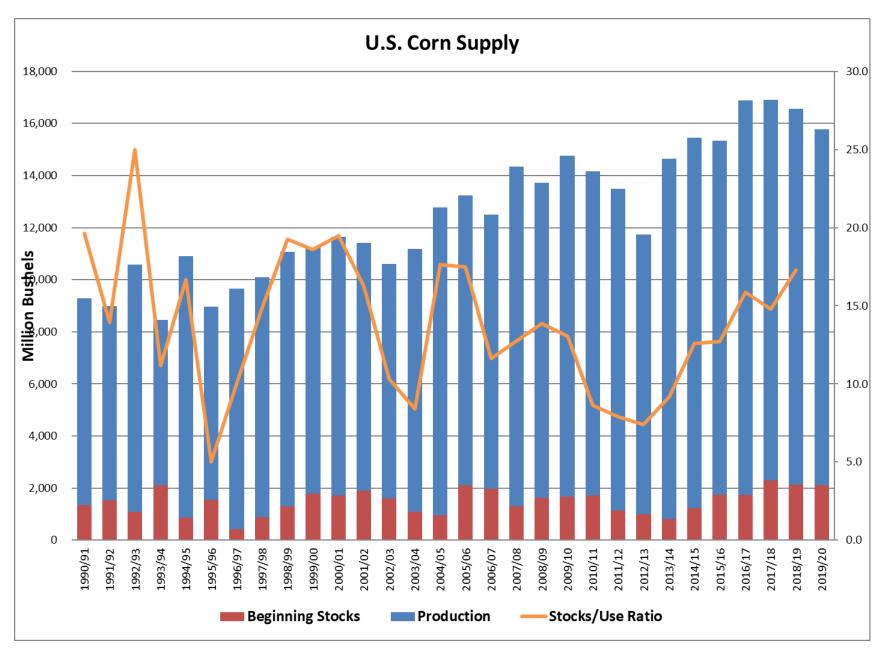
- Increase in acres harvested
- Return to average yield
- Increase in exports
- Decrease in crush
- Soybean/Corn Price ratio = 2.4



- Average Price in MY20 >>> \$9.58
- Average Price in MY21 >>> \$9.00

Commodity Specific Outlook Corn





Record supply in MY18 = 16.95 BB MY20 = 15.8 BB

Corn December WASDE

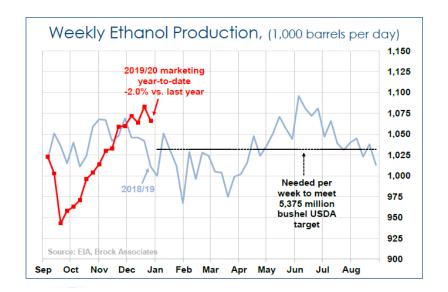
				% chng		
		2018/19 2019/20 vs 18/19		My Forecast		
			Dec		2019/20	2020/21
Acres Planted	Mil. A	89.1	89.9	0.9%	89.9	94
Acres	Mil. A	81.7	81.8	0.1%	81	85.7
Yield	Bu/A	176.4	167	-5.3%	168.4	176
Stocks	Mil. Bu.	2140	2114	-1.2%	2114	1838
Production	Mil. Bu.	14420	13661	-5.3%	13640	15083
Imports	Mil. Bu.	25	50		50	25
Total Supply	Mil. Bu.	16585	15825	-4.6%	15804	16946
Residual	Mil. Bu.	5275	5275	0.0%	5300	5400
Fuel	Mil. Bu.	5375	5375	0.0%	5350	5400
Exports	Mil. Bu.	2060	1850	-10.2%	1850	2250
Total Useage	Mil. Bu.	14140	13915	-1.6%	13925	14500
Carryover	Mil. Bu.	2445	1910	-21.9%	1879	2446
Avg. Farm						
Price		3.6	3.85		3.9	3.6
Stocks/Use		17.29	13.73		13.5	16.9

Corn December WASDE

		2018/19	2019/20	% chng vs 18/19	My Fo	recast
		2010/17	Dec	VS 10/17	2019/20	2020/21
Acres Planted Mil. A		89.1	89.9	0.9%	89.9	94
Acres	Mil. A	81.7	81.8	0.1%	81	85.7
Yield	Bu/A	176.4	167	-5.3%	168.4	176
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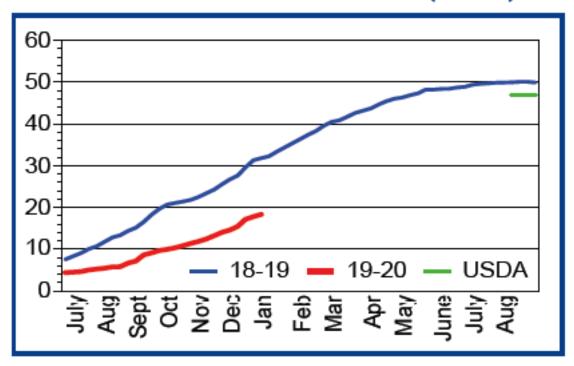
Ethanol Production

- December corn used for ethanol is lower while YoY ethanol production is higher
- Ethanol stockpiles have decreased
- EPA confirmed sticking with RFS announced in the fall
 - Issues is with waivers
 - States will determine waivers based on DOE recommendations – EPA tends to exceed DOE

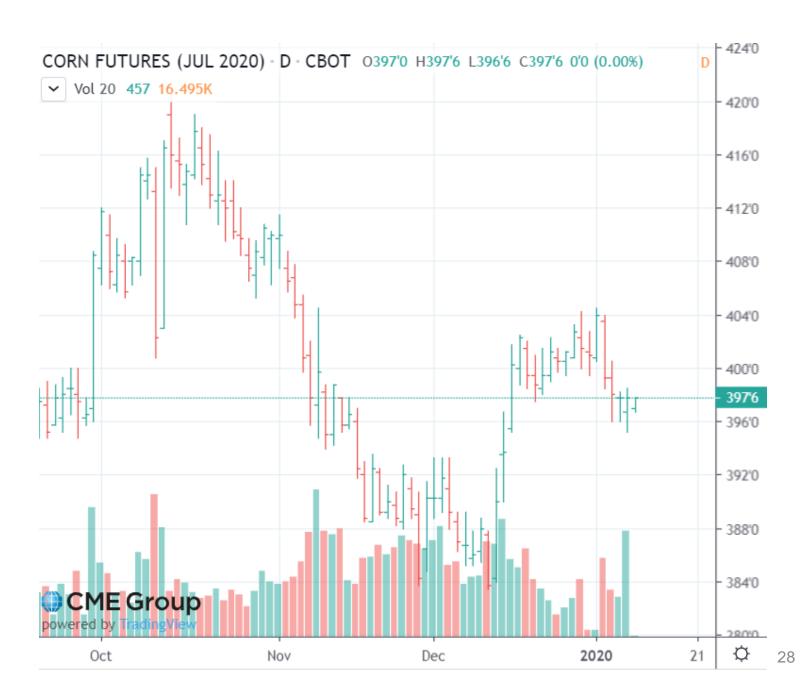


Total Corn Export Commitments

CORN EXPORT BOOKINGS (MMT)



- US exports are low
- Total commitments down 42%



Bullish Factors

- Seasonality
- Improved trade with China
 - Spur corn, ethanol and DDG trade
- Likely see smaller harvested acres vs Dec

Bearish Factors

- Rains in SA will limit rallies
- Exports are low with little signs of increase



Where will corn go in 2020/2021?

- Likely trade up until mid-May
- Limited upside potential for price
 - To make a move up need bullish news, but most of bearish news already incorporated
- In spring dependent on acreage and mother nature
- Likely see an increase in acreage
 - Trend yield of 176 bu/acre
 - Increase current demand to 14.5 bb
 - Have a stocks to use ratio of 16.9% (compared to current 13.7%)
- Average MY20 price >>> \$3.90
- Average MY21 price >>>\$3.60

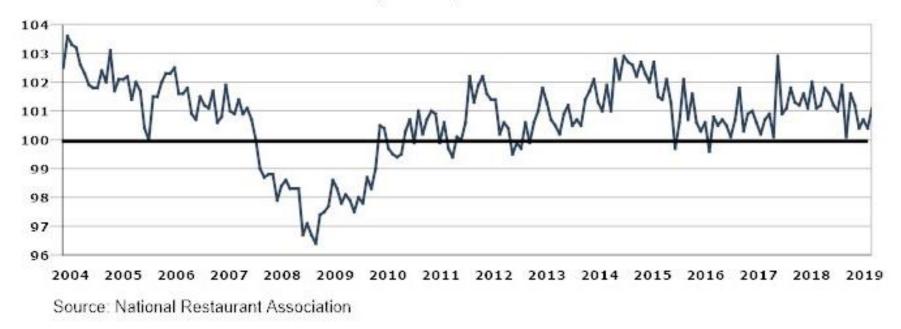
Commodity Specific Outlook Cattle





Restaurant Performance Index

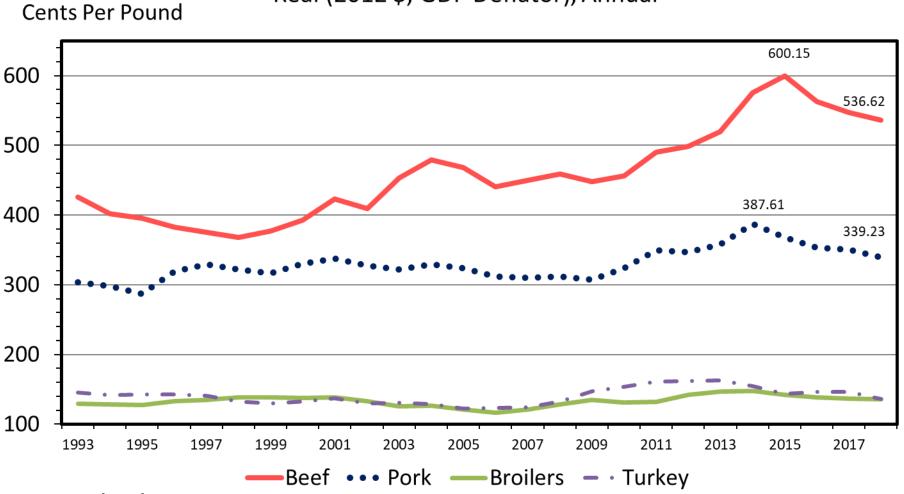
Values Greater than 100 = Expansion; Values Less than 100 = Contraction



- RPI at 101.1 in October up 0.7 from September
- Higher same store sales Restaurant menu prices have increased
 2.6%
- Worsening expectations 26% expect worse conditions within 6 months (although expectations have increased)

RETAIL MEAT AND POULTRY PRICE

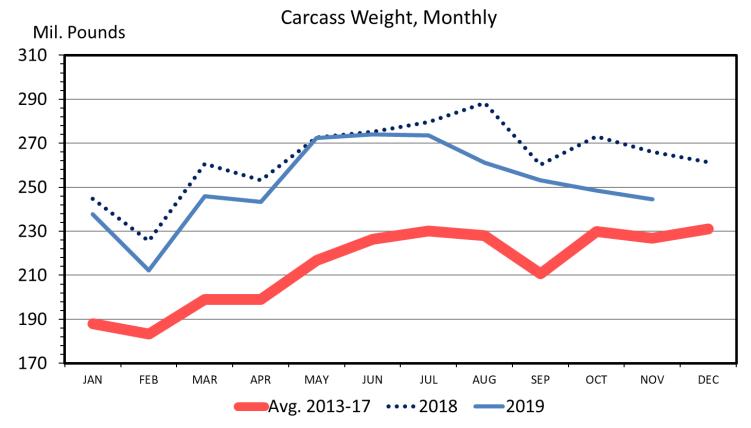
Real (2012 \$, GDP Deflator), Annual



- From highs
 - Pork down 9.7% from September 2014
 - Broilers down 7.9% from October 2013
 - Beef down 8.9% from July 2015

Beef Exports Lower

US BEEF AND VEAL EXPORTS

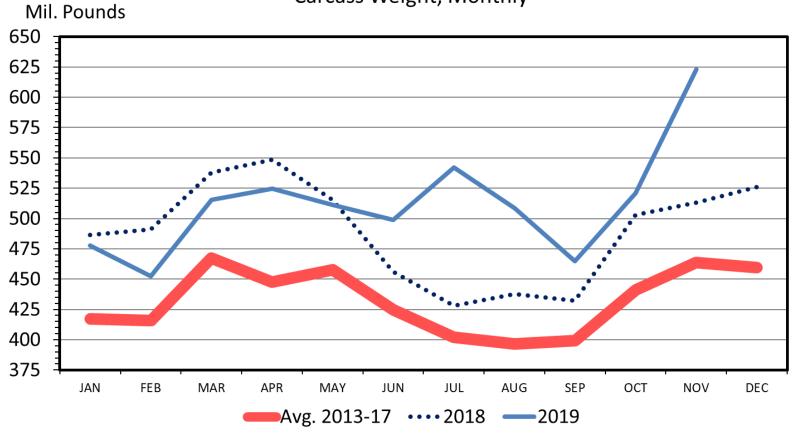


- 2019 is down 4.2% compared to 2018
- US-Japan trade deal will reduce tariff to 9%
- Japan 28% of US beef exports

Pork Exports higher

US PORK EXPORTS

Carcass Weight, Monthly



Exports are up 3.8% over 2018

Bullish

 Holiday beef movement was better than expected

 Consumers are still increasing expenditures on beef and pork

Pork trade is increasing

Bearish

 Record beef and pork production





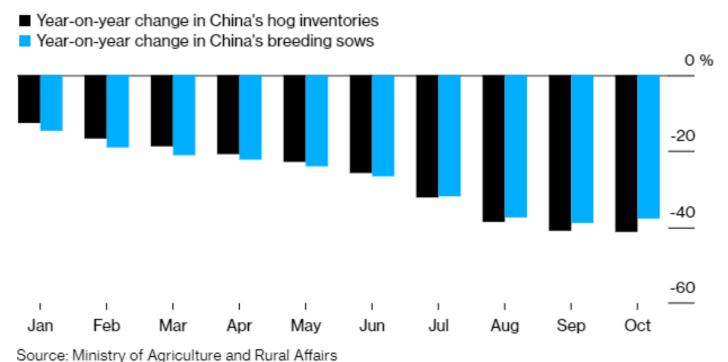
protein supply





African Swine Fever

- Chinese hog inventories down 40%
- Chinese inventory 441 M head in 2018
 - EU inventory 150 M head US 73 M head in 2018



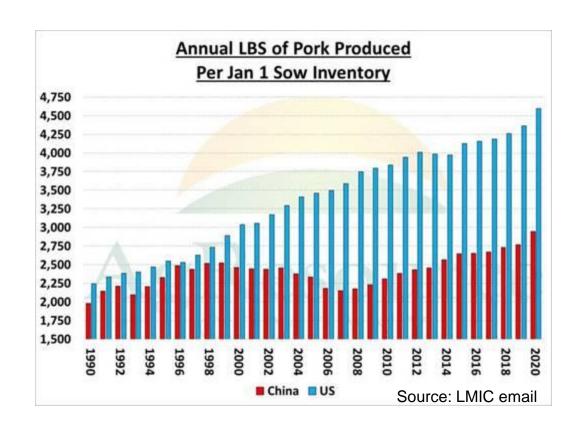
38

Chinese pork price



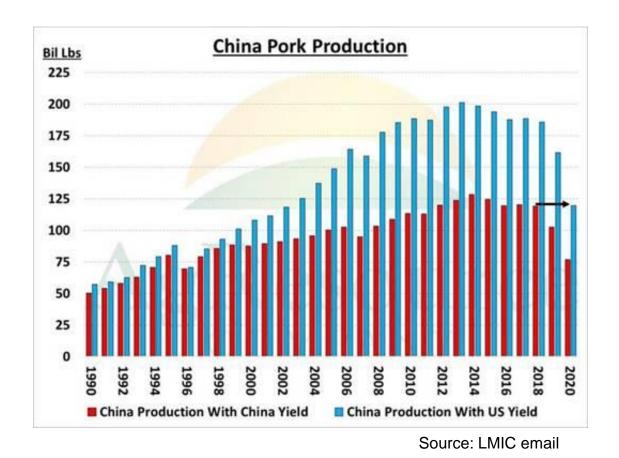
• Chinese pork price is at an all time high – up 155% over 2018

CHINESE pork production



- Chinese production is very inefficient compared to US
- Top 20 Chinese hog firms leading a transformation
 - Currently account for 10% of production
 - Likely why it will take 3-5 years for complete recovery

CHINESE pork production



- Chinese government steering industry toward more commercial production
- Huge subsidies to expand pork production

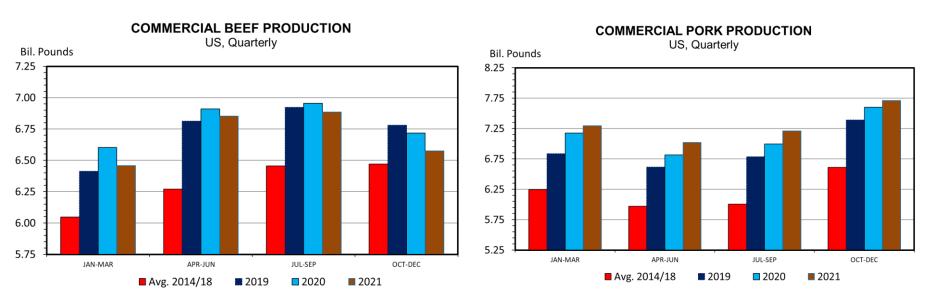
Pork Exports higher

US PORK EXPORTS TO CHINA (MAINLAND)

Carcass Weight, Monthly Mil. Pounds 180 160 140 120 100 80 60 40 20 0 APR JAN **FEB** MAR MAY JUN JUL AUG SEP OCT NOV DEC Avg. 2013-17 •••• 2018

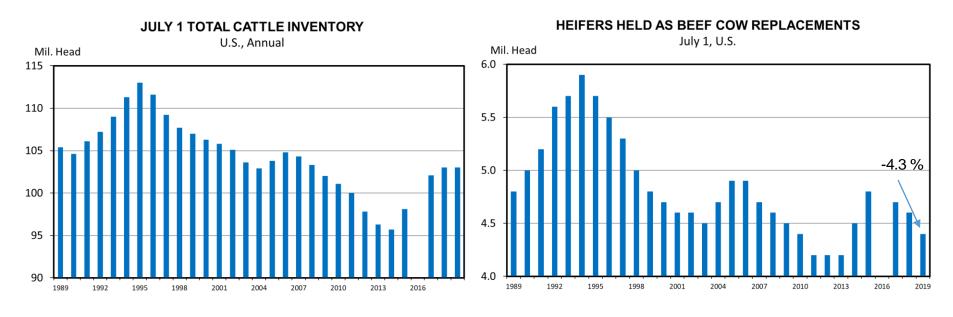
- China has pork shortage due to ASF
- US exports to China are up 125% over 2018

Beef and pork production



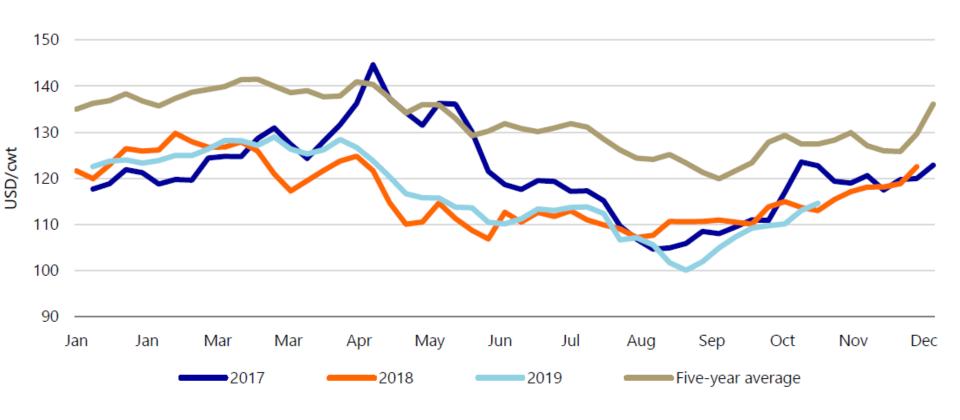
- •2019 beef production up approximately 1% over 2018 but up 15% over 2015
- •2020 beef production will be up another 1%
- •Pork production will be up approximately 5% over 2018 up another 3% in 2020

Beef Cattle Herd Stability?



- US cattle herd at 103 M head, same as 2018
 - Beef cows same at 32.4 M head, dairy cows down 1%
- Calf crop fractionally lower at 36.3 M head
- Fewer beef heifers entered herd from Jan October 2019
- Heifers on feed increased by 8% YoY in July
 - Represent 39% of COF

US Five Market Area Steer Price



WHERE ARE WE HEADED?

- Large production in all 3 major proteins
 - Record protein production of 104.3 B lbs
- Mixed impact on trade
 - Beef will benefit from US/Japan deal
 - Chinese ASF will likely impact for another year
 - •Beef and pork will likely see increases in exports in 2020
- •Growing front end beef supplies will decrease producer leverage
- Need to focus on measuring and managing input costs

Where are we headed?

- Cattle price outlook should be viewed as having potential to be much different than expectations shown here.
- Carcass weights are likely higher in 2020
- Commercial slaughter will be
 - Down 0.4% in 2020
 - Down 2.1% in 2021
- Beef production will be
 - up 0.9% in 2020
 - down 1.5% in 2021



Where will cattle prices go?



Where will Fed cattle prices go?



Year over year decreases

• 1st quarter -1.0%

• 2nd quarter +2.3%

• 3rd quarter +4.5%

• 4th quarter +3.2%

Where will Feeder prices go?

YoY changes in prices

	700-800#	500-600#
1 st quarter	+1.8%	-3.2%
2 nd quarter	+3.3%	+1.4%
3 rd quarter	+2.8%	+9.7%
4 th quarter	+1.9%	+8.1%

FACTORS TO WATCH

- Trade
 - USMCA final ratification
 - •Will China sign on January 15?
 - •Will China buy \$40 B in ag products
- Economy
 - •Recession?
- Election
- Geopolitical Environment

Questions or Comments?



