AEM Ag Executive Advisor
Industry Insights for the Ag Executive | SPRING 2018

Summer Features:

Questions/comments : asennett@aem.org

Ag's Future Rewritten: Changing Farm Structure & Tech

It is often said that the only thing you can count on is change. That statement certainly holds true when looking into the future of the agriculture industry.

My 8-year-old son has a toy combine his grandfather gave him for Christmas. This toy has a 30" platform header and is to-scale with the main harvester used on my family farm. When my father gave it to my son, he told the story of the first combine harvester his father (my son's great-grandfather) purchased for the Blades farm. It had a 36" header. In a little more than a half century, the scale of farm equipment has grown exponentially. That sort of generational change is hard to wrap your head around, but, if anything, it's only going to happen faster in the years ahead.

Recently, AEM commissioned a study to look into the future at the impact some broad trends will have on equipment manufacturers, dealers and farmers. We are sharing and discussing these findings through a series of thought provoking articles in AEM publications, member webinars and media interviews with the intent of spurring thought and conversation. A common theme coming out of these discussions and findings is that precision farming, big data, and artificial intelligence could have as much of a revolutionary impact on our industry as mechanization in the late 1800s or the advancement of seed genetics over the past century. It is an exciting time to be in agriculture.

One of the biggest changes in our industry is a direct result of our aging farm population. Farm consolidation has been happening for many years, but it will likely accelerate in the next decade. When looking at this future structure, it is important to separate the ownership of the farm from the ownership of the land. The fact is, very little farmland is transacted on the open market. The vast majority is transferred through inheritance or private sale to a family member. Increasingly, these family members are further removed from material involvement in the farm and even the Ag industry. It is hard to predict the exact impact of this continual increase in absentee landlords for farmers, but it is safe to say that someone multiple generations removed from the farm will have a different expectation on the returns from their land ownership than someone with a stronger emotional attachment to that same piece of ground. This change in structure will continue to force farmers' focus on total farm profitability. Our industry must continue to provide proof of economic returns for the farmers who buy machinery.

One key way our industry is responding to the need for positive economic returns

continued, page 2

continued from page 1

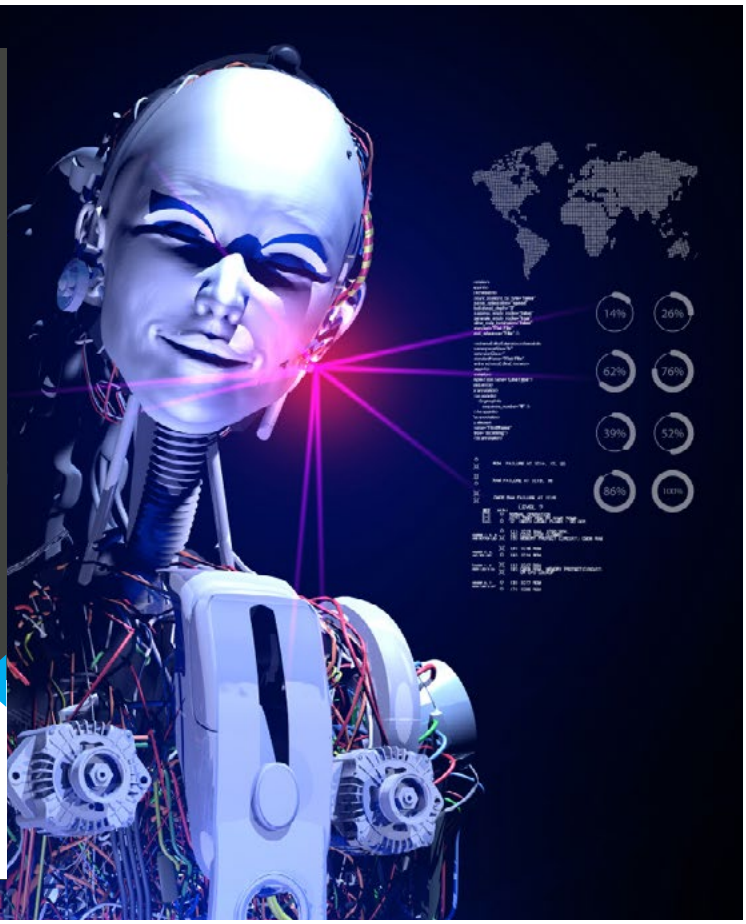
Ag's Future Rewritten: Changing Farm Structure & Tech

is though innovation and adoption of new technology. The labor saving technology of machine guidance is already revolutionizing our industry. One can only imagine the possibilities of a future when machines are able to completely drive themselves without much human interaction. Today, much of the weight of equipment is tied to creating larger, more labor-efficient machines. With autonomous machines, labor becomes less of a limiting factor, opening up a whole new paradigm for machine design and usage. Couple this autonomous future with the collection and use of production data, and you soon have a future Ag production system that looks nothing like the industry of today. But products aren't the only factor considered when assessing ROI. The economy as a whole is quickly shifting focus from products to service. This same trend is making its way into the Ag industry.

Today a farmer buys a piece of equipment from a local dealer, purchases crop inputs from a local retailer and may tap into a few advisors to assist in making agronomic and business decisions. Building on the trend of farm structure changes and adoption of new technology, it makes sense that a farmer's need for services will increase significantly. The Ag industry is poised to respond to this trend with new service offerings to meet the needs of customers. Our research shows that the role of 'most trusted advisor,' one who can bridge the gap between agronomic information and precision farming hardware, is still up for grabs. This provides a tremendous opportunity for AEM members to respond to farmers' needs for services with new product offerings, ownership models, technical support and other pay for service programs.

You don't have to look very far into the past for the most advanced equipment on the Blades farm to look like my kid's farm toys today. It is difficult to predict what the future of agriculture will look like, but we can all agree that it will look different than it does today. For me, I could not be more excited to be a part of this Ag equipment industry as we grow to meet the needs of tomorrow's customers. ■

Curt Blades
AEM Senior Vice President, AG Services



Ag Equipment Brings Farmers Together

When I was a kid, all I ever really wanted to do was drive a tractor.

I inherited my family's passion for Ag equipment and love of tractors as a result of spending my formative years growing up on a corn, soybean and wheat farm in northern Illinois. Both my father and grandfather bought and restored antique tractors, and some of my happiest childhood memories involved getting the machines back up and running in time for the yearly tractor parade at the county fair.

Looking back, I can fondly recall a number of "firsts" I experienced that were related to driving tractors. The first time I operated one myself (a Minneapolis Moline R), the first time I drove in the tractor parade (a Farmall H), and the first time I raked hay for a neighbor (an Allis Chalmers 190). My wife also reminds me of the time I taught her how to drive a tractor, and how I failed to mention to her how to stop. I don't think she'll ever let me forget it.

But now that I'm older, and as my family and I begin to sort through the estate of my late grandparents and father, I often find myself reflecting on where I came from and how I got started in Ag. I've been around farm machinery my whole life, and I'm fortunate enough to be employed by an organization in AEM with Ag equipment roots that stretch all the way back to the 19th century.

I'm happy to say I've learned a lot since joining AEM. I've been involved with everything from the product standards work that engineers and technical personnel spend months and years creating and managing, to the delicate dance of recruiting companies for market share reporting programs, to uniting industry competitors together to work alongside regulatory agencies like the Environmental Protection Agency, and even the Food and Drug Administration for dairy equipment.

And for as much as the equipment has evolved over the years, AEM's commitment to serving both its members and the industry hasn't changed. When you think about it, it's amazing to consider how the origins of AEM's Tech and Safety, Statistics and Advocacy initiatives can be traced back to 1899, respectively. I can't overstate how appreciative I am to be able to work for an organization that possesses such a rich history in the equipment industry, while also pushing manufacturers to look toward the future by organizing and offering countless trade shows, seminars, research and Thinking Forward events.

It's been an incredible experience for me to look back at the equipment my family has collected over the years. From hog oilers and corn shellers to cream separators and walking plows, seeing all they've amassed brings me right back to my early years. But more importantly, it reminds me of where my passion for Ag equipment was born, and it serves as motivation for me to continue to advocate on behalf of our members and the industry as a whole.

So if there's one takeaway I have from my time with the association so far, just like AEM brings equipment manufacturers together, it's the same equipment that brings farmers like my family and I together. It doesn't matter if you raise crops or livestock, or you like one brand over another. We're united by the equipment we use to make it possible for food to get from our fields to your table.

And it's always been that way. ■

By Brian Voss, AEM Agriculture Services Manager

Farm Bill Nearing End Game, Precision Ag Connectivity Act Alone for the Ride

The Senate and House of Representatives have passed their versions of the Farm Bill. Now it will be up to a Conference Committee to resolve the differences between the two pieces of legislation that took radically different paths to passage.

The House bill's "work requirement" reforms to nutrition programs caused Republicans and Democrats to dig partisan trenches, dooming the legislation to eke out a razor thin victory along party lines.

The Senate bill passed 86-11 as it aimed for very modest reforms to the politically sensitive welfare sections.

Crop insurance programs are largely unchanged from the last Farm Bill, with a few differences between the chambers. This critical title that plays a major role in the stability of agricultural equipment demand isn't expected to be a point of significant contention in the Conference Committee.

Also on the Committee's to do list is the AEM led, Precision Ag Connectivity Act (PACA) which was included in both Farm Bills, though with minor differences in the Senate's. AEM expects the variance to be resolved without controversy.

Once enacted, PACA will direct the Federal Communication Commission (FCC) and U.S. Department of Agriculture to work together to identify gaps in farm and

continued, page 5

AEM's DC Team Finds New Home

AEM's Advocacy team in Washington, D.C. is settling in to their new office space.

The new location at 1300 I St. NW, Suite 520 W helps to increase AEM's profile and presence in D.C., and the space was designed to more effectively host member and industry meetings. It includes an "open concept" design with open work stations that encourages collaboration and creativity as-it-happens throughout.

An official grand opening will be held in late July for AEM partners and other VIPs located in DC. The event will be hosted by AEM Chair Rich Goldsbury, President of Doosan Bobcat North America, and Dennis Slater, AEM President.

Don't forget to sign up to attend the I Make America Fly-In. Join fellow AEM members in Washington, D.C. from September 12-14. This is a great opportunity to have face-to-face meetings with members of Congress or their staff about the issues that matter to the equipment manufacturing industry and your company. Register at www.aem.org/events/meetings

If you have any questions please contact Abigail Lannoye (alannoye@aem.org, 414-298-4746). We hope to see you in Washington!

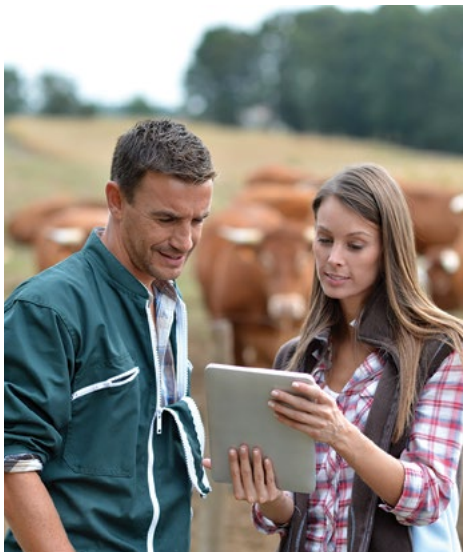
continued from page 4

Farm Bill Nearing End Game, Precision Ag Connectivity Act Alone for the Ride

ranchlands wireless coverage. Then, recommend policies to fill 90 percent of those gaps by 2025. It will be an important step in changing the way the FCC thinks about rural broadband as we strive to build the information infrastructure that modern production agriculture increasingly needs to be successful.

The fate of the Farm Bill will primarily be determined by the degree to which House Republican leaders are willing to compromise on the nutrition title. But given the realities of a tough election season ahead, the agricultural community can count on lawmakers' sense of self-preservation to avoid heading into November without a Farm Bill to show for their efforts.

Additionally, Senate Majority Leader Mitch McConnell (R-KY) is personally invested in the Farm Bill. He has spent considerable political capital to see the legalization of industrial hemp be included in the Senate version. He believes industrial hemp is a crop that former tobacco farmers in Kentucky can utilize to their advantage. ■



Taking Steps to Close the Skills Gap

Both equipment manufacturers and dealers alike are struggling to fill and retain shop floor and technician positions that are key to meeting customer demand and keeping pace with technological advancements. In support of addressing this critical need, AEM is offering several new products for its members and industry partners to leverage in closing the skills gap as part of its workforce development program for 2018.

Curriculum for Agricultural Science Education (CASE) Teacher Scholarships

In partnership with the Equipment Dealers Association, AEM provided summer scholarships to more than 30 teachers seeking certification to teach courses designed by the Curriculum for Agricultural Science Education (CASE) that are focused on agricultural power and technology as well as mechanical systems. AEM members now have an exclusive opportunity to connect at the local level with these scholarship recipients and help introduce an estimated 2,200 students from New Jersey to Oregon during the upcoming school year to career opportunities in the equipment sector.

Workforce Development Webinar

On August 23, AEM will host for its members and the industry the first in its new workforce development webinar series. The webinar will feature presentations from Ann Franz, Director of the Northeast Wisconsin (NEW) Manufacturing Alliance, and John Hindman, Director of Learning Services at Tooling U-SME. The webinar will provide key facts and figures supporting why the equipment industry should be focused on workforce development, identify the first steps to take in recruiting the next generation of skilled workers, including how to connect to the K-12 talent pipeline, and share how partnerships both inside and outside the industry play a key role in closing the skills gap. For more information, go to www.aem.org/workforcewebinar.

Themes for subsequent best practice webinars this year will feature how-to's on tapping into state and federal level workforce development grants and apprenticeship programs, conducting outreach to veterans, and establishing local partnerships with entities also engaged in solving the skills gap such as chambers of commerce, educational institutions and economic development organizations.

National FFA Convention and Expo

AEM will exhibit at the 91st National FFA Convention and Expo in Indianapolis, IN from October 24 – 27, 2018 to showcase the career opportunities in the equipment sector to over 67,000 attendees and the next generation of leaders in the agriculture community.

AEM's workforce development efforts will continue throughout the year and include additional products and areas of support for its members and industry partners. ■

Policy: Getting Your Employees Involved

AEM's grassroots campaign, I Make America, kicked off the first in a series of town halls scheduled this year designed to engage the 1.3 million men and women of the equipment manufacturing industry in a discussion about key policy issues. More than 150 employees attended the first town hall at AGCO's Jackson, Minnesota-based manufacturing center on Thursday, May 17, where a group of industry and policy experts challenged the audience to get engaged and get involved in order to help advance the pro-manufacturing agenda.

The next two town halls will take place on Thursday, Aug. 16 at Doosan Bobcat's production facility in Bismarck, North Dakota, and on Thursday, Sept. 20 at Terex Corporation's Genie manufacturing facility in Redmond, Washington. I Make America supporters will have the opportunity to watch the next town halls live via a livestream. ■

AEM Hosts EPA and USDA for Ag Demo of Nutrient Application, Management

In May, AEM hosted its third annual agricultural equipment demonstration for officials with the U.S. Environmental Protection Agency and Department of Agriculture at the University of Maryland's Wye Research Farm.

More than 40 regulators and agricultural community partners came out for a day showcasing the latest in nutrient application and management.

The day featured equipment stations by Kuhn-Krause, CNH Industrial, FAST Ag Solutions and John Deere that progressed attendees through the full lifecycle of nutrient application from pre-planting to late season.

The Agricultural Retailers Association was also on hand to discuss modern agronomy services. In addition, the National Corn Growers Association and American Soybean Association hosted a station to give the grower perspective, while the National Ag Aviation Association highlighted aerial application technology.

The 2018 Nutrient Application and Management Demo Day built upon the success of the last two, which focused on spray drift control and planting technology. In all, AEM has brought out more than 100 EPA and USDA officials to see the realities of modern production agriculture in a real world setting and in-depth discussion with industry experts. ■

May Global Executive Survey: Market Stable in Spite of Looming Trade Wars

Analysis by Benjamin Duyck - bduyck@aem.org

Special Report: Spring 2018 Ag Barometer - Survey on worldwide agricultural machinery business

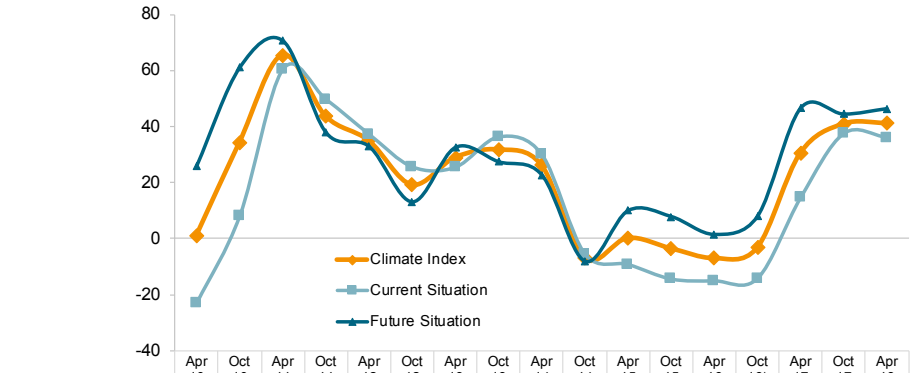
In May 2018, AEM, through the Agrievolution Alliance, participated in a worldwide survey directed at senior management of the global agricultural machinery industry focused on the general evaluation of business, order intake, sales, employment, mood, among other topics.

The following are some highlights of the results:

- The Agrievolution **business climate** index remained unchanged at 41 points in April 2018.
- The current situation as well as the future outlook remained stable, which is positive given the global marketplace started to slide into uncertainty regarding trade wars.
- On a global average, 49 percent of the participating agricultural machinery manufacturers regard their situation to be good or better while only 12 percent describe it as unfavorable.
- Only 20 percent of the respondents feel positive about the profitability of farming in their home market while 45 percent feel neutral.
- Global business climate for agricultural machinery has stabilized on high level. The global industry has good confidence that current growth rates can be maintained. However, further rising growth rates are still in a holding pattern.
- In the major production regions Europe, China and the US, the industry´s confidence has not risen any further, but rather dropped slightly, albeit from high levels.
- The same phenomenon can be seen in India, and to a lesser degree in Russia and China. The optimism for these latter markets seems to be mainly driven by government support.

Agrievolution Business Climate Index

Possible range from -100 to +100

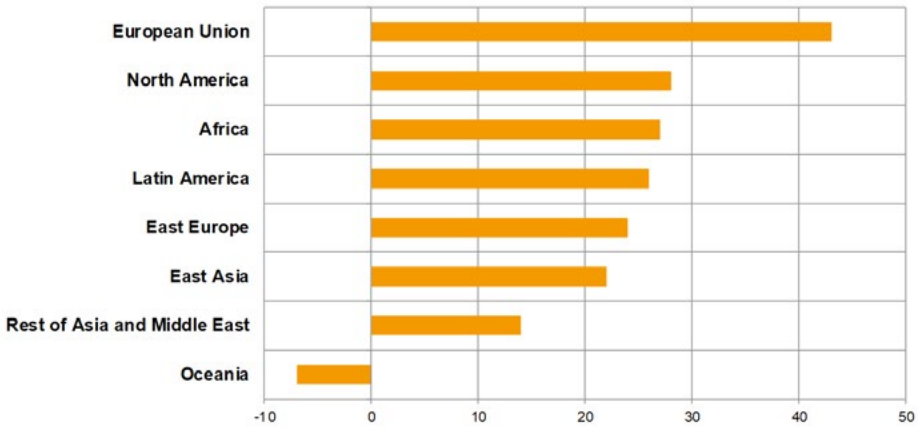


	Apr 10	Oct 10	Apr 11	Oct 11	Apr 12	Oct 12	Apr 13	Oct 13	Apr 14	Oct 14	Apr 15	Oct 15	Apr 16	Oct 16*	Apr 17	Oct 17	Apr 18
Climate Index	1	34	65	44	35	19	29	32	26	-7	0	-3	-7	-3	30	41	41
Current Situation	-23	8	60	49	37	25	25	36	30	-5	-9	-14	-15	-14	15	37	36
Future Situation	26	61	71	38	33	13	33	27	23	-8	10	8	1	8	47	44	46

Source: Agrievolution Business Barometer Apr 2018 weighted global average

Turnover expectations (next six months) according to continents

Positive value means: growth tendency, negative value means: tendency for decline (but not to be interpreted as %-change!) - index calculated as a balance of growth and decrease expectations, with a possible range from +100 to -100



Source: Agrievolution Business Barometer Apr 2018

- Despite quite heterogeneous and overall rather mixed ratings with regard to the market conditions, there is again for all global regions (except Oceania) a majority of survey participants expecting market growth in the next six months.

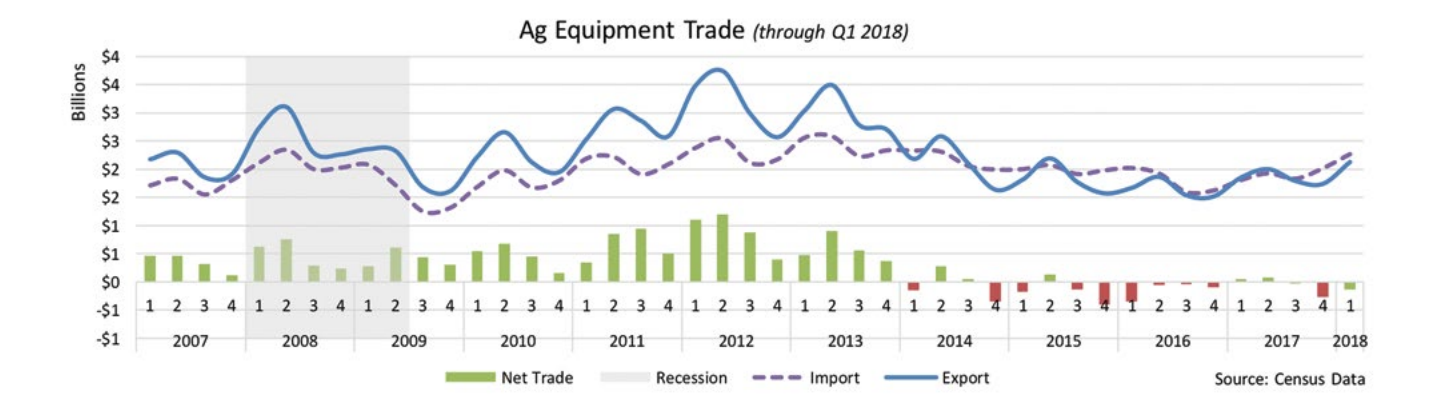
The Agrievolution Alliance is a global coalition of agricultural equipment manufacturing organizations that works to advance agricultural interests worldwide through collaborative action on industry issues. The alliance's economic committee conducts the biannual survey, released in May and November. This edition had 251 participants from Western Europe, India, Japan, South Korea, Brazil, Russia, Turkey and the United States. To sign up for the survey, please contact Benjamin Duyck at bduyck@aem.org. The public results are available in the Market Data segment on the AEM website. ■

AEM U.S. Export Trends and Analysis

Analysis by Benjamin Duyck - bduyck@aem.org

2017 U.S. Farm Equipment Export growth turns positive

- YTD Exports of U.S.-made Ag equipment were up 13.6 percent totaling $3.6 bn year over year compared to 2017. In total $3.6 bn was shipped to global markets. Over the same period, imports increased 27.3 percent, totalling $3.9 bn.
- While improvements in the domestic market and global market place continue to support our industries, concerns regarding the short term and long term effects of tariffs and retaliatory actions on relations with major trading partners are growing. Not only would tariffs make U.S. made equipment more expensive at home and comparatively abroad, retaliatory tariffs can undermine the profitability of U.S. farmers.
- The main export regions remain North America and Europe. The main import region is a draw between Asia and Europe. A small change could be seen in our major trading partners, as Ukraine gave way and Russia trumped China.



THE BELOW CHARTS ILLUSTRATE A ROLLING 4 QUARTERS VS. PREVIOUS 4 QUARTERS FOR COUNTRIES WITH > $25 MIL./YR IN EXPORTS

Regions - US Ag Equipment Imports

Region	YTD 2017	YTD 2018	% Change
Africa	$ 2,864,459	$ 1,531,414	-46.5%
Asia	$ 1,065,133,697	$ 1,507,345,668	41.5%
Austr. & Oceania	$ 54,768,824	$ 42,573,007	-22.3%
Europe	$ 1,238,096,791	$ 1,475,990,022	19.2%
North America	$ 680,652,685	$ 846,050,479	24.3%
South/Central Am.	$ 17,044,215	$ 20,398,758	19.7%

Regions - US Ag Equipment Exports

Region	YTD 2017	YTD 2018	% Change
Africa	$ 80,639,813	$ 92,906,516	15.2%
Asia	$ 231,989,765	$ 256,619,338	10.6%
Austr. & Oceania	$ 251,772,815	$ 260,672,629	3.5%
Europe	$ 826,486,700	$ 971,085,586	17.5%
North America	$ 1,501,565,145	$ 1,684,177,701	12.2%
South/Central Am.	$ 331,571,200	$ 396,557,520	19.6%

Top 10 Countries - US Ag Equipment Imports

Country	YTD 2017	YTD 2018	% Change
Germany	$ 526,903,161	$ 607,736,020	15.3%
Canada	$ 392,405,091	$ 472,699,494	20.5%
China	$ 326,556,292	$ 440,917,258	35.0%
Japan	$ 321,497,164	$ 439,741,686	36.8%
Mexico	$ 288,247,594	$ 373,350,985	29.5%
India	$ 146,929,172	$ 276,415,874	88.1%
Italy	$ 220,547,726	$ 269,833,266	22.3%
Korea, South	$ 178,449,202	$ 249,837,146	40.0%
United Kingdom	$ 98,188,248	$ 113,035,958	15.1%
France	$ 68,901,779	$ 102,623,611	48.9%
Global Total	**$ 3,058,560,671**	**$ 3,893,889,348**	**27.3%**

Top 10 Countries - US Ag Equipment Exports

Country	YTD 2017	YTD 2018	% Change
Canada	$ 983,077,551	$ 1,133,144,497	15.3%
Mexico	$ 518,487,594	$ 551,033,204	6.3%
Australia	$ 231,268,706	$ 233,491,158	1.0%
Germany	$ 141,210,159	$ 186,652,371	32.2%
Brazil	$ 91,219,810	$ 176,931,981	94.0%
Russia	$ 94,043,261	$ 117,694,333	25.1%
China	$ 73,999,555	$ 91,611,123	23.8%
France	$ 63,037,855	$ 87,303,694	38.5%
Ukraine	$ 105,868,480	$ 81,066,566	-23.4%
United Kingdom	$ 63,597,253	$ 66,401,021	4.4%
Global Total	**$ 3,224,025,438**	**$ 3,662,019,290**	**13.6%**

Sourcing: U.S. Census

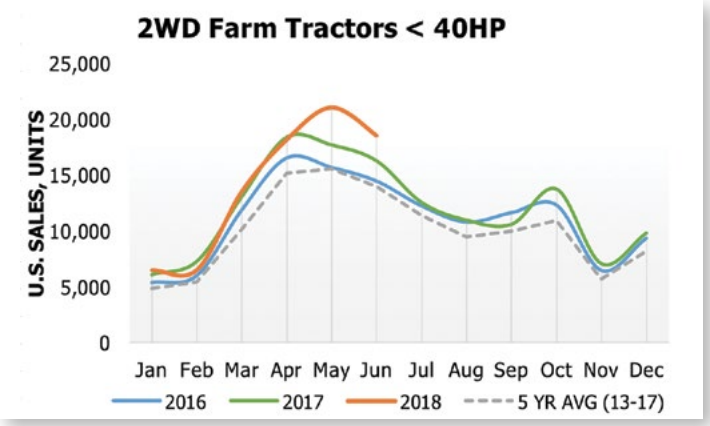
Ag Tractor and Combine Sales

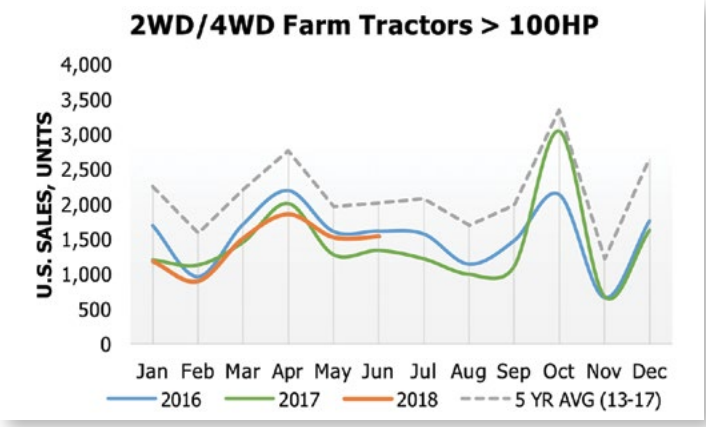
Analysis by Benjamin Duyck - bduyck@aem.org

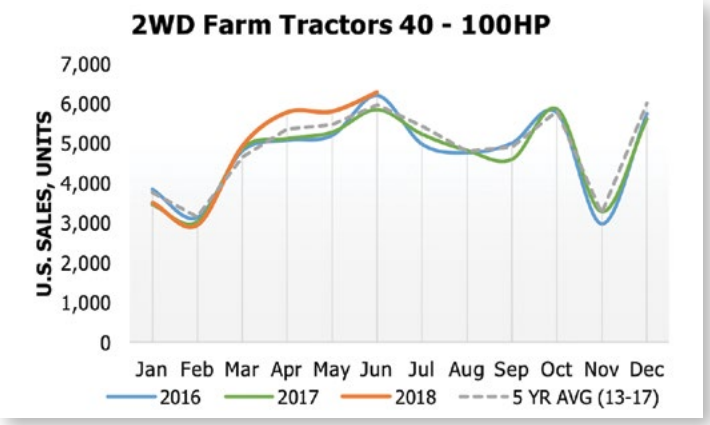
	June			YTD — June			Beginning Inventory
	2018	2017	% Chg	2018	2017	% Chg	Jun 2018
2WD Farm Tractors							
<40 HP	18,558	16,095	15.3%	84,399	77,961	8.3%	84,543
40< 100 HP	6,278	6,046	3.8%	29,327	28,403	3.3%	34,532
100+ HP	1,540	1,331	15.7%	8,508	8,374	1.6%	8,409
Total 2WD Farm Tractors	**26,376**	**23,472**	**12.4%**	**122,234**	**114,738**	**6.5%**	**127,484**
4WD Farm Tractors	**197**	**160**	**23.1%**	**1,082**	**1,029**	**5.2%**	**729**
Total Farm Tractors	**26,573**	**23,632**	**12.4%**	**123,316**	**115,767**	**6.5%**	**128,213**
Self-Prop Combines	**461**	**444**	**3.8%**	**2,011**	**1,669**	**20.5%**	**960**

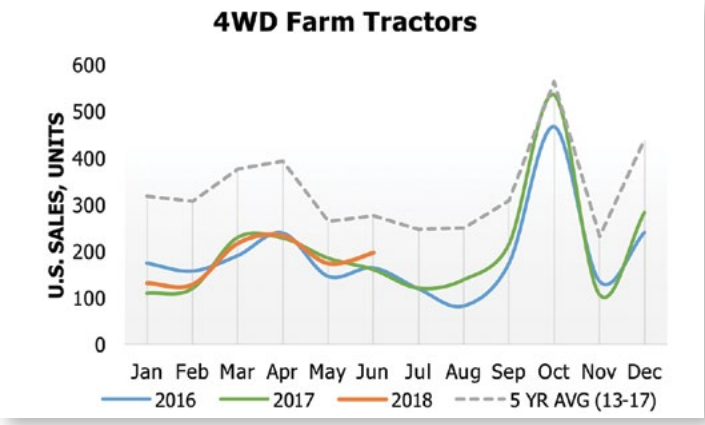
Data courtesy: Association of Equipment Manufacturers Statistics

- U.S. sales of tractors and combines remained positive at the mid-year mark, with all machine categories in the plus column.
- Overall, all categories are performing above or on par compared to the same period last year. Though, while 2WD Farm Tractors Less than 100 HP equipment continue to outperform its 5 year average, 2/4WD tractors >100HP are punching in below.
- "We view 2018 as a rebuilding year for agriculture; we've experienced a steadily improving economy, tax reform provides incentives and machines need to be replaced," said Curt Blades, AEM senior vice president, AG services. "We're still concerned with the impact of tariffs and trade wars on continued stability for manufacturers and their customers." ■









Graphs courtesy of AEM Market Intelligence

Machinery Outlook: Europe

Provided by BMI Research 07/10/2018

Key View: *After an exceptional 2017 that saw machinery sales increase by 13 percent, BMI expects sales to slow in 2018. However, sales will remain strong by historical standards due to positive business sentiment, improving credit conditions and new EU legislation. In the long term, Eastern Europe will be the main driver of growth in agricultural machinery sales.*

Strong European Tractor Sales In 2017

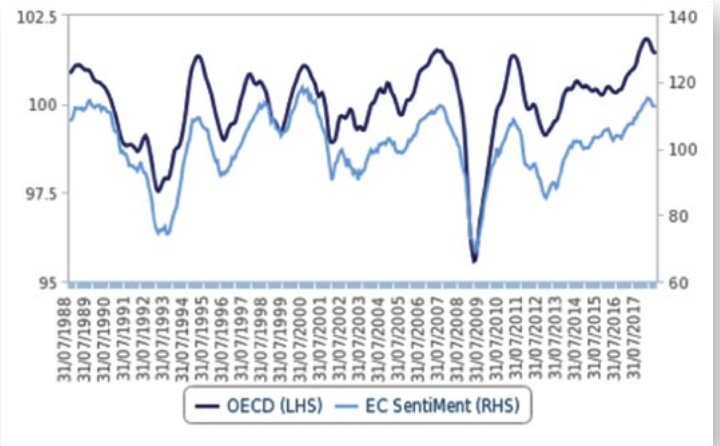
Machinery sales in Europe will remain comparatively strong in 2018, although will unlikely exceed the considerable 13 percent growth seen across 30 European countries (excluding the Black Sea Region) in 2017.

According to the European Agricultural Machinery Association, almost all of CEMA's member countries experienced strong growth in 2017, varying between 6 percent in Spain and 23 percent in Denmark. The French market was the only exception, with a decrease of 2.2 percent in tractor registrations. Without taking into account the peak in December, figures were still mostly positive. Machinery companies' global sales performed poorly in 2015 and again in 2016.

Although BMI believes that European tractor sales will not see a repeat of 2017, we highlight three factors supporting our view for European tractor sales to remain strong in 2018

Positive Environment for Purchases

Euro Area - Select Business Climate Indicators



1) New EU Legislation:

Up to December 2017, new tractor sales had increased only marginally y-o-y. However, new registrations soared in December 2017. This resulted from new technical requirements for tractors (related to various aspects including braking and lighting) that became mandatory on all new tractors on January 1, 2018. Tractors not meeting those requirements needed to be registered or placed on the market before then. Therefore, according to the European Tractor Association (CEMA) many tractors were registered by the end of 2017.

2) Slowing But Positive Business Sentiment:

Although the general business climate index of the Europe agricultural machinery industry compiled and provided by the German Mechanical Engineering Industry Association (VDMA) has declined in recent weeks after reaching its peak in Q118, it remains elevated. According to a survey provided VDMA, the agricultural machinery sector in Europe is, overall, anticipating a 4-5 percent increase in sales in 2018, in line with our views.

3) Improving EU Credit Outlook:

The credit outlook for EU farmers should improve, as BMI's Europe Country Risk team forecasts the Eurozone's real lending rate to average 1.2 percent in 2018, less than half of the 2015 level of 2.8 percent. The Country Risk team also forecasts that client loans in the Eurozone region to maintain a y-o-y growth of around 3.5 percent annually over the next five years, a trend which supports our positive outlook on credit growth in the region. Finally, the European Central Bank has been engaging in various activities (including negative deposit rates and a quantitative easing program involving purchases of sovereign and, more recently, corporate bonds) in order to loosen credit conditions. While BMI believes that tightening will now occur earlier than previously expected, the base case remains a scenario where asset purchases will continue throughout the entirety of 2018, even as the monthly amount gradually tapers. The ECB is likely to take a significant amount of time between stopping new purchases and rolling off its balance sheet, in our view, and outright balance sheet reduction is unlikely until well into 2020 at the earliest *(see 'ECB Normalisation Finally Nearing', March 1, 2018)*.

From Business Monitor International

The data on this page was provided to AEM by Business Monitor International. Through BMI, AEM members can obtain Agribusiness insights for various countries worldwide. For additional information on BMI, please email Benjamin Duyck at bduyck@aem.org.

New Product: Agrievolution Ag Indexes

Written by Benjamin Duyck 07/16/2018

AEM and Agrievolution are happy to announce the launch of four new global Ag Indexes available for free to AEM members for internal usage only. The new indexes track forage harvesters, balers, combines and tractors across 10 regions and 19 countries on a quarterly basis. The information is currently available in an easy to download excel format on the AEM website under the Agrievolution Industry Reports page of the Market Data segment.

Key Themes for Agribusiness in 2018 - Update

Provided by BMI Research 06/20/2018

KEY AGRIBUSINESS THEMES FOR 2018 - UPDATE

Themes	Description	Playing out?	Metrics
Agriculture Commodities To Outperform	We anticipate a tightening of global grain markets as yields will likely return towards trend-line averages after several years of exceptionally high yields.	Yes	S&P GSCI Commodities Sub-Indexes
Improving Performance Of Agribusiness Companies	The earnings rebound will continue, helped by accelerating EM economic growth, higher inflation in DM, and improving agricultural prices.	No	BMI Agribusiness Index
Global Grain Market In Deficit	For the first time in four seasons, the global grain market will see a deficit in 2017/18. This includes corn, wheat and soybean.	Yes	Global Supply And Demand Balance For Wheat, Corn, Soybean, Rice
New Government Policies On The Horizon	US Farm Bill, EU CAP, US marijuana legislation and environmental reform will also feature in 2018 legislative agendas.	Yes	Qualitative, initiation of discussion around CAP reform and US Farm Bill
Trade: Generally Expanding But Pockets Of DM Disruption	Trade deals including TPP, EU-Japan, EU-Mercosur, are either being revived or continuing apace, but NAFTA and Brexit are key risks.	Yes	Qualitative (deals agreed or ratified) and quantitative (volume of US trader relative to ROW).

1. **Agriculture Commodities to Outperform:** Agricultural commodities have been the best performing sub-index within the BCOM index, with grains the best performing group within the agriculture index. With wheat harvests beginning and plantings for corn and soybean complete, we believe most of the grains have been priced in, and without deteriorating weather conditions over the Northern hemisphere summer, will struggle to maintain outperformance.

2. **Improving Performance of Agribusiness Companies:** This view has not played out. Our index, which is market cap weighted and adjusted bi-monthly, suffered from poor performance from sugar and palm oil companies, along with the more consumer facing companies. Weak commodity prices have hurt palm oil and sugar companies, while trade concerns, logistical challenges and higher wage bills have impacted consumer facing companies, especially in the US. One bright spot has been agricultural input companies which, in line, with our view have outperformed the index.

3. **Global Grain Market in Deficit:** As of mid-June 2018, this view has played out, with the USDA and IGC both expecting global grain market deficits in 2017/18. The ongoing 2018/19 season (according to USDA forecasts) will register a deficit for the second consecutive season for the first time in over 15 years.

4. **New Government Policies on the Horizon:** This view has played out, with legislative proposals for the EU's CAP released on June 1 by the European Commission. While the 2018 US Farm Bill is currently in legislative committees. Meanwhile, the Canadian Senate has passed third reading of the country's Cannabis Act (Bill C-45), hurdling one of the last remaining obstacles before implementation. The law will soon receive royal assent, with sales likely to commence roughly 10-12 weeks afterwards. China and India also continue to reform and invest heavily in their respective agribusiness sectors.

5. **Trade: Generally Expanding but Pockets of DM Disruption:** Recent moves by the US Administration have heightened the risk of a trade war in recent weeks, not just with traditional adversaries like China, but also allies like NAFTA countries and the EU, adding uncertainty around agricultural and food trade between the countries. ■

What Have Your Engineers Been Up To?

If you're proud of the new products your company brought to the market in 2018, consider nominating it for an AE50 Award. AE50, sponsored by the American Society of Biological and Systems Engineers (ASABE), is the only awards program of its kind, celebrating product innovations in the areas of agricultural, food and biological systems.

Today's AE50 winners include machines, systems, components, software and services ranked highest in innovation, significant engineering advancement and impact for the markets they serve. To be eligible, qualifying products must have been first available for purchase or ordering during the 2018 calendar year.

From the many entries submitted each year, an expert panel of engineers selects 50 products for recognition. The award-winning products are those ranked highest in innovation, significant engineering advancement and impact on the market served. Awards are presented at ASABE's annual Agricultural Equipment Technology Conference (AETC). The award-winning products are also highlighted in a special issue of ASABE's Resource magazine.

AEM is once again teaming up with ASABE to present the Davidson Prize, an elite award presented to the best of the best within the AE50 winners. The top 10 placing AE50 products will be judged by a second panel to determine the winners of the 2019 Davidson Prize.

Entry deadline is September 5, 2018. For more details, see the guidelines and entry form online at www.asabe.org/AE50. If you have questions about the AE50 Awards program or the Davidson Prize, please contact Sandy Rutter (269-932-7004). ■

Welcome New Ag Members! These companies working in the Ag industry joined AEM in 2018:

3D Exhibits
Acumatica
Agricultural Instruments Corporation
AMS Galaxy
Aplicaciones Mecanicas Del Caucho, SA
Aprotech Group
ASTOUND Group
Carlisle Tire & Wheel
Cognitran Inc
Corey Steel
DECKED LLC
Dew-Eze Manufacturing
Duramark Technologies Inc
DXC Technology Corporation
Eberspaecher Climate Control Systems
FERRI SRL
Green Machine Equipment Inc
GreensGroomer WorldWide
Harper Industries
IMD LLC
Inoxt, Inc
Jana Inc
Kaufman Trailers
Linde Hydraulics Corporation
Lorence Manufacturing Corporation
MAN Engines & Components Inc
MBL (USA) Corporation
MCR Safety
Microsoft Corporation
Minet Lacing Technology
MJ DE-YI International Ltd.
MTW-Blades Mechanical Equimpent (Su Zhou) Co.,LTD
National Tube Supply Co
NorthStar Battery
Nu-Star, Inc.
ORIS Search Group
Pentair - HYPRO
Robert Bosch LLC
RSJ Technical Consulting
Schutte-Buffalo
SeedMaster
Smith Challenger Mfg.
Smithers Rapra
Stauff Corporation
Supply Dynamics
Tavant Technologies
The Carlstar Group
Turfmaker Corp
Twin Disc Inc
VP Racing Fuels
Waikato Milking Systems USA, Ltd.
Webasto Thermo & Comfort North America, Inc.

Establish a Product Safety Program in 10 Steps

Ensuring its equipment is used both properly and safely is a challenge of great significance for many small and mid-sized Ag equipment manufacturers today, and establishing a comprehensive safety program to address the issue is a task not easily accomplished.

Creating a lasting and effective safety program requires both time and effort, both of which can be scarce resources for many companies. However, successfully establishing one can help small and mid-sized equipment manufacturers experience a number of benefits, including fewer accidents and product recalls, increased safety and quality of products for consumers, as well as greater market access worldwide.

"There are two options for equipment manufacturers today," said Tom Hoffman of Kuhn North America, an AEM member. Hoffman recently shared his insights with attendees at this year's Product Safety & Compliance Seminar, which annually offers safety professionals in the equipment manufacturing industry the latest in standards, regulations and industry best practices.

"One is taking a proactive approach to product safety and deciding to put a process in place for when something happens or to preempt things from happening," said Hoffman. "The other is to wait until you have an incident, and then wonder why you don't have a process in place. Now it's a reaction, and no one wants to be in that situation."

According to Hoffman, small or mid-sized Ag equipment manufacturers should consider taking the following steps to establish both the organizational structure and governance necessary for a product safety and compliance program.

1. **Enlist the help of an outside consultant –** While there are costs associated with hiring a consultant, doing so can help ensure an organization gets its product safety program off the ground while avoiding missteps and added complexity along the way.

2. **Assemble a safety team –** The key to putting the right safety team together is to include employees from a variety of backgrounds and who possess different skillsets. Product testing, maintenance and service, as well as standards and regulations are among the specific organizational areas that need to be represented on every Ag equipment manufacturer's safety team.

3. **Create a schedule –** There's no overstating the importance of ensuring product safety issues are addressed in a timely manner. While trying to keep key stakeholders within an organization on the same page can be a tall order, the sooner everyone can be brought up-to-date on a safety review process, the easier it can be to make progress and move forward.

4. **Conduct a physical hazard analysis during a product's prototype phase –** Inspect the product to make both an early and definitive determination as to whether or not it fits what's acceptable from a safety standpoint.

5. **Evaluate your progress during the production phase –** Every manufacturer knows issues with consistency can plague – or even derail – a product offering's production. At times a company will need to revisit a machine during production because a hazard analysis is deemed necessary. However, it's extremely important to remember any changes made must not adversely affect a product's safety in the long run.

6. **Determine how to handle end-of-life issues –** Because it's impossible to predict exactly how its customers will use a piece of equipment, dealing with its lifespan can be quite difficult. That being said, a manufacturer must know exactly how to assess the safety of a machine throughout its lifecycle.

7. **Communicate safety information effectively –** If a product safety issue arises, make sure machine tracking capabilities are in place and product support can help go out, locate equipment and address the issue in an efficient manner, and document the fact that appropriate steps were taken.

8. **Be consistent with technical documentation –** This step can be easily overlooked, but the information being put out must be both accurate and consistent.

continued, page 15

American Society of Agricultural and Biological Engineers (ASABE)

The American Society of Agricultural and Biological Engineers (ASABE) has approved a new national standard, ANSI/ASABE S641, Droplet Size Classification of Aerial Application Nozzles. This standard aligns very closely with ANSI/ASAE S572 in scope but redefines measurement setups, reference nozzles and operational settings for testing spray nozzles used for high-airspeed aerial application of agricultural chemicals.

ASABE has initiated

- A revision to ANSI/ASABE S602.2, General Safety Standard for Agricultural Tractors in Scraper Applications. The standard is being revised to replace reference to SAE J167, Overhead Protection for Agricultural Tractors – Test procedure and Performance Requirements, with nationally adopted international standard ASABE/ISO 27850:2013, Tractors for agriculture and forestry — Falling object protective structures — Test procedures and performance requirements. Other changes include the incorporation of the latest version of normative references, most importantly ANSI/ASAE S318, Safety for Agricultural Field Equipment.
- A project to replace an ASABE standard on combine harvesters with a parallel ISO standard. The ISO document, ISO 5687:2018, Equipment for harvesting — Combine harvesters — Determination and designation of grain tank capacity and unloading device performance, was revised with input from ASABE members, demonstrating the commitment among engineers and farmers to have a consistent and analytical procedure for measuring grain tank capacity and unloading rate. ISO 5687:2018 will replace the earlier version adopted identically by ASABE in 2004, and readopted with deviations in 2014.

ASABE has completed revisions to

- Part 3 of the standard series to improve air-quality systems of agricultural cabs. The revision, **ANSI/ASABE S613-3.1, Tractors and self-propelled machinery for agriculture — Air quality systems for cabs — Part 3: Filters for environmental cab HVAC systems**, incudes modified acceptance levels and test conditions for the vapor test, as well as clarified wording.
- **ASABE S591.1, Procedure for Measuring Point Trip Force and Maximum Trip Height of Tillage Shank Assemblies.** The Standard establishes a uniform method of measuring the static point trip force and trip height of agricultural tillage shank assemblies, including field cultivator or conditioner shanks, chisel plow shanks, and subsoiler (or ripper) shanks. It is limited to shank assemblies utilizing a spring cushion, or "S" tine/coil shank design, but not those with rigid, non-flexing shank assemblies. The revision includes updates to the normative references and minor editorial changes.

ASABE members with standards access and those with site-license privileges can access the full-text via electronic download on the ASABE online Technical Library at elibrary.asabe.org. Others can obtain a copy for a fee directly from the library or by contacting ASABE headquarters at OrderStandard@asabe.org.

For information on these or any other ASABE standard, contact Scott Cedarquist at 269-932-7031, cedarq@asabe.org. A current listing of all ASABE standards projects can be found on the ASABE web site at www.asabe.org/projects.

continued from page 14

9. **Attend safety seminars and learn from others in the industry –** There's always new information to be learned, and it's available from a variety of different sources. Investigate worthwhile opportunities and take advantage when it's appropriate to do so.
10. **Promote a culture of organizational safety –** If employees feel an issue related to safety needs to be discussed, it's important they know where to go and who to talk to in order for it to be addressed quickly and decisively.

More Information

The 2019 Product Safety & Compliance Seminar and Product Liability Seminar will be held April 29 - May 2 in Des Moines, Iowa. For more information on the Product Safety & Compliance and Product Liability seminars, contact Nathan Burton, AEM technical and safety services manager (nburton@aem.org, tel: 414-298-4126).

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