

# ***Ag Equipment Intelligence***

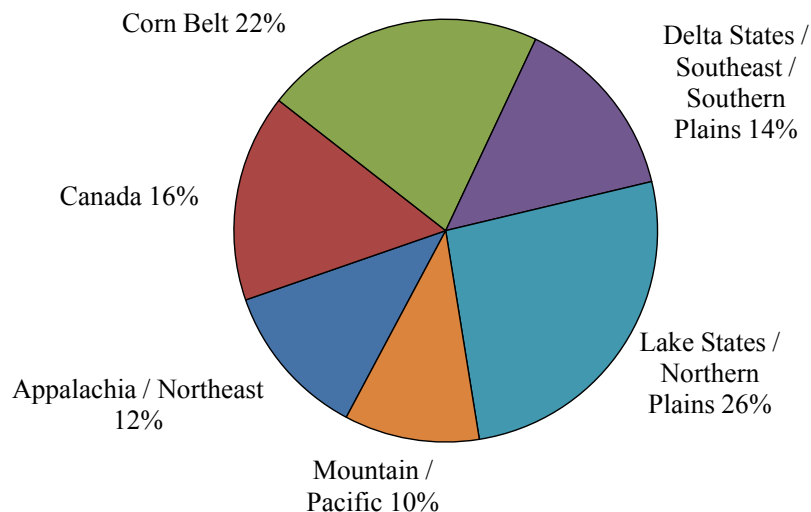
July 2017 Dealer Sentiments & Business  
Conditions Update

# Monthly Ag Equipment Intelligence North American Dealer Survey

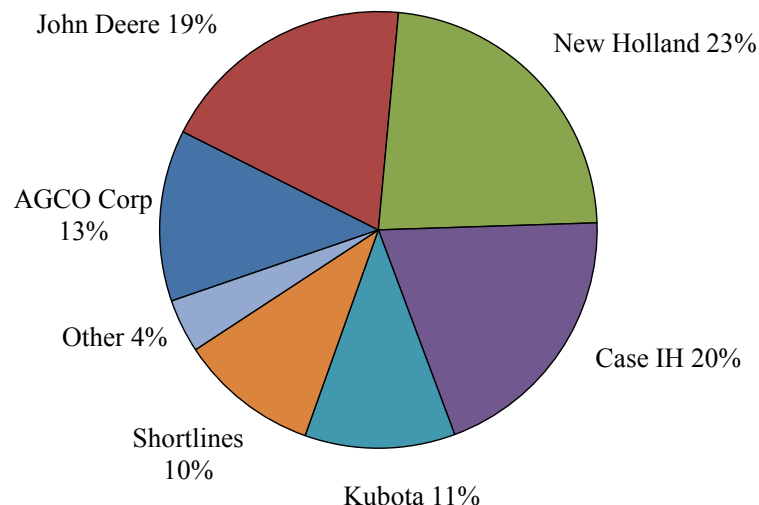
## Background:

- We are pleased to announce the results of the June 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 June survey had ~130 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 down 2% y/y in June, better than the 5% declines in May. A net 3% of dealers missed their sales budgets in June, an improvement from the 11% that missed last month. Commercial and consumer lawn equipment and GPS / Precision ag sales showed strength, while large equipment demand remains weak.
- **Outlook** –The 2017 sales forecast was revised to flat y/y and improved from down 2% in May. A net 4% of dealers were more optimistic in June vs the net 2% less optimistic in May. Commentary suggests dealers are encouraged by customer activity, but remain cautious as commodity prices remain weak.
- **Inventory** – A net 25% of dealers reported new equipment inventories too high, an improvement from the 30% in May. Used equipment inventories remained elevated as a net 26% of dealers reported used inventory as too high, better than the 34% last month. Overall, inventories have come down from 2016 levels.
- **Pricing** – Dealers reported relatively flat new equipment pricing as OEM price increases have been offset by discounting at the dealer level. Used equipment values fell slightly in the month with large tractor pricing reported down 5% y/y vs the 4% declines in May. Used combine pricing was down 6% y/y, inline with May.

# Monthly Sales Growth

- Average dealer sales were reported down 2% y/y in June, better than the 5% declines in May. A net 3% of dealers missed their sales budgets in June, an improvement from the 11% that missed last month.
- A net 4% of dealers reported they are more optimistic, an improvement from the 2% reporting less optimism in May.

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

% Change y/y	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
AGCO	-4%	-1%	-19%	-7%	-22%	-12%	-12%	-12%	-5%	-13%	-4%	-11%	-2%	-13%	-1%
John Deere	-11%	-6%	-8%	-16%	-17%	-4%	-9%	-11%	-6%	-1%	-7%	-1%	-4%	-1%	-1%
New Holland	-16%	2%	-3%	-8%	-11%	-12%	-14%	-9%	-15%	-7%	2%	-12%	-13%	-4%	-1%
Case IH	-9%	-19%	-8%	-5%	-11%	-8%	-11%	-11%	-14%	-8%	-4%	-5%	-3%	-16%	-2%
Kubota	2%	6%	2%	8%	1%	4%	1%	-1%	5%	-5%	2%	7%	2%	1%	0%
Shortlines/Other	-6%	-7%	-4%	8%	-22%	-22%	-11%	-7%	-14%	-9%	5%	4%	-9%	-1%	-1%
<b>Total</b>	<b>-10%</b>	<b>-6%</b>	<b>-9%</b>	<b>-8%</b>	<b>-11%</b>	<b>-7%</b>	<b>-10%</b>	<b>-10%</b>	<b>-9%</b>	<b>-6%</b>	<b>-5%</b>	<b>-5%</b>	<b>-5%</b>	<b>-5%</b>	<b>-2%</b>

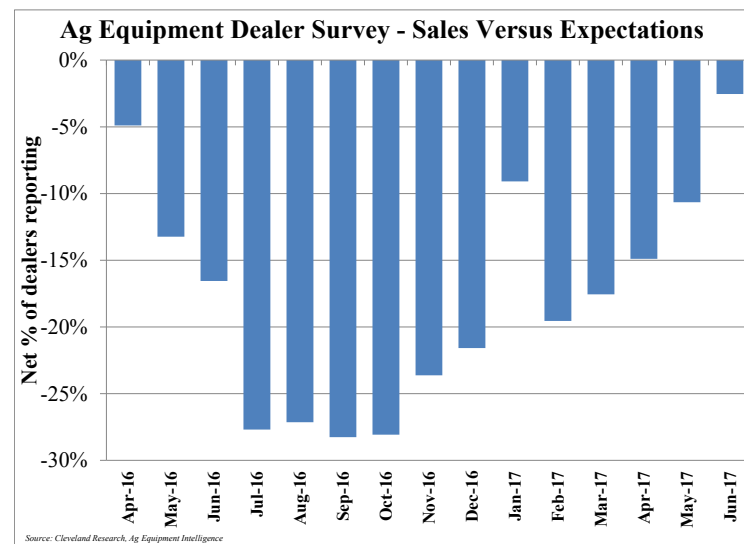
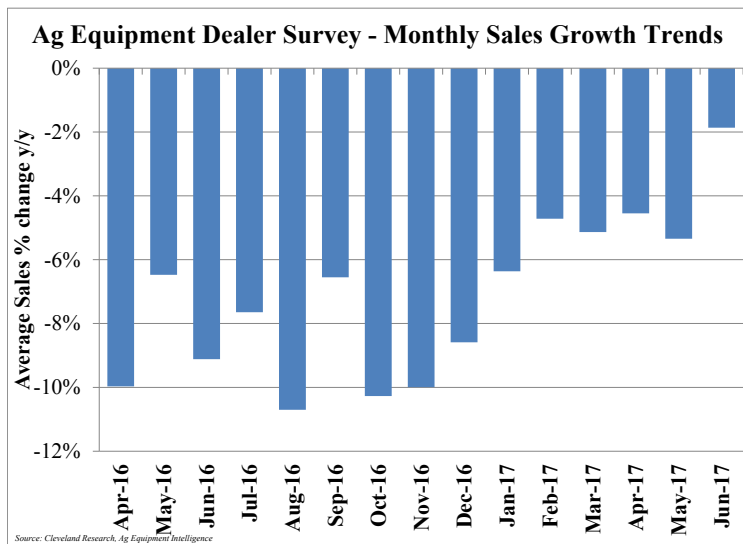
Source: Cleveland Research, Ag Equipment Intelligence

**N. American Farm Equipment Dealer Survey - Sales Versus Expectations**

% of Dealers Reporting	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
Better than expected	24%	21%	22%	15%	14%	14%	16%	8%	11%	16%	11%	12%	16%	19%	16%
In line with expectations	48%	46%	40%	43%	44%	44%	40%	61%	57%	59%	58%	58%	54%	52%	65%
Worse than expected	29%	34%	38%	42%	41%	42%	44%	31%	32%	25%	31%	30%	30%	30%	19%
<b>Net % (Better - Worse)</b>	<b>-5%</b>	<b>-13%</b>	<b>-17%</b>	<b>-28%</b>	<b>-27%</b>	<b>-28%</b>	<b>-28%</b>	<b>-24%</b>	<b>-22%</b>	<b>-9%</b>	<b>-20%</b>	<b>-18%</b>	<b>-15%</b>	<b>-11%</b>	<b>-3%</b>

Source: Cleveland Research, Ag Equipment Intelligence

# Monthly Sales Growth Continued



N. American Farm Equipment Dealer Survey - Average Dealer Revenue Growth Trends															
% of Dealers Reporting	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
Positive Sales Growth	27%	29%	27%	20%	19%	22%	18%	20%	26%	27%	25%	32%	34%	39%	37%
Flat Sales	23%	16%	23%	21%	19%	22%	15%	23%	17%	22%	31%	23%	19%	18%	32%
Negative Sales Growth	50%	55%	50%	59%	62%	56%	67%	58%	58%	52%	45%	45%	47%	43%	32%
<b>Net % Reporting Growth</b>	<b>-23%</b>	<b>-26%</b>	<b>-23%</b>	<b>-39%</b>	<b>-43%</b>	<b>-33%</b>	<b>-48%</b>	<b>-38%</b>	<b>-32%</b>	<b>-25%</b>	<b>-20%</b>	<b>-13%</b>	<b>-13%</b>	<b>-4%</b>	<b>5%</b>
<b>Average % Change y/y</b>	<b>-10%</b>	<b>-6%</b>	<b>-9%</b>	<b>-8%</b>	<b>-11%</b>	<b>-7%</b>	<b>-10%</b>	<b>-10%</b>	<b>-9%</b>	<b>-6%</b>	<b>-5%</b>	<b>-5%</b>	<b>-5%</b>	<b>-5%</b>	<b>-2%</b>

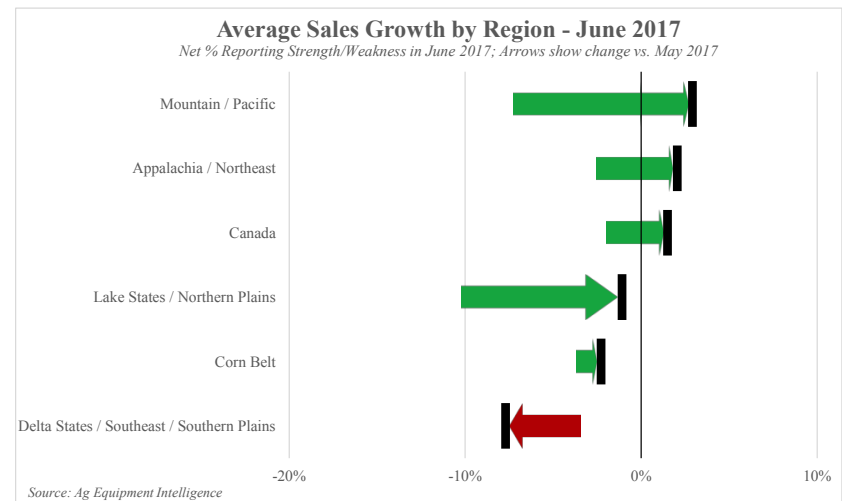
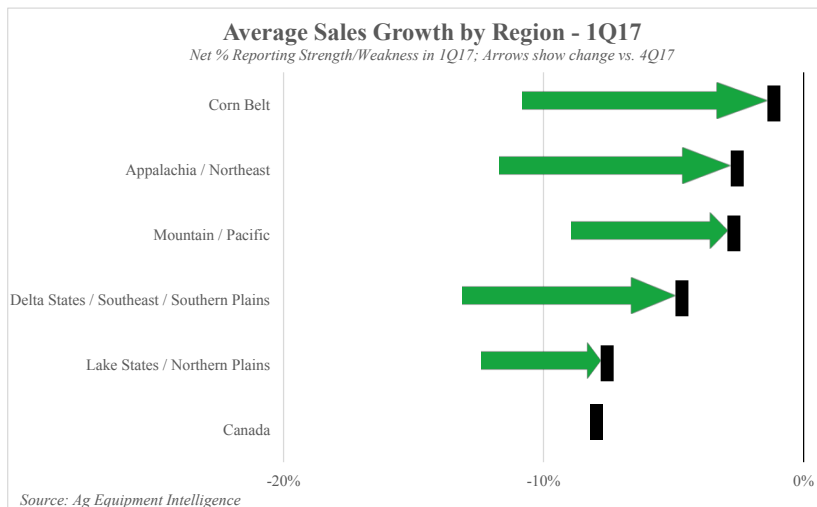
Source: Cleveland Research

Optimism/Sentiment vs. Last Month															
% of Dealers Reporting	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
More Optimistic	15%	22%	11%	16%	11%	14%	13%	15%	17%	31%	21%	26%	17%	19%	23%
Same	59%	51%	60%	44%	52%	49%	53%	60%	58%	48%	60%	47%	53%	61%	58%
Less Optimistic	26%	27%	30%	40%	36%	38%	34%	25%	26%	20%	19%	27%	30%	20%	19%
<b>Net % Dealer Optimism</b>	<b>-11%</b>	<b>-4%</b>	<b>-19%</b>	<b>-24%</b>	<b>-25%</b>	<b>-24%</b>	<b>-21%</b>	<b>-10%</b>	<b>-9%</b>	<b>11%</b>	<b>1%</b>	<b>-1%</b>	<b>-13%</b>	<b>-2%</b>	<b>4%</b>

Source: Cleveland Research

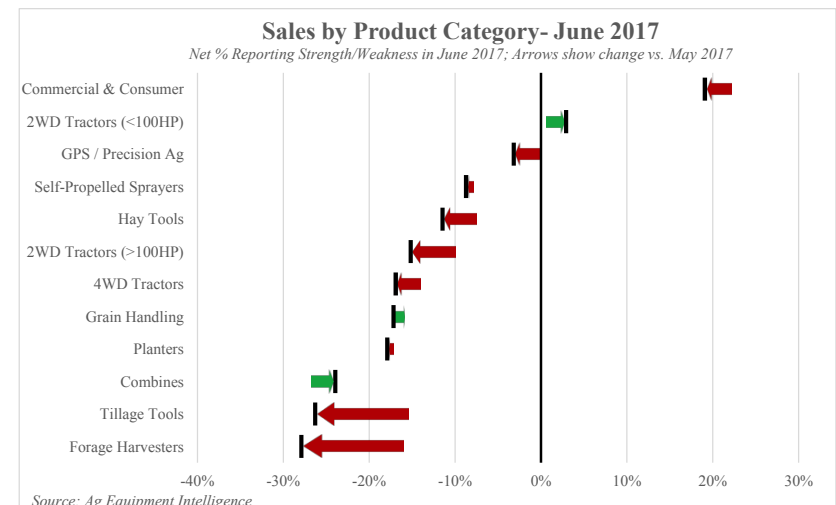
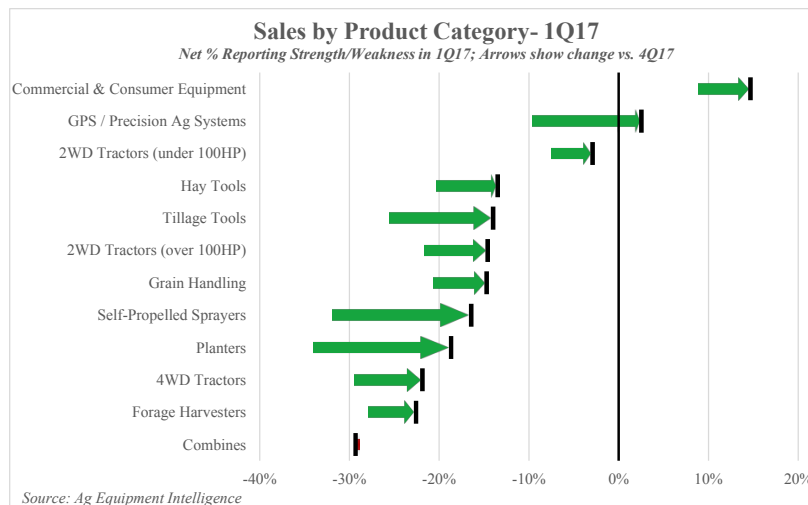
# Monthly Sales Growth by Region

- Sales trends by region were mixed in the month. 5 of the 6 regions improved from last month's results, while trends in the Delta States / Southeast / Southern Plains region deteriorated from May. Sales growth by region in 2Q improved from 1Q with forecasts in the down 5% to down 1% range vs the down 8% to down 1% range in 1Q.

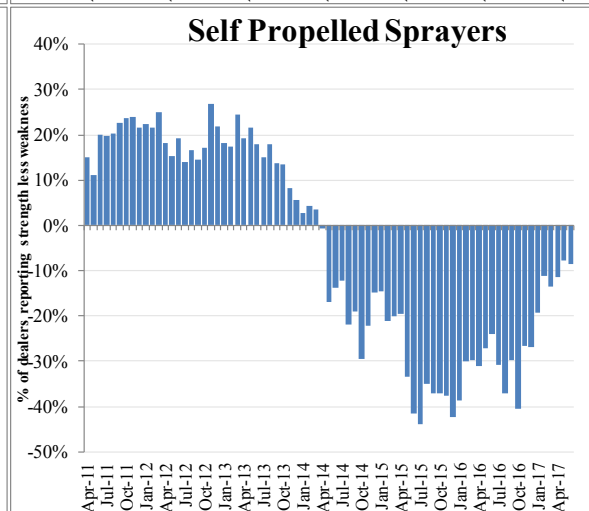
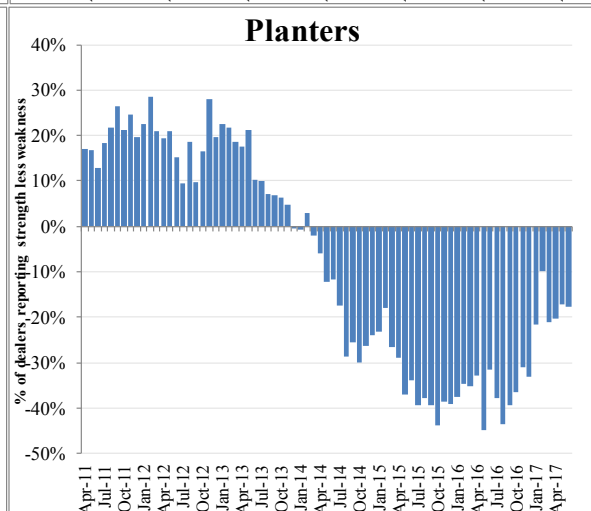
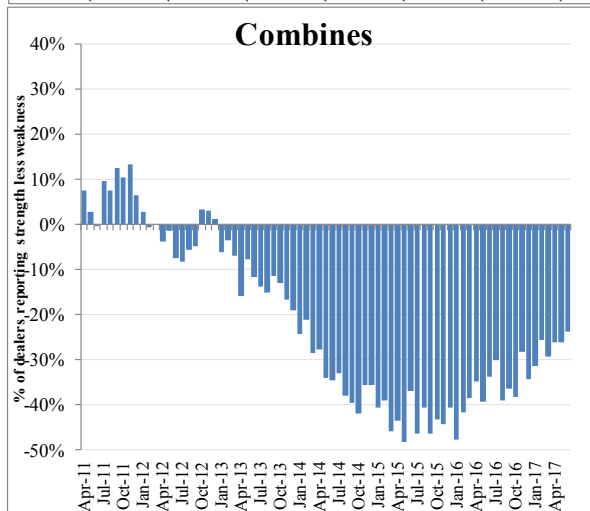
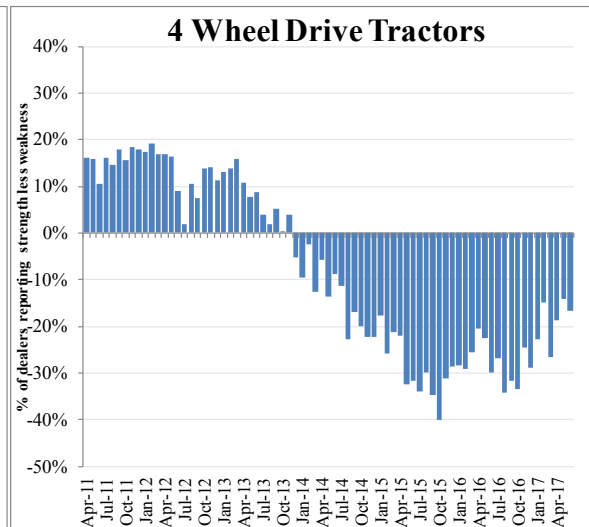
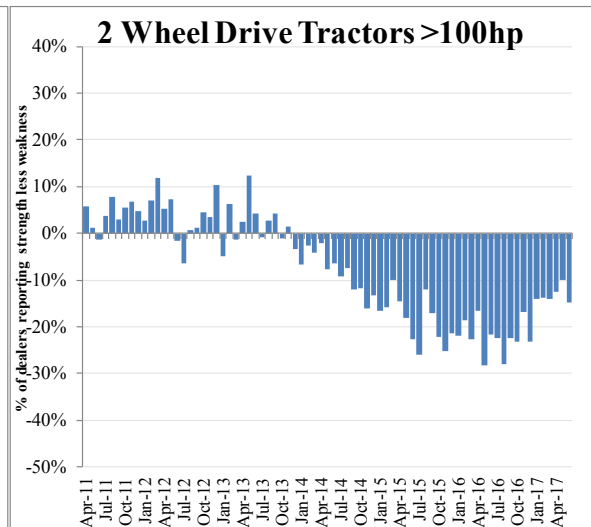
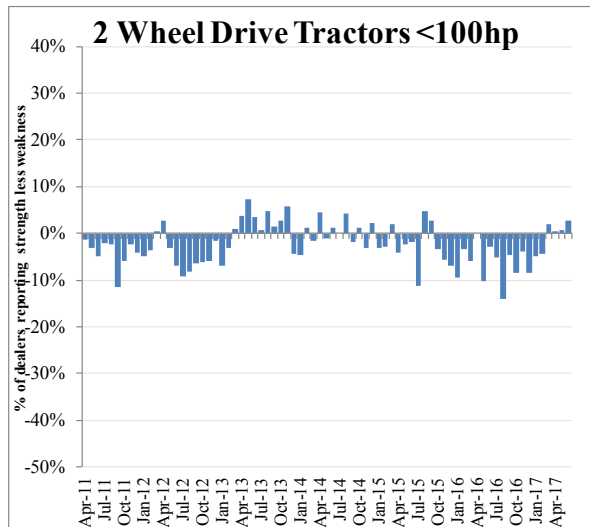


# Equipment Category Sales Trends

- Commercial and consumer lawn equipment and GPS / Precision ag sales showed strength, while large equipment demand remains weak. Sequentially, the bulk of equipment category sales softened in June, though combines saw the greatest improvement from May. In 2Q, nine of twelve categories saw sequential improvement from 1Q compared to eleven categories improving from 4Q to 1Q.

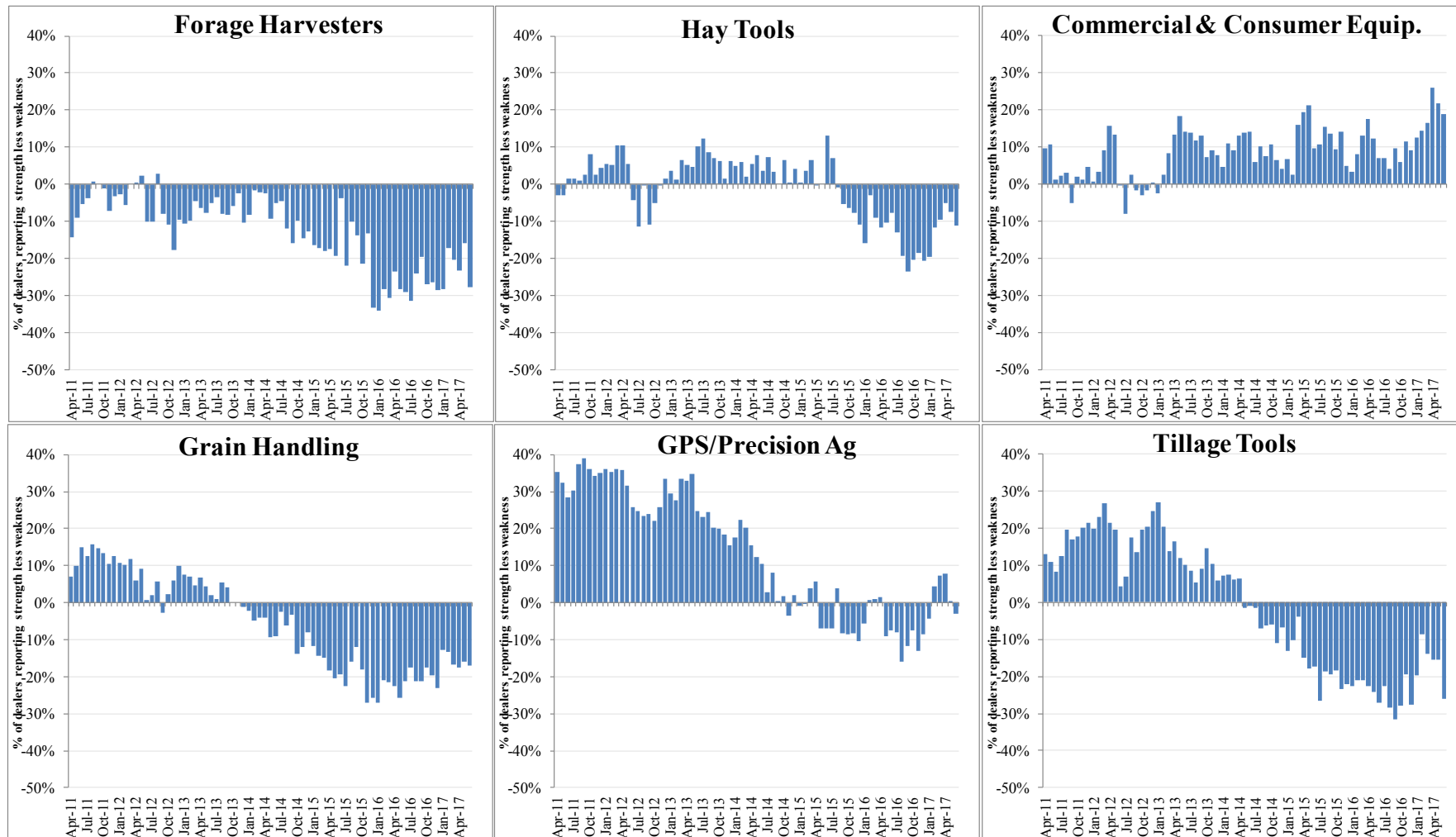


# Equipment Category Sales Trends





# Equipment Category Sales Trends (Continued)



## Average Dealer Sales Outlook

- The 2017 sales growth forecast was reported flat, an improvement from the YTD average of down 3% and down 2% in May. Dealers are optimistic as inventory levels and farmer optimism have shown improvement, but remain cautious on commodity prices.
- The bottom table details the 2017 industry outlooks from Deere, CNHI, and AGCO. N. America industry forecasts are down 5-10% on average.

N. American Farm Equipment Dealer Survey - 2017 Sales Forecast												
% change y/y	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
AGCO	-1%	-2%	-20%	-10%	-8%	-2%	-1%	2%	-5%	-3%	-6%	-4%
John Deere	-11%	-4%	-15%	-1%	-6%	-5%	-3%	-3%	-3%	0%	0%	3%
New Holland	-4%	-3%	-21%	-3%	-5%	-4%	-6%	-3%	-5%	-11%	-4%	0%
Case IH	-14%	-6%	-20%	-12%	2%	-13%	-7%	-3%	-6%	-4%	-3%	-6%
Kubota	6%	-24%	4%	-3%	-6%	-2%	-8%	3%	4%	1%	1%	3%
Shortlines/Other	-3%	-5%	-19%	-2%	0%	-10%	1%	-2%	-6%	-10%	2%	0%
<b>Overall</b>	<b>-8%</b>	<b>-7%</b>	<b>-8%</b>	<b>-5%</b>	<b>-4%</b>	<b>-4%</b>	<b>-4%</b>	<b>-2%</b>	<b>-4%</b>	<b>-4%</b>	<b>-2%</b>	<b>0%</b>

Source: Cleveland Research, Ag Equipment Intelligence

2017 Ag Equipment Industry Sales Outlook (units)			
Geography	Deere	CNH Industrial	AGCO Corp.
N. America	Down 5%	Tractors (5-10%), Combines (0-5%)	Down 5-10%
Western Europe	Flat to Down 5%	Tractors Flat, Combines Flat	Flat to Down 5%
Latin America	Up 20%	Tractors 15%, Combines 10-15%	Up 15%
CIS or ROW	na	na	na
Asia	Flat to up Slightly	Tractors 0-5%, Combines 0-5%	na

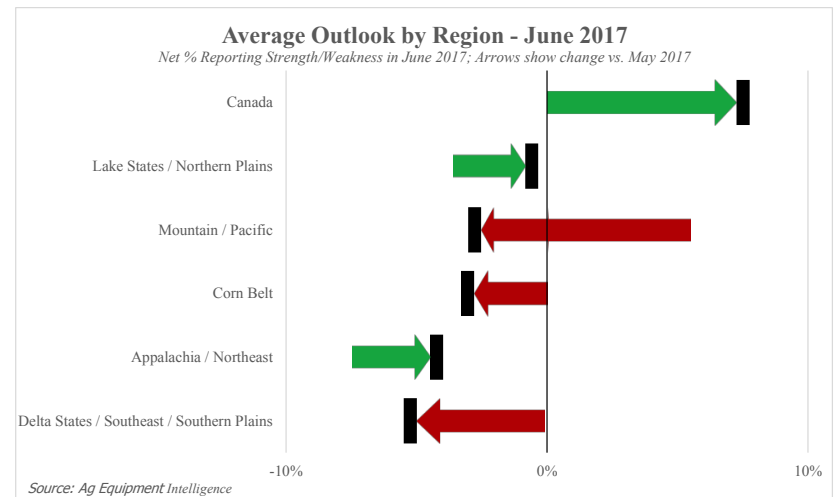
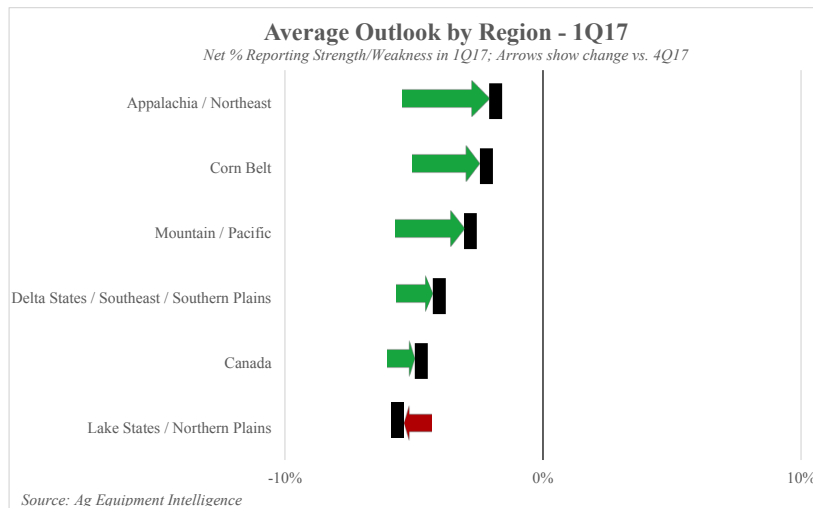
Source: Company reports, CRC estimates

## Most Interesting Commentary - Monthly Sales and Outlook

- *Compact tractors and turf equipment sales were strong in the month, while haytools remain soft. We continue to see a more positive attitude from farmers driven by the near term surge in pricing.*
- *Our large, new equipment sales have been below expectations but our used sales have been picking up the slack. We have made great strides in reducing our used equipment inventories.*
- *Business has picked up relative to expectations, but we are below our internal plan.*
- *Small tractor sales carried us through the month of June. Mid-sized tractors and hay tool sales were off substantially y/y.*
- *Our sales in turf and light industrial grew in the month, offsetting declines in ag equipment sales.*
- *Consumer products, and compact tractors <60hp were strong in June, while hay tools, combines, and tractors >100hp were weak.*
- *May came in way well below our expectations and I believe the growth we saw in June is primarily carryover from what would normally have been May business.*
- *We feel that the general economy is improving. Our dairy and poultry sectors are strong, along with the fruit and vegetable industry. It appears that commodity values could tick upwards as cattle and hog producers are doing well.*
- *The continued drought is now a major concern for row crop sales with 40% of wheat put up for hay in our area. Customers have told us they are waiting until harvest season to consider buying new equipment.*
- *While our used equipment inventories are inline and lower than most dealers of our size, the glut of used continues to make trade ins very difficult.*
- *Our manufacturer continues to take away programming to move equipment, while we have also heard of other OEM programs that have improved vs 1H17. Overall, the programs are not as strong which could prevent future market share gains.*
- *Our combine inventories are elevated particularly due to the absence of manufacturer incentives that we have historically had. This is a totally new way of programming used equipment and it doesn't appear to be working at this time.*
- *We wonder if the zero percent financing is no longer holding the weight that it did over the past few years with the lifestyle customer. Perhaps the small horsepower boom cycle of 2014-2016 has finally caught up to us, and consumers do not have the need to replenish their equipment.*

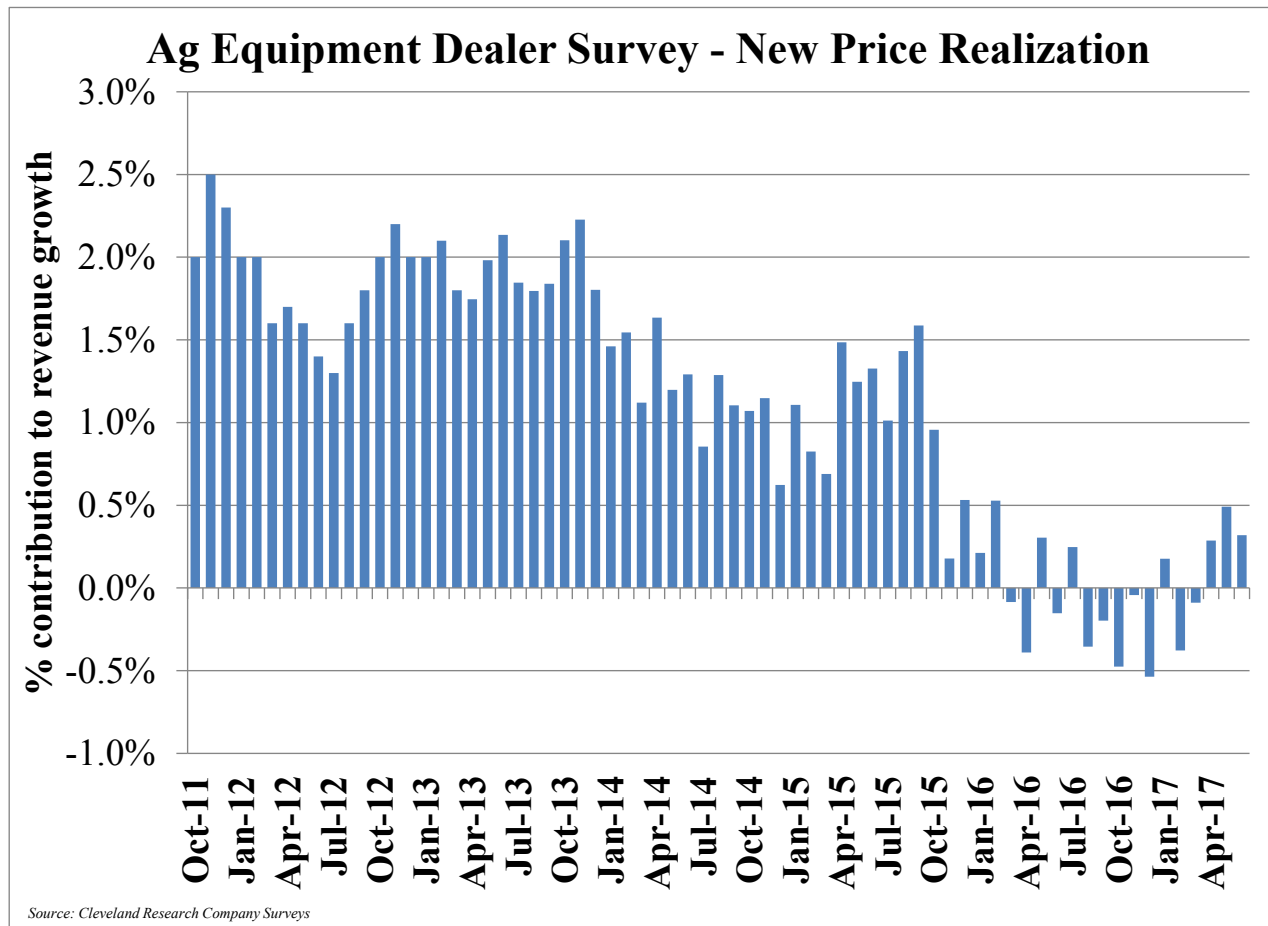
# 2017 Sales Outlook

- The 2017 outlook in June was mixed with improvement in Canada and the largest sequential decline in the Mountain / Pacific region. Sales outlook by region in 2Q improved from 1Q with forecasts in the down 4% to up 2% range vs the down 5% to down 2% range in 1Q. Dealers believe customer activity is sustainable through the 2H17 despite weak commodity prices.



## Pricing Trends

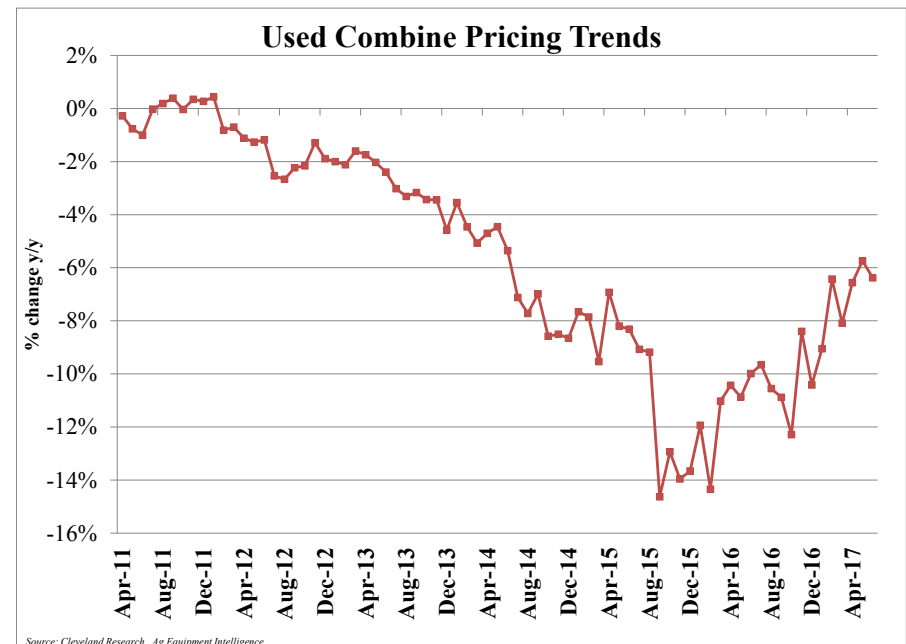
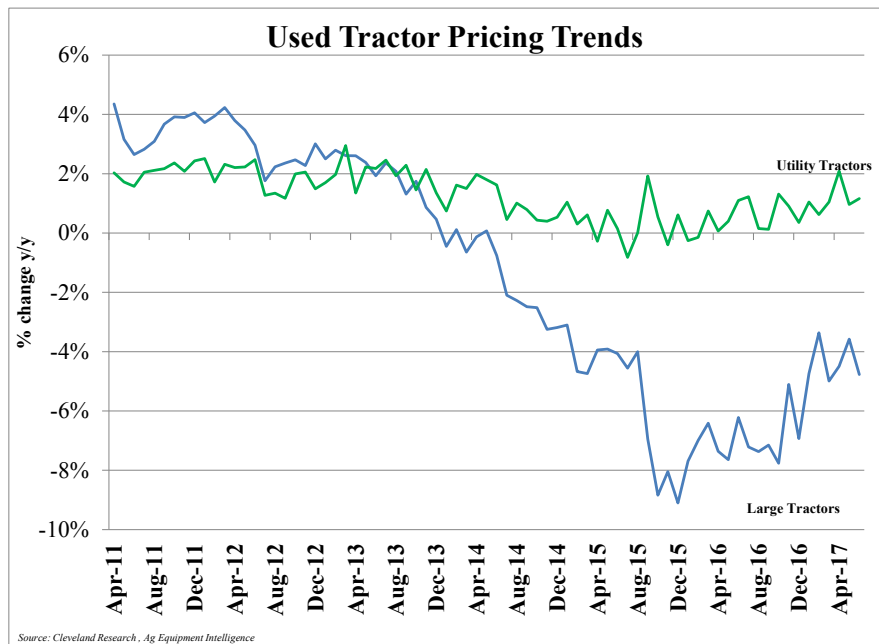
- Dealers reported relatively flat pricing over the last year as incentive programs have more than offset list price increases. Pricing has shown sequential improvement over the past 5 months. Commentary in the month suggests an absence of OEM incentive programs, but dealers are optimistic incentives could pick up in 2H17.



# Used Equipment Pricing

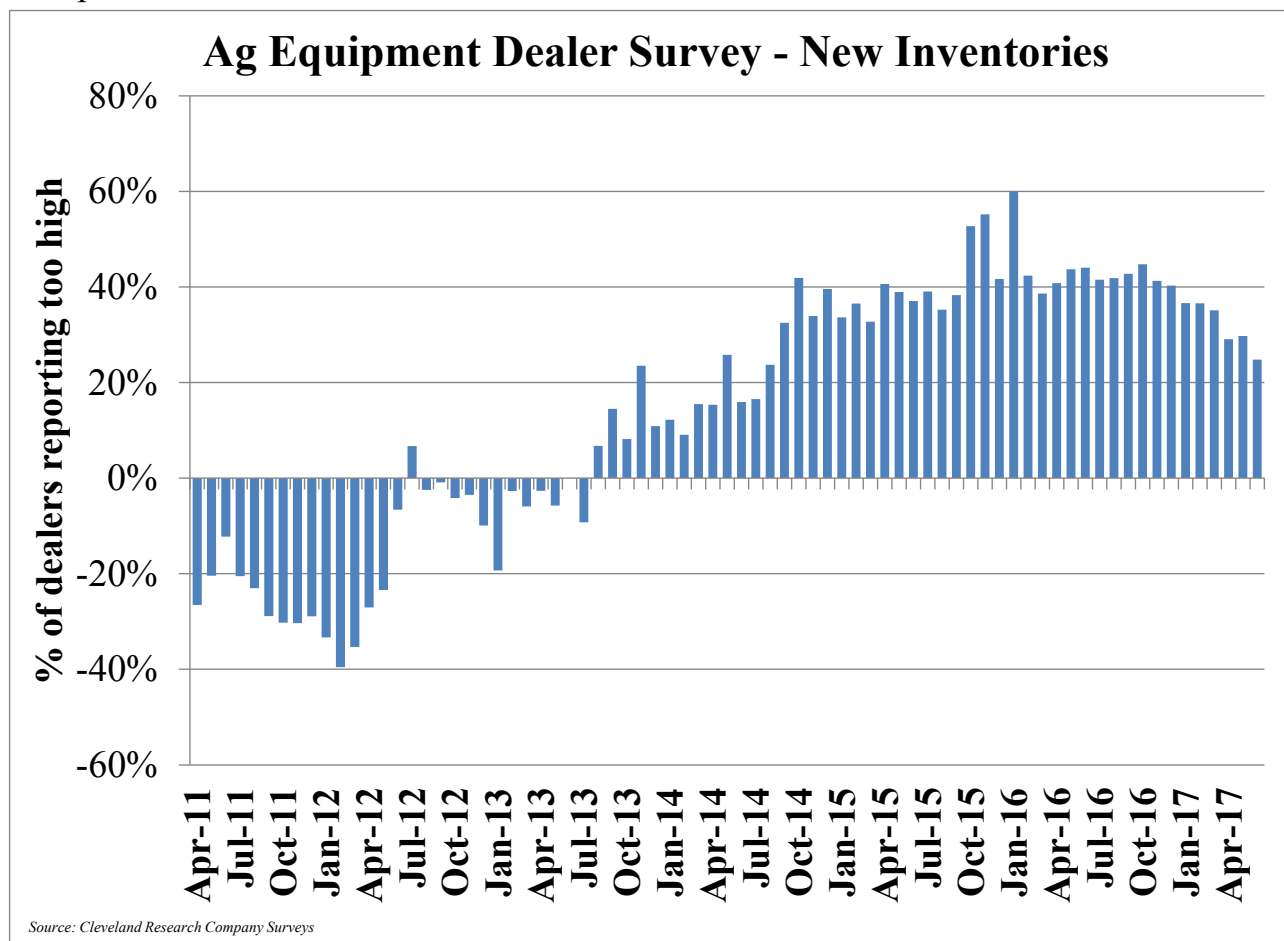
- Pricing trends were mixed in the month. Large tractors were reported down 5% y/y, below the 4% decline reported in May. Combine pricing was inline with May at down 6% y/y.

Used Tractor and Combine Values (Y/Y)																
	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	
Compact (<40HP)	0%	1%	2%	2%	1%	1%	2%	2%	1%	1%	1%	1%	2%	2%	2%	
Utility (40-100HP)	0%	0%	1%	1%	(0%)	(0%)	1%	0%	0%	1%	0%	1%	2%	0%	0%	
Row Crop (100HP+)	(6%)	(7%)	(5%)	(6%)	(6%)	(6%)	(6%)	(4%)	(5%)	(3%)	(2%)	(3%)	(4%)	(3%)	(4%)	
4WD Tractors	(8%)	(9%)	(8%)	(8%)	(9%)	(8%)	(10%)	(7%)	(9%)	(6%)	(4%)	(7%)	(5%)	(4%)	(6%)	
Combines	(10%)	(11%)	(10%)	(10%)	(11%)	(11%)	(12%)	(8%)	(10%)	(9%)	(6%)	(8%)	(7%)	(6%)	(6%)	



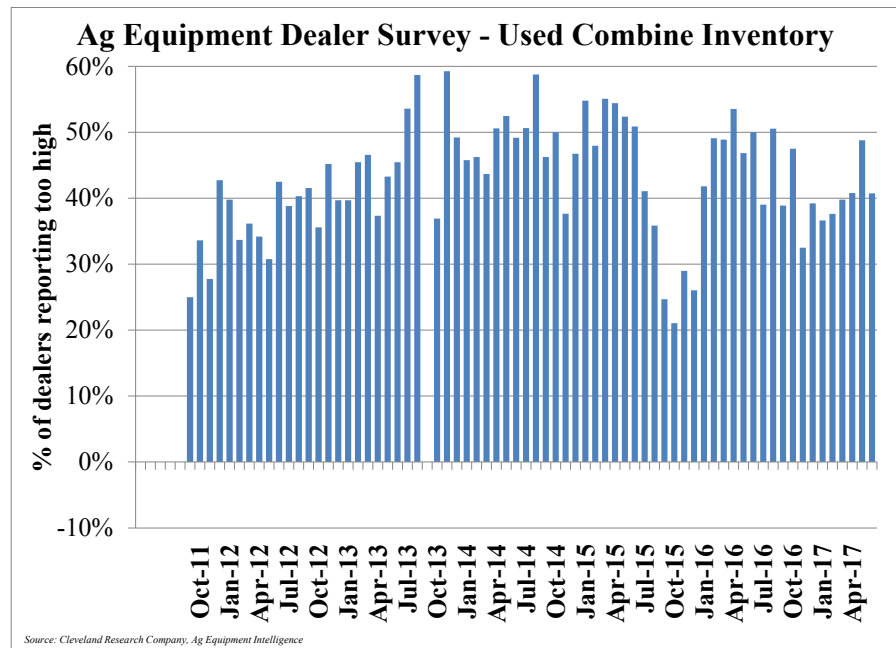
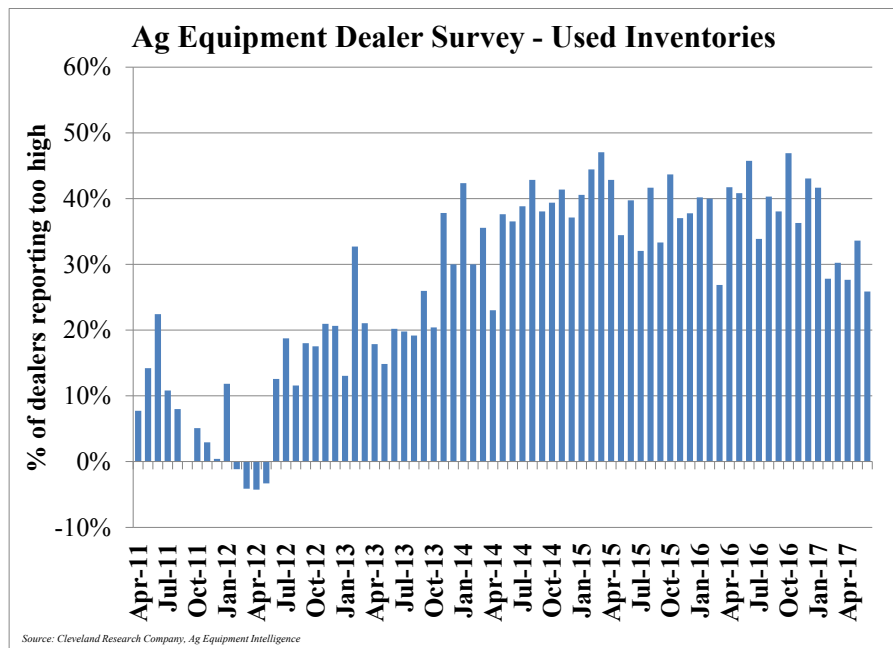
## New Equipment Inventory Levels

- A net 25% of dealers reported new equipment inventories too high (38% too high, 48% about right, 14% too low), better than the 30% in May. New inventory levels have been elevated for over 3 years, but have come down over the past 9 months.



# Used Equipment Inventory Levels

- A net 26% of dealers reported used equipment inventory as too high (35% too high, 55% about right, 9% too low), an improvement from the 34% reporting heightened inventory in May (41% too high, 51% about right, 8% too low). Used combine inventory levels were reported as too high by a net 41% of dealers in June, inline with 1Q trends, and better than the 49% in May.





# 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	
May-14	16,828	6,586	2,928	474	26,816	3,402	669	-2%	6%	-16%	-14%	-2%	-16%	-24%	
Jun-14	15,245	6,488	2,733	408	24,874	3,141	837	13%	2%	-16%	-25%	5%	-18%	-25%	
Jul-14	11,245	5,934	3,206	389	20,774	3,595	1,034	5%	7%	1%	-21%	4%	-2%	-30%	
Aug-14	9,691	5,444	2,575	371	18,081	2,946	946	4%	9%	-9%	-37%	2%	-14%	-24%	
Sep-14	11,333	6,193	3,276	492	21,294	3,768	1,142	32%	28%	-2%	-14%	23%	-4%	-11%	
Oct-14	10,950	7,085	4,920	733	23,688	5,653	983	14%	6%	-17%	-40%	1%	-21%	-41%	
Nov-14	5,857	4,177	1,891	354	12,279	2,245	450	4%	8%	-29%	-45%	-4%	-32%	-50%	
Dec-14	8,089	7,473	3,730	512	19,804	4,242	920	6%	8%	-24%	-47%	-3%	-28%	-40%	
Jan-15	5,382	4,506	3,124	220	13,232	3,344	384	13%	9%	-5%	-65%	3%	-15%	-53%	
Feb-15	5,305	3,250	1,955	348	10,858	2,303	399	0%	-13%	-19%	-39%	-10%	-23%	-24%	
Mar-15	9,702	4,799	2,539	499	17,539	3,038	470	-4%	-6%	-20%	-24%	-8%	-20%	-48%	
Apr-15	16,624	6,461	3,131	430	26,646	3,561	664	17%	8%	-17%	-42%	8%	-21%	-33%	
May-15	16,028	5,643	1,994	260	23,925	2,254	549	-5%	-14%	-32%	-45%	-11%	-34%	-18%	
Jun-15	15,679	6,526	2,409	300	24,914	2,709	502	3%	1%	-12%	-26%	0%	-14%	-40%	
Jul-15	14,372	7,039	2,469	268	24,148	2,737	806	28%	19%	-23%	-31%	16%	-24%	-22%	
Aug-15	9,800	5,087	1,768	167	16,822	1,935	679	1%	-7%	-31%	-55%	-7%	-34%	-28%	
Sep-15	10,917	5,348	1,934	249	18,448	2,183	845	-4%	-14%	-41%	-49%	-13%	-42%	-26%	
Oct-15	12,897	6,792	3,266	515	23,470	3,781	796	18%	-4%	-34%	-30%	-1%	-33%	-19%	
Nov-15	6,112	3,728	1,159	222	11,221	1,381	343	4%	-11%	-39%	-37%	-9%	-38%	-24%	
Dec-15	8,755	6,376	2,567	516	18,214	3,083	883	8%	-15%	-31%	1%	-8%	-27%	-4%	
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	13,344	5,418	1,833	152	20,747	1,985	619	-7%	-23%	-26%	-43%	-14%	-27%	-23%	
Aug-16	11,600	5,068	1,315	102	18,085	1,417	563	18%	0%	-26%	-39%	8%	-27%	-17%	
Sep-16	12,632	5,491	1,768	203	20,094	1,971	621	16%	3%	-9%	-18%	9%	-10%	-27%	
Oct-16	13,850	6,819	2,722	612	24,003	3,334	579	7%	0%	-17%	19%	2%	-12%	-27%	
Nov-16	7,382	3,656	907	205	12,150	1,112	294	21%	-2%	-22%	-8%	8%	-19%	-14%	
Dec-16	10,343	6,326	2,071	328	19,068	2,399	687	18%	-1%	-19%	-36%	5%	-22%	-22%	
Jan-17	6,821	3,854	1,396	147	12,218	1,543	289	15%	-9%	-30%	-40%	-2%	-31%	-36%	
Feb-17	7,868	3,319	1,335	199	12,721	1,534	276	22%	-2%	13%	-10%	13%	9%	15%	
Mar-17	13,950	5,328	1,790	338	21,406	2,128	457	12%	4%	-6%	31%	9%	-2%	32%	
Apr-17	19,473	5,595	2,425	441	27,934	2,866	504	10%	0%	-4%	31%	7%	0%	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%	

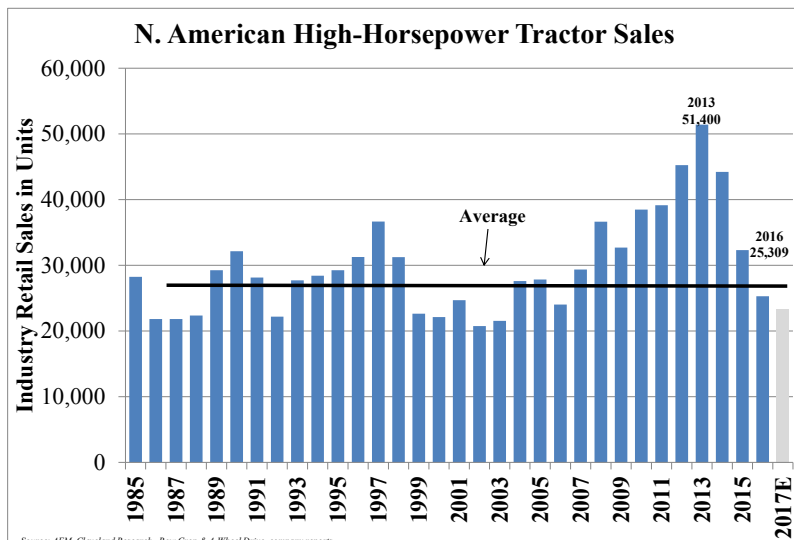
Source: AEM; Cleveland Research Company estimates. High hp tractors are row crop & 4-wheel drive.

# North American Farm Equipment Industry Inventory

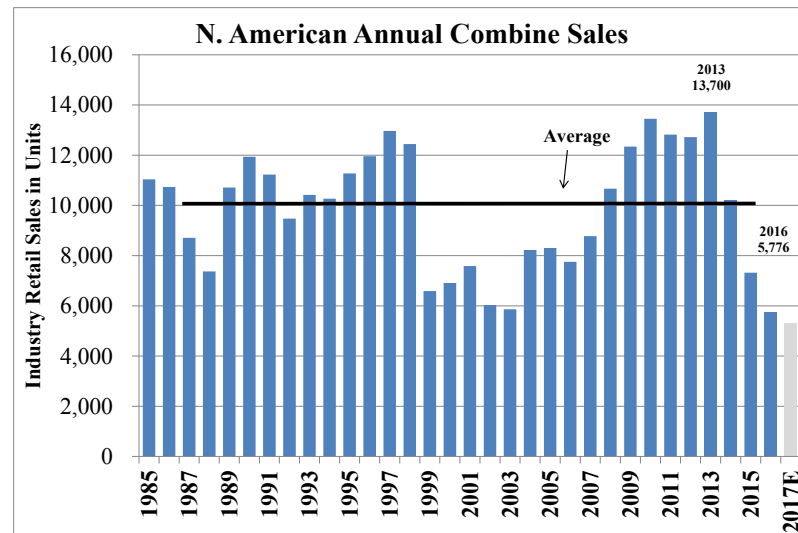
NORTH AMERICAN FARM EQUIPMENT INVENTORY														
	Inventory (Units)							Inventory to 12-mo. Sales						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	<40HP	Util	RC	4-WD	Total Tractor	Row Crop & 4WD	Comb
Apr-14	69,986	35,615	13,298	2,117	121,016	15,415	2,467	60%	55%	31%	26%	52%	31%	18%
May-14	66,364	34,755	13,505	2,255	116,879	15,760	2,734	57%	54%	32%	28%	51%	32%	21%
Jun-14	62,025	34,004	14,531	2,294	112,854	16,825	3,101	53%	52%	35%	29%	49%	34%	24%
Jul-14	61,829	34,393	14,836	2,159	113,217	16,995	3,144	52%	53%	36%	27%	49%	35%	25%
Aug-14	62,466	35,692	15,060	2,193	115,411	17,253	3,360	53%	54%	37%	29%	49%	36%	28%
Sep-14	61,811	35,926	16,185	2,399	116,321	18,584	2,891	51%	54%	40%	32%	49%	38%	24%
Oct-14	63,713	35,965	14,640	1,802	116,120	16,442	2,187	52%	53%	37%	25%	49%	35%	19%
Nov-14	67,691	37,110	14,840	1,652	121,293	16,492	2,046	55%	55%	38%	24%	51%	36%	19%
Dec-14	69,876	35,550	14,638	1,426	121,490	16,064	1,674	57%	52%	39%	22%	51%	36%	16%
Jan-15	73,716	35,405	13,934	1,439	124,494	15,373	1,713	59%	51%	37%	24%	53%	35%	18%
Feb-15	78,177	36,676	13,981	1,436	130,270	15,417	1,820	63%	54%	38%	25%	55%	36%	19%
Mar-15	81,662	37,881	14,179	1,346	135,068	15,525	2,040	66%	56%	39%	24%	58%	37%	22%
Apr-15	80,348	37,047	13,193	1,353	131,941	14,546	2,116	64%	54%	37%	26%	56%	35%	24%
May-15	78,880	37,037	13,177	1,400	130,494	14,577	2,058	63%	55%	38%	28%	56%	36%	23%
Jun-15	76,286	36,584	13,006	1,416	127,292	14,422	2,276	61%	54%	37%	29%	55%	36%	27%
Jul-15	72,876	35,232	12,507	1,354	121,969	13,861	2,218	56%	51%	37%	28%	52%	36%	27%
Aug-15	74,247	36,442	12,555	1,343	124,587	13,898	2,232	58%	53%	38%	29%	53%	37%	28%
Sep-15	65,844	37,545	12,551	1,374	117,314	13,925	2,001	51%	56%	39%	32%	51%	38%	26%
Oct-15	75,042	37,885	11,906	1,266	126,099	13,172	1,504	57%	56%	39%	31%	54%	38%	20%
Nov-15	79,228	39,911	12,983	1,317	133,439	14,300	1,492	61%	60%	44%	33%	58%	43%	20%
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%	61%	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%

Source: AEM; Cleveland Research Company estimates

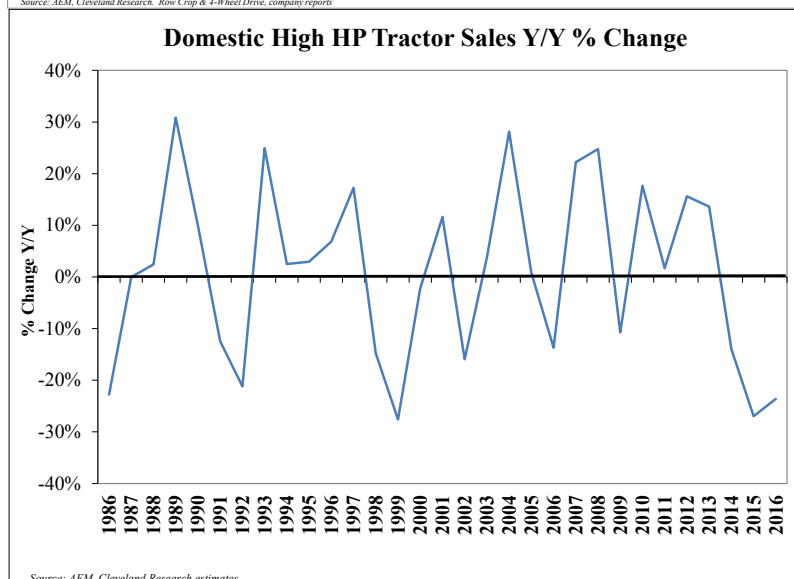
# Annual Agricultural Equipment Industry Sales (1985 - 2016)



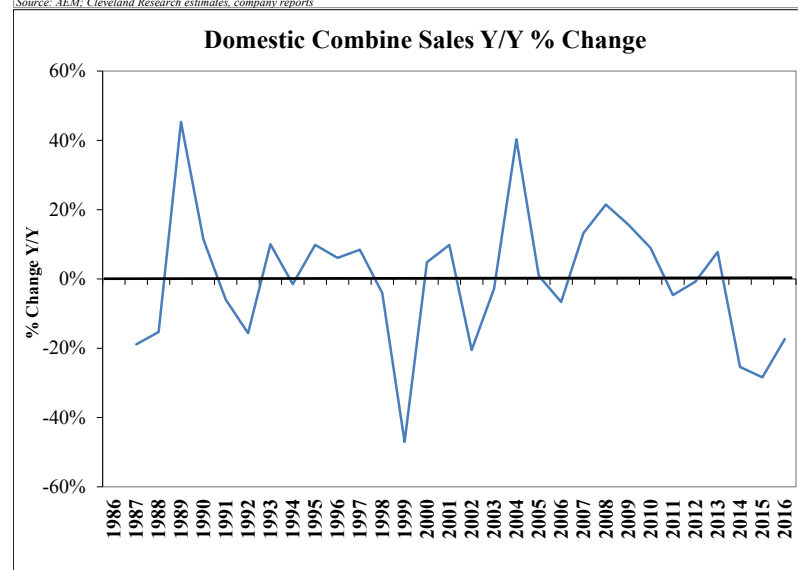
Source: AEM, Cleveland Research, Row Crop & 4-Wheel Drive, company reports



Source: AEM, Cleveland Research estimates, company reports

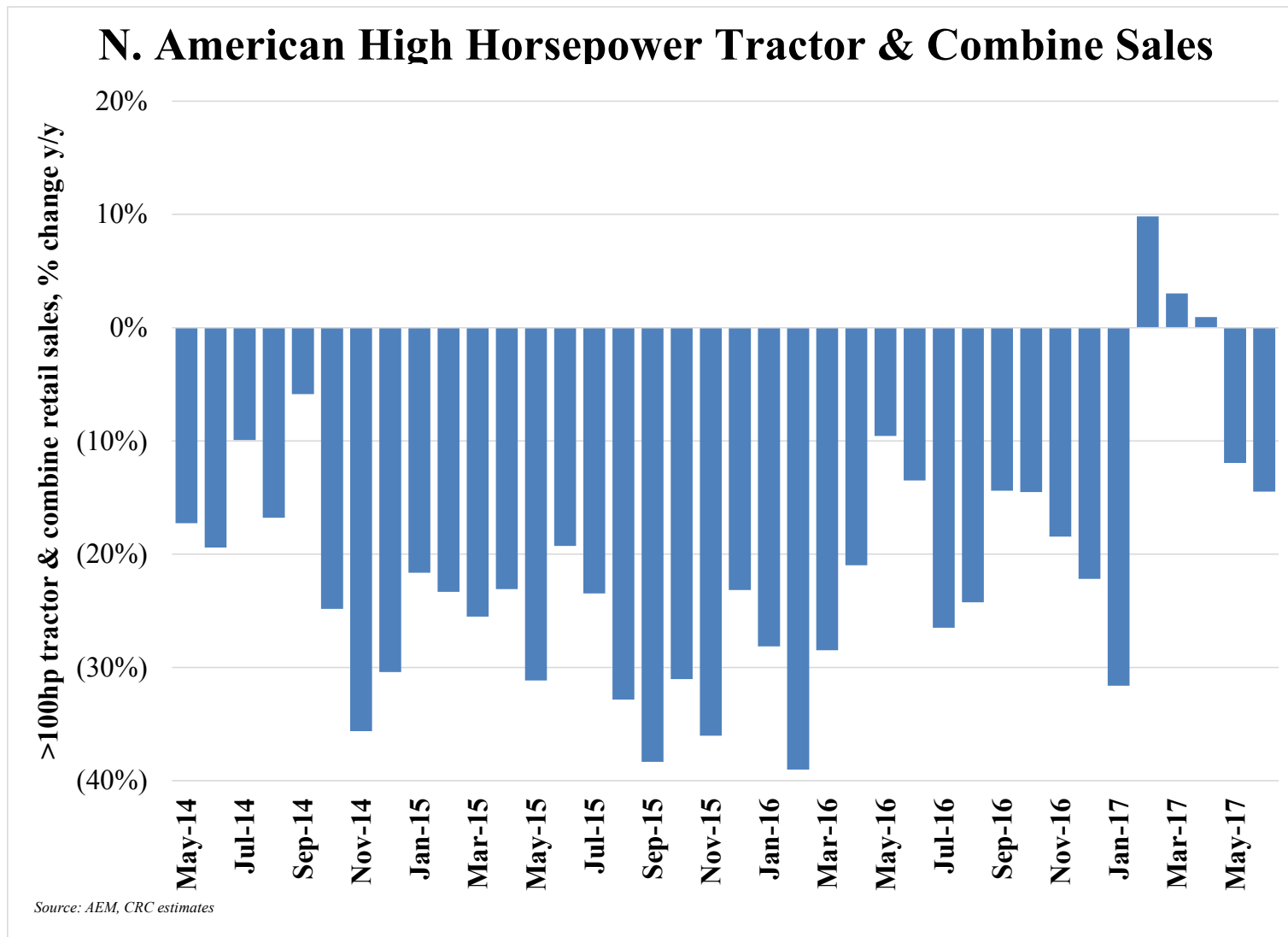


Source: AEM, Cleveland Research estimates



Source: AEM, Cleveland Research estimates

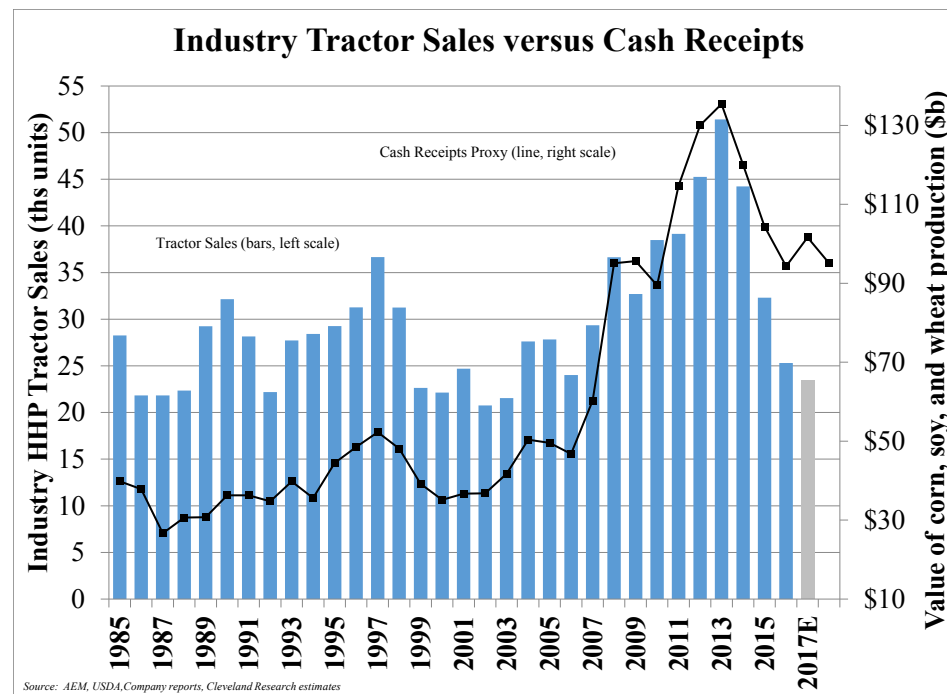
# North America Large Ag Equipment Sales



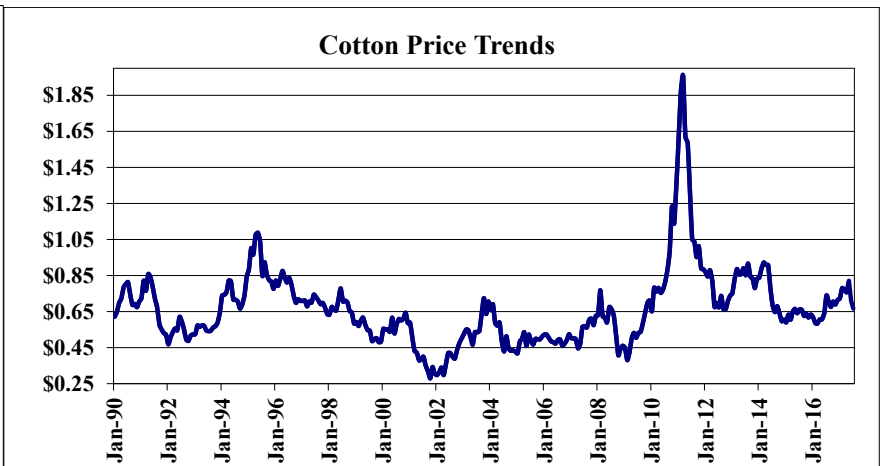
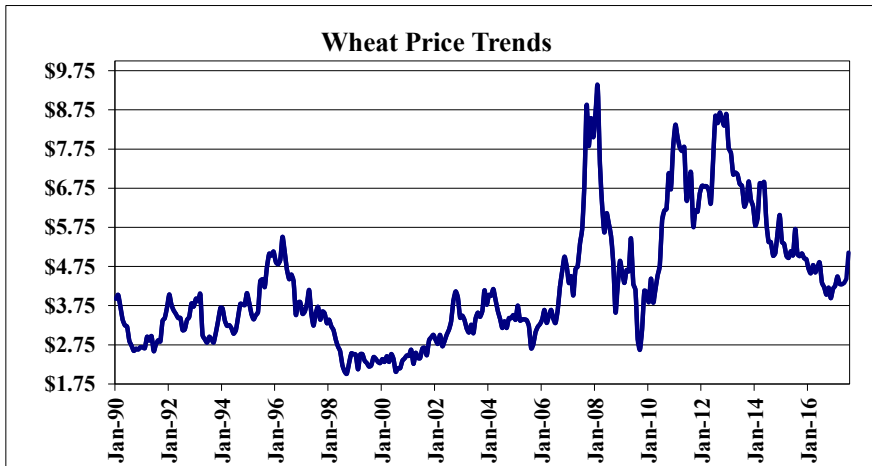
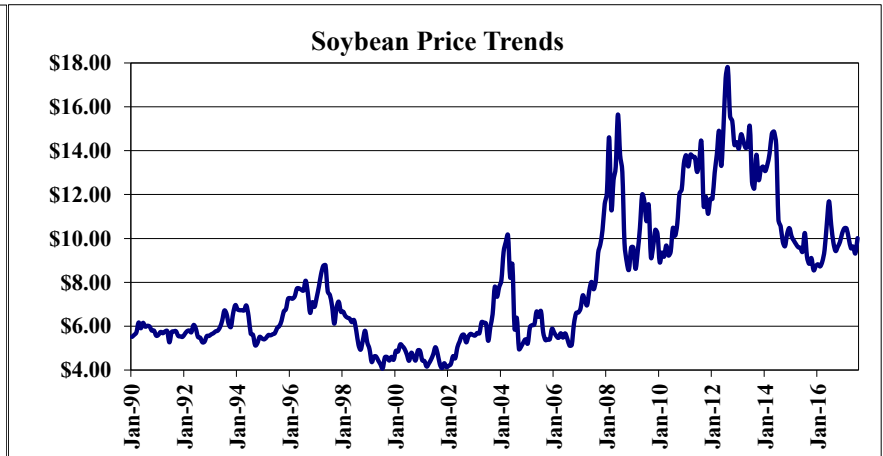
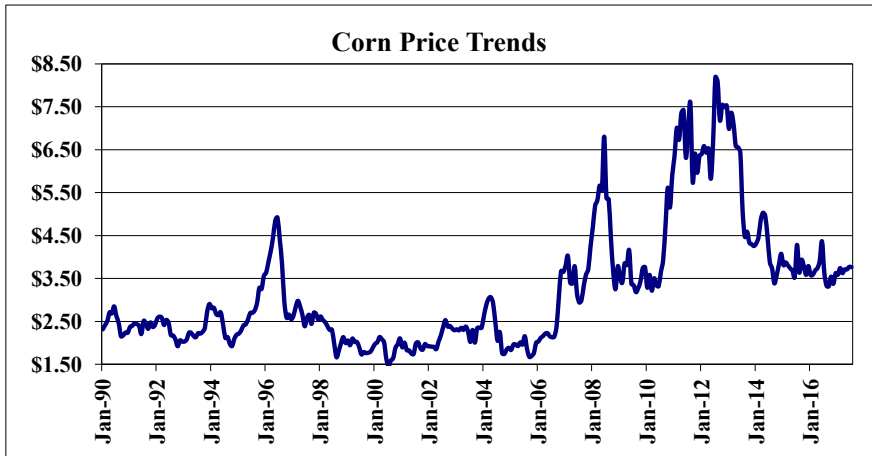
## Commodity Prices – Cash Receipts vs. Next Year Equipment Sales

**USDA's July 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 July crop report was similar to June with cash receipts proxy forecast down 6% y/y in 2017/18. Wheat cash receipt forecasts improved to down 6% y/y vs down 13% in June, soybean forecasts were adjusted to down 3% from down 4%, while corn cash receipt forecasts were lowered to down 9% vs down 7% previously.



# 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 2017

US Corn Balance Sheet - USDA Long Term Forecast (Feb 2017)														
Millions of bushels	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027
Planted	95	91	88	94	90	90	90	89	88	88	87	87	87	86
Harvested	88	83	81	87	82	82	82	81	80	80	79	79	79	78
Yield (bu/acre)	158	171	168	175	171	173	175	177	179	181	183	185	187	189
Beginning Stocks (MM bu)	821	1,232	1,731	1,737	2,295	2,298	2,213	2,193	2,104	2,033	2,023	1,933	1,923	1,896
Production (MM bu)	13,829	14,216	13,601	15,148	14,065	14,135	14,300	14,285	14,360	14,520	14,495	14,655	14,719	14,784
Imports (MM bu)	36	32	67	55	50	50	50	50	50	50	50	50	50	50
<b>Total Supply (MM bu)</b>	<b>14,686</b>	<b>15,480</b>	<b>15,399</b>	<b>16,940</b>	<b>16,410</b>	<b>16,483</b>	<b>16,563</b>	<b>16,528</b>	<b>16,514</b>	<b>16,603</b>	<b>16,568</b>	<b>16,638</b>	<b>16,692</b>	<b>16,730</b>
Feed & Residual (MM Bu)	5,036	5,315	5,130	5,500	5,425	5,500	5,600	5,625	5,700	5,800	5,850	5,950	6,025	6,075
Food, Seed, & Industrial Total	6,501	6,568	6,635	6,920	7,000	6,795	6,770	6,775	6,730	6,705	6,685	6,640	6,620	6,595
Ethanol & By-Products	5,134	5,209	5,206	5,450	5,500	5,350	5,325	5,325	5,275	5,250	5,225	5,175	5,150	5,125
Domestic Use	11,537	11,883	11,765	12,420	12,425	12,295	12,370	12,400	12,430	12,505	12,535	12,590	12,645	12,670
Exports	1,917	1,864	1,898	2,225	1,875	1,975	2,000	2,025	2,050	2,075	2,100	2,125	2,150	2,175
<b>Total Use</b>	<b>13,454</b>	<b>13,747</b>	<b>13,663</b>	<b>14,645</b>	<b>14,300</b>	<b>14,270</b>	<b>14,370</b>	<b>14,425</b>	<b>14,480</b>	<b>14,580</b>	<b>14,635</b>	<b>14,715</b>	<b>14,795</b>	<b>14,845</b>
Ending Stocks	1,232	1,731	1,738	2,295	2,110	2,213	2,193	2,104	2,033	2,023	1,933	1,923	1,896	1,885
Ending Stocks/Use	9.2%	12.6%	12.7%	15.7%	14.8%	15.5%	15.3%	14.6%	14.0%	13.9%	13.2%	13.1%	12.8%	12.7%
Weeks Carryover	4.8	6.5	6.6	8.1	7.7	8.1	7.9	7.6	7.3	7.2	6.9	6.8	6.7	6.6
<b>Average Farm Price (\$/bu)</b>	<b>\$4.46</b>	<b>\$3.70</b>	<b>\$3.61</b>	<b>\$3.40</b>	<b>\$3.40</b>	<b>\$3.35</b>	<b>\$3.35</b>	<b>\$3.45</b>	<b>\$3.50</b>	<b>\$3.55</b>	<b>\$3.60</b>	<b>\$3.65</b>	<b>\$3.65</b>	<b>\$3.70</b>
Value of Production	\$61,677	\$52,599	\$49,100	\$51,503	\$47,821	\$47,352	\$47,905	\$49,283	\$50,260	\$51,546	\$52,182	\$53,491	\$53,724	\$54,701
% change y/y	-17%	-15%	-7%	5%	-7%	-1%	1%	3%	2%	3%	1%	3%	0%	2%

U.S. Soybean Balance Sheet - USDA Long Term Forecast (Feb 2017)														
Millions of bushels	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027
Planted	77	83	83	83	90	85	85	85	85	85	85	85	85	85
Harvested	76	83	82	83	89	84	84	84	84	84	84	84	84	84
Yield Per Harvested Acre (Bushels)	44	48	48	52	48	48	49	49	50	50	51	51	52	52
Beginning Stocks	141	92	191	197	450	396	326	306	291	300	309	317	330	338
Production	3,358	3,927	3,926	4,307	4,255	4,070	4,090	4,130	4,195	4,240	4,280	4,325	4,365	4,405
Imports	72	33	24	25	25	30	30	30	30	30	30	30	30	30
<b>Total Supplies</b>	<b>3,571</b>	<b>4,052</b>	<b>4,141</b>	<b>4,528</b>	<b>4,730</b>	<b>4,496</b>	<b>4,446</b>	<b>4,466</b>	<b>4,516</b>	<b>4,570</b>	<b>4,619</b>	<b>4,672</b>	<b>4,725</b>	<b>4,773</b>
Crush	1,734	1,873	1,886	1,925	1,950	1,955	1,970	1,990	2,015	2,040	2,060	2,085	2,105	2,130
Exports	1,647	1,843	1,936	2,050	2,150	2,085	2,040	2,055	2,070	2,090	2,110	2,125	2,150	2,150
Seed & Residual	98	145	121	128	128	129	130	130	131	131	132	132	132	132
<b>Total Use</b>	<b>3,479</b>	<b>3,861</b>	<b>3,943</b>	<b>4,093</b>	<b>4,235</b>	<b>4,169</b>	<b>4,140</b>	<b>4,175</b>	<b>4,216</b>	<b>4,261</b>	<b>4,302</b>	<b>4,342</b>	<b>4,387</b>	<b>4,412</b>
Ending Stocks	92	191	197	435	495	326	306	291	300	309	317	330	338	361
Stocks/Use	2.7%	4.9%	5.0%	10.6%	11.7%	7.8%	7.4%	7.0%	7.1%	7.2%	7.4%	7.6%	7.7%	8.2%
<b>Average Price (\$/bu)</b>	<b>\$13.00</b>	<b>\$10.10</b>	<b>\$8.95</b>	<b>\$9.55</b>	<b>\$9.30</b>	<b>\$9.40</b>	<b>\$9.40</b>	<b>\$9.45</b>	<b>\$9.45</b>	<b>\$9.50</b>	<b>\$9.55</b>	<b>\$9.55</b>	<b>\$9.55</b>	<b>\$9.55</b>
Value of Production	\$43,654	\$39,663	\$35,138	\$41,132	\$39,572	\$38,258	\$38,446	\$39,029	\$39,643	\$40,280	\$40,874	\$41,304	\$41,686	\$42,068
% change y/y	0%	-9%	-11%	17%	-4%	-3%	0%	2%	2%	2%	1%	1%	1%	1%

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

## US Corn, Soy, and Wheat Supply and Demand - Long Term Annual Forecast 2017 (continued)

### U.S. Wheat Balance Sheet - USDA Long Term Forecast (Feb 2017)

Millions of bushels	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027
Planted	56	57	55	50	46	49	50	50	50	50	50	50	50	50
Harvested	45	46	47	44	38	42	42	42	42	42	42	42	42	42
Yield Per Harvested Acre (Bushels)	47	44	44	53	46	48	48	48	49	49	50	50	50	51
Beginning Stocks	718	590	752	976	1,184	993	892	832	784	742	707	679	658	654
Production	2,134	2,026	2,062	2,310	1,760	1,976	2,012	2,029	2,045	2,062	2,079	2,096	2,113	2,129
Imports	169	144	113	115	140	125	125	125	130	135	140	145	150	155
<b>Total Supplies</b>	<b>3,021</b>	<b>2,760</b>	<b>2,927</b>	<b>3,400</b>	<b>3,084</b>	<b>3,094</b>	<b>3,029</b>	<b>2,986</b>	<b>2,959</b>	<b>2,939</b>	<b>2,926</b>	<b>2,920</b>	<b>2,921</b>	<b>2,938</b>
Food	955	960	957	955	955	970	975	980	985	990	995	1,000	1,005	1,010
Seed	77	81	67	61	66	67	67	67	67	67	67	67	67	67
Feed&residual	223	111	152	190	150	190	180	170	170	170	170	170	170	170
Exports	1,176	855	775	1,035	975	975	975	985	995	1,005	1,015	1,025	1,025	1,035
<b>Total Use</b>	<b>2,431</b>	<b>2,007</b>	<b>1,952</b>	<b>2,241</b>	<b>2,146</b>	<b>2,202</b>	<b>2,197</b>	<b>2,202</b>	<b>2,217</b>	<b>2,232</b>	<b>2,247</b>	<b>2,262</b>	<b>2,267</b>	<b>2,282</b>
Ending Stocks	590	753	976	1,159	938	892	832	784	742	707	679	658	654	656
Stocks/Use	24.3%	37.5%	50.0%	51.7%	43.7%	40.5%	37.9%	35.6%	33.5%	31.7%	30.2%	29.1%	28.9%	28.8%
<b>Average Price (\$/bu)</b>	<b>\$6.87</b>	<b>\$5.99</b>	<b>\$4.89</b>	<b>\$3.90</b>	<b>\$4.80</b>	<b>\$4.30</b>	<b>\$4.50</b>	<b>\$4.70</b>	<b>\$4.70</b>	<b>\$4.80</b>	<b>\$4.90</b>	<b>\$5.00</b>	<b>\$5.00</b>	<b>\$5.00</b>
Value of Production	\$14,661	\$12,136	\$10,083	\$9,009	\$8,448	\$8,497	\$9,054	\$9,536	\$9,612	\$9,898	\$10,187	\$10,480	\$10,565	\$10,645
% change y/y	-16%	-17%	-17%	-11%	-6%	1%	7%	5%	1%	3%	3%	3%	1%	1%

### Total Acreage and Value of U.S. Corn, Soy and Wheat Production - USDA February 2017 Projection

Total Corn, Soy, Wheat	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027
Planted (mm acres)	228	231	226	228	226	224	224	223	223	223	222	222	221	221
Harvested (mm acres)	209	212	210	213	210	208	207	206	206	206	205	205	205	204
Yield (bu/acre)	92	95	93	102	96	97	98	99	100	101	102	103	103	104
Production	19,321	20,169	19,589	21,765	20,275	20,181	20,402	20,444	20,600	20,822	20,854	21,076	21,197	21,318
Average Price (\$/bu)	\$6.21	\$5.18	\$4.81	\$4.67	\$4.71	\$4.66	\$4.68	\$4.79	\$4.83	\$4.89	\$4.95	\$4.99	\$5.00	\$5.04
<b>Value of Production</b>	<b>\$119,992</b>	<b>\$104,398</b>	<b>\$94,320</b>	<b>\$101,644</b>	<b>\$95,534</b>	<b>\$94,107</b>	<b>\$95,405</b>	<b>\$97,848</b>	<b>\$99,514</b>	<b>\$101,724</b>	<b>\$103,243</b>	<b>\$105,275</b>	<b>\$105,975</b>	<b>\$107,414</b>
% change y/y	-11%	-13%	-10%	8%	-6%	-1%	1%	3%	2%	2%	1%	2%	1%	1%

Source: USDA, Cleveland Research estimates



# U.S. Acreage Planted Per Crop Year

