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**Industry Insights: Examining the Factors Influencing
Agribusiness Performance and Profit**



WORLD PERSPECTIVES: AG REVIEW

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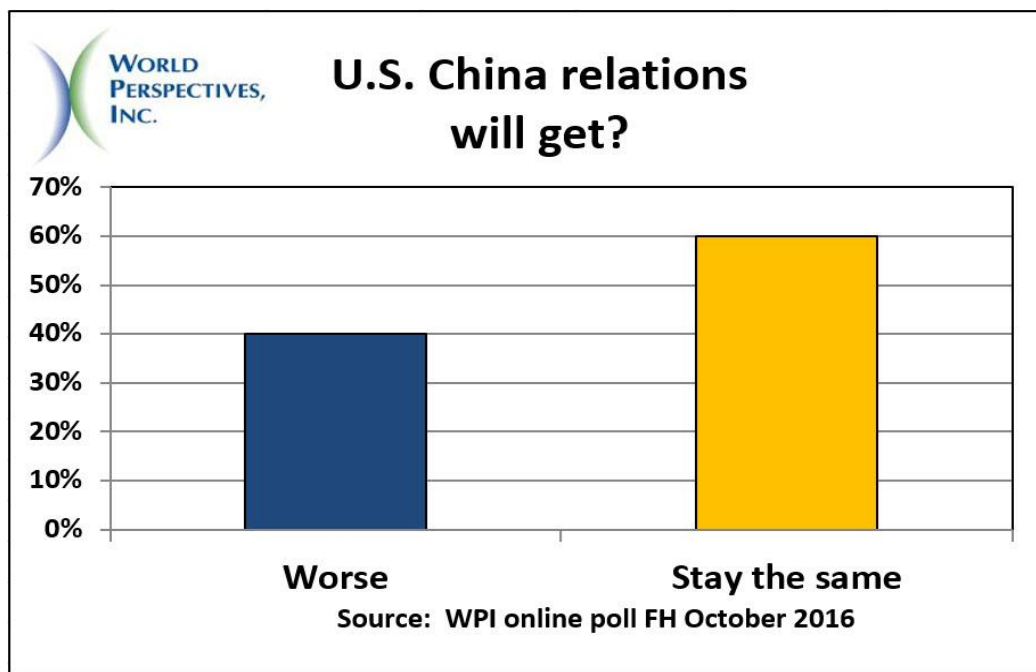
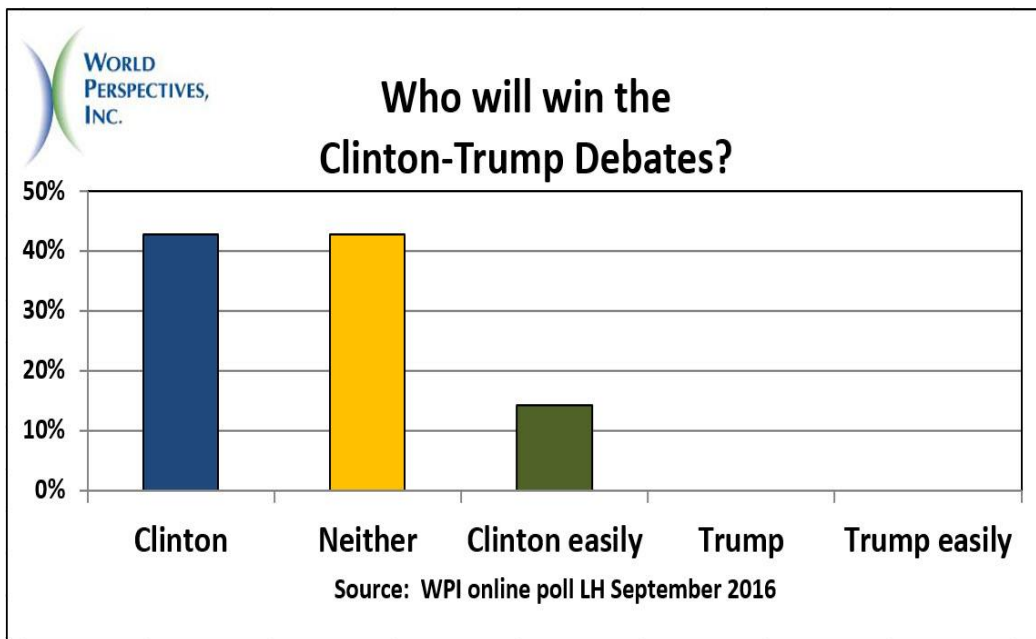
“Do the thing you fear most and the death of fear is certain.”

— *Mark Twain*

<i>HARVESTED DATA</i>	
Market Opportunity	
Open the Door	<p>A vast majority (79 percent) of those surveyed said that the best way for the U.S. to normalize relations with Cuba is to end the trade embargo and allow U.S. tourism there.</p> <p style="text-align: right;">Zimm Poll</p>
Point of Interest	
Low versus High	<p>63 percent of U.S. investors polled indicated that low interest rates are better than higher interest rates for their financial situation today. However, 52 percent of retired investors prefer high interest rates versus 71 percent of non-retired investors.</p> <p style="text-align: right;">Gallup Poll</p>
Ag Future	
Mega Merger	<p>When asked to opine on the Bayer-Monsanto deal, 37 percent responded that it was bad news, and 26 percent said it would result in better solutions for farmers. Meanwhile, 22 percent indicated that consolidation is an inevitability.</p> <p style="text-align: right;">Zimm Poll</p>
Judgement	
Produce Preference	<p>81 percent of Americans surveyed confirm that appearance is at least somewhat important to them when shopping for produce, but 62 percent indicated that they would be comfortable eating “ugly produce.”</p> <p style="text-align: right;">Harris Poll</p>

WPI POLLING

Below are the results of two recent WPI polls. Visit www.worldperspectives.com to cast your vote in our current survey.



THE GRAIN INDUSTRY

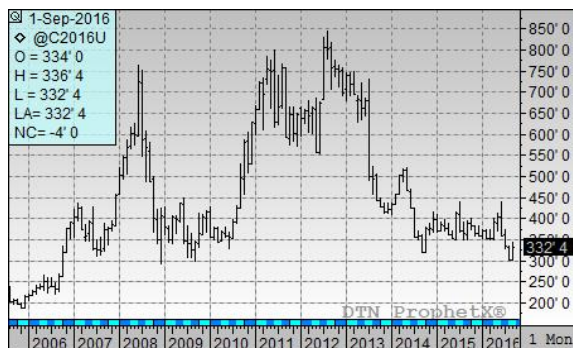
By Mike Krueger

Top Five Reasons WPI is Bearish the U.S. Grains Industry

- Low commodity prices are driving the farm economy toward recession.
- Farmers will endeavor to cut seed, fertilizer, and chemical costs in 2017.
- Farm recession is driving agribusiness mergers focused on efficiency and scale gains.
- Currently improved grain handling and export margins will be short lived.
- Declining farmland values will stress some pension funds and real estate investment trusts.

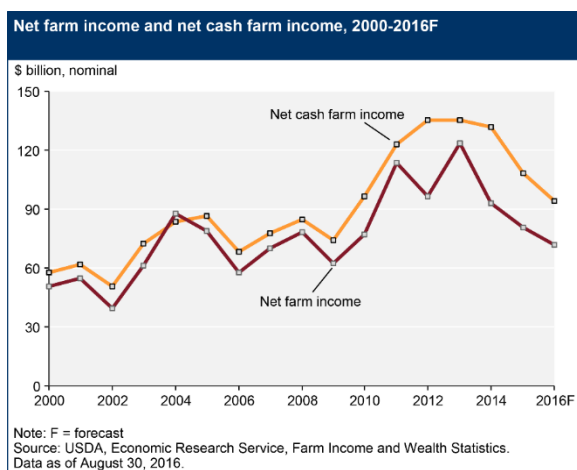
Pension funds and real estate investment trusts (REITs) with farmland ownership will start to see losses. The mergers and acquisitions that are occurring evidence the financial hurt being felt by input suppliers. Currently improved grain handling and export margins will be short-lived.

The longest agricultural bull market in history started in 2006 and came to an end in 2014 (as shown in the long-term wheat and corn charts that follow). All-time, record-high prices were established for corn and wheat futures markets. Producer profits soared as did land values and cash rental rates across the U.S. Most of the world's agricultural producers also recorded big profits during this period. Planted acreage of corn and soybeans expanded around the world. Some readily spent this newfound wealth, and sales of major farm equipment soared as did construction of new on-farm storage. That storage may be needed now as farmers contemplate how best to market a bumper crop.



High prices also brought record-high profit margins to nearly every industry associated with crop inputs. This included equipment manufacturers and dealers as well as producers, wholesalers and retailers of direct crop inputs like seed, fertilizer and chemicals. Big profit margins also brought new investment and expansion as everyone wanted a piece of the pie.

Contrary to popular belief, the end of the bull market didn't occur because high prices killed demand. In fact, world demand for agricultural commodities actually expanded during that period. The bull market ended because high profitability brought more planted acres and better technology to agriculture worldwide. That combined with four consecutive years of excellent weather and record crop production resulted in increased ending supplies of corn, wheat and soybeans. The sharp increase in the value of the U.S. dollar also created a significant advantage to export competitors. The result of the price collapse has been a corresponding plunge in net farm income. The chart below shows USDA's most recent data:



The anticipated record corn and soybean yields will help cushion the blow of low prices. Big yields may bring gross per acre income back to break-even levels, but they will probably not result in pushing gross income to profitable levels. The Crop Revenue Coverage (CRC) insurance program will also not guarantee profitable returns per acre as it has in the past because of the low prices.

The result is that many farmers will try to reduce costs heading into the 2017 crop production cycle. Despite balance sheets that still look good because they retain high calculated land values and inflated equipment values, cash flow is a major problem. Following are some of the producer practices that can be expected in order to reduce cash outflows:

- Plant crops that have lower input costs (e.g., less corn planted are in 2017).
- Reduce inputs on the crops that are planted.
- Reduce plant populations to use less seed.
- Plant cheaper seed.

Some of this is already occurring as farmers begin planting the U.S. winter wheat crop. There are producers moving away from planting certified seed and cutting the rate of fertilizer application in order to save money. Similar tactics are likely for corn, soybean and spring wheat plantings in 2017. Reduced or eliminated chemical applications will likely affect fungicides initially.

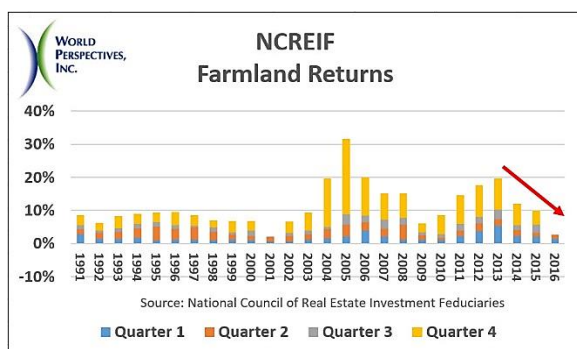
New equipment sales will be sluggish as farmers maintain their current equipment rather than upgrade. They no longer need the tax deductions/credits as they did during the peak of the bull market. There will also be a reduction in family living expenses, particularly regarding items such as vacation homes, trips, vehicles and general lifestyle upgrades.

The prices of crop inputs like fertilizer, chemical and seed will have to drop in this environment. Low prices coupled with the likelihood of reduced consumption by producers will mean smaller profit margins for input suppliers. This should also be the case through the entirety of production agriculture and in other key producing areas of the world, notably Brazil and Argentina. Producers in those countries are also feeling the pain of lower prices or increasing currency valuations, lack of credit, or political and economic uncertainty. This should mean that those companies and industries providing products and services to farmers will continue to see their profits under pressure.

The downturn in the market is also evidenced by the consolidation and mergers that are occurring at the very top levels of the industry. These include Bayer's \$66 billion acquisition of Monsanto, ChemChina's \$45+ billion acquisition of Syngenta, and DuPont's \$130 billion acquisition of Dow. The most recent news is the

merger between Potash Corporation and Agrium, which comes as a result of excess production and low prices. These transactions would have been unthinkable just five or six years ago.

The sector of the farm economy most at risk from this point forward is land values. Those quadrupled during the bull market and exceeded the return on stocks and investment-grade corporate bonds. This encouraged a great deal of institutional investment - \$2 billion alone in the past two years, according to the publication *Institutional Investor*. Farmland values have now begun to fall, although the decline has been modest relative to the enormous gains over the last decade.



Current crop prices can't support high land values and high cash rental (lease) rates. Land has been the last piece of production agriculture to attempt to sustain its high value. That will change over this winter and next spring as bankers start making decisions on 2017 operating loans while looking at inflated balance sheets. Cash flow problems will start to push land values lower.

The flip side of record world production and low commodity prices is that consumers of agricultural products now enjoy the lowest raw product prices in more than a decade. Feed ingredients are cheap. Unfortunately, livestock prices are too and the livestock industry is also experiencing bad economic times. The sharp increase in the U.S. export outlook has meant a significant boost in rail and barge shipping volumes and at least a temporary improvement in grain-handling and export margins. These gains, however, are likely to be short-lived.

OILSEED PROCESSING

By John Baize

Top Five Reasons WPI is Bullish the Oilseed Processing Industry

- Record-large U.S. soybean crop and ample global supplies ensure low input costs for crushers.
- Reduced South American export competition in Q4 2016 and Q1 2017 gives advantages to U.S. firms.
- U.S. domestic soybean processors should make very good margins from low input costs and stable output demand.
- Low soymeal prices will expand domestic demand from the livestock sector.
- Operations in Brazil and Argentina will face tighter margins this year.

A combination of the third record large U.S. soybean crop in as many years, less competition from South America and very strong global demand for soybeans is likely to create very positive conditions for exporters of U.S. soy, animal protein producers and soybean processors in 2016/17. Reduced global supplies of rapeseed should also contribute to profit opportunities for U.S. soybean processors.

USDA is forecasting the U.S. will produce 4.201 billion bushels (116.18 MMT) of soybeans in 2016. If realized, that would be the third record U.S. crop in as many years. The average yield is forecast at 51.4 bushels/acre (3.45 MT/hectare), also a record high. This production will provide U.S. soybean processing and exporting firms with a record soybean supply to meet growing domestic and foreign demand. USDA is forecasting the mid-point average price for soybeans in 2016/17 at \$9.05/bushel, a 10-cent increase from 2015/16.

Exporters of U.S. soybeans should have excellent success in the first half of MY 2016/17 because of limited competition from South America. Brazil is running short of stocks due to large exports early in the year, and there is now growing evidence that those exports will fall short of USDA's forecast by as much as 2 MMT.

Some are predicting Brazil may need to import soybeans from Paraguay or elsewhere during December and January in order to meet domestic demand. Argentina has relatively few good quality soybeans left to export owing to the flooding that occurred in March and April of this year. Argentine processors are acquiring most of the top quality soybeans for blending with those of poorer quality as a way to meet export contract specifications.

U.S. soybean exports in August 2016 were a record for that month by a large margin, and the same will likely be true for September. The top destination by far for the soybeans has been China, but there were also sizable quantities shipped to Europe. South America's short supplies is the main driver of the higher U.S. soybean exports in these two months. Exporters earned large margins late in the year because of very strong demand. The high elevation margins somewhat undermined U.S. soymeal exports during the period because exporters were using the available port infrastructure for soybean shipments.

It appears U.S. soymeal exports will face a greater challenge in 2016/17. Argentina still has a sizable supply of soybeans and is exporting most of that in the form of soymeal, soyoil or

biodiesel. The country uses differential export taxes to subsidize its soybean processors as well as biodiesel producers and exporters. U.S. soybean prices will need to decline from current levels to be competitive with Argentine exports. In addition, U.S. processors will need to put on aggressive soybean export programs this fall if the U.S. is to reach USDA's forecast of 11.16 MMT in 2016/17.

U.S. domestic soybean demand is set to expand in 2016, driven by continued growth in the livestock and poultry sectors. It is forecast to increase to 31.12 MMT in 2016/17 from 30.39 MMT in 2015/16, which will be the highest such demand since MY 2007/08. A lack of growth in the corn ethanol sector will limit supply increases in DDGS that compete with soybean in feed rations. However, because China imposed antidumping duties on U.S. DDGS imports, the result is higher competition between DDGS and soybean in U.S. livestock feed rations.

U.S. domestic soybean demand is also expected to be strong in 2016/17. USDA is forecasting total U.S. demand for soybean in 2016/17 will increase 250,000 MT to 9.321 MMT. The primary driver of this is projected to be the biodiesel sector, which is forecast to boost its demand by 204,119 MT to a total of 2.699 MMT. However, this will depend to some extent on Congress extending the \$1.00/gallon biodiesel tax credit to 2017. It is not yet clear whether or not such action will occur this year.

It also appears that the U.S. soybean sector may benefit in the coming year from slower growth or a decline in South American soybean production. USDA is forecasting Brazil will have only a small gain (1.8 percent) in soybean plantings in the upcoming cropping season, and some analysts believe there may not be any expansion at all. Meanwhile, high domestic corn prices there have made that crop more competitive with soybeans, and those plantings are certain to increase. Other factors contributing to a slowdown in soybean plantings are a lack of financing, higher transportation costs, and a stronger Brazilian currency. A slowdown or a decrease in Brazil's soybean production growth will be negative for the bottom line of its domestic soybean

processors. However, it would tend to be positive for those in the U.S.

In Argentina, farmers clearly intend to plant more corn in response to changes in the country's export tax policies. Early in 2016, the government eliminated the 20 percent export tax on corn and the 23 percent export tax on wheat. However, it reduced but did not eliminate the export tax on soybeans, cutting it only from 35 percent to 30 percent with a promise to possibly lower it further to 25 percent in 2017. This policy makes corn and wheat more remunerative to farmers and causes plantings of both to increase. The Argentine government now appears to be renegeing on its announced action regarding the soybean export tax next year because it cannot afford the approximate \$1.3 billion revenue loss that would result. Many believe Argentina's soybean plantings could decline by as much as 500,000 hectares if the government does not move forward with the tax cut. Any substantial drop in Argentina's soybean plantings and production in 2017 will be negative for the profitability of processors there. As is the case with Brazil, however, multi-national companies' profits would likely be positively impacted with respect to their operations in the U.S. and Europe.

One major, potentially negative factor that could affect the U.S. and global soybean sector is a slowdown in China's soybean imports. In its September WASDE report, USDA reduced its forecast for those Chinese imports in 2015/16 by 500,000 MT to 82.5 MMT and those in 2016/17 by 1 MMT to 86 MMT. Estimates for Chinese soybean imports were left unchanged in the October WASDE. USDA also expects China to increase its soybean plantings in 2017 as a result of higher subsidies for that crop and a cut in incentives for corn plantings. While these changes may slow the growth in that country's soybean imports somewhat, they are expected to have relatively little impact on total world demand.

The U.S. and global soybean sector also stands to benefit in the next year from lower production of rapeseed/canola in Europe, though the effects will be partly mitigated by increased Canadian production. USDA is forecasting EU rapeseed

production in 2016 at 20 MMT, down from 22.2 MMT in 2015 and 24.6 MMT in 2014. Canada's canola crop is expected to increase to 18.5 MMT in 2016 from 18.38 MMT in 2015. The combined 2.08 MMT decline in rapeseed output will mean about a 1 MMT reduction in rapeseed oil production in 2016/17 and should result in some increase in soyoil demand from the food market as well as for biodiesel production.

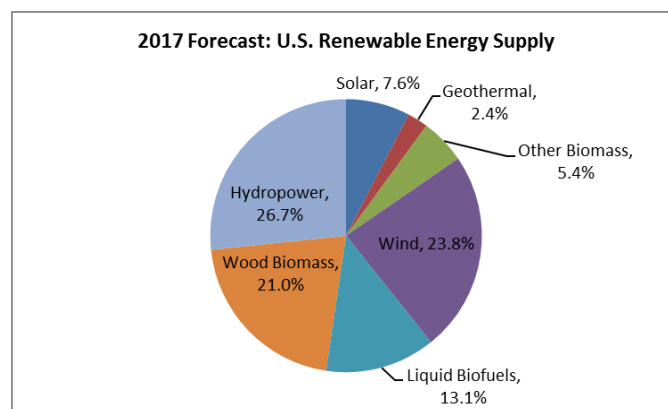
THE U.S. BIOFUELS INDUSTRY

By Dave Juday

Top Five Reasons WPI is Bullish the Biofuels Industry

- Long-term environmental and energy policy aims at reducing greenhouse gas emission by replacing fossil fuels; liquid biofuels are falling behind in that objective to wind and solar replacing coal as electric utility generation.
- The Renewable Fuel Standard (RFS,) which mandates minimum volumes of biofuels, is starting to plateau to the 15 billion statutory cap on corn ethanol (2017 volume set at 14.8 billion gallons), and the rate of increase for biodiesel is also slowing.
- The RFS is still in place and guarantees an increase in demand for both ethanol and biodiesel in 2017.
- Biodiesel faces some uncertainty about the extension of the blenders' tax credit. The credit expires on 31 December 2016, and its fate for an extension is uncertain in Congress.
- Ethanol's outlook is more bullish. Even though ethanol prices periodically rise above gasoline prices, the RFS drives ethanol use. Moreover, inputs into ethanol production like corn and natural gas are lower-cost, which maintains margins.

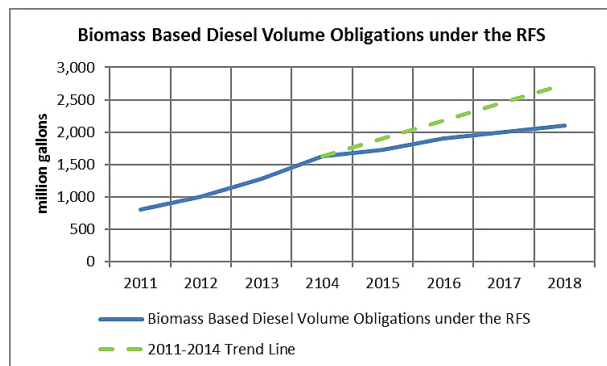
The U.S. Energy Information Administration (EIA) released its September Short Term Energy Outlook (STEO) that predicted the U.S. liquid biofuels supply would be down to 1.249 quadrillion British thermal units (Btu) in 2017 from the 1.252 quadrillion Btu projected for this year. For reference, the supply had been at 1.220 quadrillion Btu in 2015. The U.S. Energy Department uses Btu to measure the energy output for different fuels across similar physical units such as gallons and to provide a cross reference for energy sources that are measured by different physical units such as gallons of fuel, tons of coal and cubic feet of natural gas. What the Btu measurement shows is that other renewable energy sources are more responsible than liquid fuels for replacing the energy equivalent of fossil fuels and are also growing faster. Currently, liquid biofuels comprise about 13.1 percent of the total renewable energy supply, approximately the same level as in 2009 before peaking in 2010 at 15 percent.



Source: EIA, WPI

Assuming EIA's forecast for 2017 is correct, this will be only the second time that the liquid biofuel supplies decreased year-over-year after the first such occurrence in 2012 when the issue was insufficient feedstock due to a drought-induced, short corn supply. Next year, according to the agency, the driver will be a matter of demand. The Renewable Fuel Standard (RFS) is plateauing as it nears the 15-billion-gallon cap on conventional corn ethanol and blend wall issues limit additional use of both conventional and advanced ethanol. Biodiesel is also reaching the

point of diminishing marginal returns under the RFS, having increased by 104 percent from 2011 to 2014 but rising only 21 percent from 2015 to the proposed 2018 volumes.



Source: EPA, WPI

Long-Term Outlook

Despite the dramatic increase in use of biofuels over the past decade, that of solar and wind for electricity generation has had the fastest growth in renewables. According to EIA, fossil fuels accounted for 81.5 percent of total U.S. energy consumption in 2015, which was their lowest share in the past century. In contrast, the renewable share of energy consumption in the United States that year was its largest since the 1930s at nearly 10 percent. Indeed, the most significant decline of fossil fuel use in recent years has been coal with a 13 percent decrease in consumption during the same year, the highest annual drop for any fossil fuel in the past 50 years. The only similar declines were in 2009 and 2012 when coal fell 12 percent below the level of the previous year, reflecting the growth in wind and solar in electricity generation.

In EIA's Annual Energy Outlook projection, petroleum consumption remains close to current levels through 2040. While fuel efficiency standards and other changes in transportation reduce total motor fuel use, that is offset by growth in population and travel. The net effect is that long-term transportation fuel demand remains stable. Outside of renewables, natural gas consumption continues to expand its share of electricity generation. The advent of greater domestic petroleum and natural gas production is

a key factor for those fuels maintaining their place in the energy generation mix.

Over the long term, demand for renewable liquids remains flat with EIA projecting it will decrease next year compared with this year. However, there is more to the short-term market for liquid biofuels than might be apparent, and the reason for this is the RFS. It will maintain a floor on ethanol and biodiesel production until 2022. At that time, the EPA will then establish volumes that will not exceed the 15-billion-gallon cap on conventional ethanol and keep the applicable volumes of advanced biofuel and biomass-based diesel to at least the same percentages as in CY 2022 and 2012, respectively.

Renewable Fuel Standard

There is growing political pressure to reform the RFS as it is a complicated program that is difficult for the EPA to administer. The agency has only met its timeline for establishing volumes twice during the period of 2009-2016. Moreover, conventional ethanol is at the blend wall, and higher level blends have not emerged due to costs and regulatory problems with E15 in the summer months. There are a number of reform and repeal proposals introduced in Congress, and both major party presidential candidates have suggested the RFS should be subject to further scrutiny. Furthermore, the existing statute stipulates that the EPA is to undertake a modification of the statutory volumes in 2017 if the agency has waived any applicable volume requirement below 20 percent for two consecutive years or at least 50 percent for a single year. Indeed, the final volumes for overall advanced biofuels and cellulosic were waived by EPA and did fall below the 20 percent figure for two consecutive years. The agency proposed to reduce the advanced biofuel volume by 47 percent 2015 and 53 percent in 2016 as well as the cellulosic biofuel volume by more than 95 percent for both 2015 and 2016. This will require the EPA to eventually promulgate a rule modifying the statutory volumes for advanced biofuels and cellulosic through 2022.

In short, the long-term outlook for liquid biofuels foresees a stagnant market for conventional corn ethanol that is capped at 15 billion gallons, a loss of support for advanced biofuels and a slower rate of growth for biodiesel. In addition, policies driving other sources of renewable energy have been more successful in reducing the use of fossil fuel, which has been the driving force behind renewable energy legislation.

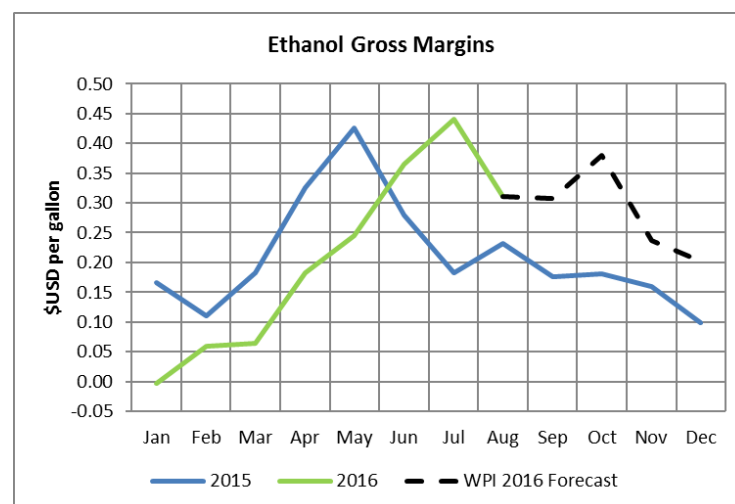
Short-Term Outlook

The outlook for liquid biofuels in the short term is not as bearish as it is in the long run, primarily because the RFS remains in place to drive the market for this year and next. The mandated volume use for ethanol is 14.5 billion gallons for 2016 with 14.8 billion gallons proposed for 2017, which is subject to finalization by the EPA on 30 November. This has been a banner year for ethanol production as the weekly average exceeded 1 million barrels per day (bpd) 10 times this summer compared with only twice in all of 2015. Prior to November 2015, the record weekly ethanol production was 994,000 bpd. EIA is projecting the average production for 2016 and 2017 at 990,000 bpd, which equates to about 15.2 billion gallons versus 970,000 bpd in 2015. Production in recent years has typically been about 105 percent of the U.S. established volume obligation, so WPI foresees it reaching up to 15.5 billion gallons in 2017. Whatever is not used in the domestic market will likely find its way to the export market. Through June, exports are running slightly ahead of last year's approximate total of 844 million gallons. Further, imports of ethanol through June are running about 20 percent behind last year when they reached 91.5 million gallons, meaning net exports are likely to be higher this year. In April, they were at a 52-month high. Increased net exports clear the way for more total utilization.

While production is experiencing its usual seasonal slowdown, it is worth noting that the EPA lifted the summertime restriction on mid-range blends of ethanol such as E15 on 16 September. Those can't be sold from 1 June to 15 September without a waiver due to restrictions on oxygenates during that period. However, there are about 330 retail stations in 26 states that are

capable of selling these higher blends until next June, which could enable those markets with demand to resume use of E15 and E85. The offset, though, is that ethanol is currently more expensive than gasoline blend stock, and this hampers use of the higher blends. There have been several periods this year when ethanol has been more expensive than gasoline, but it is blended anyway because of the RFS requirement. Higher-priced ethanol squeezes blenders' margins, and it can put a cap on discretionary blending. However, with ethanol supplies at a level near the 10 percent blend wall, there isn't much room for discretionary blending anyway. Thus, ethanol production is forecast to stay level through 2017, imports are likely to be reduced 15-20 million gallons, and consumption is guaranteed to increase at least 300 million gallons under the RFS. EIA is predicting that ethanol use will reach a full 10 percent of the finished motor gasoline use in 2017.

More importantly, ethanol mills' margins remain positive and have surpassed last year's. The gross margin on ethanol milling has been helped by lower corn and natural gas prices. Assuming corn and DDGS prices hold steady, and based on the October, November and December futures prices of ethanol and natural gas, WPI foresees ethanol margins remaining positive and ahead of last year as the chart below indicates:



Source: Iowa State University, WPI

Biodiesel production averaged 82,000 bpd last year, but it is expected to increase to 99,000 bpd this year and 102,000 bpd next year as a result of the RFS. However, fulfilling the RFS volumes requires a growing reliance on imports. Net imports of biomass-based diesel are expected to increase from 29,000 bpd last year to 43,000 bpd this year and 47,000 bpd in 2017.

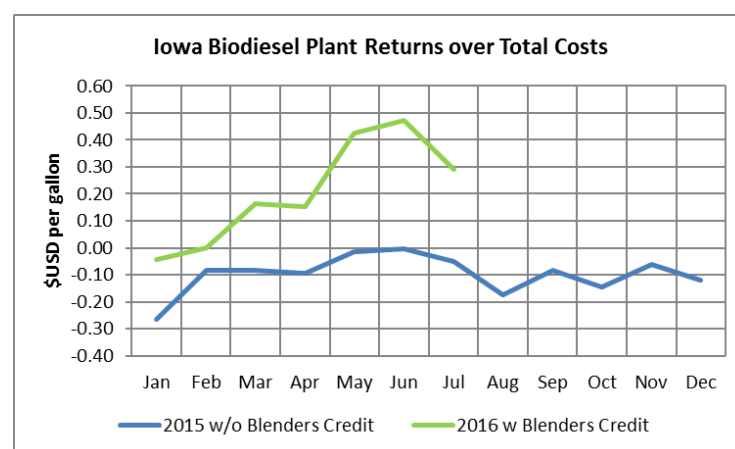
The short-term outlook is a bit cloudier for biodiesel than for ethanol because it faces some policy risks. The \$1/gallon biodiesel blenders' tax credit expires 31 December 2016. It was established in 2005 by the American Jobs Creation Act of 2004, extended by the Energy Policy Act of 2005 and amended by the Energy Improvement and Extension Act of 2008. The credit expired and was not in place at the beginning of 2010, 2011 and 2014, but it was extended retroactively for those years as well as for 2015 and extended proactively for 2016.

The tax-writing committees, the House Ways and Means and the Senate Finance Committees, have shown little appetite for creating an extender bill to date. This is especially true of the House committee as its chairman, Representative Kevin Brady (R-TX), is targeting tax reform and overall rate reduction by using the added revenue from the expired tax provisions as a way to reduce personal income tax and capital gains rates as well as eliminate the estate tax. Part of the political inertia on an extender package is that many expiring provisions were made permanent last year while others like wind and solar tax credits were extended for five years.

Indeed, the 2015 tax extender package, Protecting Americans from Tax Hikes (PATH) Act, addressed 52 expiring provisions and made permanent many of the most politically popular ones for both sides of the political aisle. Now there are only 32 provisions expiring at the end of 2016. Of those, 16 that account for about \$7.4 billion are all renewable energy-related. The permanent extension of many has dramatically reduced the lobbying pressure on the tax-writing committees to take up an extender bill. Moreover, the chances of a retroactive extension at the end of next year are even slimmer as there is only one

tax provision expiring in 2017, according to the Joint Tax Committee.

The tax credit is a key component of profitability in the sector. According to data from Iowa State University, monthly gross returns over variable costs (with no contemporaneous blenders' credit in place) averaged about \$0.16/gallon last year versus \$0.55/gallon for the first six months of 2016. Similarly, Iowa State's estimated per gallon returns over all costs (variable and fixed) were in the red every month of last year but positive for six of seven months this year.



Source: Iowa State University, WPI

All in all, the outlook for the liquid biofuels industry is a bit mixed as growth is supported by the RFS in the short run but plateaus in the long term. For biodiesel, another key policy component is the blenders' tax credit that is unsettled at this time. In terms of its extension, there is a proposal to change the credit so that it applies to production of biodiesel rather than to its blending. This would be a positive development for U.S. biodiesel plants since this would apply only to domestic production. However, this could also be a signal that the EPA will be less expansive in setting future volumes for biodiesel as the reliance on imports is already high. The EPA's 2017 final volume is 2 billion gallons, but the statutory requirement under the RFS is only 1 billion gallons or more, allowing the agency ample room for drawing down future levels.

FARM INPUTS

By Joost Hazelhoff

Top Three Reasons WPI is Neutral the Farm Inputs Industry

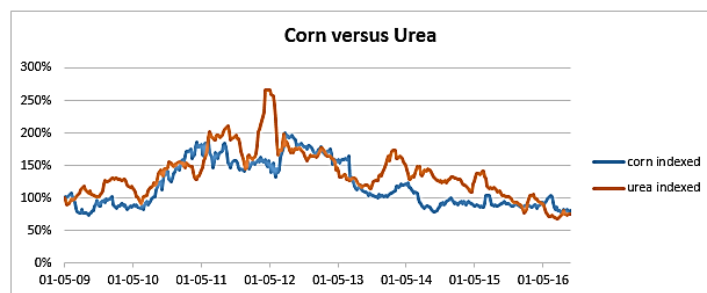
- Demand: total fertilizer sales for the next cropping cycle are likely to face headwinds from record-low grain and oilseeds prices around the world and rationalization of fertilizer use.
- External price drivers: based on historical relationships between crude oil and fertilizers, a modest recovery in projected crude prices offers price support in an otherwise challenging environment.
- Production cost/margins: margins for North American nitrogen production are pressured by rising natural gas costs.

The fertilizer industry continues to face a challenging business environment with a mostly neutral-to-bearish outlook for the majority of sub-segments. The nitrogen segment seems to have stabilized. Although current global buying activity is modest, seasonal demand will start picking up soon. The market seems to be counting on stable prices from supply out of China, driving an overall neutral price outlook for the next two or three months. In phosphates, the overall sentiment is weak. The supply side has seen capacity increases in China and Morocco. Tender activity on the demand side has not been enough to turn sentiment around. In potash, now that the market has had a chance to digest the contract settlements with China and India, the general sense is that the market has bottomed out. The price outlook for the next two to three months is neutral.

External Price and Production Cost Drivers: Grains, Crude and Natural Gas

Historically, performance of the sector goes hand-in-hand with the ebb and flow of grain and energy markets. Going into the current marketing year for grains and oilseeds, those counting on low prices to cure low prices were likely disappointed. The largest-ever corn, soy and wheat crops are being harvested. However, they

are not really needed as the beginning stocks for corn and wheat are also the largest ever with those for soybeans the second-largest ever. As a consequence, the market is trading at price levels not seen in seven years. Inevitably, this has been directly reflected in fertilizer prices as illustrated by the graph below that plots urea versus corn price performance.



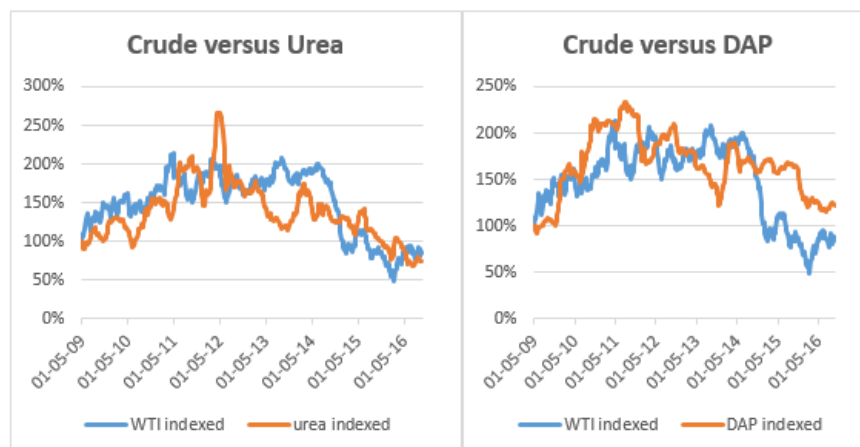
Source: CME, WPI analysis

Transitioning into the next production cycle, one would expect a supply response to the current low price environment driving a (modest) price recovery leading up to the next marketing year. After all, adding acreage or splurging on the highest-cost seed or optimal fertilizer application is counterintuitive when farming returns merely break even or show negative results. This will have an initial negative impact on overall fertilizer volumes, but the consequent price recovery should help support fertilizer prices in the beginning of 2017.

Crude Oil versus Fertilizers

Current urea values appear intuitive from an energy perspective – they are in the range of the historical price band between crude and urea. DAP actually held up well relative to crude. The

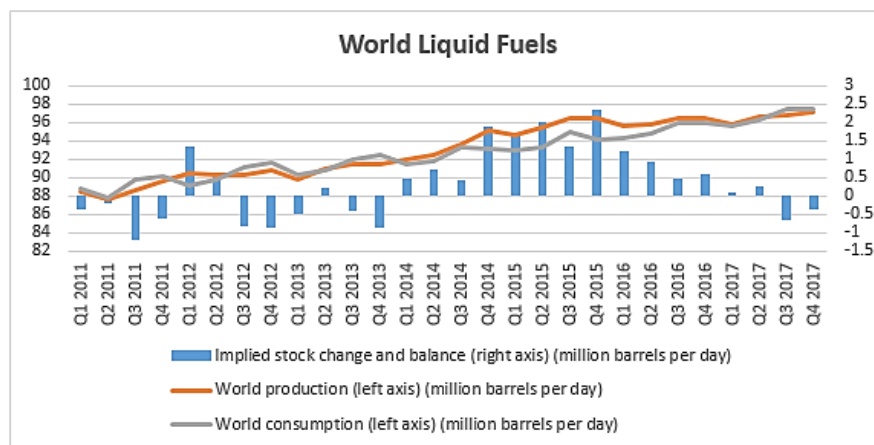
spread between the two that opened up as long 24 months ago has finally narrowed again after the DAP correction in the beginning of 2016 and the more recent crude recovery.



Source: UA Dataservice, WPI analysis (NB: 1 May 2009=100%)

The US Energy Information Administration (EIA) is forecasting higher crude prices in 2017. In its global liquid fuels forecast, the agency

projects the market will transition from inventory build (current) to balance (H1 2017) and then to inventory draws (H2 2017).



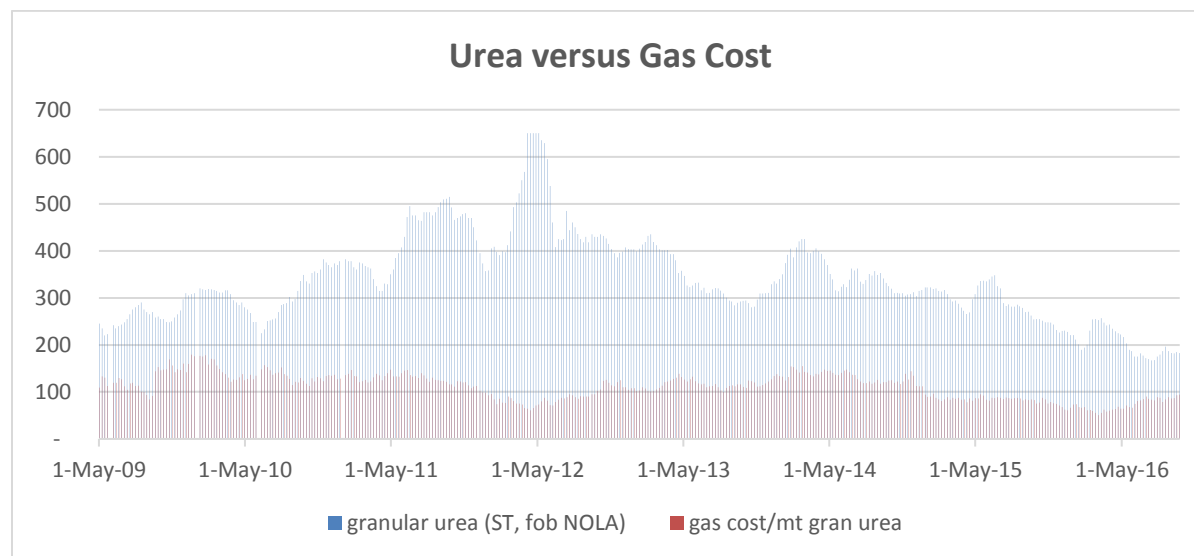
Source: U.S. EIA August 2016, WPI analysis

The price outlook for crude offers some support for nitrogen and phosphates. A sustained stabilization/modest recovery in crude has a mitigating effect on the downward pressure that a bearish grains market and weak macros have on fertilizers.

Natural Gas versus Fertilizers

As a rule of thumb, gas cost represents about two-thirds of the nitrogen production cost. In the second-half of September, U.S. natural gas crossed the \$3.00/MMBtu for the first time in 16 months. Reportedly, the overhang of natural gas is declining at a higher rate than crude oil. Although inventories are well ahead of last year's level, refill season injections are well below the five-year average for the period.

Longer term, EIA projects 2017 consumption to average 77.1 Bcf/d versus 76.4 in 2016 and 75.2 in 2015. It projects Henry Hub prices to average \$2.42/MMBtu in 2016 and \$2.87/MMBtu in 2017. The increase of spot natural gas prices will theoretically pressure margins for North American nitrogen production in the upcoming quarter. How much influence spot gas prices have on the margins of individual industry participants depends on the terms of their respective gas supply contracts.



Source: CME, WPI analysis

THE U.S. LIVESTOCK INDUSTRY

By Dave Juday and Matt Herrington

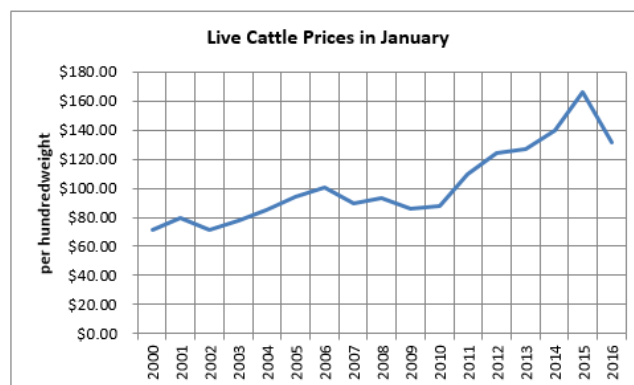
Top Five Reasons WPI is Bullish the Livestock Industry

- Strong export and domestic beef demand, combined with increasing cattle supplies, is building beef packer margins.
- Large feedlot placements will pressure fed cattle prices into early 2017.
- Ongoing cattle herd liquidation is evidenced by high heifer numbers in the fed cattle supply chain.
- Hog packers are experiencing record margins from strong pork demand and cheap hogs.
- Hog supplies and pork demand are both ample, giving excellent packer margins for the fall and winter.

The U.S. beef sector received some promising news at the end of September when China, the world's second-largest beef importer, revealed plans to lift its ban on U.S. beef that has been in place since late 2003 when bovine spongiform encephalopathy (BSE) was discovered in the United States. The U.S. supplied 70 percent of the 11,000 MT of beef imported by China in 2002, and Brazil will be the source for much of the 825,000 MT the country is expected to import this year. This announcement regarding the ban, however, is only the first step in negotiations between the U.S. and China, and the timeline before the market is actually open is very unclear, as is the eventual impact. Nonetheless, it is a step in the right direction after 13 years, especially given the current state of beef supplies and exports.

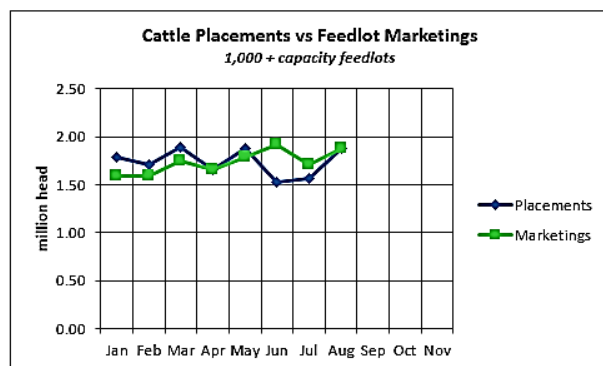
Currently, there is some U.S. beef exported to Hong Kong and Vietnam that makes its way to China, thus the opening of the market there would probably reduce exports to those markets. Through July, beef exports to Vietnam were up to 2,604 MT, a 25 percent increase versus the same period in 2015, but those to Hong Kong were down 13 percent to 51,754 MT. Overall, through July, beef exports during January-July were up 2 percent from last year on a volume of 455,166 MT, but they were down 11 percent in value.

Indeed, cattle and beef prices have levelled off of record highs in past years and extreme volatility throughout the past 12 months. January 2016 cattle prices dropped \$34/cwt from January 2015, a month that had the highest prices on record. This is the largest decline ever. Moreover, the nearby October futures contract dropped to \$99.375/cwt by 6 September, which is the lowest level since 2010. In the wake of the WASDE report released on 12 September, however, prices moved back above the \$100 level based on a lowered estimate of red meat production and the perspective that that the environment for trade prospects over coming months is improving.



Source: USDA, WPI

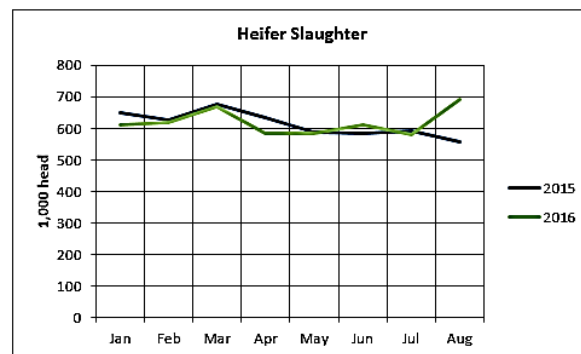
USDA's monthly Cattle on Feed report showed that placements on feedlots were up to 115.1 percent of total placements last August, which makes this year's volume the largest for that month in four years. However, marketings were up to 116.7 percent of the August 2015 level and accounted for the largest August marketing volume in three years. The big increases in both placements and marketings essentially kept the total inventory of cattle on feed at a net wash; total inventory as of 1 September was at 101.5 percent of last year. One caveat on the large increases is that August 2016 had 23 weekdays, two more than in August 2015, which would explain half or more of the increased placements and marketings for that month. Nonetheless, the increases were significant.



Source: USDA, WPI

The Cattle on Feed report was a mixed bag of news. August placements determine, in part, the January-April 2017 beef supply, and this additional inventory is bearish for cattle prices for that period. This high level of marketings is bullish for cattle prices for the short term, notably September, as there are fewer finished cattle available. Thus, it would appear that higher cattle prices will be supported by lower inventory in the short term, but they should be expected to correct lower over the longer run.

One notable fact about the slaughter in August 2016, which was 118 percent of the August 2015 total, is the increase in heifer slaughter. That was up 23 percent month-to-month but only 0.85 percent higher on the year to date, possibly an indication of a herd liquidation phase just one year into a new cattle cycle that started last year.



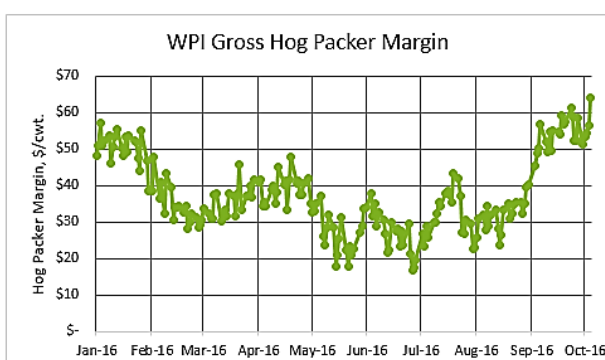
Source: USDA, WPI

A cattle cycle is a period of time during which the number of beef cattle in the nation is alternately expanded and reduced for several consecutive years in response to perceived changes in profitability of beef production. It is measured from trough to trough. The last cycle spanned from 2004 to 2014 with three years of growth followed by a seven-year liquidation. The longest cycle since 1928 began in 1990 and ended in 2004 when there were six years of growth and eight years of decreasing inventory. Interestingly, the first five cattle cycles, beginning in 1928, saw more years of increases than decreases in inventory. During the last three cattle cycles that began in 1979, however, there have been more years of declines than of expansion. That pattern may already be starting already just 18 months into this latest cycle. If so, that means cattle availability may increase through the rest of the year and into 2017.

While per capita beef consumption has dropped from 57 pounds/person in 2010 to 51.5 pounds/person in 2015, this has not necessarily been a reflection of lower demand. Total domestic production and supply, which includes imports, have also decreased even as beef imports grew. Beef demand withstood record-high prices in recent years, and consumer demand has remained strong. Likewise, should the export outlook turn rosier as forecast, packers will benefit from increased cattle availability with this demand.

Beef packers aren't the only meat industry players looking at improving margins, however, as hog packers are also looking at bullish times ahead. Ample hog supplies have eliminated

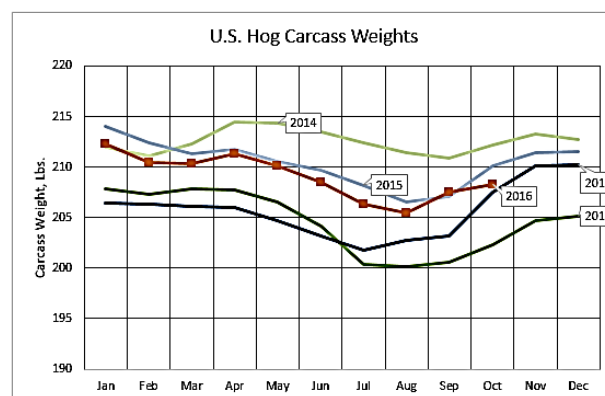
procurement concerns for packers while strong exports and domestic demand are supporting pork prices, leaving good margins for packers. Cash hog prices have been weak through the summer and early fall, declining from over \$80/cwt in June to near \$55 in early October. At the same time, the pork cutout has recovered somewhat from its precipitous decline in late July and has left hog packers with expanding gross margins. WPI's estimate of hog packer gross margins stands at over \$50 per head for the end of September and beginning of October, the highest margins seen this year.



Source: USDA AMS, WPI

In response to declining cash prices, hog producers are maintaining an aggressive pace to their marketings. Slaughter weights are below 2014 and 2015 levels thus far in October and are not increasing at their typical pace as producers attempt to keep supplies off the market. Efforts to keep current on marketings and reduce (to the extent possible) pork supplies will be key for producers going forward, especially given the larger slaughter weeks coming by the end of the year. Surprisingly, weekly slaughter for September and October is up 5 percent compared to last year when the March-May pig crop reportedly increased by only 2.7 percent. The difference between the pig crop and observed slaughter rates is working against hog producers' margins. Iowa State University is currently forecasting hog crush margins near \$8/cwt for October that will erode to losses of \$10-\$20 through November and December. Moreover, the pig herd discrepancy is adding another risk that must be factored in by the futures market,

particularly for the December and February contracts.



Source: USDA AMS, WPI

Hog packers, acknowledging the strong likelihood of low input (hog) prices this fall are increasingly focused on their output price: the pork cutout. This experienced its lowest September since 2013 (when mandatory price reporting for pork started) and has followed this trend so far in October. Seasonally, the pork cutout declines steadily into the winter months and this year's decline may have started early. Still, pork demand in the U.S. remains strong with Kansas State University reporting that it increased 2.8 percent year-over-year in Q2 2016. Export values have continued to run slightly higher than year-ago levels (up 1 percent January-August YTD), while volumes are indicative of growing international consumption of U.S. pork. The volume of U.S. pork going overseas is up 4 percent YTD, and August's 411 million pounds of pork exports were 16.3 percent higher than the prior year. Japan, Mexico, South Korea and China have been responsible for most of that gain.

Looking forward, challenges exist for hog producers to maintain profitability through the end of the year. In contrast, however, hog packers are seeing factors align bullishly for their margins and earnings. Provided pork demand remains stable heading into the fall (and demand is traditionally the more slowly-changing factor), hog packers should see sizeable margins through the end of the year.

THE FARM MACHINERY INDUSTRY

By David Gregg

Top Five Reasons WPI is Bearish the Farm Machinery Industry

- Ample supply in key commodities has pressured prices lower.
- The resulting farm recession is increasingly global in nature, impacting the U.S., South America and Europe.
- A softer construction market has influenced sales in that segment.
- A surplus of used farm and construction machinery has affected movement of new equipment.
- Decelerating economic growth in China has slackened demand in commodities from aluminum to wheat.

A review of 2013-2015 earnings' announcements from the machinery industry's heavy hitters (e.g., John Deere (DE), Case (CNHI), Caterpillar (CAT), etc.) reveals a period of impressive upward momentum. Seemingly, every subsequent quarter saw a new record earnings figure posted as the heavy equipment industry, particularly the farm sector, took advantage of rising farm income and related demand.

Today an abrupt downshift has occurred across the industry. Recent reports show key industry players' net income down as much as 30 percent with an especially glaring slowdown in the farm equipment sector.

Low Commodity Prices Reverberate

When prices for major row crops were high, North American farmers in particular were buying new equipment to keep pace with technological advances and lessen their potential year-end tax hit. However, favorable growing weather across the world's major production regions for multiple years has resulted in large stocks of major food/feed commodities. While demand projections for commodities are still

positive in the long term, the bigger issues impacting the farm equipment industry include:

- Stagnant farm incomes in the U.S. and Canada;
- Brazil's political and economic woes that cast a cloud over the South American market; and
- General weakness in Asia and Europe.

Forecasts for industry bellwethers project declines of anywhere from 5 percent (Europe) to 20 percent (U.S., Canada, South America) in sales of tractors and combines. The relatively strong U.S. dollar is further influencing the slowdown in sales to South America and Europe. In the U.S., monetary policy remains a question for the market with the expected increase in interest rates possibly further hampering equipment sales as farmers face more expensive financing options.

Mid-Range Models Holding Steady

While sales for higher-horsepower tractors and combines are down, demand for mid-range models shows a less gloomy picture. According to the owner of a Massey Ferguson (AGCO) farm

implement dealership in rural Oregon, "...sales of our new, bigger farming tractors are down from past years – but we've seen continued strong demand for our mid-range utility tractors. Guys are looking for inexpensive, daily-use machines that can meet a diverse set of demands." The following table shows recent auction values for comparable mid-range utility tractors:

Make/Model	Horsepower	Value*
1998 John Deere 7410 w/loader	120	\$51,500
2010 Kubota M135X w/loader	135	\$45,500
2008 New Holland T6070	140	\$60,000

Source: www.MachineryPete.com

*From sales price via online auction.

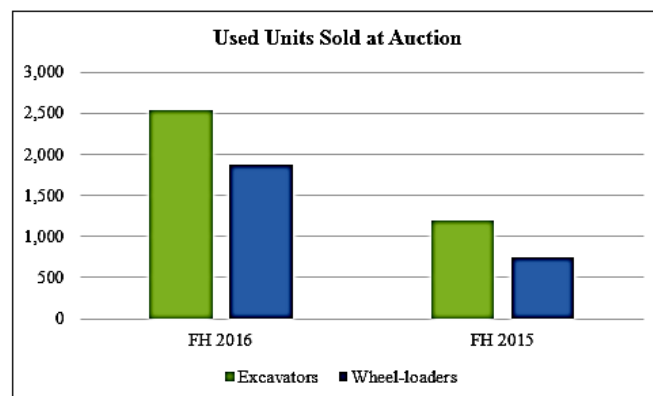
The above sample supports the current state of the used mid-range tractor market: re-sale and/or auction values are holding as high as 85 percent of the dealer-advertised price for comparable new models. An analysis of online used machinery vendors shows a glut of bigger tractors for sale while the raw number of mid-range tractors for sale is substantially less.

Big Machines...Little Action

Meanwhile, a general economic slowdown (evidenced especially by China's cooling growth rates) has slowed demand for large construction and mining equipment. Mining activity has quieted amid the general stagnation of commodity markets. Though recent reports have pointed to improvement in that industry, top gun Caterpillar has gone so far as to announce the potential closure of a manufacturing site in

Belgium and a workforce reduction of up to 10,000 by 2018.

The new-used market dynamic is telling in the heavy equipment industry as well. Sales for Caterpillar, John Deere and Volvo (VOLV-B) are all down as an excess of used equipment offers cheaper alternatives to companies that are still looking to buy heavy machinery.



Source: Rouse Service; Barclays Research

Note: "Used" constitutes machines 9 years old or newer

Rental businesses, which account for approximately 50 percent of new heavy equipment sales in the U.S. annually, are projected to increase their market share in the near term. In turn, this would further add to the plethora of used equipment on the market as rental businesses replace equipment every three years or so. Meanwhile, according to Barclays, leases of construction equipment are becoming more common – accounting for 40-50 percent of equipment sales financed by players such as John Deere and Volvo.

POLICY TRENDS

By Gary Blumenthal

Top Four Reasons WPI is Bearish Policy's Implications for Agribusiness

- Market players need to focus on the real risks in the policy realm.
- Policymakers are focused on agribusiness mergers, but it is their actions or inactions that are having the largest impact on the market.
- Elections are a major contributor to policy volatility.
- Overall policy conditions are slightly bearish.

In a recent WPI-sponsored survey, respondents overwhelmingly selected geopolitics as the area presenting them with the greatest concern about the future rather than changes in other policies such as those affecting agriculture, food, trade or macroeconomics. This concern seems inapropos considering a study the company performed earlier that showed agriculture to be relatively immune to the geopolitical strife that normally is focused in urban areas. Moreover, Max Roser at the Institute for New Thinking at Oxford University points to the actual data, which shows the world becoming safer and more inclusive. Take away the microscope effect of news headlines, and combatant deaths are at historic lows with rates falling for everything from disease to poverty to homicide.

By contrast, the policies that are actually skewing the marketplace include a rise in production subsidies in important countries such as China, India and Brazil, changes in food policies like sugar taxes and labeling regimes, the macroeconomic stimulus that props up equities at the expense of commodities, and the growing social rejection of more liberalized trade.

Agribusiness Mergers

Conventional food and drink companies are being upended by the rapid changes in consumer

demand for everything from craft beers to clean label and GMO-free. Meanwhile, the politicians are focused on the merger interests in an agribusiness sector burdened by the current market conditions and intent on innovating into a better future. The U.S. Senate Judiciary Committee held an inquiry into the proposed mergers of the six largest agricultural chemical and seed companies (ChemChina/Syngenta, Monsanto/Bayer and Dow/Dupont). Panel members described the mergers as problematic and worrisome. Even more apoplectic over the Bayer/Monsanto merger were German Parliamentarians, whose ruling party members joined the Greens in opposition to what they fear will be a “super company” squashing farmers and dumping Frankenfood on unwilling German consumers.

Major farm organizations like the American Farm Bureau initially reacted to the mergers with cautious concern. By the time the politicians started their inquiry, however, the larger farm groups characterized the tie-ups as “vital to the future of food production.” It is unclear what assurances or private concessions were made by the companies to the farm groups, but the point is that the larger, progressive farmers producing most of the major crops understand that innovation is critical to their future success. By contrast, they are likely to be less open to the proposed merger of Agrium and Potash Corp.

Trade Policy Disruptions

There are plenty of safeguard measures being implemented and disrupting trade, including the recent imposition of new antidumping duties in China against U.S.-supplied DDGS. However, most of the trade policy machinery is focused on larger issues such as trade agreements and the possible removal of China's nonmarket economy status at the end of the year. It seems unlikely that the Trans-Pacific Partnership (TPP) will get a vote in the Congress after the election, but the Obama administration has not given up on the notion. Similarly, and despite the impression given by a negotiating session scheduled for this month, no one on either side of the Atlantic expects the Transatlantic Trade and Investment Partnership (TTIP) to be concluded this year.

With TTIP treading water, Brussels has committed to instead direct its energies toward adoption of the EU–Canada Comprehensive Economic and Trade Agreement (CETA). Some in Europe are upset, contending that because of the duty-free benefits of the North American Free Trade Agreement (NAFTA), the U.S. will also benefit from CETA despite making no concessions to Europe. For example, Canada exports its production of 315 million gallons (1.2 billion liters) of ethanol to Europe under CETA, and then the U.S. will backfill the resulting ethanol deficit in the Canadian market via NAFTA.

The beverage industry has filed suit to block the city of Philadelphia's tax on sugar sweetened beverages. They argue that federal law prohibits local taxes on products purchased with federal SNAP benefits. If successful, the suit could finally turn the policy discussion toward what food products should be eligible for SNAP – an approach long opposed by both the beverage industry and advocates for the poor.

Electoral Implications

By far, the 8 November U.S. election poses the wildest of wild cards for the agrifood sector. The biggest issue of contrast between Hillary Clinton

and Donald Trump affecting agriculture is immigration policy. This is because a majority of the migrant labor in the sector is illegal. Clinton promises a path to citizenship, whereas Trump vows to control the inflow and base immigration on an outcome that will “improve the jobs, wages and security for all Americans.” Clinton will be more favorable of environmental regulations than Trump, and she has focused on higher taxes on the wealthy versus his traditional Republican tax overhaul plan.

Neither candidate has indicated any major diversion from the status quo when it comes to farm bill policy. The Clinton approach is likely to be more conventional, but Trump's top advisors are all from the traditionalist farm support block. Both candidates support biotechnology, though Clinton supports the recent agreement on labeling while Trump opposes it. In contrast to Trump, Clinton says she will double the funding started in the Obama administration for social projects like local food and farmers' markets – neither of which are major market movers.

Meanwhile, some analysts say Federal Reserve interest rates will rise under Trump because he has criticized the current ongoing low rates as a political sop to President Obama; others contend the uncertainty and risk of a Trump presidency would force the Fed into a rate cut.

Going forward, it is the negotiation of Brexit and a series of elections next year in Europe that will define the single market economy and European agriculture. Elections are scheduled in Germany, France, the Netherlands, Austria and Spain. The far right has been making inroads, driven by angst over immigration from Middle East/North Africa (MENA) countries and objections to cultural homogenization. Wins for the far right will slow the European experiment.

Future of Futures

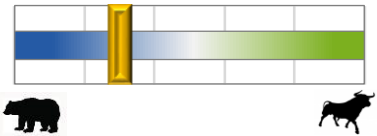
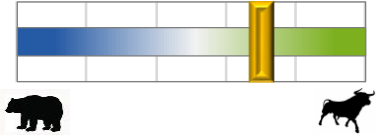
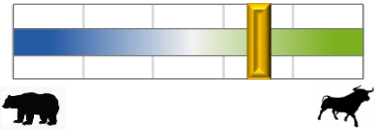
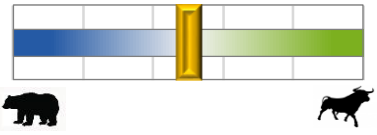
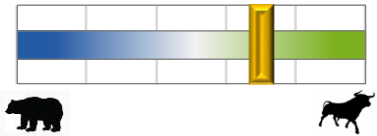
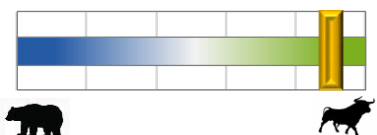
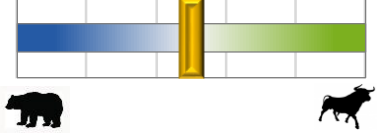
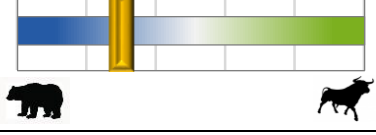
To the chagrin of some conventional hedgers, the bull market drew many new players into the commodity futures market. These include investors seeking to diversify their portfolios or urged into doing so by people like Jim Rogers,

who proclaimed an insatiable demand by China for all commodities. The bear market came sooner than predicted, and now Rogers is quoted on Yahoo Finance saying, “You will see in the next couple of years the worst bear market in your lifetime. It’s going to be very, very bad so I hope that you’re worried.”

Whether or not this is another over-wrought forecast, companies in the origination business are licking their wounds. More importantly, the financial institutions that once seemingly skewed commodity prices beyond fundamentals are now either being brow-beaten or legislated out of the market. The latest is a proposed rule by the U.S. Federal Reserve that would make bank involvement in commodities prohibitive due to high capital requirements.

WPI BULL/BEAR LEANINGS FOR AGRIBUSINESS

By WPI Staff

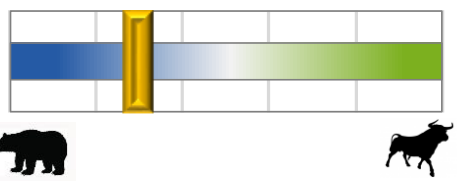
Industry	WPI Industry Bull/Bear Rating	Predominant Influencing Factors
Grains		<ol style="list-style-type: none"> 1) Low commodity prices are driving the farm economy toward recession. 2) Farmers will endeavor to cut seed, fertilizer, and chemical costs in 2017. 3) Farm recession is driving mergers focused on efficiency and scale gains. 4) Currently improved grain handling and export margins will be short lived. 5) Declining farmland values will stress pension funds and real estate trusts.
Oilseeds		<ol style="list-style-type: none"> 1) Record U.S. soybean crop and ample supplies. 2) Reduced South American competition for exports in Q4/Q1. 3) U.S. domestic soybean processors should make very good margins. 4) Low soymeal prices will expand domestic demand from livestock sector. 5) Operations in Brazil and Argentina will face tighter margins this year.
Biofuels		
<i>Ethanol</i>		<ol style="list-style-type: none"> 1) The RFS maintains ethanol demand while low input prices aid margins. 2) Ethanol is reaching the RFS statutory plateau, capping future demand.
<i>Biodiesel</i>		<ol style="list-style-type: none"> 3) Biodiesel bearishness from blenders' tax credit expiration uncertainty. 4) Liquid biofuels are falling behind wind and solar in replacing fossil fuels.
Livestock		
<i>Beef Packers</i>		<ol style="list-style-type: none"> 1) Export and domestic beef demand is strong, building packer margins. 2) Large feedlot placements will pressure fed cattle prices into early 2017. 3) High heifer slaughter shows ongoing cattle herd liquidation.
<i>Hog Packers</i>		<ol style="list-style-type: none"> 4) Record hog packing margins from strong demand and cheap hogs. 5) Hog supplies and pork demand are ample, giving excellent packer margins.
Farm Inputs		<ol style="list-style-type: none"> 1) Fertilizer sales face headwinds from likely global acreage reductions. 2) Crude oil/fertilizer relationships suggest a slight fertilizer price recovery. 3) N. American nitrogen production margins are lower from rising natural gas costs.
Machinery		<ol style="list-style-type: none"> 1) Ample supply in key commodities has pressured prices lower. 2) The resulting farm recession is increasingly global in nature. 3) A softer construction market has influenced the segment's sales. 4) A surplus of farm and construction machinery weighs on the industry. 5) China's decelerating economic growth has slackened commodity demand.

Policy Factors

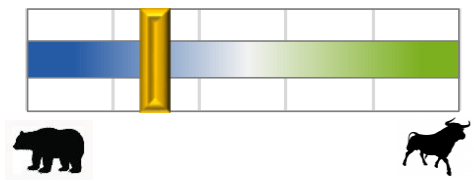
- 1) Macroeconomic headwinds persist and present a challenging environment.
- 2) Policymakers are focused on agribusiness mergers, but it is their actions or inactions having the largest market impact.
- 3) Market players need to focus on the real risks in the policy realm.
- 4) Elections are a major contributor to policy volatility.
- 5) Overall policy conditions are slightly bearish.

WPI Bull/Bear Ratings for Policy Factors Influencing Agribusinesses

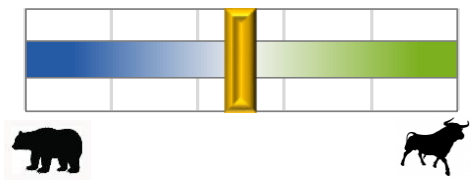
Macroeconomics



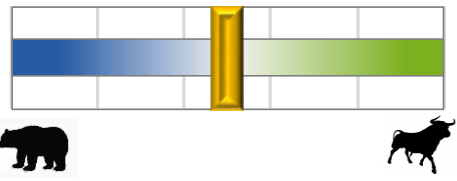
Trade Policy



Agricultural Policy



Food Policy



Geopolitics

