

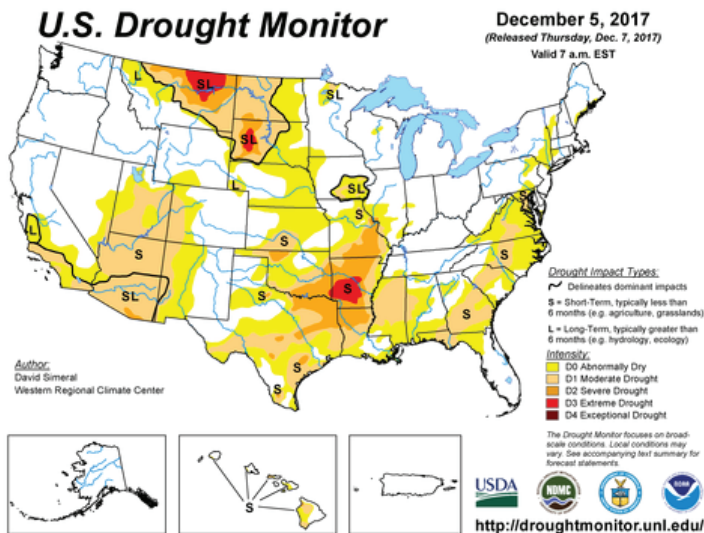
BROILER ECONOMICS

By Dr. Paul Aho

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GRAIN PRICES - LOW AND STABLE

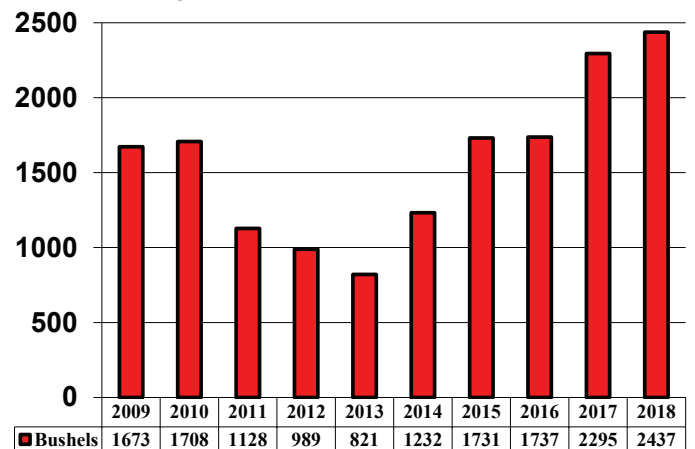
Grain prices are relatively low and stable. That would seem to be ideal for the poultry industry. Unfortunately, it is probably not perfect for two reasons. First, low prices provide an incentive to consume grain and a disincentive to produce grain leading inevitably to higher grain prices. The trigger could be a number of things including a drought in some part of the world. As can be seen on the latest drought monitor below, at least in the US, there is no sign yet of a drought in the Corn Belt except a small portion of Iowa.



US Corn Supply and Demand - December
USDA Billions of Bushels

	2015-16	2016-17	2017-18
Harvest	13.602	15.148	14.578
Supply Total	15.401	16.942	16.922
Ethanol	5.206	5.438	5.525
Exports	1.898	2.293	1.925
Feed	5.131	5.425	5.575
Total Use	13.662	14.647	14.485
Ending Inventory	1.737	2.295	2.437
Farm Price	\$3.61	\$3.36	\$3.20

US Ending Stock of Corn - Millions of Bushels



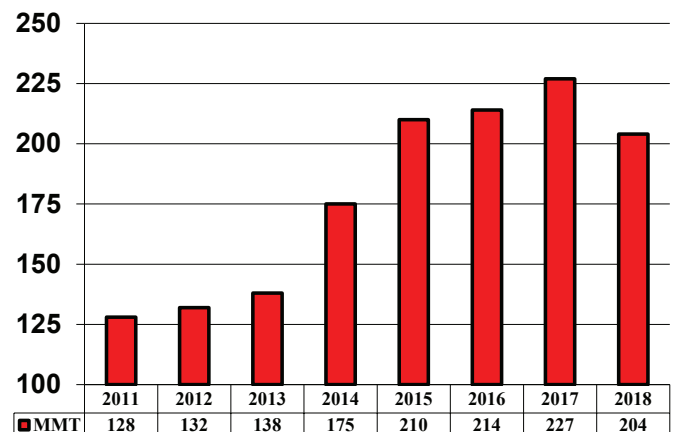
The second reason why low and stable grain prices may not be ideal is the effect of competing meats. Competing meats are, for the most part, poor converters of grain to meat. As a result, high grain prices have a greater negative effect on those meats. Low and stable grain prices are great for beef and pork. Don Tyson used to say that high and stable grain prices were best for the chicken industry. He is being proven correct once again as competing meat production threatens to place a burdensome amount of competing meat on the market next year thanks in part to low grain prices.

Corn

The December USDA World Agricultural Supply and Demand Estimates (WASDE report) projects a higher ending supply of US corn this crop year. High ending stocks are a burden for grain producers and a boon for grain users. World ending stock is starting to go in the other direction dropping to a still substantial 204 million metric tons. It is important to take note of the change in trend from increasing world stocks to falling world stocks which could signal the low point for this price cycle. It is particularly worrisome to hear that China plans to produce large quantities of ethanol.

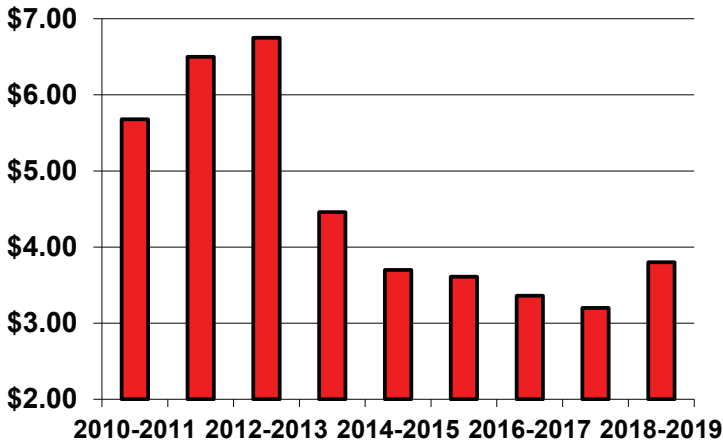
With ending stock in 2018 being similar to 2017, the price this crop year is also likely to be similar, or slightly below, the price of the last crop year (crop years end on August 31).

World Ending Stock of Corn
Millions of Metric Tons (MMT)



Corn prices are likely to reach their lowest average price of the price cycle in the current crop year. By crop year 2018-2019, prices may begin to rise in part due to a shift of acres from corn to soybeans in the US, a recovery in US exports, and possibly a lower level of corn production in South America. In 2018-19, the average price could be closer to \$4.00 per bushel (\$160 per metric ton).

**Average Farm Price of Corn
\$/Bushel to 2018-19 Projected**



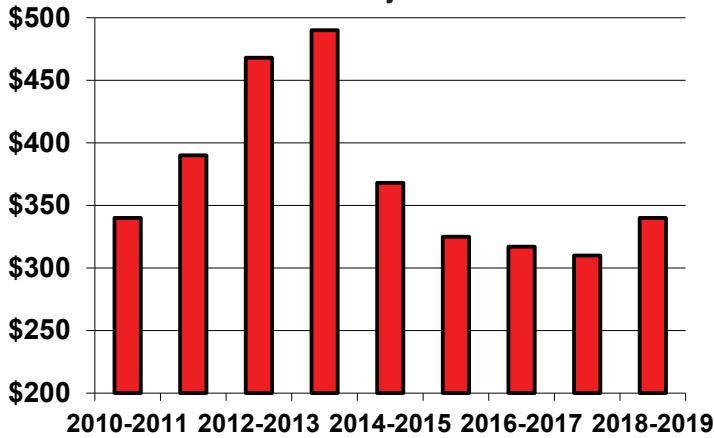
**US Soybeans - USDA - December
Billions of Bushels**

	2015-16	2016-17	2017-18
Harvest	3.926	4.296	4.425
Export	1.886	2.174	2.225
Total Use	3.944	4.214	4.306
Ending Inventory	197	301	445
Meal Price short ton	\$325	\$317	\$315

Soybeans

Compared to last crop year, the December USDA WASDE report shows that production is higher and ending stocks are significantly higher. World soybean stocks are also still rising. Soybean meal prices can be expected to fall from current levels and, like corn, reach their lowest average price of the price cycle in the current crop year. Also like the corn market, soybean prices could well begin to rise by crop year 2018-19.

**Average Crop Year Price of Soybean Meal
2018-19 Projected**

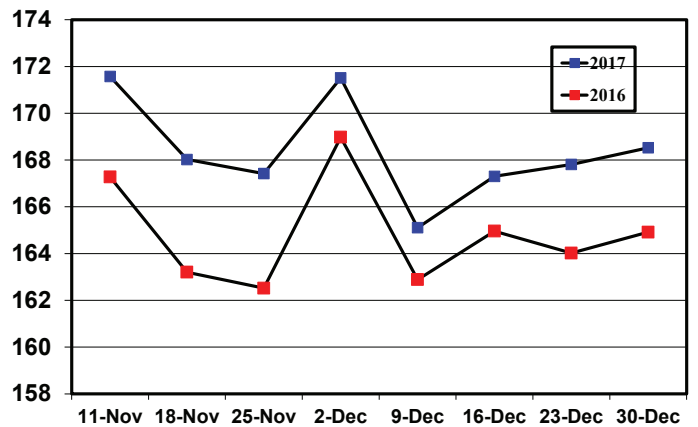


Chicken Industry Production

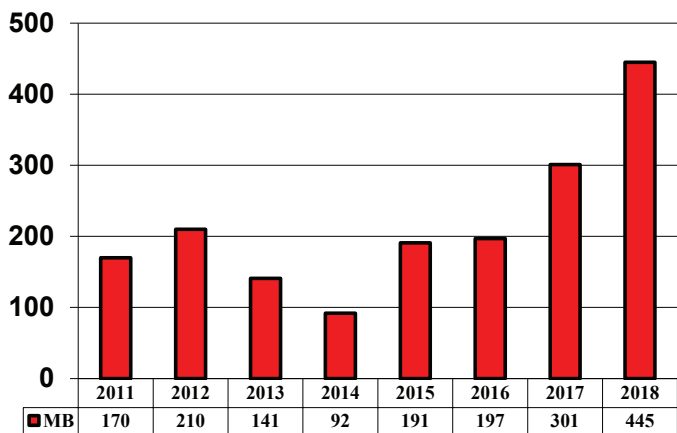
The USDA expects US production of chicken meat to increase 2% this year and an additional 2% next year. Two percent is probably the new long-term average growth rate for this increasingly mature market that is closing in on one hundred pounds per capita consumption. In sharp contrast, red meat producers are throwing caution to the wind (in part due to low grain prices) and are increasing production by 5% in 2018 after increasing 3.3% in 2017. These increases are quite likely to be unsustainable and could be the cause a major headache in the meat industry down the road.

The graph below shows weekly chick placement in millions moved forward 7 weeks to estimate chickens processed. Using this method of estimation, processing numbers are running close to 2% over last year. With little increase in average weight, total production will also show a 2% increase this year. Another 2% is projected for next year. If current expansion plans are carried out and weights begin to increase, production could accelerate in 2019. However, any production growth exceeding 2% per year is likely to be temporary.

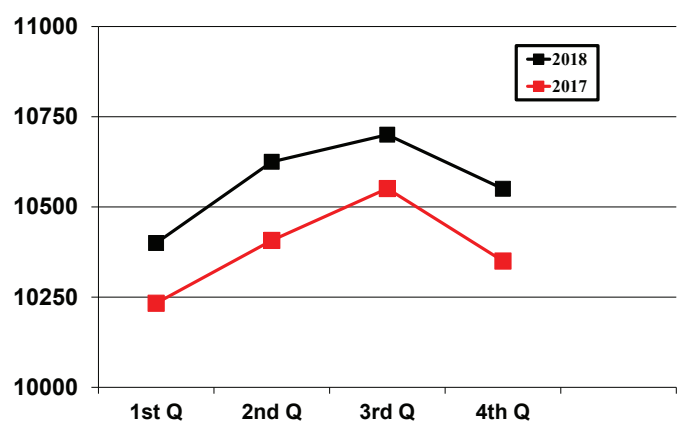
**Weekly Chick Placement - Millions
7 Weeks Forward - 2017 versus 2016**



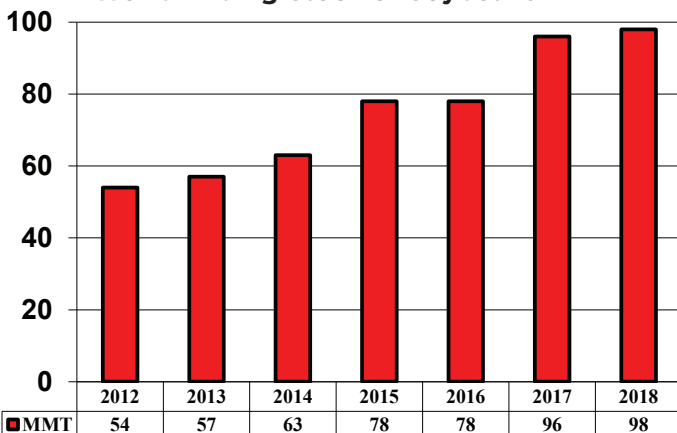
US Ending Stock of Soybeans in Millions of Bushels



**US Quarterly Broiler Production - USDA
Million Pounds**



World Ending Stock of Soybeans MMT



The combination of low grain prices, modest supply growth and moderate competition (so far) from red meats brought high profitability to chicken production this year. That profitability is now showing a seasonal decline. Next year, significantly increased competition from red meats could begin to erode profitability. If rapid increases in red meat production continue into 2019 without a counterbalancing increase in exports, then prices and profitability for all meat production may prove to be disappointing.

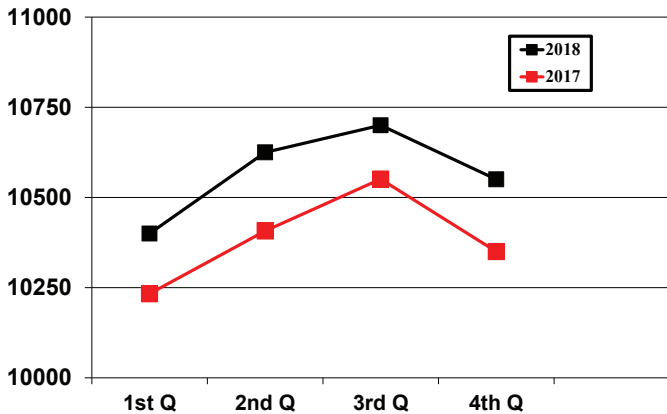
A possible “black swan” event would be a trade dispute with Mexico. Mexico is the number one destination for US chicken exports buying more than one billion pounds of leg quarters per year. Any disruption in trade with Mexico would have severe consequences for the US chicken industry. Unfortunately, it appears increasingly likely that an announcement will be made by the US to exit NAFTA.

Chicken prices will begin to feel the pressure from the increased production of red meats next year. This year, there was only one billion additional pounds of red meat available for domestic use. Next year, another two billion pounds is expected. So far, demand appears to be keeping up with the supply of both poultry and red meat. This is due in part to rising median income. When grain prices start rising again and/or the growth in median income slows down, supply of all meat could very well outpace demand.

It is interesting to note that total per capita red meat consumption has recently been rising faster than poultry consumption. This is logical given three factors; 1) low grain prices, 2) rising median income, and 3) the time lag for increased red meat production. When these factors change, poultry consumption will once again outperform red meat consumption. “Outperform” may mean rising slowly while red meat consumption falls.

Could the US meat industry as a whole be reaching market saturation? Since per capita consumption in 2018 is returning to the level of 2006, this is the time to ask that question. The level of consumption in 2006 (and again in 2018), 220 pounds, might be near the upper limit for red meat and poultry consumption in the US. Only time will tell for sure, but there is logically some upper limit to per capita consumption.

US Per Capita Consumption of Red Meat and Poultry in Pounds



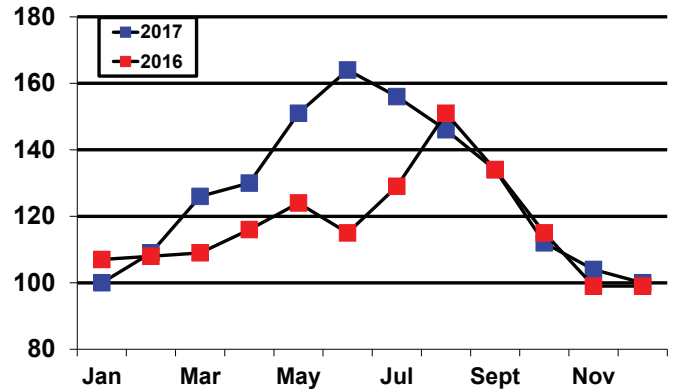
Per Capita Consumption in Pounds - US

	Pork	Beef	Chicken	Turkey	Total
2006	49	66	87	18	220
2007	51	65	85	18	219
2008	49	63	83	18	213
2009	50	61	80	17	208
2010	48	60	82	16	206
2011	46	57	83	16	205
2012	46	57	80	16	202
2013	47	56	82	16	201
2014	46	54	83	16	202
2015	50	54	89	16	211
2016	50	56	90	17	215
2017	50	57	91	17	217
2018	52	59	92	17	222

Deboned Breast

Prices for breast meat were much higher in June of this year compared to last year but then began falling seasonally in perfect alignment with last year. The June price behavior can be explained in part due to a reduction in the size of the largest chickens grown for deboning. Now weight is increasing again and competition from competing meats is beginning to have an effect.

Deboned Breast - 2016-17 USDA Northeast Price - Cents/lb

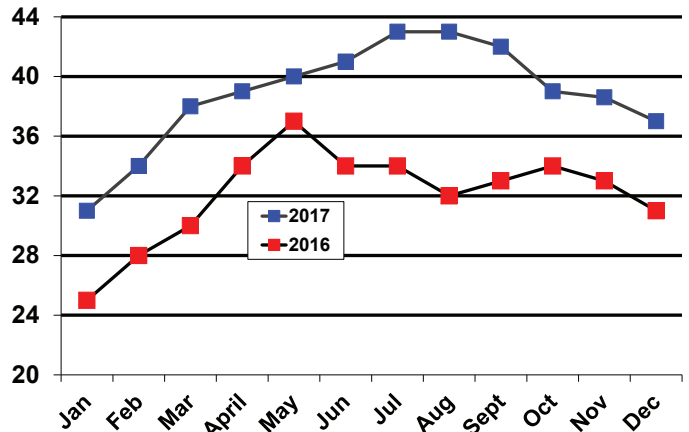


Leg Quarters

The highest price for leg quarters in 2016 was 37 cents Northeast Price (There is a range in prices for leg quarters with many leg quarters sold at a price lower than the published Northeast price). This year, the peak was 43 cents but now the price is falling as would be expected seasonally.

Going forward, trade policy with Mexico will be a key factor. If a trade war with Mexico can be avoided, leg quarter prices should rise again into the 40’s next year. However, if the US exits NAFTA, as seems increasingly likely, leg quarter prices could tumble if Mexico puts restrictions on US chicken.

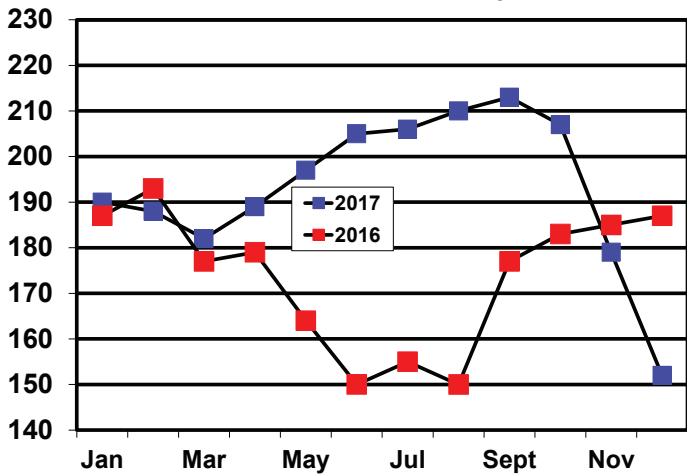
Leg Quarter Price - 2016-17 USDA Northeast Price - Cents/lb



Wings

The price of wings defied gravity when they rose counter seasonally this summer. As the price difference between deboned breast and wings became ever wider there was the inevitable substitution of “boneless wings” (deboned breast meat) for bone-in wings. As that trend gathered speed, wing prices fell back down to earth in a surprisingly short period of time. They are still 50% higher than deboned breast but much lower than earlier peak prices. The price behavior of wings suggests a volatile market with an unusually inelastic demand. In other words, a few wings too few or a few wings too many have a huge effect on price one way or the other.

**Whole Wing Prices - 2016-17 USDA
Northeast Price - Cents/lb**



The production of chicken in the US was highly profitable this year but profitability eroded in the last few months as is normal for this time of year. The year 2018 is not likely to be as profitable as 2017.

December 2017

Leg Quarters	\$ 0.36/lb
Deboned Breast	\$ 1.00/lb
Wings	\$ 1.50
Chicago Corn	\$ 3.37/bushel
Soybean Meal	\$ 323/Ton
Total Cost of Eviscerated Chicken	\$ 0.67
Revenue	\$ 0.68
Gain (Loss) per pound	\$ 0.01

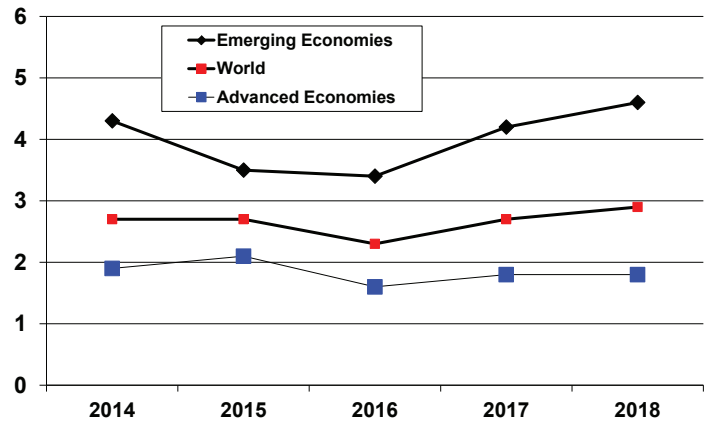
June 2018

Leg Quarters	\$ 0.30/lb
Deboned Breast	\$ 1.30/lb
Wings	\$ 1.50
Chicago Corn	\$ 3.25/bushel
Soybean Meal	\$ 310/Ton
Total Cost of Eviscerated Chicken	\$ 0.66
Revenue	\$ 0.71
Gain (Loss) per pound	\$ 0.05

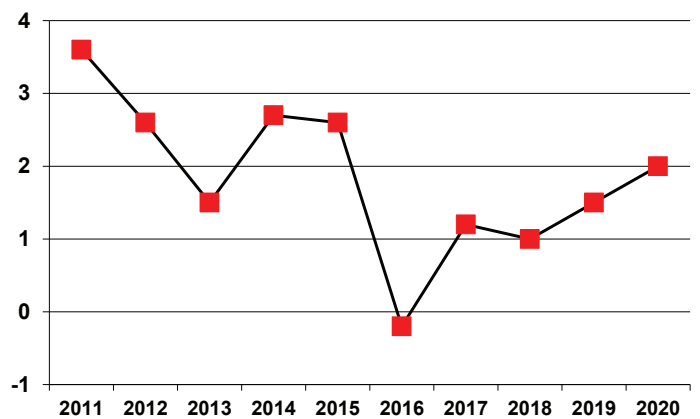
World Chicken Growth Rate

World economic growth and per capita income are both rising substantially. That would normally result in a rapid growth in world chicken production. However, chicken production fell last year and is now rising at only 1% per year. The reason is China. China's production is down over 2 million metric tons over the last three years due to avian influenza, limited availability of genetics, weak prices and soft demand (caused to a great extent by fears about avian influenza). Surely, by 2019, conditions will finally improve in China and the world chicken growth rate will once again be more closely correlated to world economic growth.

Economic Growth Rate



World Chicken Growth Rate



FAS-USDA

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Dr. Paul Aho is an international agribusiness economist specializing in projects related to the poultry industry and has been a prolific writer in trade journals in both the United States and in Latin America. Dr. Aho now operates his own consulting company called "Poultry Perspective". In this role he works around the world with poultry managers and government policy makers.

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