

Ag Equipment Intelligence

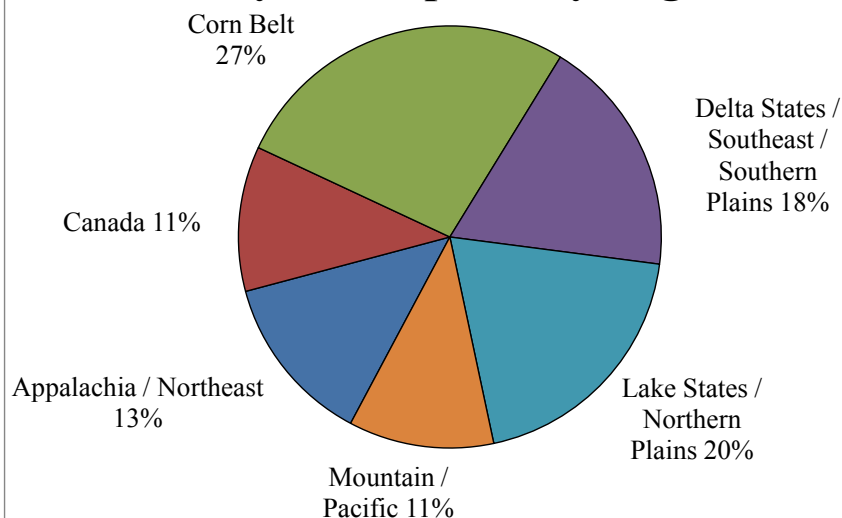
May 2018 Dealer Sentiments &
Business Conditions Update

Monthly Ag Equipment Intelligence North American Dealer Survey

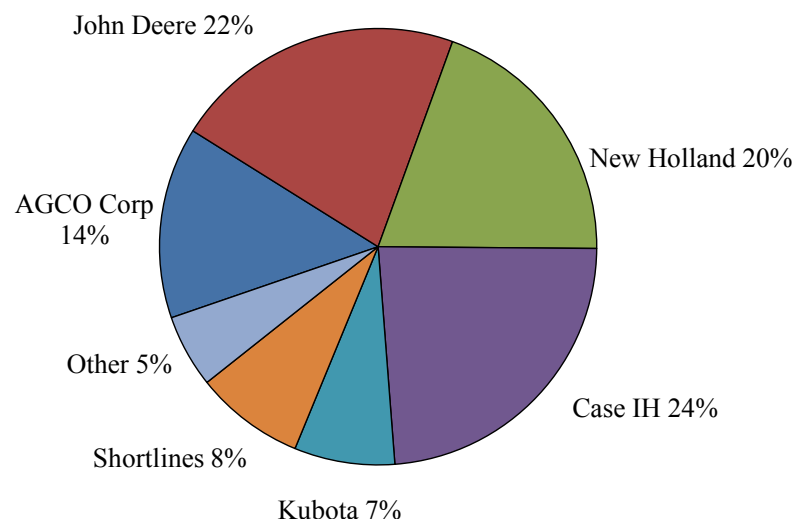
Background:

- We are pleased to announce the results of the April Ag Equipment Intelligence survey conducted in partnership with Cleveland Research Company. We hope this monthly survey will provide valuable and timely insight into industry trends and fundamentals.
- The April survey had ~160 respondents representing combined annual revenues of roughly \$5 billion. Participants represent a broad cross section of geographies and brands are summarized in the charts below.

Survey Participants by Region



Participants by Brand



Appalachia / Northeast – CT, DE, KY, MA, MD, ME, NC, NH, NY, NJ, PA, RI, TI, TN, VA, VT, WV, **Corn Belt** – IL, IN, IA, MO, OH, **Delta States / Southeast / Southern Plains** – AL, AR, FL, GA, LA, MS, OK, SC, TX, **Lake States / Northern Plains** – KS, MI, MN, NE, ND, SD, WI, **Mountain / Pacific** – AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY. Note AGCO represents Massey Ferguson and Challenger brands.

Highlights / Summary Thoughts

- **Sales** – Average dealer sales were reported flat y/y in April, inline with March. A net 18% of dealers missed their sales budgets in April, also inline with last month. Commercial and consumer lawn equipment sales showed strength, while large equipment demand remains weak but has seen improvement over the last year.
- **Outlook** –The 2018 forecast is for 1% y/y growth, inline with March, with a net 10% of contacts expecting growth, below the net 16% of contacts expecting growth in 1Q. 50% of contacts do not believe the tax bill will have an impact on sales of machinery equipment in 2018, relatively unchanged from last month.
- **Inventory** – A net 23% of dealers reported new equipment inventories as too high, below the 28% in March. Used equipment inventory levels were worse in the month with a net 31% of dealers reporting used inventory as too high vs the 15% last month. Overall, inventories have come down from 2016 levels.
- **Pricing** – Pricing trends were stable in April. Large tractor pricing was reported down 2%, inline with March. Combine pricing was reported down 3%, also inline with last month.

Monthly Sales Growth

- Average dealer sales were reported flat y/y in April, inline with March. A net 18% of dealers missed their sales budgets in April, inline with last month.
- A net 6% of dealers reported more optimism in April, an improvement from the 1% of dealers that were less optimistic in March and the 0% in 1Q. Commentary suggests cold, wet weather in April deterred equipment purchases.

N. American Farm Equipment Dealer Survey - Average Dealer Sales Growth

% Change y/y	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
AGCO	-12%	-12%	-5%	-13%	-4%	-11%	-2%	-13%	-1%	-3%	0%	-5%	2%	0%	4%	0%	1%	6%	-3%
John Deere	-9%	-11%	-6%	-1%	-7%	-1%	-4%	-1%	-1%	-2%	3%	5%	2%	-1%	4%	1%	0%	1%	-1%
New Holland	-14%	-9%	-15%	-7%	2%	-12%	-13%	-4%	-1%	-6%	0%	-4%	-11%	3%	0%	0%	-3%	-7%	-6%
Case IH	-11%	-11%	-14%	-8%	-4%	-5%	-3%	-16%	-2%	-5%	-2%	-8%	-4%	-7%	-3%	-1%	-1%	-3%	-1%
Kubota	1%	-1%	5%	-5%	2%	7%	2%	1%	0%	8%	12%	-4%	14%	10%	10%	5%	3%	3%	12%
Shortlines/Other	-11%	-7%	-14%	-9%	5%	4%	-9%	-1%	-1%	-1%	-1%	3%	0%	-1%	-5%	-5%	-4%	2%	-11%
Total	-10%	-10%	-9%	-6%	-5%	-5%	-5%	-5%	-2%	-3%	-1%	-1%	0%	0%	1%	0%	0%	0%	0%

Source: Cleveland Research, Ag Equipment Intelligence

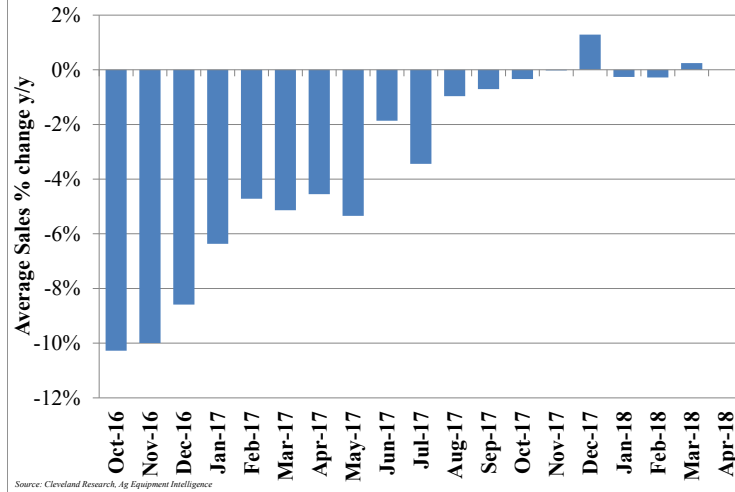
N. American Farm Equipment Dealer Survey - Sales Versus Expectations

% of Dealers Reporting	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
Better than expected	16%	8%	11%	16%	11%	12%	16%	19%	16%	16%	21%	21%	18%	21%	18%	13%	13%	11%	10%
In line with expectations	40%	61%	57%	59%	58%	58%	54%	52%	65%	48%	52%	47%	55%	60%	62%	65%	61%	60%	61%
Worse than expected	44%	31%	32%	25%	31%	30%	30%	30%	19%	36%	27%	32%	27%	20%	20%	22%	26%	29%	29%
Net % (Better - Worse)	-28%	-24%	-22%	-9%	-20%	-18%	-15%	-11%	-3%	-19%	-6%	-11%	-8%	1%	-1%	-9%	-13%	-18%	-18%

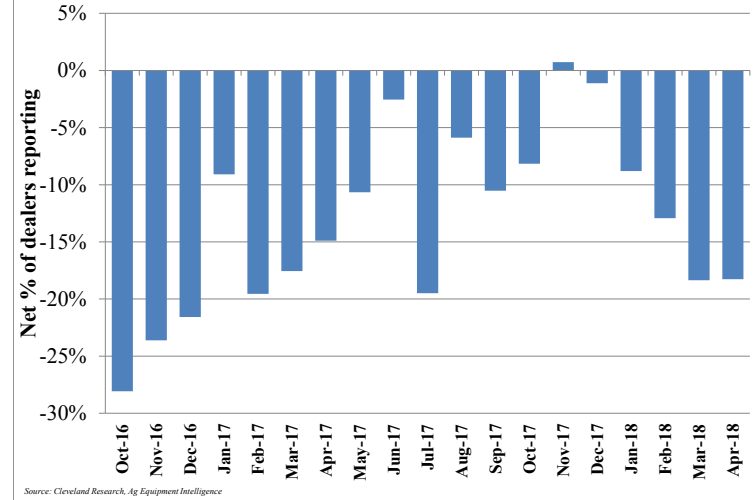
Source: Cleveland Research, Ag Equipment Intelligence

Monthly Sales Growth Continued

Ag Equipment Dealer Survey - Monthly Sales Growth Trends



Ag Equipment Dealer Survey - Sales Versus Expectations



N. American Farm Equipment Dealer Survey - Average Dealer Revenue Growth Trends

% of Dealers Reporting	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
Positive Sales Growth	18%	20%	26%	27%	25%	32%	34%	39%	37%	33%	41%	43%	41%	43%	41%	36%	31%	36%	37%
Flat Sales	15%	23%	17%	22%	31%	23%	19%	18%	32%	19%	21%	22%	20%	21%	22%	28%	31%	32%	29%
Negative Sales Growth	67%	58%	58%	52%	45%	45%	47%	43%	32%	48%	38%	35%	38%	36%	37%	36%	38%	32%	34%
Net % Reporting Growth	-48%	-38%	-32%	-25%	-20%	-13%	-13%	-4%	5%	-15%	4%	7%	3%	7%	4%	0%	-7%	4%	3%
Average % Change y/y	-10%	-10%	-9%	-6%	-5%	-5%	-5%	-5%	-2%	-3%	-1%	-1%	0%	0%	1%	0%	0%	0%	0%

Source: Cleveland Research

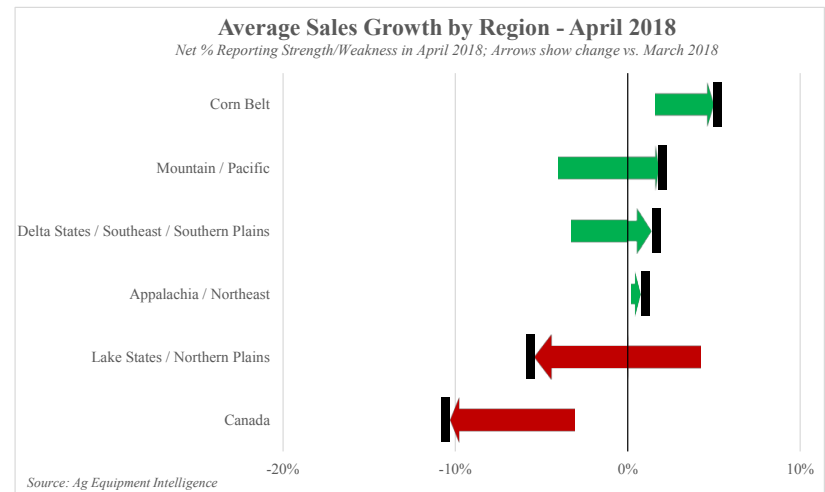
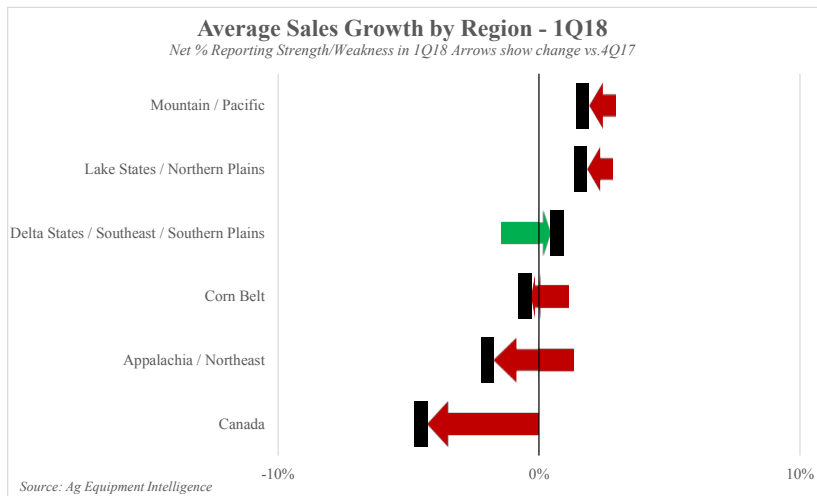
Optimism/Sentiment vs. Last Month

% of Dealers Reporting	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
More Optimistic	13%	15%	17%	31%	21%	26%	17%	19%	23%	21%	23%	23%	22%	24%	28%	21%	21%	24%	26%
Same	53%	60%	58%	48%	60%	47%	53%	61%	58%	47%	52%	51%	56%	63%	53%	58%	58%	51%	54%
Less Optimistic	34%	25%	26%	20%	19%	27%	30%	20%	19%	32%	26%	26%	22%	14%	19%	21%	21%	25%	20%
Net % Dealer Optimism	-21%	-10%	-9%	11%	1%	-1%	-13%	-2%	4%	-11%	-3%	-4%	1%	10%	9%	1%	0%	-1%	6%

Source: Cleveland Research

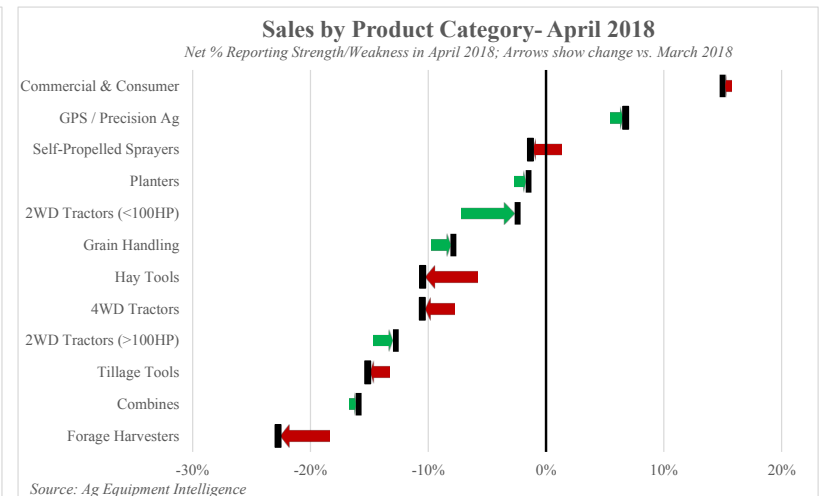
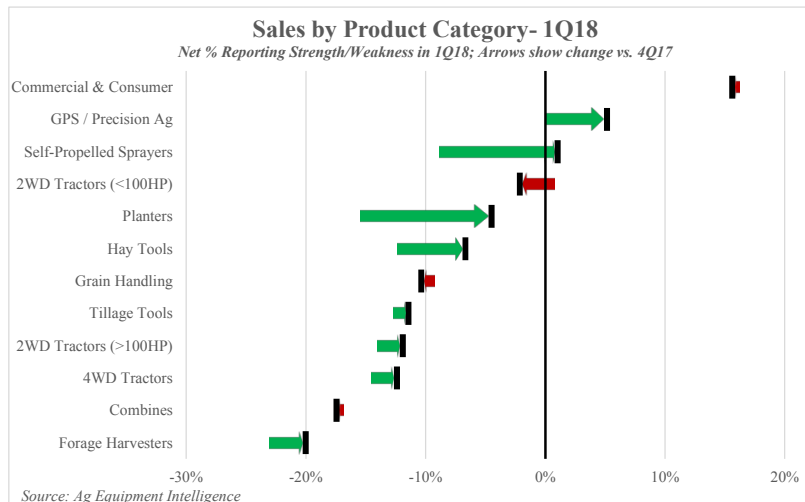
Monthly Sales Growth by Region

- Sales trends by region improved in 4 of the 6 regions in April vs declines in 5 of the 6 regions in 1Q. The Corn Belt was the strongest region in April while the Mountain / Pacific region saw the greatest improvement from March. Canada saw a sequential deterioration in the month and was the weakest region in April and 1Q.

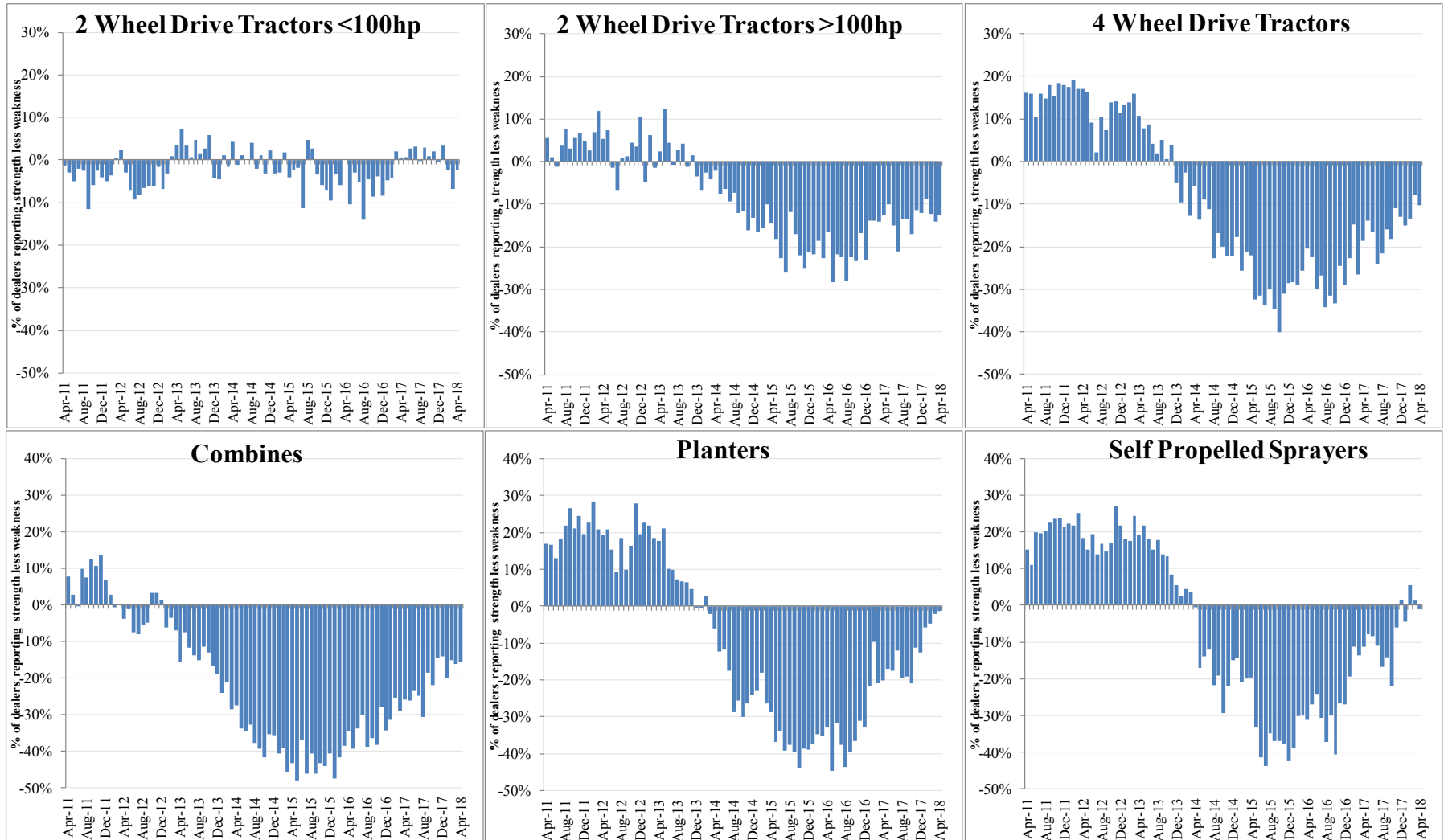


Equipment Category Sales Trends

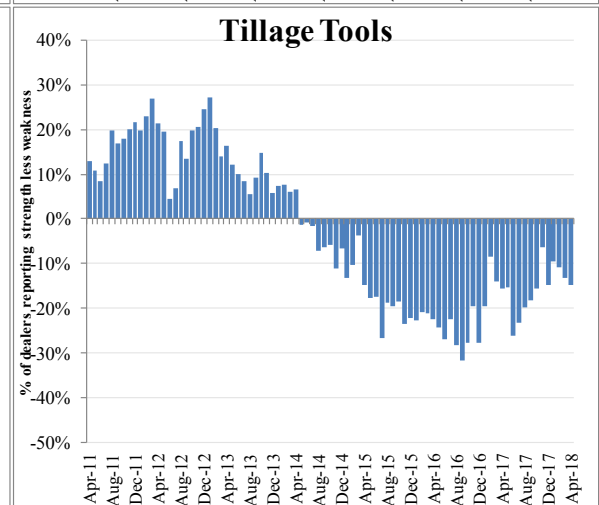
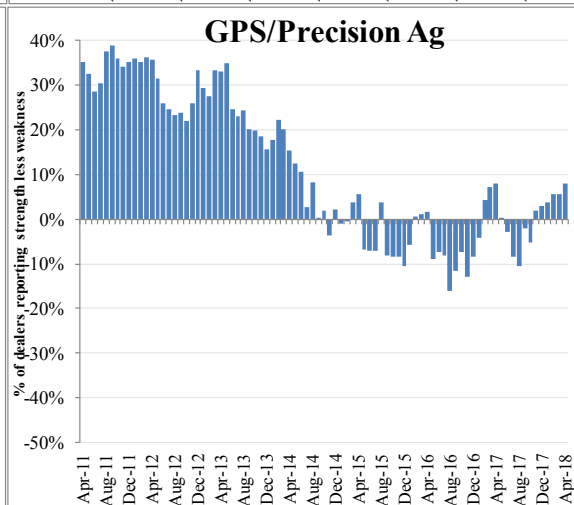
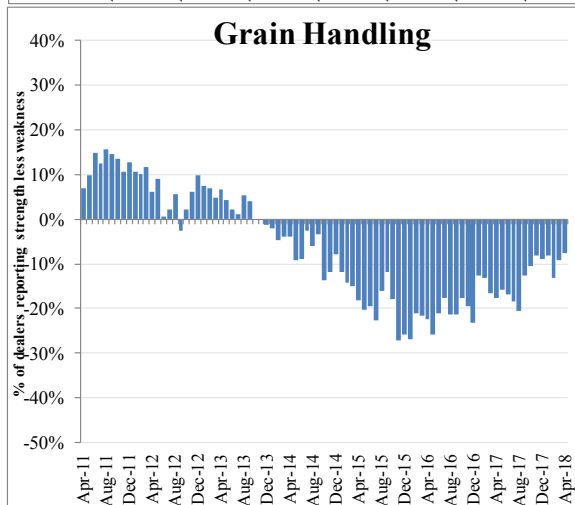
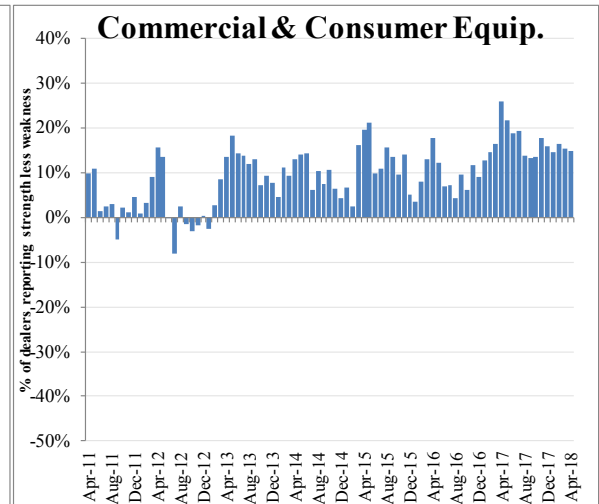
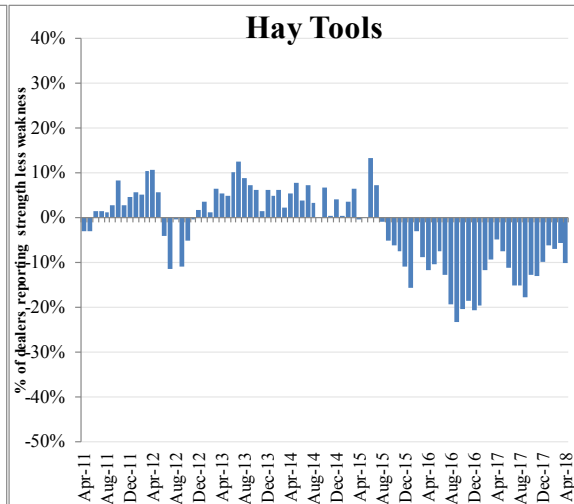
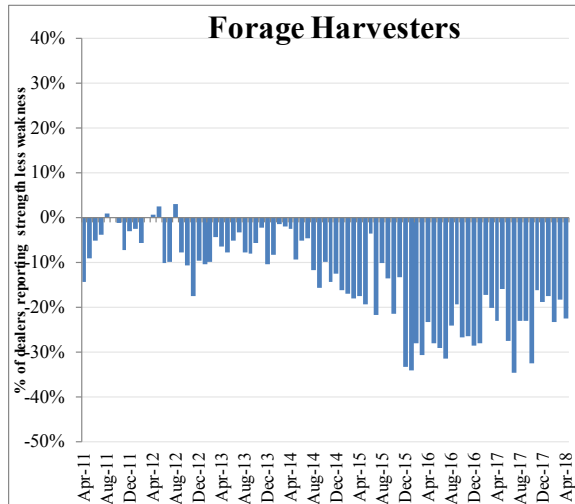
- Sales by product category was mixed in April following overall sequential improvement from 4Q to 1Q. <100hp 2WD tractors showed the greatest improvement from March, while hay tools and forage harvesters saw the greatest declines.
- Commentary suggests used equipment sales were very weak in the month and the overhang of lease returns remains a headwind.



Equipment Category Sales Trends



Equipment Category Sales Trends (Continued)



Average Dealer Sales Outlook

- The 2018 forecast is for 1% y/y growth, inline with March, with a net 10% of contacts expecting growth, below the 15% in March and the 16% of contacts expecting growth in 1Q. More than half of contacts do not believe the tax bill will have an impact on sales in 2018.
- Public ag equipment manufacturers forecast NAFTA ag equipment sales flat to up 10% in 2018. The bottom table details sales outlook by region for John Deere, CNH Industrial, and AGCO Corp.

N. American Farm Equipment Dealer Survey - 2018 Sales Forecast										
% change y/y	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
AGCO	0%	2%	1%	0%	3%	-1%	-4%	4%	0%	-2%
John Deere	1%	7%	4%	5%	4%	2%	4%	1%	3%	-5%
New Holland	2%	-4%	-1%	-3%	2%	-2%	1%	0%	0%	3%
Case IH	0%	1%	1%	4%	3%	4%	0%	-4%	-5%	5%
Kubota	0%	1%	-1%	-2%	1%	2%	1%	-1%	2%	3%
Shortlines/Other	-3%	0%	0%	3%	-5%	4%	1%	-3%	3%	3%
Overall	-3%	0%	1%	0%	2%	2%	2%	1%	1%	1%

Source: Cleveland Research, Ag Equipment Intelligence

2018 Ag Equipment Industry Sales Outlook (units)			
Geography	Deere	CNH Industrial	AGCO Corp.
N. America	Up 10%	Tractors 0-5%; Combines up 10%	Flat to up 5%
Western Europe	Up 5%	Tractors (0-5%); Combines up 5-10%	Flat
Latin America	Flat to up 5%	Tractors 0-5%; Combines up 5%	Flat
Asia	Flat	Tractors up 5%; Combines up 10%	na

Source: Company reports, CRC estimates

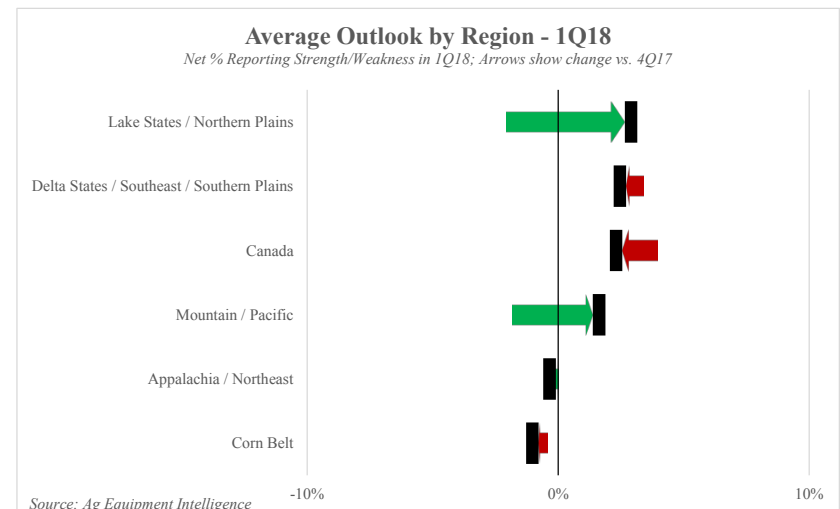
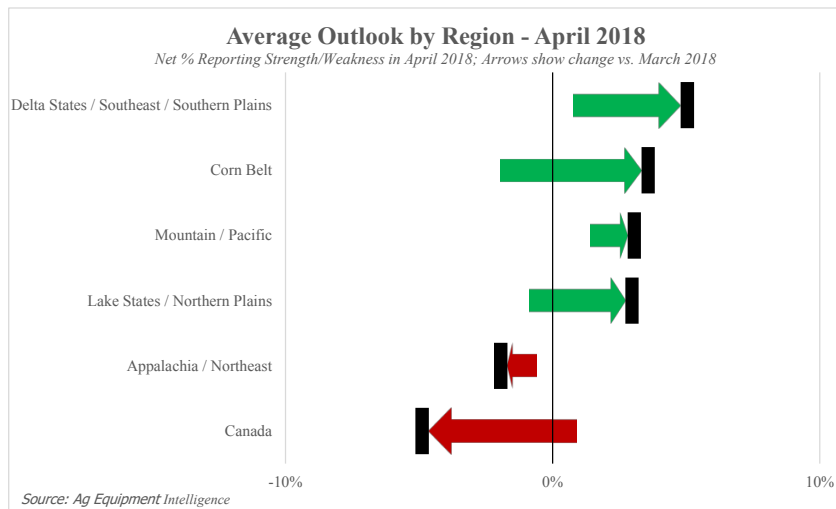
Most Interesting Commentary - Monthly Sales and Outlook

- *Our sales were negatively impacted by the wet spring weather which delayed sales of equipment as well as service and parts.*
- *We believe the overhang of lease returns is still hurting the used equipment market.*
- *The cold and wet weather slowed buyers down across the board. Nevertheless, there appears to be some pent up buying going on despite the condition of the general ag economy.*
- *Steel pricing has driven nearly all of the ag equipment manufacturers to raise price anywhere from 2-5%.*
- *We get a new notice of price increases on new product orders almost every other day. The rumors of looming steel surcharges are adding caution to the mix.*
- *We received mid year price increases from four different manufacturers in the range of 3-5%.*
- *For this year, we see price increases, bad weather, interest rate increases, and low commodity prices indicating a slowdown.*
- *It appears that weather is set to improve in May and we expect stronger sales due to pent up demand.*
- *There is still a lot of economic and NAFTA uncertainty with our customers, which leads us to be more cautious on 2018.*
- *We have not received any aggressive used financing from our manufacturer. It appears quite a few major manufacturers are pulling back on incentives.*
- *Used equipment is still an issue. We need to grow our used equipment sales to lower our inventories before we look at marketing any new equipment.*
- *Used combine inventory levels are very high. There are too many large tractors and tillage equipment as well.*

Source: Ag Equipment Intelligence

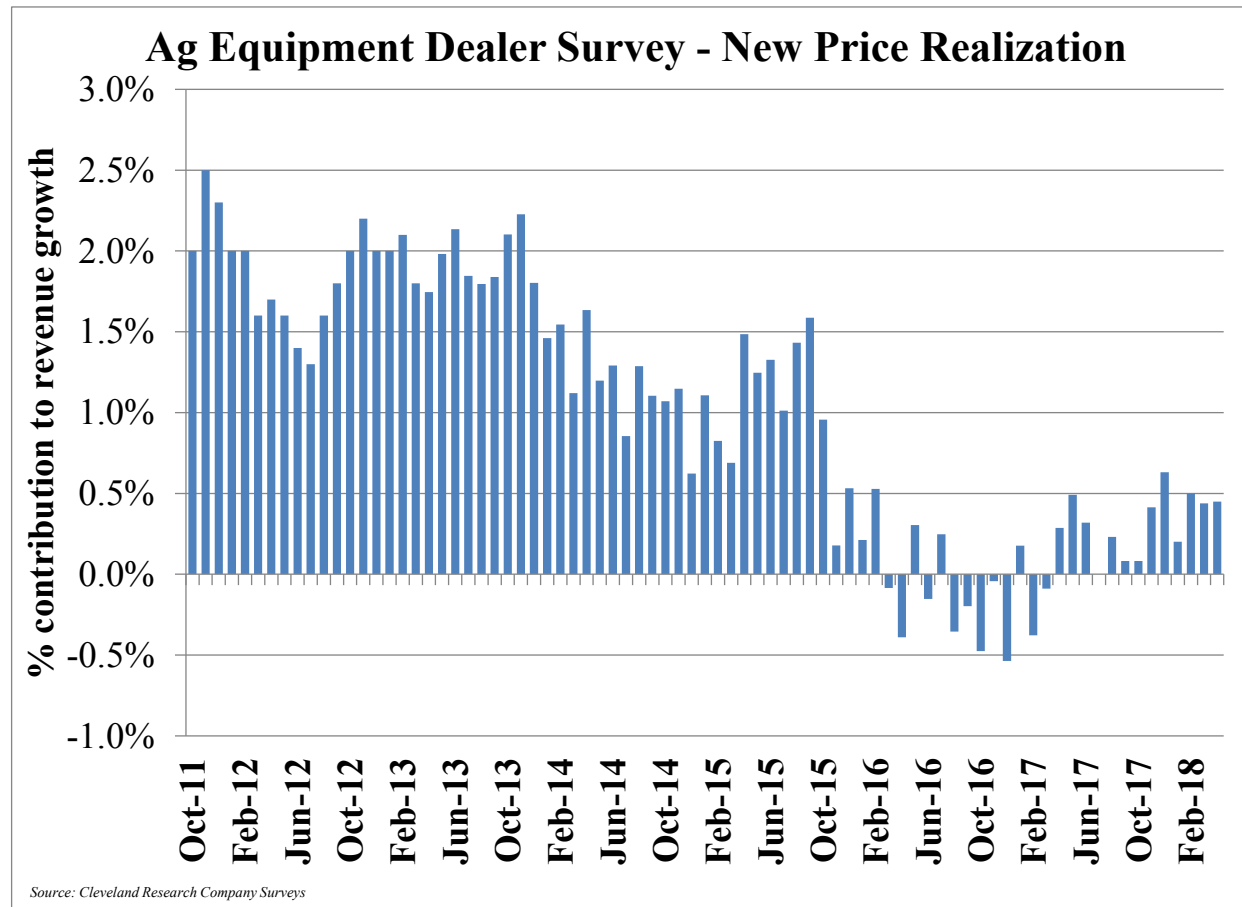
2018 Sales Outlook

- The 2018 outlook in April saw sequential improvement in 4 of the 6 regions, while the outlook declined 4 of the 6 regions in 1Q. The Corn Belt saw the greatest improvement from March.
- The 2018 outlook in April for 1% growth is inline with the average growth forecasts collected from July to April. Dealers were less optimistic in the month due to higher used equipment inventories, less manufacturer incentives, and poor weather conditions.



Pricing Trends

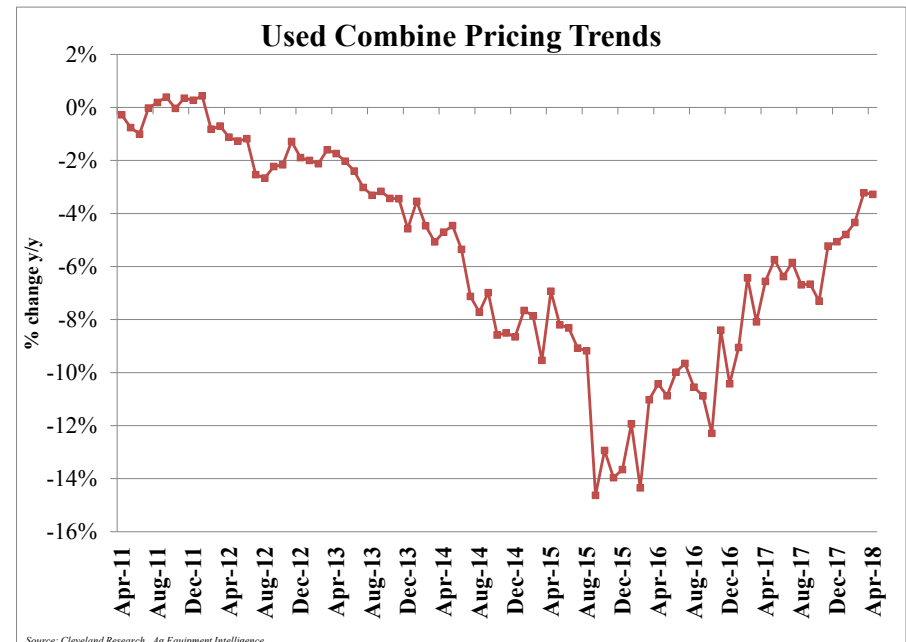
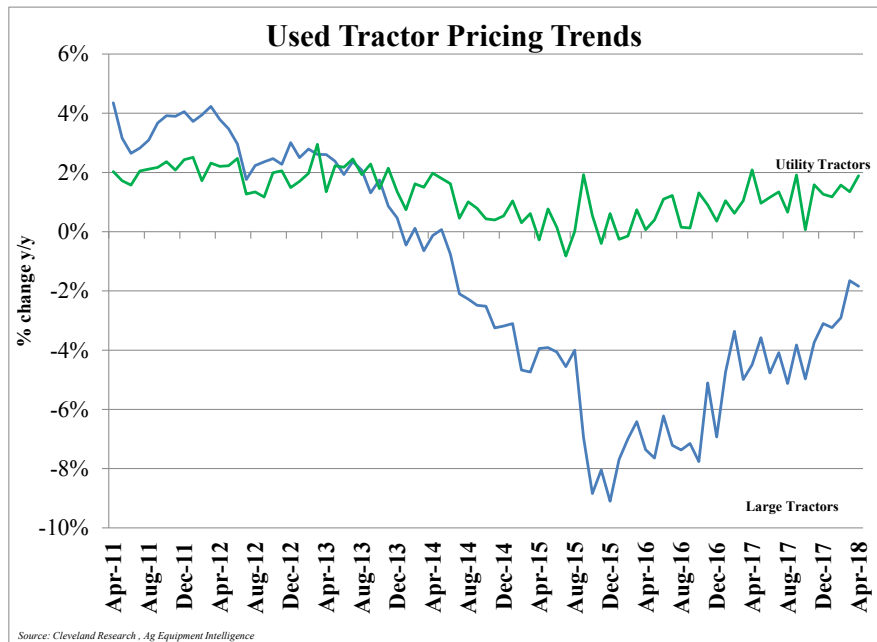
- Pricing trends were stable in the month suggesting 1Q price increases have been implemented. Commentary suggests dealers continue to receive price increases from manufacturers in the 2-5% range due to steel surcharges.



Used Equipment Pricing

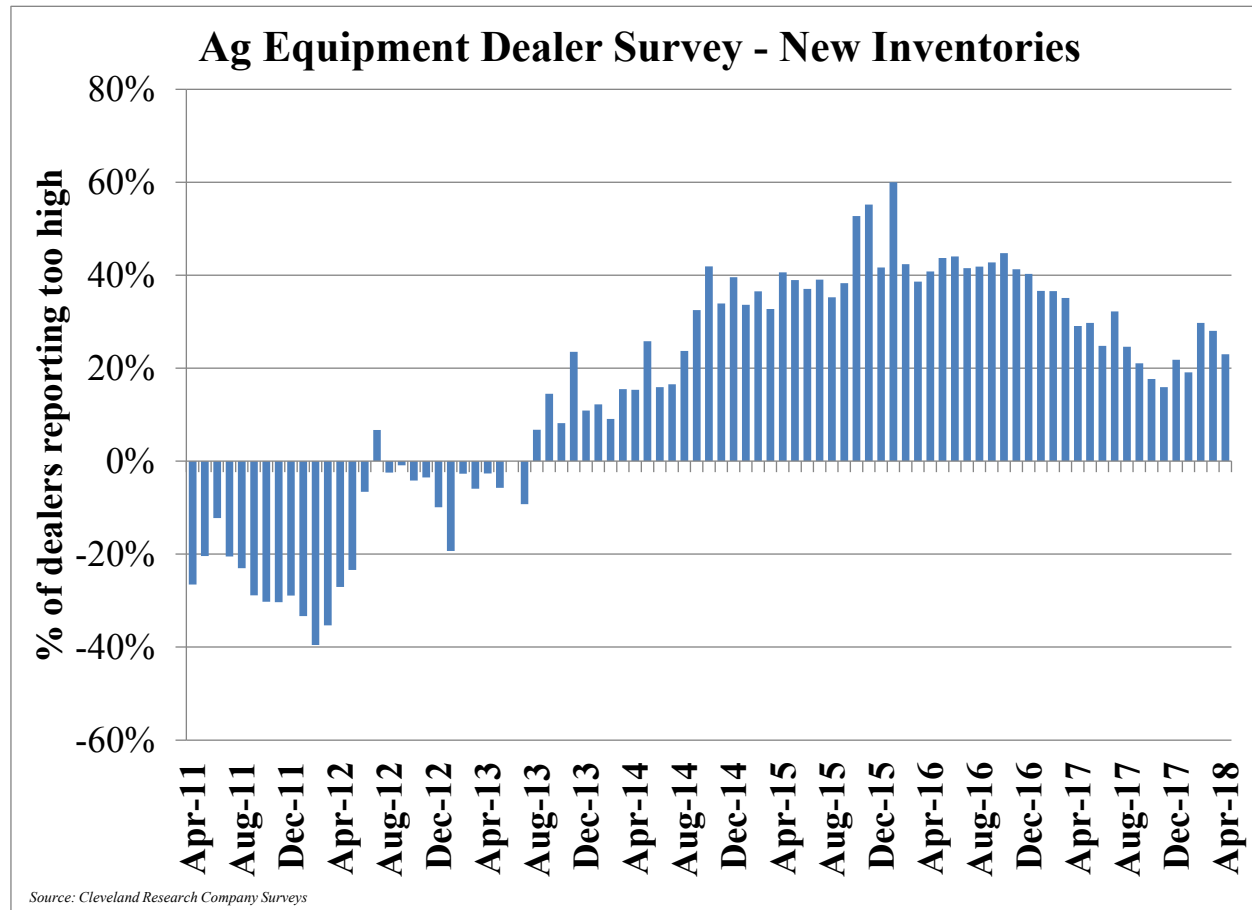
- Tractor and combine pricing trends remain solid and were unchanged from last month with large tractor pricing forecast down 2% and combines down 3%.

Used Tractor and Combine Values (Y/Y)																			
	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
Compact (<40HP)	2%	2%	1%	1%	1%	1%	2%	2%	2%	1%	1%	2%	0%	2%	1%	1%	2%	1%	2%
Utility (40-100HP)	1%	0%	0%	1%	0%	1%	2%	0%	0%	1%	0%	1%	0%	1%	1%	1%	1%	1%	1%
Row Crop (100HP+)	(6%)	(4%)	(5%)	(3%)	(2%)	(3%)	(4%)	(3%)	(4%)	(3%)	(4%)	(2%)	(4%)	(3%)	(2%)	(2%)	(2%)	(1%)	(2%)
4WD Tractors	(10%)	(7%)	(9%)	(6%)	(4%)	(7%)	(5%)	(4%)	(6%)	(5%)	(6%)	(5%)	(6%)	(5%)	(4%)	(4%)	(4%)	(2%)	(2%)
Combines	(12%)	(8%)	(10%)	(9%)	(6%)	(8%)	(7%)	(6%)	(6%)	(6%)	(7%)	(7%)	(7%)	(5%)	(5%)	(5%)	(4%)	(3%)	(3%)



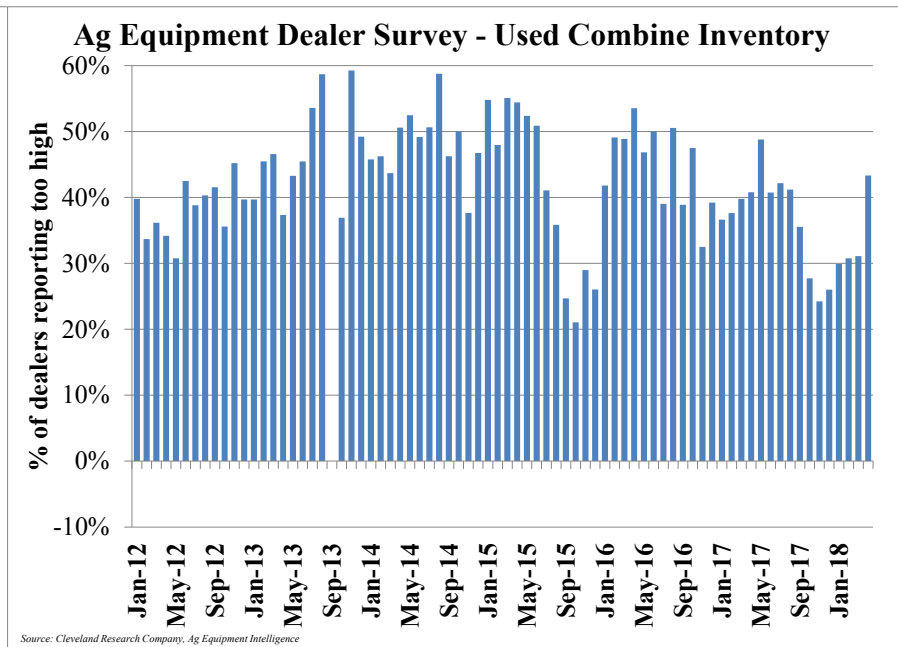
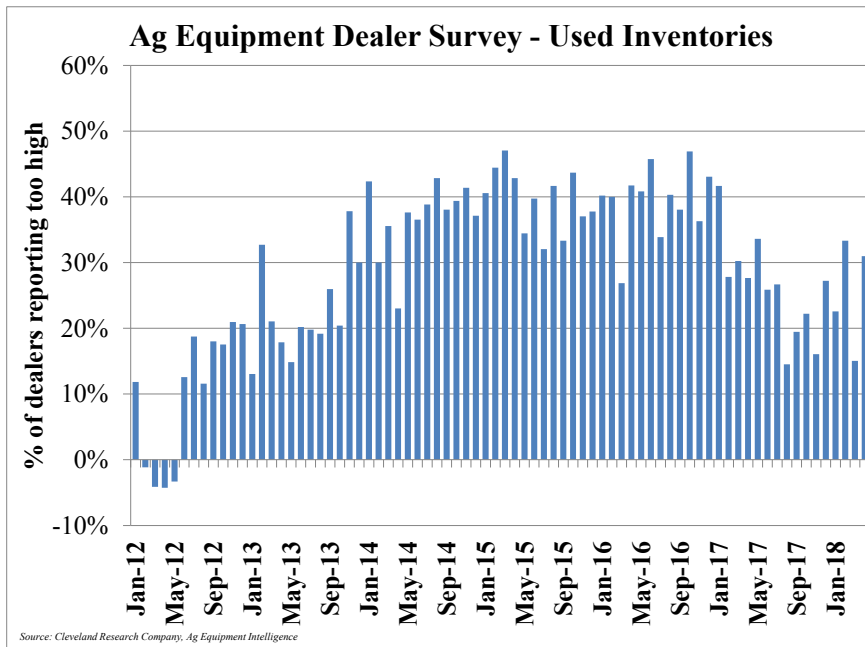
New Equipment Inventory Levels

- A net 23% of dealers reported new equipment inventories too high (32% too high, 59% about right, 9% too low), an improvement from the 28% in March. Commentary suggests dealers have prioritized used equipment sales over new equipment sales in order to work down used inventories.



Used Equipment Inventory Levels

- A net 31% of dealers reported used equipment inventory as too high (37% too high, 57% about right, 6% too low), growing from the 15% reporting heightened inventory in March and the 26% average in 2017. Used combine inventory levels were reported as too high by a net 43% of dealers in April, growing from 1Q and the 37% average in 2017.



North American Farm Equipment Industry Retail Sales

NORTH AMERICAN FARM EQUIPMENT RETAIL SALES														
	Units							% change year-over-year						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines
Jan-16	5,946	4,250	1,981	243	12,420	2,224	455	10%	-6%	-37%	10%	-6%	-33%	18%
Feb-16	6,429	3,372	1,185	222	11,208	1,407	241	21%	4%	-39%	-36%	3%	-39%	-40%
Mar-16	12,453	5,110	1,905	258	19,726	2,163	346	28%	6%	-25%	-48%	12%	-29%	-26%
Apr-16	17,726	5,578	2,539	336	26,179	2,875	464	7%	-14%	-19%	-22%	-2%	-19%	-30%
May-16	17,191	5,617	1,969	234	25,011	2,203	332	7%	0%	-1%	-10%	5%	-2%	-40%
Jun-16	16,094	6,273	1,966	247	24,580	2,213	565	3%	-4%	-18%	-18%	-1%	-18%	13%
Jul-16	13,342	5,494	1,875	152	20,863	2,027	619	-7%	-22%	-24%	-43%	-14%	-26%	-23%
Aug-16	11,600	5,049	1,314	102	18,065	1,416	562	18%	-1%	-26%	-39%	7%	-27%	-17%
Sep-16	12,664	5,449	1,759	200	20,072	1,959	620	16%	2%	-9%	-20%	9%	-10%	-27%
Oct-16	13,816	6,799	2,716	610	23,941	3,326	579	7%	0%	-17%	18%	2%	-12%	-27%
Nov-16	7,416	3,651	903	205	12,175	1,108	293	21%	-2%	-22%	-8%	9%	-20%	-15%
Dec-16	10,384	6,301	2,064	325	19,074	2,389	688	19%	-1%	-20%	-37%	5%	-23%	-22%
Jan-17	6,836	3,832	1,392	147	12,207	1,539	289	15%	-10%	-30%	-40%	-2%	-31%	-36%
Feb-17	7,959	3,312	1,339	198	12,808	1,537	254	24%	-2%	13%	-11%	14%	9%	5%
Mar-17	13,704	5,361	1,786	338	21,189	2,124	457	10%	5%	-6%	31%	7%	-2%	32%
Apr-17	19,358	5,883	2,416	426	28,083	2,842	504	9%	5%	-5%	27%	7%	-1%	9%
May-17	19,588	5,825	1,606	254	27,273	1,860	372	14%	4%	-18%	9%	9%	-16%	12%
Jun-17	18,107	6,313	1,590	191	26,201	1,781	595	13%	1%	-19%	-23%	7%	-20%	5%
Jul-17	13,806	5,583	1,443	136	20,968	1,579	656	3%	2%	-23%	-11%	1%	-22%	6%
Aug-17	11,985	5,229	1,222	170	18,606	1,392	679	3%	4%	-7%	67%	3%	-2%	21%
Sep-17	11,613	5,082	1,409	266	18,370	1,675	643	-8%	-7%	-20%	33%	-8%	-14%	4%
Oct-17	15,404	6,991	3,748	709	26,852	4,457	845	11%	3%	38%	16%	12%	34%	46%
Nov-17	8,152	4,109	952	187	13,400	1,139	334	10%	13%	5%	-9%	10%	3%	14%
Dec-17	10,964	6,276	1,974	413	19,627	2,387	699	6%	0%	-4%	27%	3%	0%	2%
Jan-18	7,261	3,960	1,423	196	12,840	1,619	275	6%	3%	2%	33%	5%	5%	-5%
Feb-18	7,101	3,313	1,127	221	11,762	1,348	316	-11%	0%	-16%	12%	-8%	-12%	24%
Mar-18	14,407	5,340	1,879	318	21,944	2,197	395	5%	0%	5%	-6%	4%	3%	-14%
Apr-18	19,350	6,257	2,343	386	28,336	2,729	709	0%	6%	-3%	-9%	1%	-4%	41%

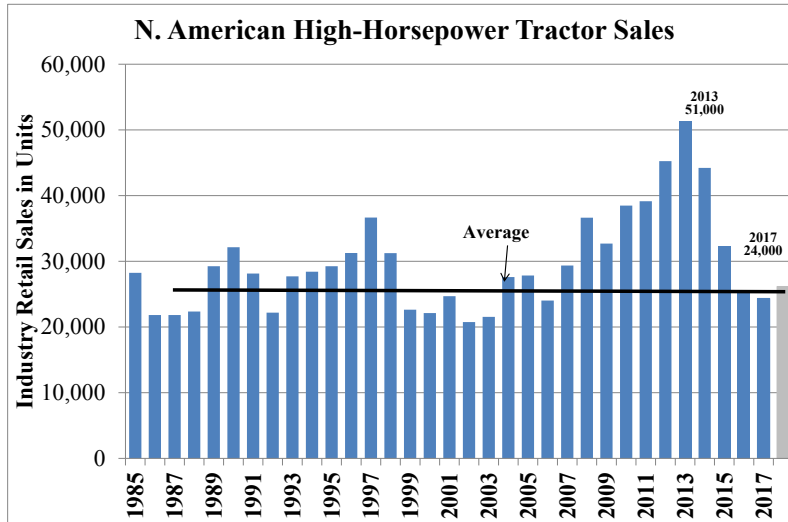
Source: AEM; Cleveland Research Company estimates. High hp tractors are row crop & 4-wheel drive.

North American Farm Equipment Industry Inventory

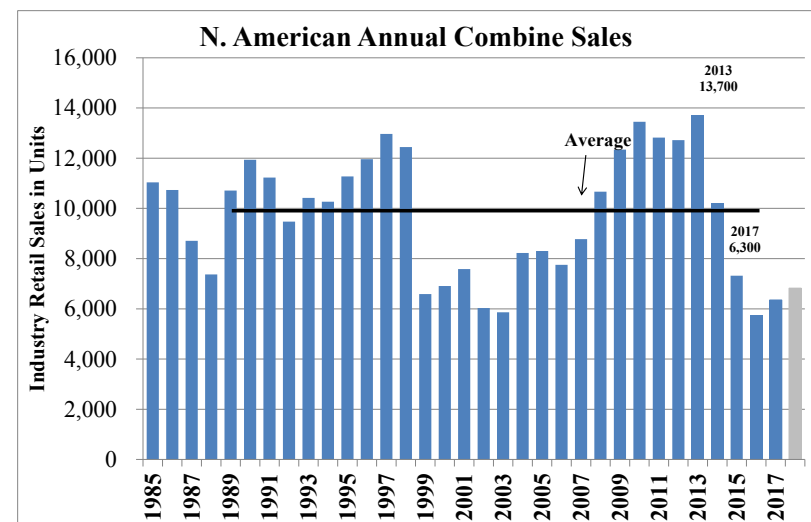
NORTH AMERICAN FARM EQUIPMENT INVENTORY														
	Inventory (Units)							Inventory to 12-mo. Sales						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	<40HP	Util	RC	4-WD	Total Tractor	Row Crop & 4WD	Comb
Dec-15	82,737	41,363	13,140	1,189	138,429	14,329	1,277	63%	63%	46%	30%	60%	44%	17%
Jan-16	86,618	42,352	12,727	1,129	142,826	13,856	1,169	66%	65%	47%	28%	62%	44%	16%
Feb-16	92,071	44,704	13,298	1,097	151,170	14,395	1,281	69%	68%	50%	28%	66%	48%	18%
Mar-16	93,703	45,127	13,327	1,131	153,288	14,458	1,281	69%	69%	52%	31%	66%	49%	18%
Apr-16	90,381	44,499	13,136	1,115	149,131	14,251	1,312	66%	69%	52%	31%	65%	50%	19%
May-16	86,451	43,931	13,015	1,152	144,549	14,167	1,492	63%	68%	52%	33%	62%	49%	22%
Jun-16	82,264	42,688	12,928	1,005	138,885	13,933	1,593	59%	66%	52%	29%	60%	49%	24%
Jul-16	81,046	41,621	12,765	920	136,352	13,685	1,580	59%	66%	53%	27%	60%	50%	24%
Aug-16	79,823	41,683	12,962	998	135,466	13,960	1,671	57%	66%	55%	30%	59%	52%	26%
Sep-16	78,438	41,007	12,671	1,103	133,219	13,774	1,428	56%	65%	54%	34%	58%	52%	23%
Oct-16	77,609	39,058	11,417	1,013	129,097	12,430	1,118	55%	62%	50%	30%	56%	47%	19%
Nov-16	80,250	39,972	12,075	1,059	133,356	13,134	1,105	56%	63%	53%	32%	57%	51%	19%
Dec-16	81,456	39,339	11,955	985	133,735	12,940	1,082	56%	62%	54%	31%	57%	51%	19%
Jan-17	83,153	39,248	11,838	1,024	135,263	12,862	1,099	57%	63%	55%	34%	58%	52%	20%
Feb-17	84,464	39,659	11,692	1,105	136,920	12,797	1,345	57%	63%	54%	37%	58%	52%	24%
Mar-17	83,854	41,907	11,428	1,072	138,261	12,500	1,432	56%	67%	53%	35%	59%	51%	25%
Apr-17	80,239	38,000	10,705	980	129,924	11,685	1,427	53%	60%	50%	31%	55%	47%	25%
May-17	79,064	37,377	10,363	985	127,789	11,348	1,604	52%	59%	49%	31%	53%	47%	28%
Jun-17	77,022	36,209	10,372	924	124,527	11,296	1,731	50%	57%	50%	29%	51%	47%	30%
Jul-17	77,490	36,223	10,210	1,001	124,924	11,211	1,604	50%	57%	50%	32%	52%	48%	27%
Aug-17	76,934	36,868	10,541	1,045	125,388	11,586	1,615	49%	58%	52%	33%	52%	49%	27%
Sep-17	75,112	36,376	11,022	1,104	123,614	12,126	1,483	49%	58%	55%	34%	51%	52%	25%
Oct-17	78,973	34,502	9,554	862	123,891	10,416	1,052	51%	54%	46%	26%	51%	43%	17%
Nov-17	84,909	35,100	10,194	977	131,180	11,171	974	54%	55%	49%	29%	54%	46%	15%
Dec-17	90,166	35,080	10,191	922	136,359	11,113	959	57%	55%	49%	27%	56%	46%	15%
Jan-18	95,198	35,476	10,137	905	141,716	11,042	1,128	60%	55%	48%	26%	58%	45%	18%
Feb-18	101,479	37,637	10,590	935	150,641	11,525	1,333	65%	59%	51%	27%	61%	48%	21%
Mar-18	103,354	38,556	11,004	963	153,877	11,967	1,548	66%	60%	53%	28%	63%	49%	25%

Source: AEM; Cleveland Research Company estimates

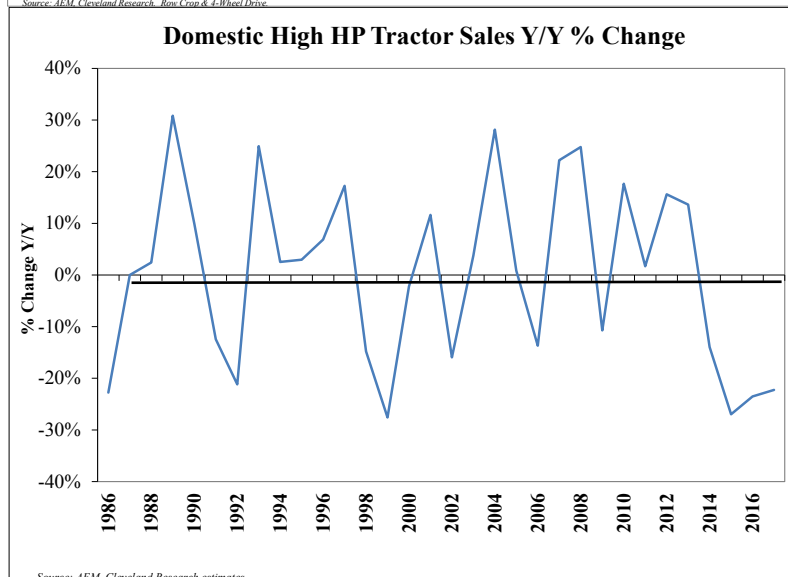
Annual Agricultural Equipment Industry Sales (1985 - 2017)



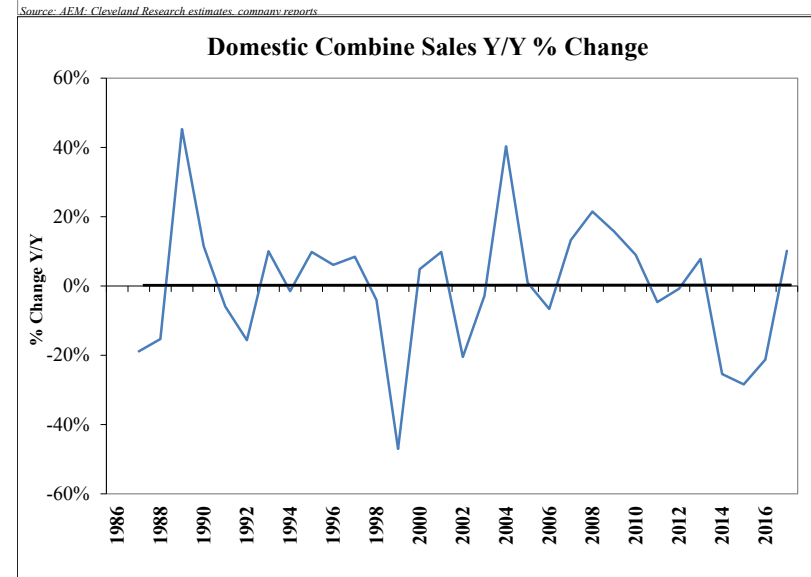
Source: AEM, Cleveland Research, Row Crop & 4-Wheel Drive



Source: AEM, Cleveland Research estimates, company reports

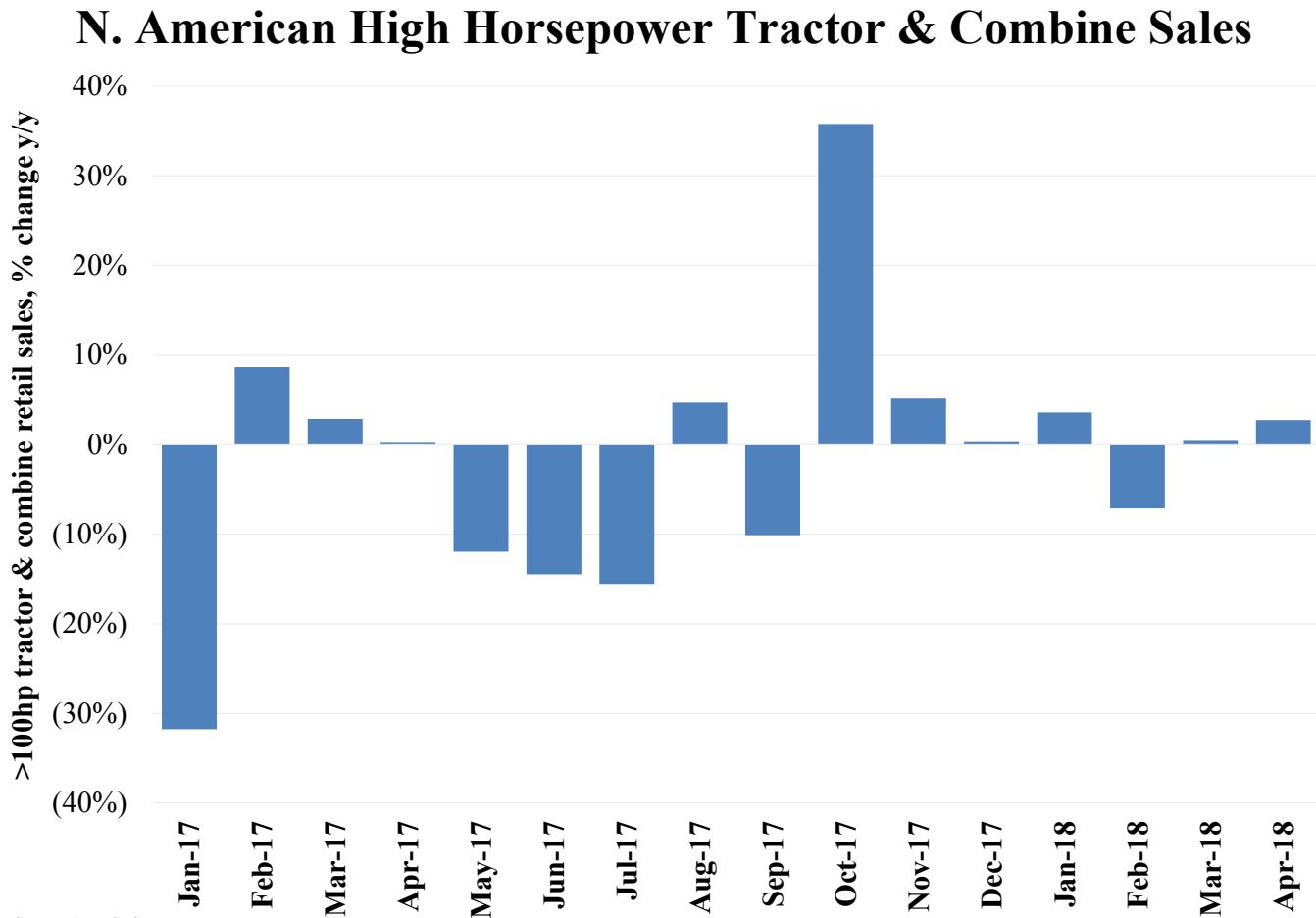


Source: AEM, Cleveland Research estimates



Source: AEM, Cleveland Research estimates

North America Large Ag Equipment Sales

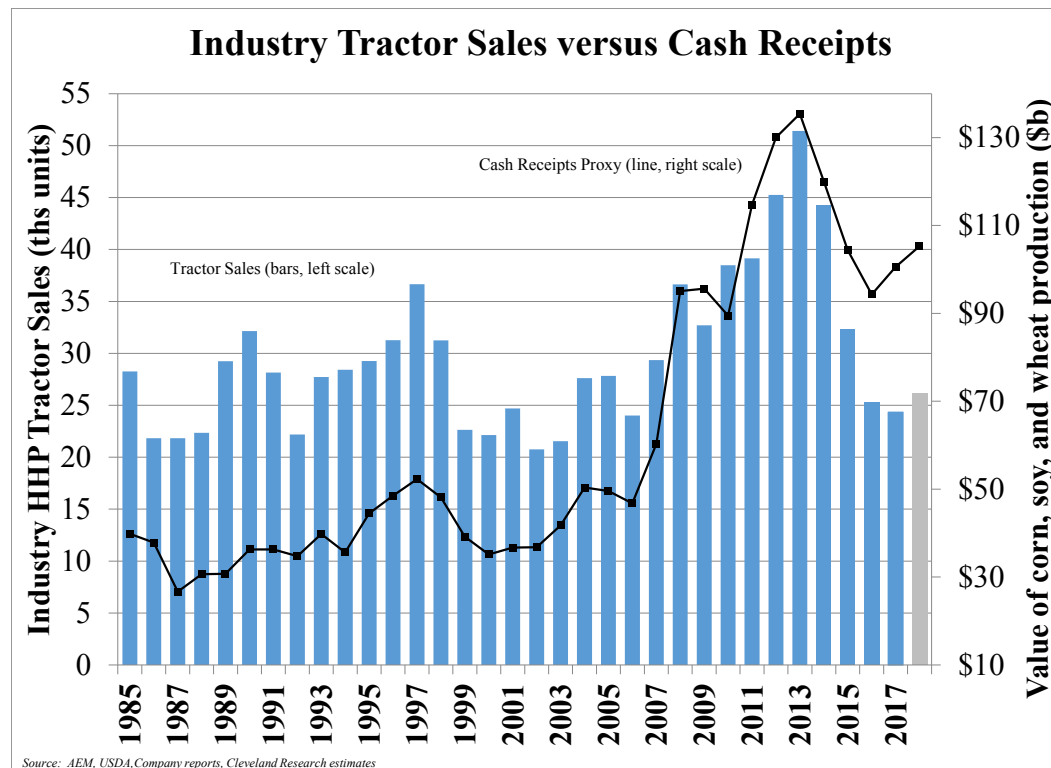


Source: AEM, CRC estimates

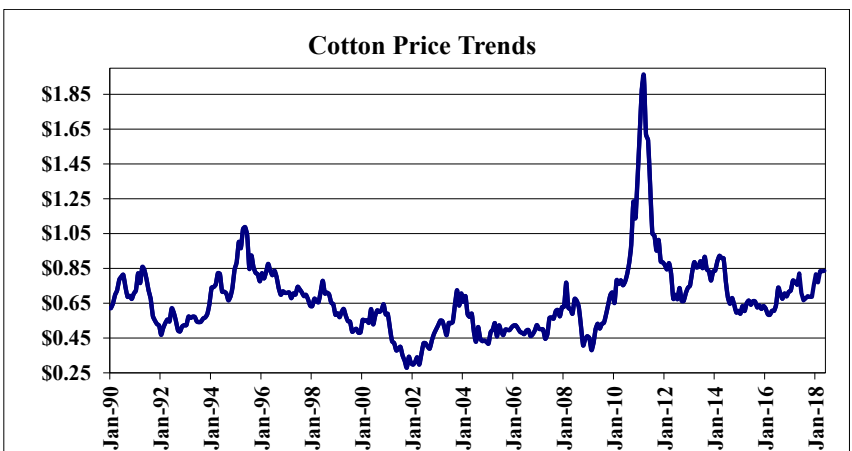
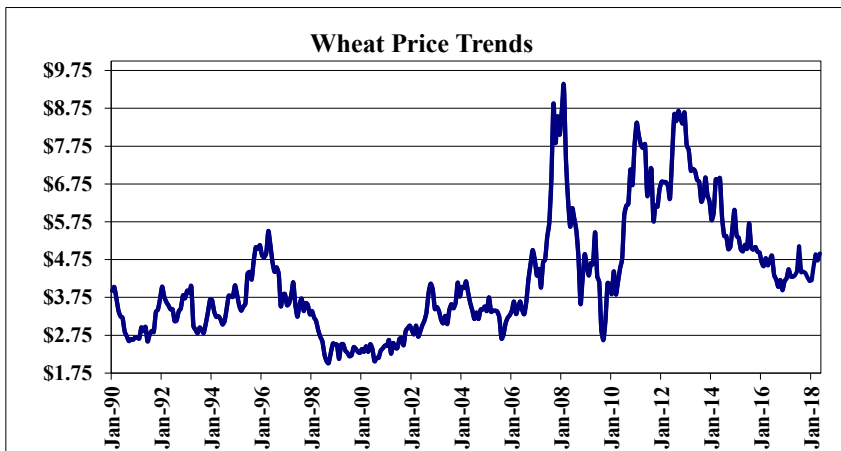
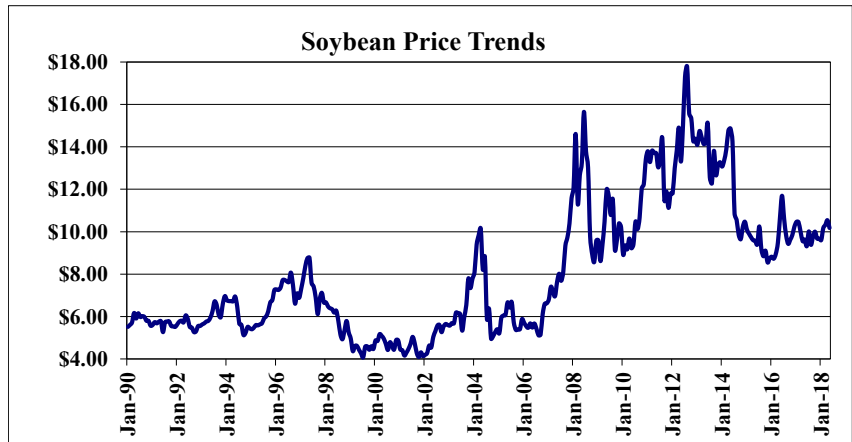
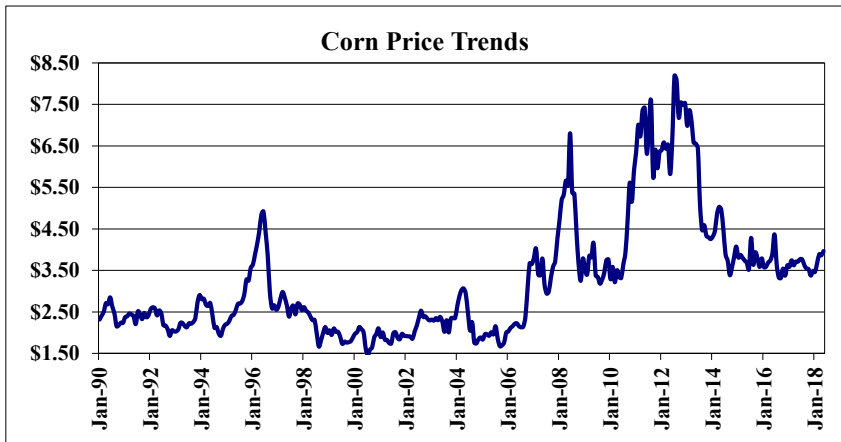
Commodity Prices – Cash Receipts vs. Next Year Equipment Sales

USDA's May WASDE Update Highlights – The following chart illustrates the historical relationship between the value of production of corn, soybeans, and wheat in the U.S. compared to annual industry sales of high horsepower tractors.

USDA's May crop report was strong with cash receipts proxy forecast down 2% y/y in 2017/18 and up 5% in 2018/19. For 2018/19, corn cash receipt forecasts are for 5% growth, wheat forecasts are up 1%, and soybean forecasts are up 4% y/y.



Long Term Commodity Price Trends



Commodity Trends – Long Run Supply and Demand Projections

US Corn, Soy, and Wheat Supply and Demand - Long Term Annual Forecast 2018

US Corn Balance Sheet - USDA Long Term Forecast (Feb 2018)													
Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	88	94	90	88	90	90	90	90	89	89	88	88	88
Harvested	81	87	83	81	83	83	82	82	81	81	81	80	80
Yield (bu/acre)	168	175	177	174	176	178	180	182	184	186	188	190	192
Beginning Stocks (MM bu)	1,731	1,737	2,293	2,182	2,607	2,597	2,637	2,647	2,657	2,617	2,632	2,627	2,607
Production (MM bu)	13,601	15,148	14,604	14,040	14,515	14,680	14,755	14,920	14,900	15,065	15,130	15,200	15,360
Imports (MM bu)	67	57	50	50	50	50	50	50	50	50	50	50	50
Total Supply (MM bu)	15,399	16,942	16,947	16,272	17,172	17,327	17,442	17,617	17,607	17,732	17,812	17,877	18,017
Feed & Residual (MM Bu)	5,130	5,463	5,500	5,375	5,600	5,700	5,750	5,900	5,925	6,000	6,075	6,125	6,250
Food, Seed, & Industrial Total	6,635	6,891	7,040	7,115	7,025	7,015	7,020	7,010	6,990	7,000	6,985	6,970	6,955
Ethanol & By-Products	5,206	5,463	5,575	5,625	5,550	5,525	5,525	5,500	5,475	5,475	5,450	5,425	5,400
Domestic Use	11,765	12,354	12,540	12,490	12,625	12,715	12,770	12,910	12,915	13,000	13,060	13,095	13,205
Exports	1,898	2,293	2,225	2,100	1,950	1,975	2,025	2,050	2,075	2,100	2,125	2,175	2,200
Total Use	13,663	14,647	14,765	14,590	14,575	14,690	14,795	14,960	14,990	15,100	15,185	15,270	15,405
Ending Stocks	1,738	2,295	2,182	1,682	2,597	2,637	2,647	2,657	2,617	2,632	2,627	2,607	2,612
Ending Stocks/Use	12.7%	15.7%	14.8%	11.5%	17.8%	18.0%	17.9%	17.8%	17.5%	17.4%	17.3%	17.1%	17.0%
Weeks Carryover	6.6	8.1	7.7	6.0	9.3	9.3	9.3	9.2	9.1	9.1	9.0	8.9	8.8
Average Farm Price (\$/bu)	\$3.61	\$3.36	\$3.40	\$3.80	\$3.35	\$3.35	\$3.40	\$3.40	\$3.45	\$3.50	\$3.50	\$3.55	\$3.60
Value of Production	\$49,100	\$50,897	\$49,654	\$53,352	\$48,625	\$49,178	\$50,167	\$50,728	\$51,405	\$52,728	\$52,955	\$53,960	\$55,296
% change y/y	-7%	4%	-2%	7%	-9%	1%	2%	1%	1%	3%	0%	2%	2%

U.S. Soybean Balance Sheet - USDA Long Term Forecast (Feb 2018)													
Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	83	83	90	91	91	92	92	92	92	92	92	92	92
Harvested	82	83	90	90	90	91	91	91	91	91	91	91	91
Yield Per Harvested Acre (Bushels)	48	52	49	48	49	50	50	51	51	52	52	53	53
Beginning Stocks	191	197	302	425	376	351	324	323	325	328	321	324	331
Production	3,926	4,296	4,392	4,360	4,410	4,475	4,550	4,595	4,645	4,665	4,715	4,760	4,810
Imports	24	22	25	25	25	25	25	25	25	25	25	25	25
Total Supplies	4,141	4,515	4,718	4,810	4,811	4,851	4,899	4,943	4,995	5,018	5,061	5,109	5,166
Crush	1,886	1,899	1,990	1,970	1,985	2,005	2,025	2,050	2,075	2,095	2,120	2,145	2,165
Exports	1,936	2,174	2,065	2,325	2,335	2,380	2,410	2,425	2,450	2,460	2,475	2,490	2,515
Seed & Residual	121	128	128	140	140	141	142	142	142	142	142	143	143
Total Use	3,943	4,214	4,188	4,435	4,460	4,526	4,577	4,617	4,667	4,697	4,737	4,778	4,823
Ending Stocks	197	301	530	376	351	324	323	325	328	321	324	331	342
Stocks/Use	5.0%	7.1%	12.7%	8.5%	7.9%	7.2%	7.1%	7.0%	7.0%	6.8%	6.8%	6.9%	7.1%
Average Price (\$/bu)	\$8.95	\$9.47	\$9.35	\$9.40	\$9.45	\$9.45	\$9.50	\$9.50	\$9.60	\$9.75	\$9.75	\$9.80	\$9.80
Value of Production	\$35,138	\$40,683	\$41,065	\$40,984	\$41,675	\$42,289	\$43,225	\$43,653	\$44,592	\$45,484	\$45,971	\$46,648	\$47,138
% change y/y	-11%	16%	1%	0%	2%	1%	2%	1%	2%	2%	1%	1%	1%

Commodity Trends – Long Run Supply and Demand Projections (Cont.)

US Corn, Soy, and Wheat Supply and Demand - Long Term Annual Forecast 2018 (continued)

U.S. Wheat Balance Sheet - USDA Long Term Forecast (Feb 2018)

Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	55	50	46	45	46	47	47	47	47	48	48	48	48
Harvested	47	44	38	38	39	40	40	40	40	41	41	41	41
Yield Per Harvested Acre (Bushels)	44	53	46	47	48	48	49	49	49	50	50	51	51
Beginning Stocks	752	976	1,181	935	813	739	714	690	667	648	650	658	667
Production	2,062	2,309	1,741	1,815	1,869	1,928	1,944	1,960	1,976	2,032	2,048	2,064	2,077
Imports	113	118	155	135	130	130	130	130	130	120	120	120	120
Total Supplies	2,927	3,402	3,076	2,885	2,812	2,797	2,788	2,780	2,773	2,800	2,818	2,842	2,864
Food	957	949	963	950	950	950	955	960	960	965	965	970	975
Seed	67	61	63	62	63	63	63	63	65	65	65	65	65
Feed&residual	152	156	70	110	100	110	110	110	110	120	120	130	140
Exports	775	1,055	910	950	960	960	970	980	990	1,000	1,010	1,010	1,010
Total Use	1,952	2,222	2,006	2,072	2,073	2,083	2,098	2,113	2,125	2,150	2,160	2,175	2,190
Ending Stocks	976	1,181	1,070	813	739	714	690	667	648	650	658	667	674
Stocks/Use	50.0%	53.2%	53.3%	39.2%	35.6%	34.3%	32.9%	31.6%	30.5%	30.2%	30.5%	30.7%	30.8%
Average Price (\$/bu)	\$4.89	\$3.89	\$4.70	\$4.60	\$4.80	\$4.90	\$5.00	\$5.10	\$5.10	\$5.10	\$5.10	\$5.10	\$5.20
Value of Production	\$10,083	\$8,982	\$8,183	\$8,349	\$8,971	\$9,447	\$9,720	\$9,996	\$10,078	\$10,363	\$10,445	\$10,526	\$10,800
% change y/y	-17%	-11%	-9%	2%	7%	5%	3%	3%	1%	3%	1%	1%	3%

Total Acreage and Value of U.S. Corn, Soy and Wheat Production - USDA February 2018 Projection

Total Corn, Soy, Wheat	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted (mm acres)	226	228	226	224	227	229	229	229	228	228	228	227	227
Harvested (mm acres)	210	213	210	209	212	213	213	213	212	213	212	212	212
Yield (bu/acre)	93	102	99	97	98	99	100	101	101	102	103	104	105
Production	19,589	21,753	20,737	20,215	20,794	21,083	21,249	21,475	21,521	21,762	21,893	22,024	22,247
Average Price (\$/bu)	\$4.81	\$4.62	\$4.77	\$5.08	\$4.77	\$4.79	\$4.85	\$4.86	\$4.93	\$4.99	\$5.00	\$5.05	\$5.09
Value of Production	\$94,320	\$100,562	\$98,902	\$102,685	\$99,271	\$100,914	\$103,112	\$104,377	\$106,075	\$108,574	\$109,371	\$111,134	\$113,234
% change y/y	-10%	7%	-2%	4%	-3%	2%	2%	1%	2%	2%	1%	2%	2%

Source: USDA, Cleveland Research estimates

U.S. Acreage Planted Per Crop Year

