

# ***Ag Equipment Intelligence***

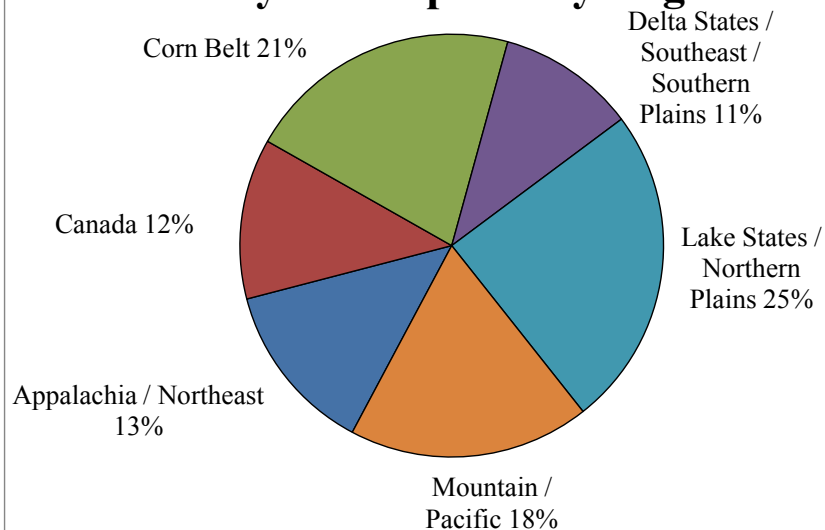
November 2016 Dealer Sentiments &  
Business Conditions Update

# Monthly Ag Equipment Intelligence North American Dealer Survey

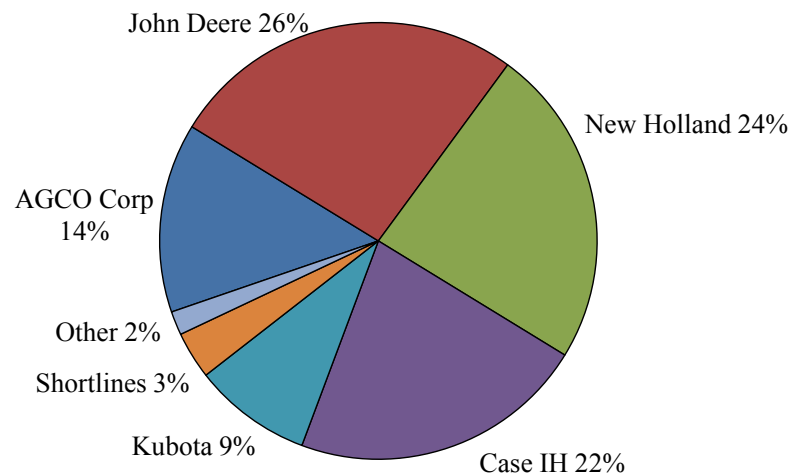
## Background:

- We are pleased to announce the results of the October 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 October survey had ~120 respondents representing combined annual revenues of roughly \$6 billion. Participants representing 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 10% y/y in October vs the 7% decline reported in September as a net 28% of dealers missed their sales budget in both months. A net 48% of dealers reported a sales decline in the month, worse than the net 33% citing a decline in September. Commercial and consumer lawn equipment sales continue to show strength, while large equipment demand remains very weak.
- **Outlook** – The full year 2016 dealer average sales growth forecast improved slightly to down 11% from the down 12% in September as monthly sales have trended better than forecast year to date (down 10% YTD). A net 53% of dealers are forecasting a sales decline for the year vs a net 48% forecasting a decline last month. The 2017 sales forecast was projected at down 5%, better than the 8% decline forecast reported last month as cash receipt forecasts improved slightly through the month.
- **Inventory** – A net 45% of dealers reported new equipment inventories as too high, slightly worse than the 42-43% reported over the past few months. Used inventory levels were also reported higher than September, as a net 47% of dealers reported inventory as too high vs. 38% last month.
- **Pricing** – Dealers reported relatively flat new equipment pricing as OEM price increases have been offset by greater discounting at the dealer level. Used large tractors were reported down 8% y/y on average, worse than the down 7% reported in September. Used combine pricing was down 12% y/y vs down 11% in September.

# Monthly Sales Growth

- Average dealer sales were reported down 10% y/y in October, worse than the 7% decline in September. A net 28% of dealers missed their sales budgets in October, inline with September.
- A net 21% of dealers report they are less optimistic about overall business conditions vs 24% in September. Sentiment has been negative for more than two years.

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

% Change y/y	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
AGCO	-8%	-1%	4%	-12%	-24%	-13%	-14%	-22%	-27%	-9%	-13%	-7%	-18%	-4%	-1%	-19%	-7%	-22%	-12%	-9%
John Deere	-8%	-11%	-15%	-14%	-19%	-14%	-15%	-16%	-12%	-16%	-11%	-11%	-13%	-11%	-6%	-8%	-16%	-17%	-4%	-9%
New Holland	-3%	-2%	-7%	-5%	-17%	-12%	-23%	-14%	-13%	-15%	-11%	-10%	-15%	-16%	2%	-3%	-8%	-11%	-12%	-14%
Case IH	-13%	-16%	-19%	-19%	-17%	-19%	-20%	-19%	-22%	-18%	-18%	-20%	-15%	-9%	-19%	-8%	-5%	-11%	-8%	-11%
Kubota	-4%	-1%	0%	0%	0%	-3%	-2%	2%	-5%	-13%	-8%	0%	8%	2%	6%	2%	8%	1%	4%	1%
Shortlines/Other	-18%	-8%	-6%	-16%	-7%	-38%	-7%	-9%	-8%	-8%	-9%	-1%	-4%	-6%	-7%	-4%	8%	-22%	-22%	-11%
<b>Total</b>	<b>-8%</b>	<b>-10%</b>	<b>-13%</b>	<b>-13%</b>	<b>-18%</b>	<b>-15%</b>	<b>-16%</b>	<b>-16%</b>	<b>-16%</b>	<b>-15%</b>	<b>-13%</b>	<b>-12%</b>	<b>-13%</b>	<b>-10%</b>	<b>-6%</b>	<b>-9%</b>	<b>-8%</b>	<b>-11%</b>	<b>-7%</b>	<b>-10%</b>

Source: Cleveland Research, AEI

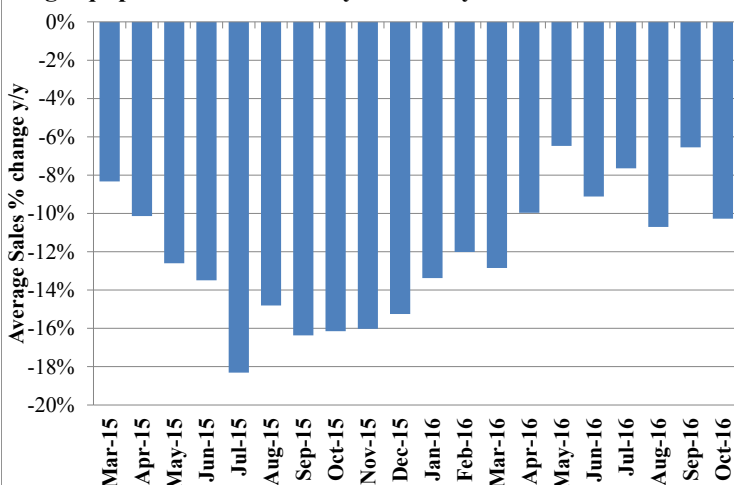
N. American Farm Equipment Dealer Survey - Sales Versus Expectations

% of Dealers Reporting	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
Better than expected	20%	27%	23%	21%	18%	16%	19%	15%	12%	19%	12%	15%	20%	24%	21%	22%	15%	14%	14%	16%
In line with expectations	50%	44%	39%	48%	45%	56%	53%	43%	51%	47%	52%	47%	52%	48%	46%	40%	43%	44%	44%	40%
Worse than expected	28%	29%	36%	31%	36%	28%	28%	41%	37%	34%	35%	38%	28%	29%	34%	38%	42%	41%	42%	44%
<b>Net % (Better - Worse)</b>	<b>-8%</b>	<b>-2%</b>	<b>-13%</b>	<b>-10%</b>	<b>-18%</b>	<b>-12%</b>	<b>-9%</b>	<b>-26%</b>	<b>-25%</b>	<b>-15%</b>	<b>-23%</b>	<b>-22%</b>	<b>-8%</b>	<b>-5%</b>	<b>-13%</b>	<b>-17%</b>	<b>-28%</b>	<b>-27%</b>	<b>-28%</b>	<b>-28%</b>

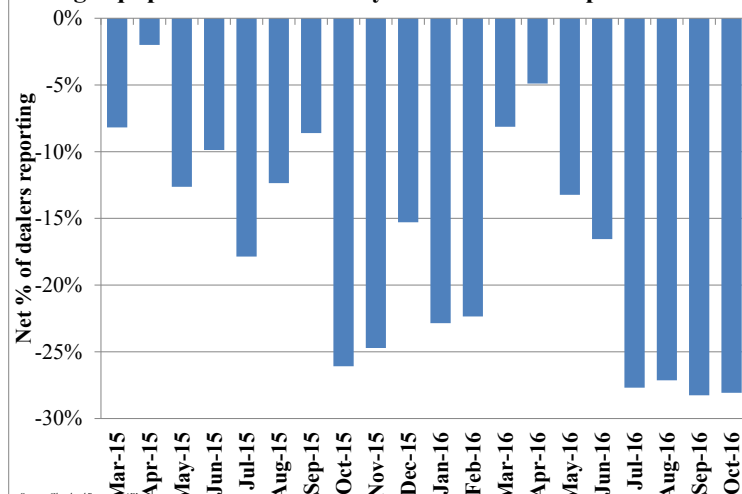
Source: Cleveland Research, AEI

# 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	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
Positive Sales Growth	20%	27%	29%	26%	20%	19%	24%	20%	16%	18%	14%	20%	23%	27%	29%	27%	20%	19%	22%	18%
Flat Sales	50%	11%	17%	11%	16%	16%	16%	15%	17%	10%	22%	20%	17%	23%	16%	23%	21%	19%	22%	15%
Negative Sales Growth	28%	62%	54%	63%	64%	65%	60%	65%	67%	72%	64%	60%	60%	50%	55%	50%	59%	62%	56%	67%
<b>Net % Reporting Growth</b>	<b>-8%</b>	<b>-35%</b>	<b>-25%</b>	<b>-37%</b>	<b>-43%</b>	<b>-46%</b>	<b>-35%</b>	<b>-46%</b>	<b>-52%</b>	<b>-54%</b>	<b>-50%</b>	<b>-40%</b>	<b>-37%</b>	<b>-23%</b>	<b>-26%</b>	<b>-23%</b>	<b>-39%</b>	<b>-43%</b>	<b>-33%</b>	<b>-48%</b>
<b>Average % Change y/y</b>	<b>-8%</b>	<b>-10%</b>	<b>-13%</b>	<b>-13%</b>	<b>-18%</b>	<b>-15%</b>	<b>-16%</b>	<b>-16%</b>	<b>-16%</b>	<b>-15%</b>	<b>-13%</b>	<b>-12%</b>	<b>-13%</b>	<b>-10%</b>	<b>-6%</b>	<b>-9%</b>	<b>-8%</b>	<b>-11%</b>	<b>-7%</b>	<b>-10%</b>

Source: Cleveland Research

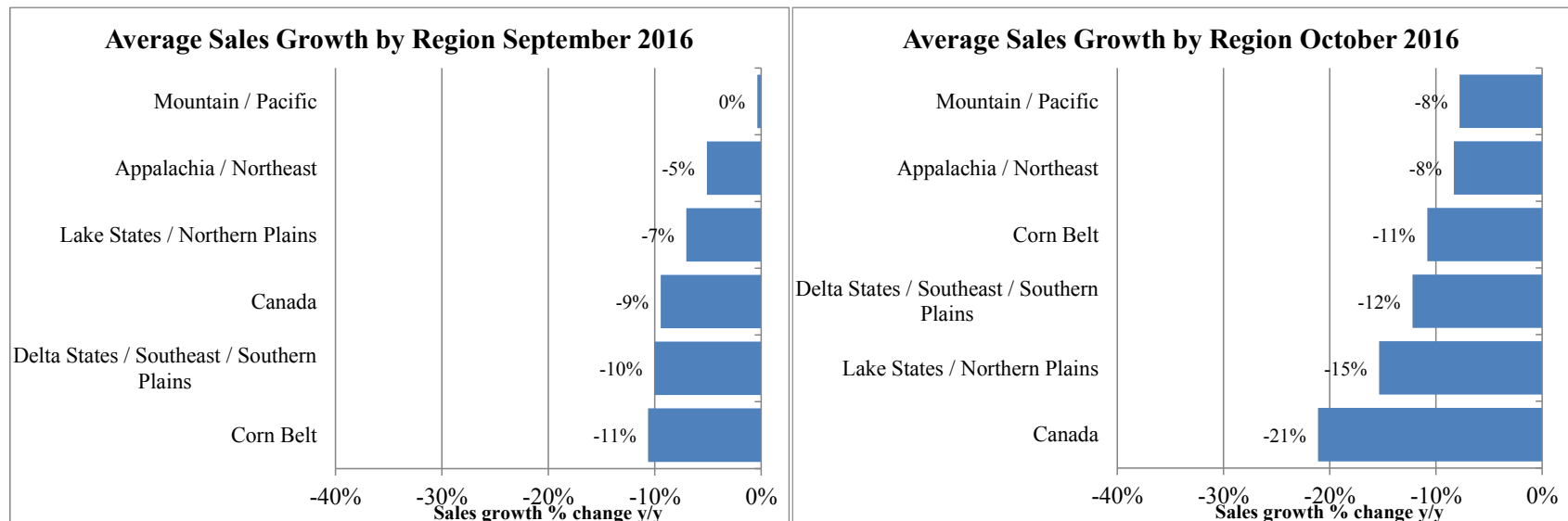
**Optimism/Sentiment vs. Last Month**

% of Dealers Reporting	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
More Optimistic	14%	14%	12%	13%	14%	11%	12%	8%	10%	8%	11%	13%	17%	15%	22%	11%	16%	11%	14%	13%
Same	42%	47%	48%	58%	52%	45%	51%	60%	52%	48%	46%	51%	55%	59%	51%	60%	44%	52%	49%	53%
Less Optimistic	43%	40%	40%	30%	35%	43%	37%	33%	38%	44%	43%	36%	28%	26%	27%	30%	40%	36%	38%	34%
<b>Net % Dealer Optimism</b>	<b>-29%</b>	<b>-26%</b>	<b>-26%</b>	<b>-18%</b>	<b>-21%</b>	<b>-32%</b>	<b>-26%</b>	<b>-25%</b>	<b>-28%</b>	<b>-35%</b>	<b>-31%</b>	<b>-24%</b>	<b>-11%</b>	<b>-11%</b>	<b>-4%</b>	<b>-19%</b>	<b>-24%</b>	<b>-25%</b>	<b>-24%</b>	<b>-21%</b>

Source: Cleveland Research

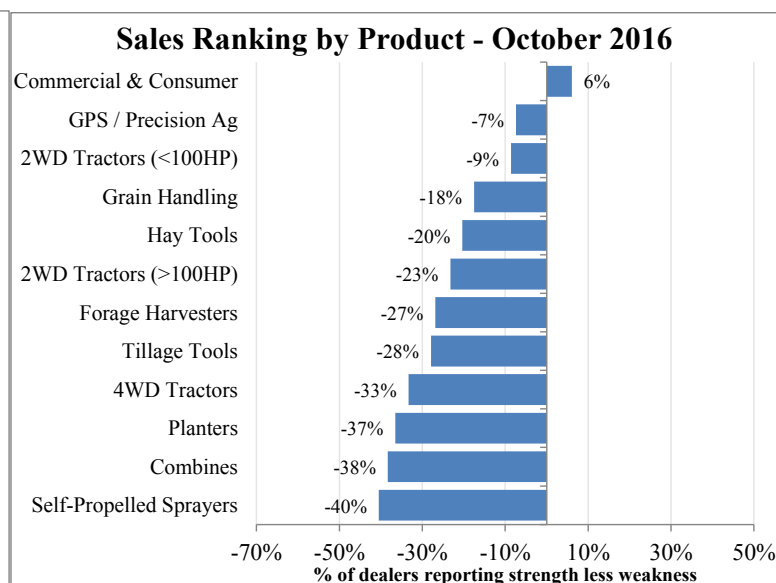
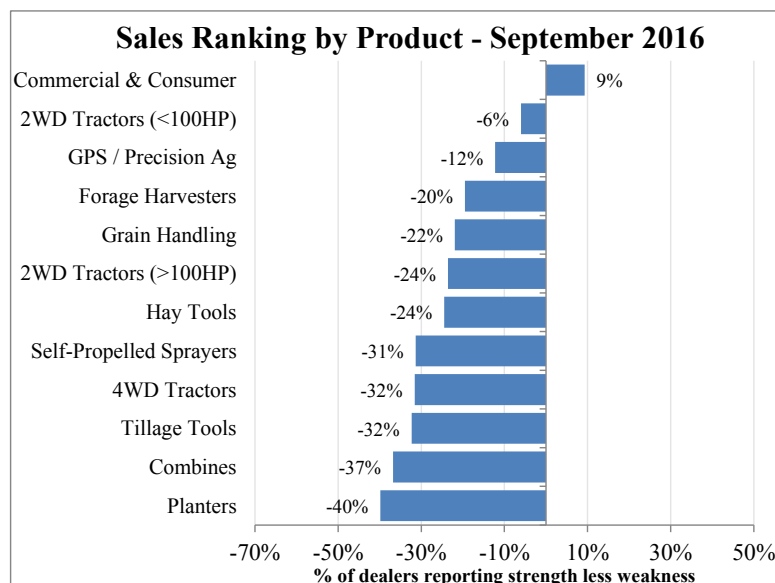
# Monthly Sales Growth by Region

- Sales trends by region were negative overall in the month, and further declines were noted across all regions except the Corn Belt. Canada showed the largest sequential decline in the month.

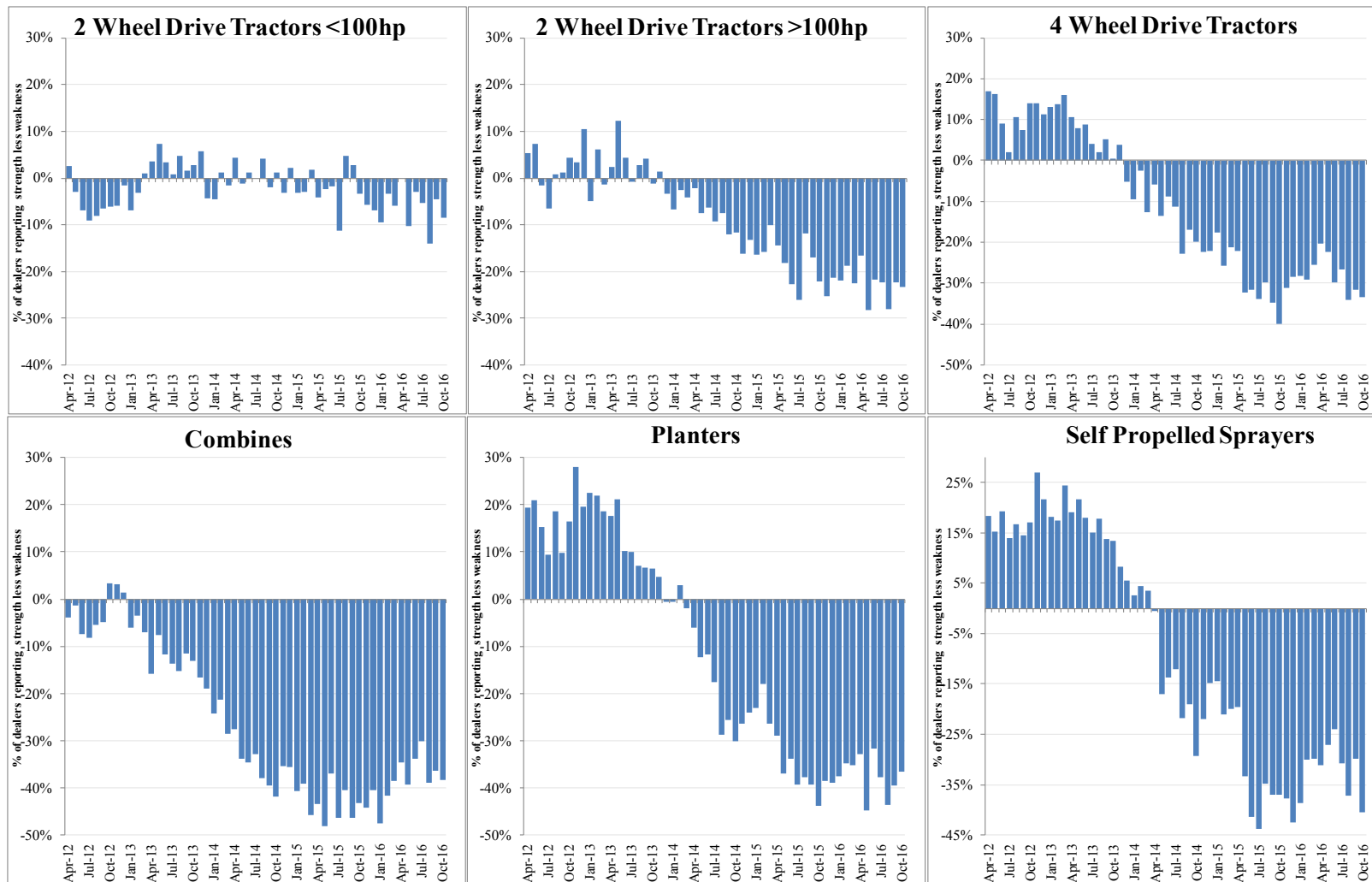


# Equipment Category Sales Trends

- Commercial & consumer lawn equipment continues to show strength in contrast to declines in other categories (combines, planters, tillage tools, and sprayers in particular). While GPS/Precision Farming equipment had seen strength in the 1H16, trends have deteriorated over the past few months. We continue to see significant headwinds to large equipment sales.

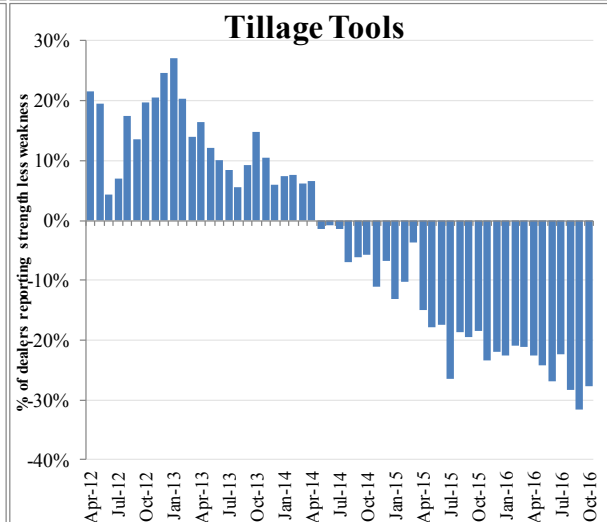
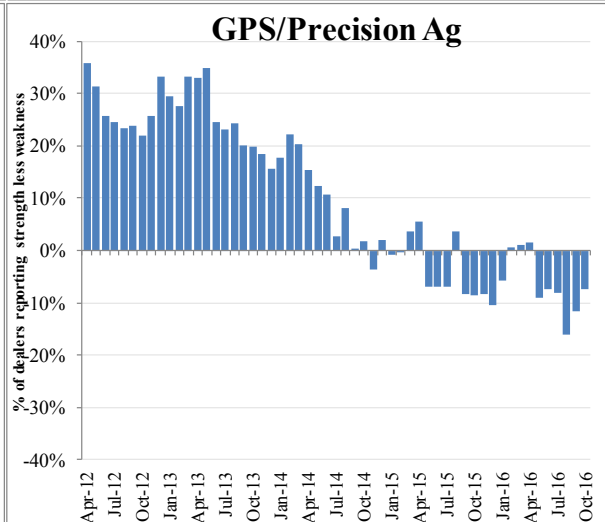
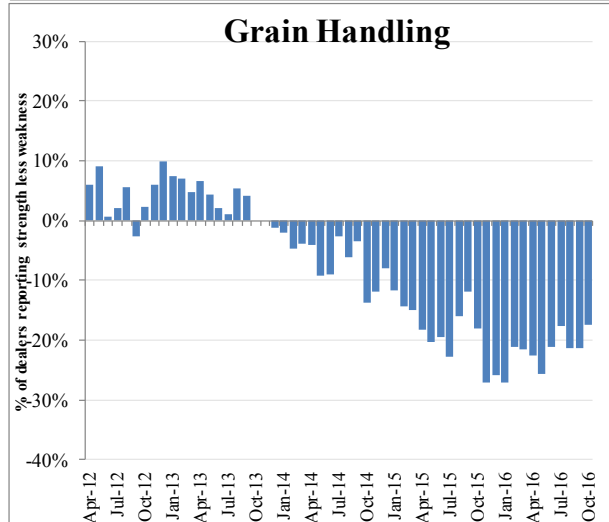
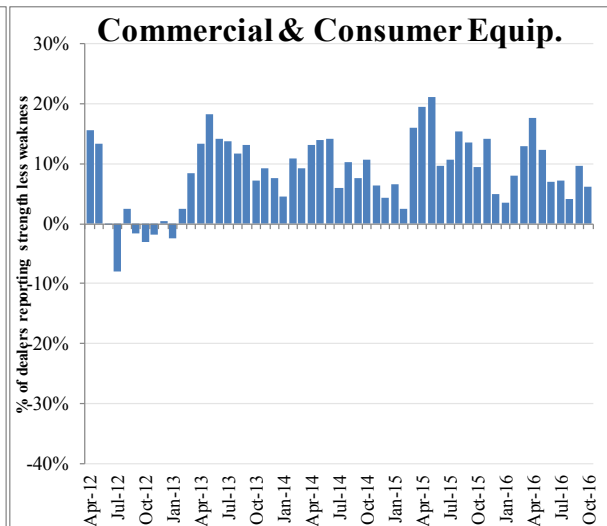
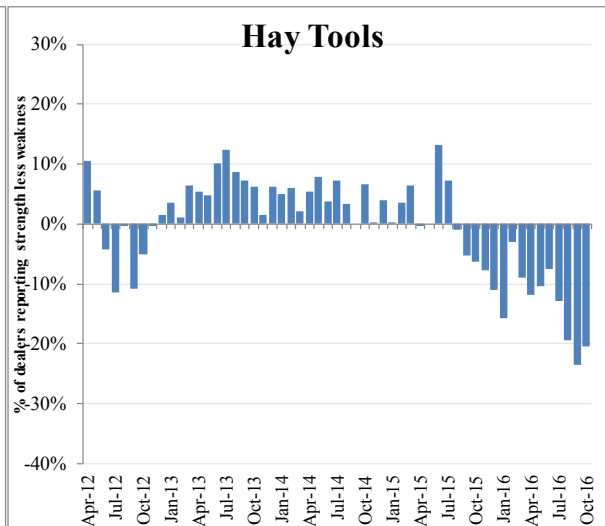
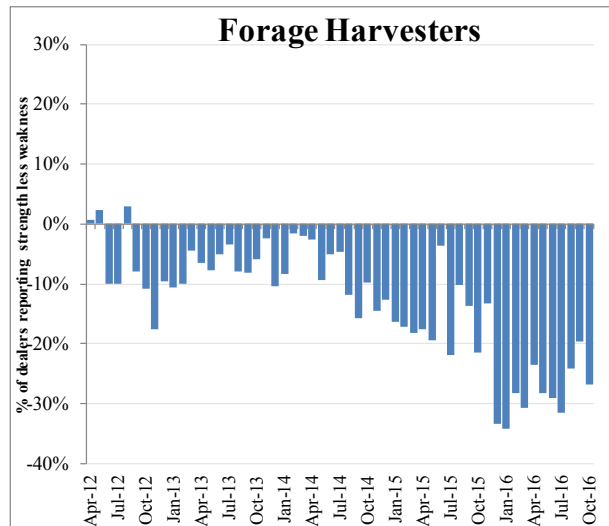


# Equipment Category Sales Trends





# Equipment Category Sales Trends (Continued)



# Most Interesting Commentary - Monthly Sales and Outlook

- 90-120 hp tractor preorders are up over last year at this time. Our equipment is up 3% on average.
- We are seeing strong sales in low hp 4WD tractors and the attachments associated with these units. Service and parts departments are staying busy but we expect it to slow when harvest is over.
- Consumer/turf is still strong, large ag sales are as strong as last year, and combine activity has improved in the short term.
- Drought conditions in New York, poor crop yields, and lower milk prices have stopped area farmers from even thinking of purchasing equipment. Commodity prices must come up to increase farmer optimism and in turn, see a sales lift.
- The wet weather in the Corn Belt and low commodity prices are hurting sales & rentals of vertical tillage.
- Case IH partnership program objectives were at least doubled over prior quarters, and were unattainable. This severely limits both new and used programming/financing options available to us.
- We opted out of the Case IH wholesale ordering, leaving us with very limited programs for new and /or used equipment.
- We are seeing row crop equipment buying interest for both new and used equipment. Ag sales are holding steady to 2015 numbers which is a relief. We expected them to be down further.
- We are more optimistic about 2016 as inventory is lower, government payments should help year end buying, we have seen good yields, and commodity prices are steady.
- Our used equipment inventory is our most pressing concern. It is too high in used combine headers, round hay balers, and tillage tools. Inventory is getting closer to being in line with demand but there are still too many low hour high horsepower tractors and aged harvesters.
- We are seeing more favorable incentives (financing, retail, and bonus incentives) on both ag and turf which will positively affect sales through the winter.
- Crops in our area were very good and we have seen limited purchasing, so if a normal or below average crop yield occurs next year, it will further reduce demand.
- There is a lack of optimism on 2017 as hay, cattle, and wheat commodity prices are down and there is an uncertain political climate.

## Average Dealer Sales Outlook

- Dealers forecast 2016 sales down 11% y/y, slightly better than September's forecast of down 12% (sales are down 10% YTD). A net 53% of dealers are forecasting a sales decline (18% increase, 11% about the same, 71% decline) which is worse than the 48% of dealers forecasting declines in September.
- The 2017 sales growth forecast was reported at down 5% on average, better than last month's forecast of 8% declines as cash receipt forecasts improved slightly through the month.
- The second table below details the 2016 industry outlooks from Deere, CNHI and AGCO. N. American forecasts estimates have not changed through AGCO and CNH's October earnings releases.

N. American Farm Equipment Dealer Survey - Full Year Sales Forecast														
% change y/y	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
AGCO	-9%	-8%	-7%	-9%	-10%	-6%	-15%	-6%	-7%	-8%	-13%	-17%	-20%	-15%
John Deere	-6%	-10%	-9%	-8%	-12%	-10%	-12%	-10%	-6%	-11%	-15%	-14%	-12%	-11%
New Holland	-5%	-12%	-9%	-13%	-6%	-11%	-12%	-8%	-2%	-11%	-14%	-21%	-18%	-14%
Case IH	-7%	-8%	-10%	-10%	-12%	-15%	-11%	-15%	-23%	-11%	-15%	-15%	-9%	-10%
Kubota	3%	3%	4%	2%	-7%	5%	9%	2%	0%	1%	7%	2%	2%	0%
Shortlines/Other	-9%	-15%	-8%	-6%	-12%	0%	-14%	-24%	-6%	-4%	11%	-26%	-12%	-10%
Overall	-6%	-9%	-9%	-9%	-11%	-10%	-11%	-11%	-9%	-10%	-12%	-15%	-12%	-11%

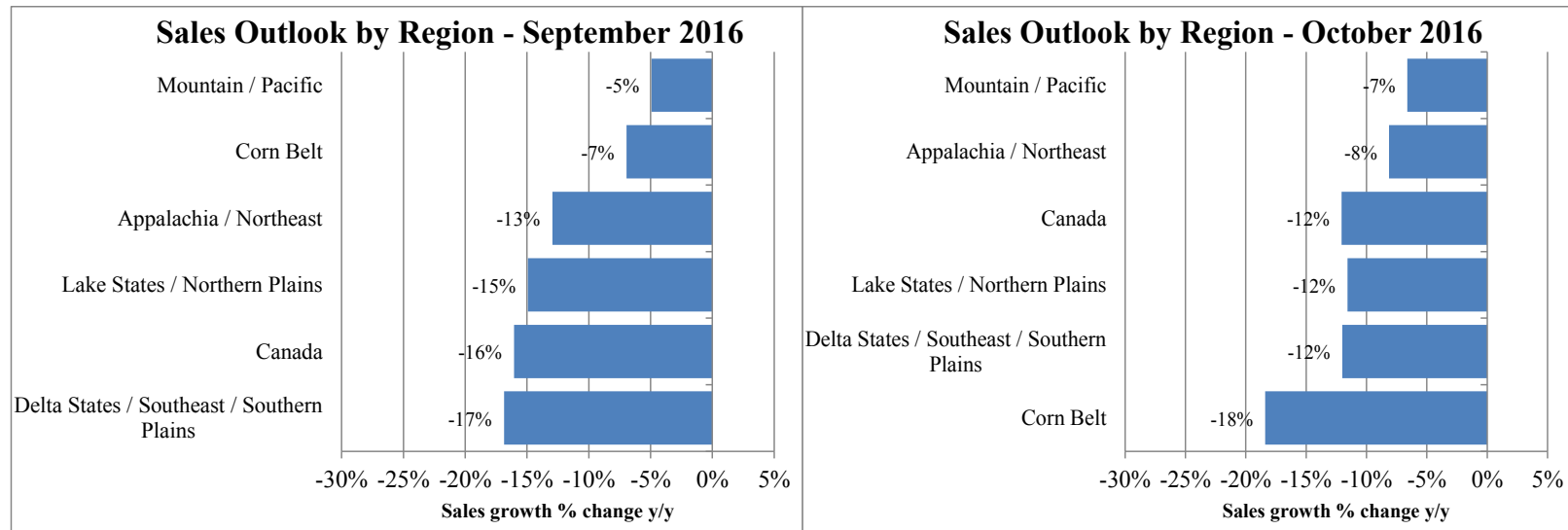
Source: Cleveland Research, AEI

2016 Ag Equipment Industry Sales Outlook (units)			
Geography	Deere	CNH Industrial	AGCO Corp.
N. America	Down 15-20%	Tractors (5%); Combines (15-20%)	Down 10-15%
Western Europe	Flat to Down 5%	Tractors (0-5%), Combines (5-10%)	Flat to Down 5%
Latin America	Down 15-20%	Tractors (10-15%), Combines 0-5%	Down 10-15%
CIS or ROW	na	na	na
Asia	Flat to Down Slightly	Tractors 0-5%, Combines 10-15%	na

Source: Company reports, CRC estimates

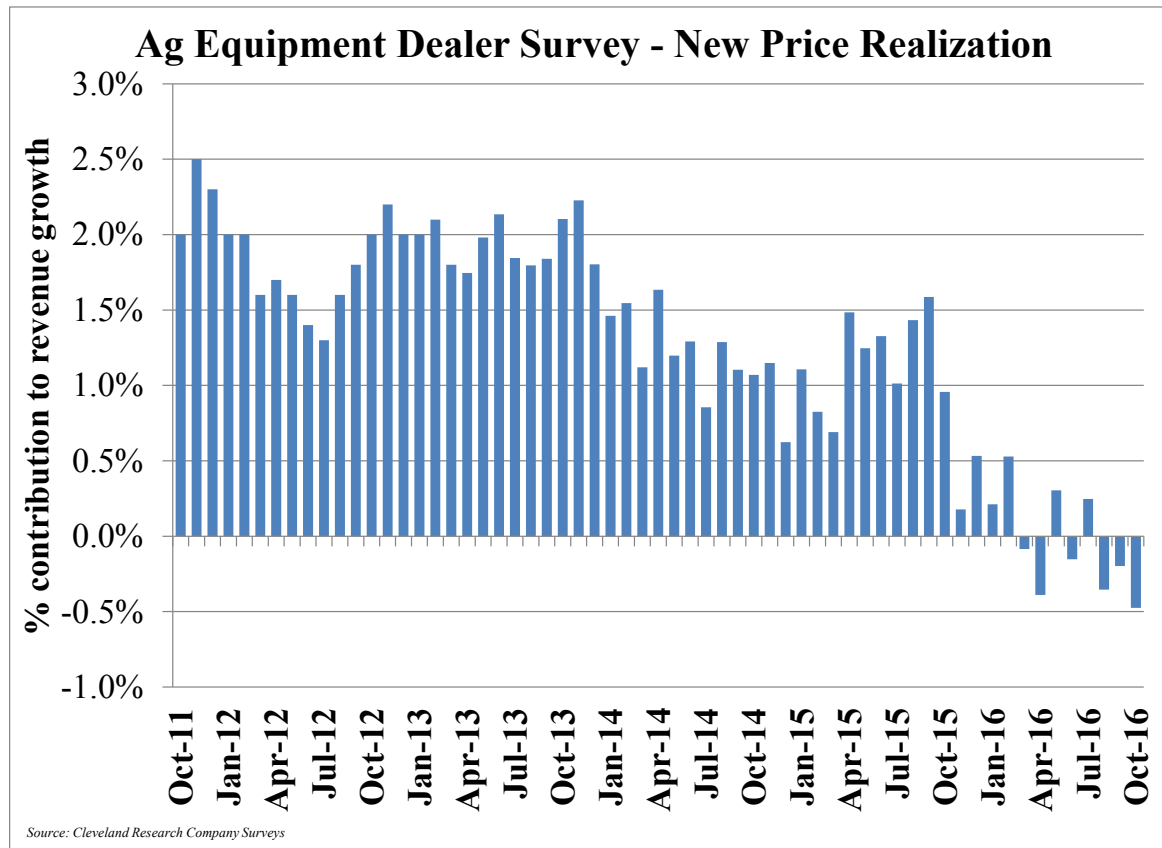
# 2016 Sales Outlook

- Trends remained negative by region in the month, but the 2016 outlook improved in all regions except Mountain/Pacific and the Corn Belt where expectations fell to down 18% vs down 7% in September. Commentary on 2017 appears cautiously optimistic across all regions as initial forecasts are in the range of down 2% to down 12%.



# Pricing Trends

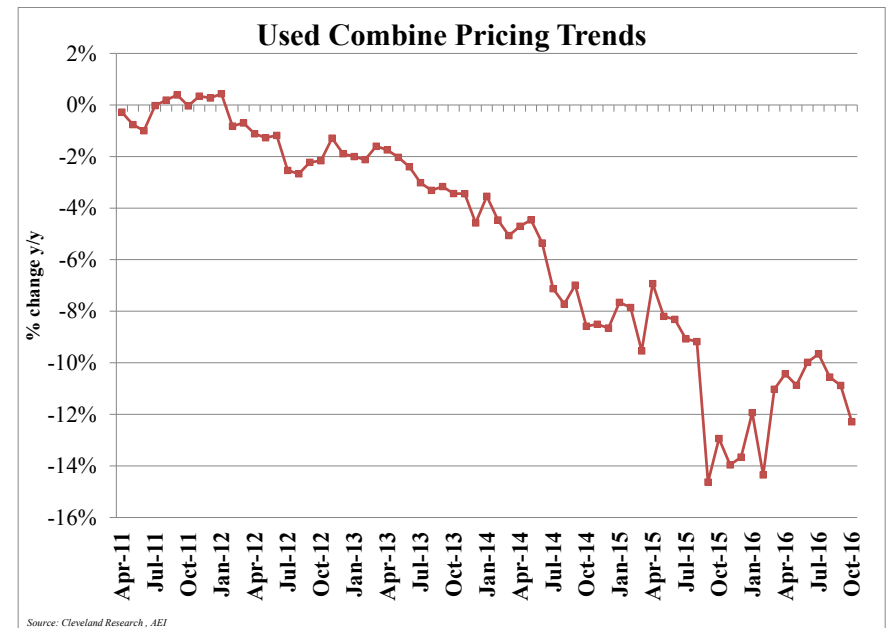
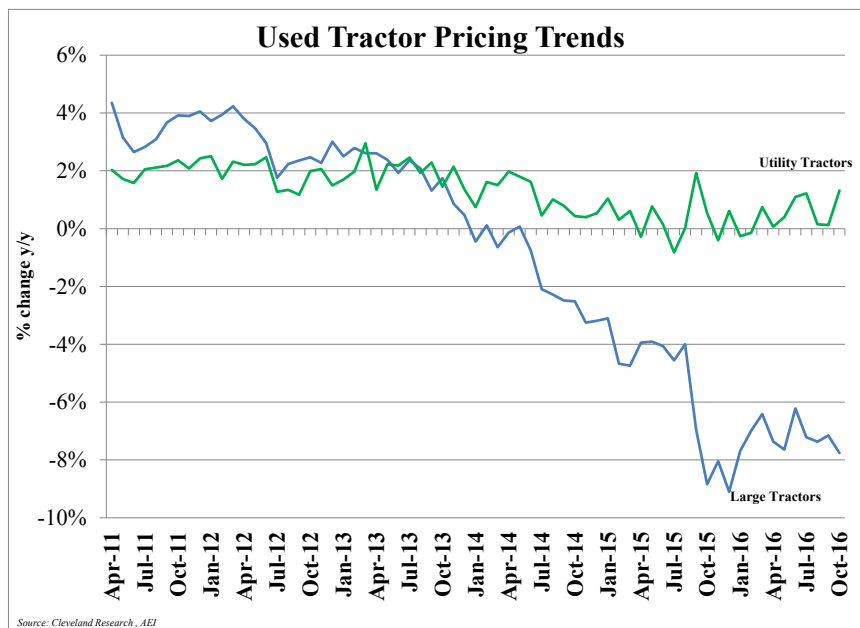
- Dealers reported relatively flat pricing over the last few months as incentives programs have more than offset list price increases back in 4Q15. The effect of the strong US dollar on Canadian exchange rate has also played a part in pricing inflation within North America.



# Used Equipment Pricing

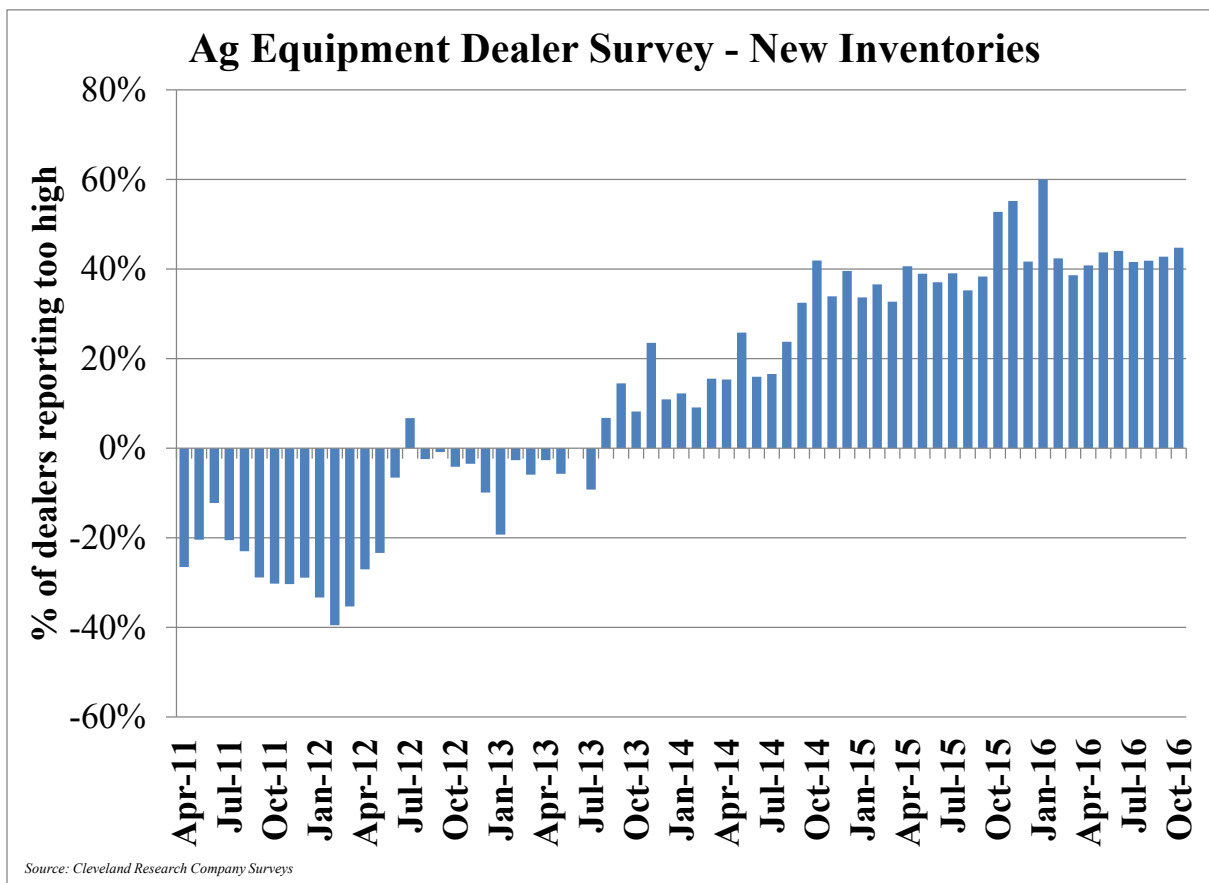
- Pricing trends improved slightly for low horsepower equipment and deteriorated for high horsepower equipment in the month. Large tractors were reported down ~8% y/y on average, slightly worse than the 7% reported in September. Combine pricing was down 12% y/y, worse than the 11% in September.

Used Tractor and Combine Values (Y/Y)														
	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
Compact (<40HP)	2%	1%	(1%)	0%	(1%)	0%	1%	0%	1%	2%	2%	1%	1%	2%
Utility (40-100HP)	2%	0%	(0%)	1%	0%	(1%)	0%	0%	0%	1%	1%	(0%)	(0%)	1%
Row Crop (100HP+)	(4%)	(6%)	(7%)	(7%)	(6%)	(5%)	(5%)	(6%)	(7%)	(5%)	(6%)	(6%)	(6%)	(6%)
4WD Tractors	(9%)	(11%)	(9%)	(11%)	(10%)	(9%)	(8%)	(8%)	(9%)	(8%)	(8%)	(9%)	(8%)	(10%)
Combines	(15%)	(13%)	(14%)	(14%)	(12%)	(14%)	(11%)	(10%)	(11%)	(10%)	(10%)	(11%)	(11%)	(12%)



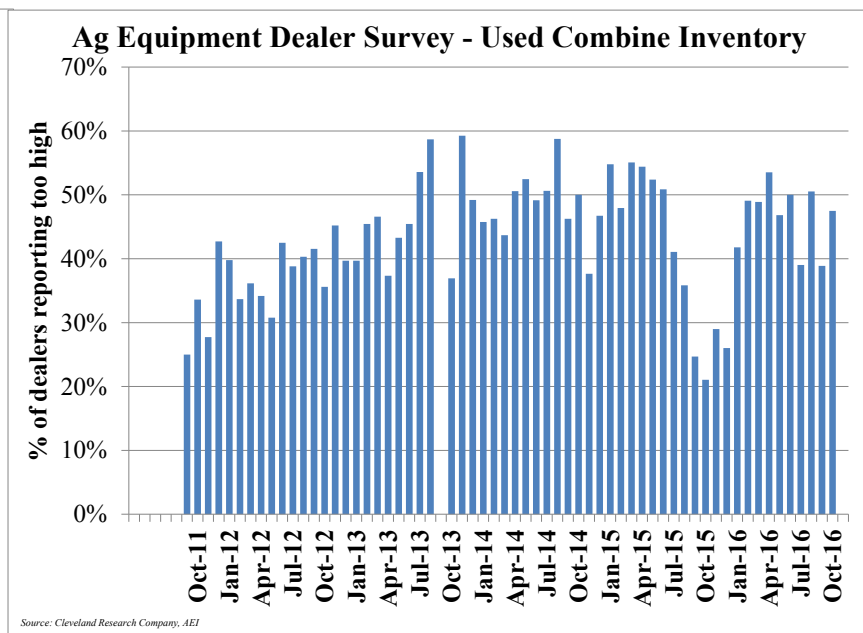
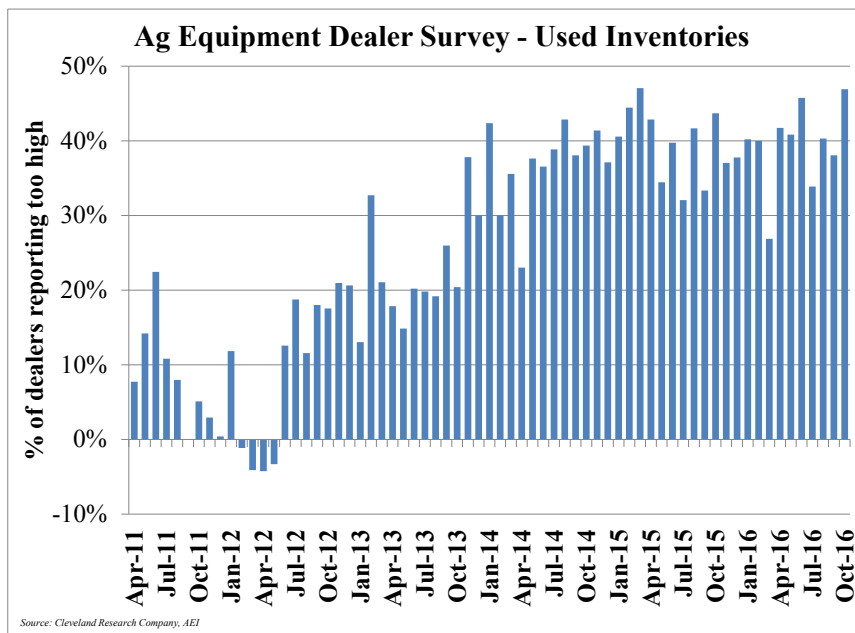
# New Equipment Inventory Levels

- A net 45% of dealers reported new equipment inventories are too high (49% too high, 46% about right, 4% too low), a slightly worse reading than September's net 43% of inventories reported too high. New inventory levels have been reported as too high for nearly 3 years.



# Used Equipment Inventory Levels

- A net 47% of dealers reported used equipment inventory as too high (52% too high, 42% about right, 5% too low), better than the 38% reporting heightened inventory in September (46% too high, 46% about right, 8% too low). Used combine inventory levels were reported as too high by a net 48% of dealers in October, compared to September's reading of 39% and August's 51%.





# 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-14	4,755	4,152	3,303	631	12,841	3,934	824	1%	2%	12%	-7%	3%	8%	33%
Feb-14	5,308	3,745	2,423	575	12,051	2,998	526	4%	1%	-6%	-14%	0%	-8%	-15%
Mar-14	10,108	5,110	3,155	655	19,028	3,810	899	22%	3%	-9%	-7%	9%	-9%	-25%
Apr-14	14,191	6,010	3,752	745	24,698	4,497	996	2%	7%	-13%	-12%	0%	-13%	-13%
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	5,940	3,697	1,164	221	11,022	1,385	344	1%	-11%	-38%	-38%	-10%	-38%	-24%
Dec-15	8,693	6,350	2,559	515	18,117	3,074	886	7%	-15%	-31%	1%	-9%	-28%	-4%
Jan-16	5,647	4,261	1,981	242	12,131	2,223	457	5%	-5%	-37%	10%	-8%	-34%	19%
Feb-16	6,404	3,386	1,186	222	11,198	1,408	241	21%	4%	-39%	-36%	3%	-39%	-40%
Mar-16	12,453	5,136	1,909	259	19,757	2,168	350	28%	7%	-25%	-48%	13%	-29%	-26%
Apr-16	17,713	5,586	2,548	337	26,184	2,885	465	7%	-14%	-19%	-22%	-2%	-19%	-30%
May-16	17,201	5,634	1,976	234	25,045	2,210	333	7%	0%	-1%	-10%	5%	-2%	-39%
Jun-16	15,794	6,594	1,974	223	24,585	2,197	567	1%	1%	-18%	-26%	-1%	-19%	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%

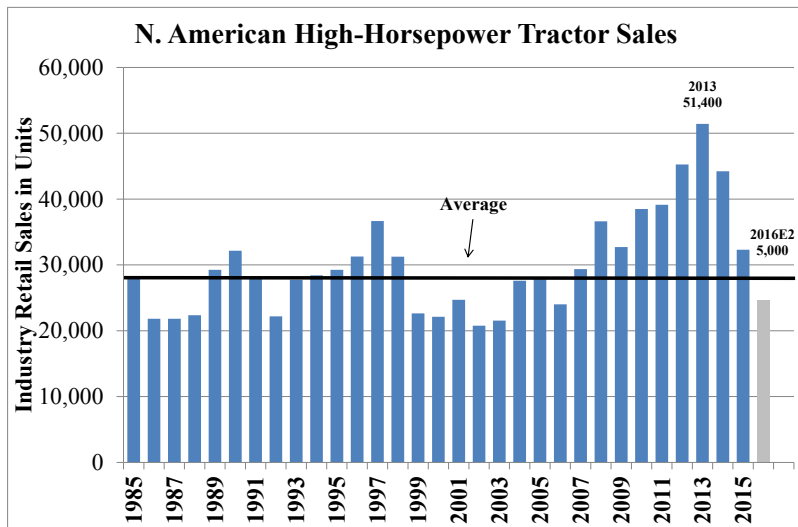
Source: AEM; Cleveland Research Company estimates. High hp tractors are row crop & 4-wheel drive.

# North American Farm Equipment Industry Inventory

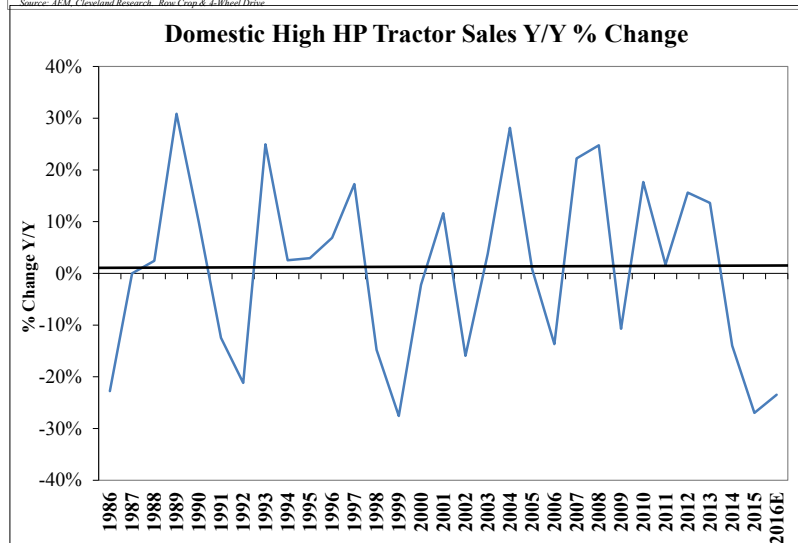
NORTH AMERICAN FARM EQUIPMENT INVENTORY														
	Inventory (Units)							Inventory to 12-mo. Sales						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	<40HP	Util	RC	4-WD	Total Tractor	Row Crop & 4WD	Comb
<b>Dec-13</b>	67,863	32,028	13,318	2,049	115,258	15,367	2,083	59%	50%	31%	24%	50%	30%	15%
<b>Jan-14</b>	69,111	33,240	12,620	2,028	116,999	14,648	1,681	60%	52%	29%	24%	51%	28%	12%
<b>Feb-14</b>	71,514	34,326	13,267	2,046	121,153	15,313	2,063	62%	54%	31%	25%	53%	30%	15%
<b>Mar-14</b>	71,249	35,256	14,058	2,218	122,781	16,276	2,456	61%	55%	33%	27%	53%	32%	18%
<b>Apr-14</b>	69,986	35,615	13,298	2,117	121,016	15,415	2,467	60%	55%	31%	26%	52%	31%	18%
<b>May-14</b>	66,364	34,755	13,505	2,255	116,879	15,760	2,734	57%	54%	32%	28%	51%	32%	21%
<b>Jun-14</b>	62,025	34,004	14,531	2,294	112,854	16,825	3,101	53%	52%	35%	29%	49%	34%	24%
<b>Jul-14</b>	61,829	34,393	14,836	2,159	113,217	16,995	3,144	52%	53%	36%	27%	49%	35%	25%
<b>Aug-14</b>	62,466	35,692	15,060	2,193	115,411	17,253	3,360	53%	54%	37%	29%	49%	36%	28%
<b>Sep-14</b>	61,811	35,926	16,185	2,399	116,321	18,584	2,891	51%	54%	40%	32%	49%	38%	24%
<b>Oct-14</b>	63,713	35,965	14,640	1,802	116,120	16,442	2,187	52%	53%	37%	25%	49%	35%	19%
<b>Nov-14</b>	67,691	37,110	14,840	1,652	121,293	16,492	2,046	55%	55%	38%	24%	51%	36%	19%
<b>Dec-14</b>	69,876	35,550	14,638	1,426	121,490	16,064	1,674	57%	52%	39%	22%	51%	36%	16%
<b>Jan-15</b>	73,716	35,405	13,934	1,439	124,494	15,373	1,713	59%	51%	37%	24%	53%	35%	18%
<b>Feb-15</b>	78,177	36,676	13,981	1,436	130,270	15,417	1,820	63%	54%	38%	25%	55%	36%	19%
<b>Mar-15</b>	81,662	37,881	14,179	1,346	135,068	15,525	2,040	66%	56%	39%	24%	58%	37%	22%
<b>Apr-15</b>	80,348	37,047	13,193	1,353	131,941	14,546	2,116	64%	54%	37%	26%	56%	35%	24%
<b>May-15</b>	78,880	37,037	13,177	1,400	130,494	14,577	2,058	63%	55%	38%	28%	56%	36%	23%
<b>Jun-15</b>	76,286	36,584	13,006	1,416	127,292	14,422	2,276	61%	54%	37%	29%	55%	36%	27%
<b>Jul-15</b>	72,876	35,232	12,507	1,354	121,969	13,861	2,218	56%	51%	37%	28%	52%	36%	27%
<b>Aug-15</b>	74,247	36,442	12,555	1,343	124,587	13,898	2,232	58%	53%	38%	29%	53%	37%	28%
<b>Sep-15</b>	65,844	37,545	12,551	1,374	117,314	13,925	2,001	51%	56%	39%	32%	51%	38%	26%
<b>Oct-15</b>	75,042	37,885	11,906	1,266	126,099	13,172	1,504	57%	56%	39%	31%	54%	38%	20%
<b>Nov-15</b>	79,228	39,911	12,983	1,317	133,439	14,300	1,492	61%	60%	44%	33%	58%	43%	20%
<b>Dec-15</b>	82,737	41,363	13,140	1,189	138,429	14,329	1,277	63%	63%	46%	30%	60%	44%	17%
<b>Jan-16</b>	86,618	42,352	12,727	1,129	142,826	13,856	1,169	66%	65%	47%	28%	63%	44%	16%
<b>Feb-16</b>	92,071	44,704	13,298	1,097	151,170	14,395	1,281	69%	68%	50%	28%	66%	48%	18%
<b>Mar-16</b>	93,703	45,127	13,327	1,131	153,288	14,458	1,281	69%	69%	52%	31%	66%	49%	18%
<b>Apr-16</b>	90,381	44,499	13,136	1,115	149,131	14,251	1,312	66%	69%	52%	31%	65%	50%	19%
<b>May-16</b>	86,451	43,931	13,015	1,152	144,549	14,167	1,492	63%	68%	52%	33%	63%	49%	22%
<b>Jun-16</b>	82,264	42,688	12,928	1,005	138,885	13,933	1,593	60%	66%	52%	29%	60%	49%	24%
<b>Jul-16</b>	81,046	41,621	12,765	920	136,352	13,685	1,580	59%	66%	53%	28%	60%	50%	24%
<b>Aug-16</b>	79,823	41,683	12,962	998	135,466	13,960	1,671	58%	66%	55%	31%	59%	52%	26%
<b>Sep-16</b>	78,438	41,007	12,671	1,103	133,219	13,774	1,428	56%	65%	54%	34%	58%	52%	23%

Source: AEM; Cleveland Research Company estimates

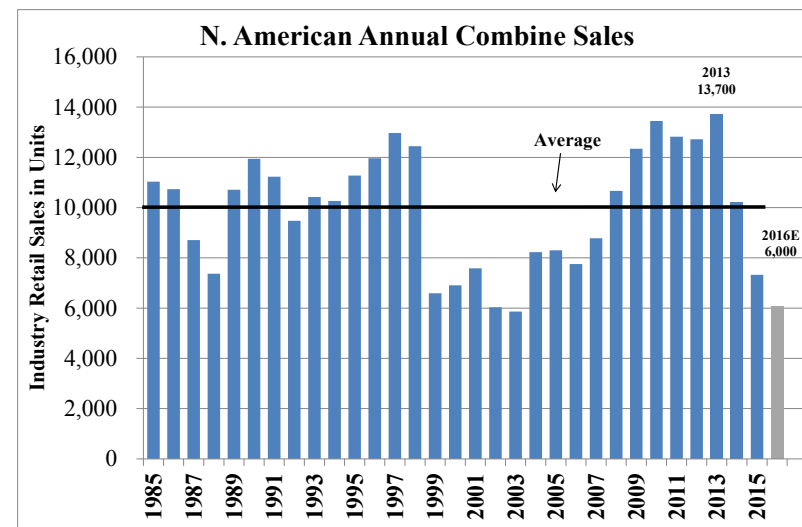
# Annual Agricultural Equipment Industry Sales (1985 - 2015)



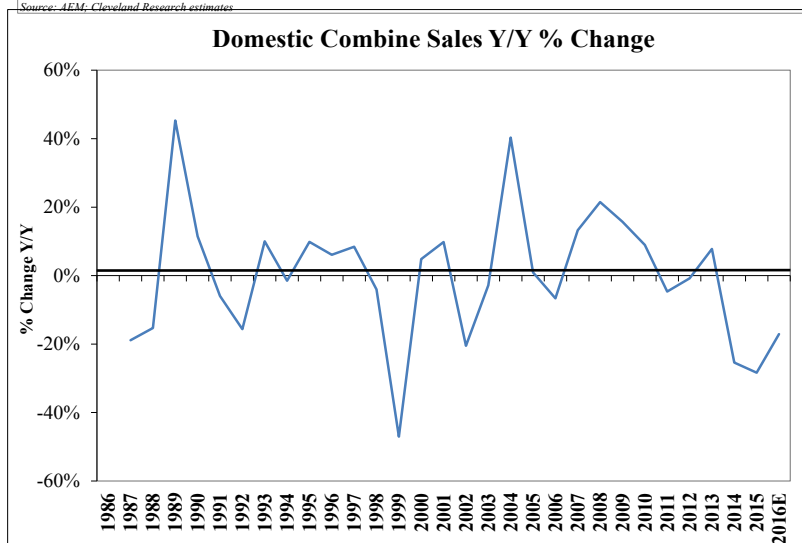
Source: AEM, Cleveland Research, Row Crop & A Wheel Drive



Source: AEM, Cleveland Research estimates

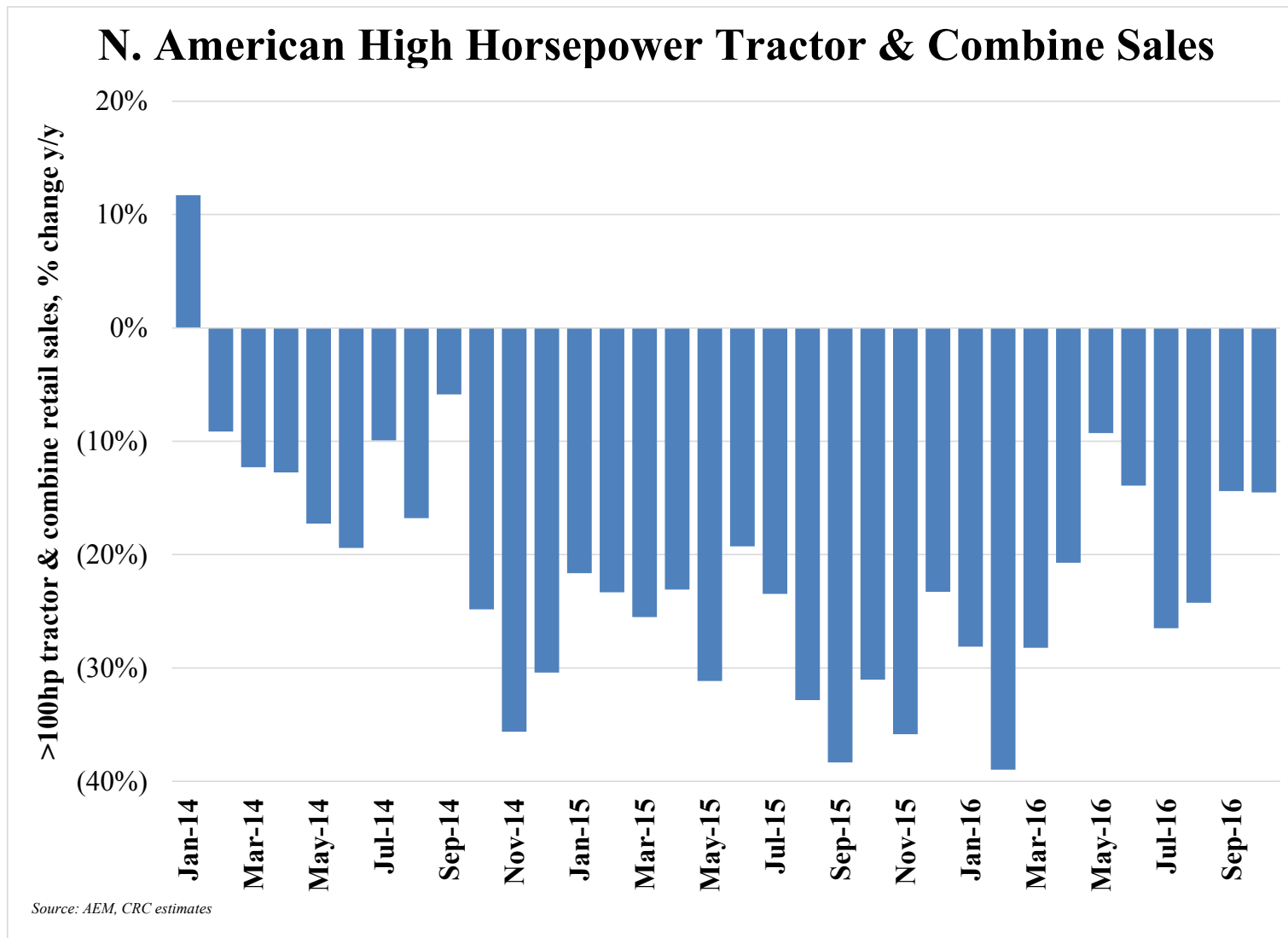


Source: AEM, Cleveland Research estimates



Source: AEM, Cleveland Research estimates

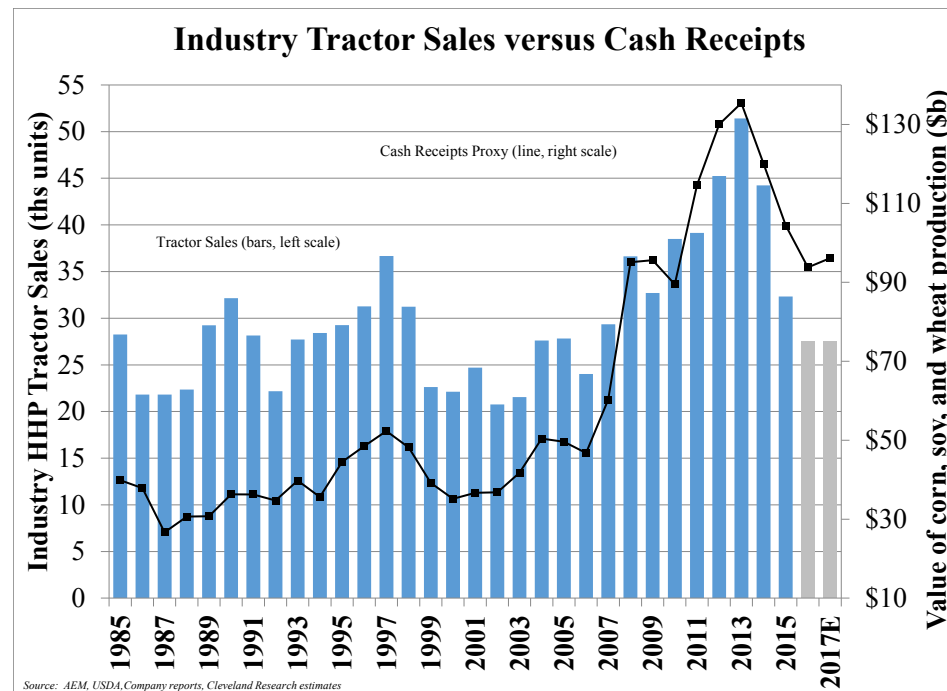
# North America Large Ag Equipment Sales



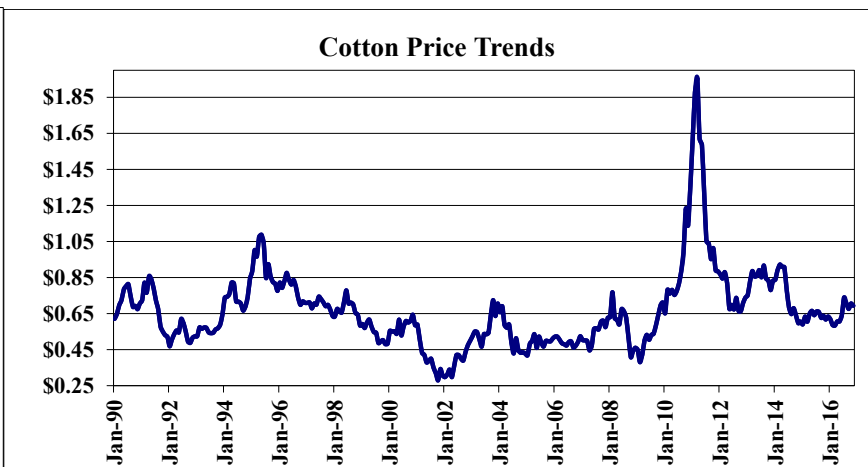
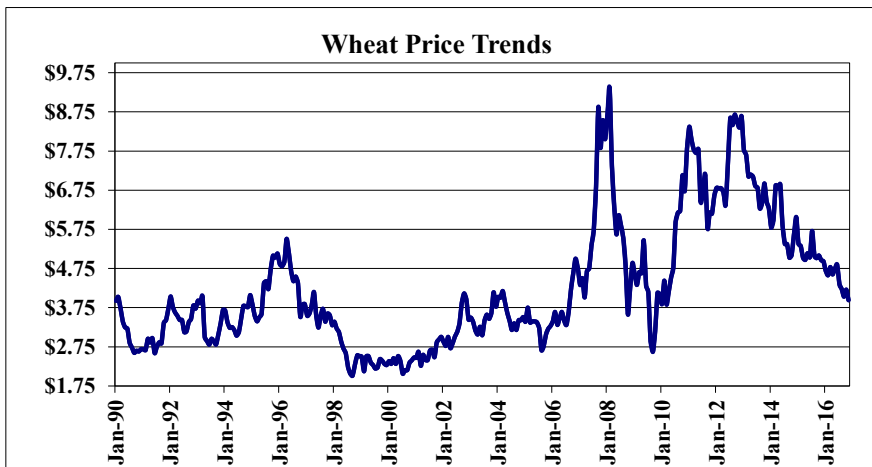
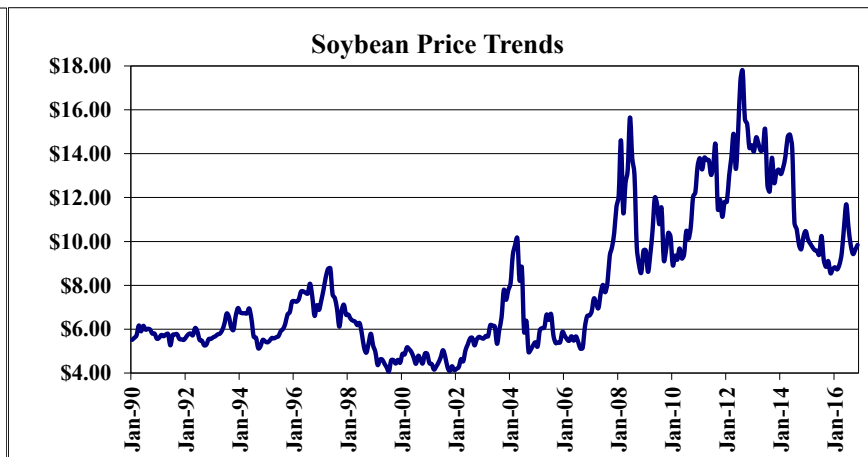
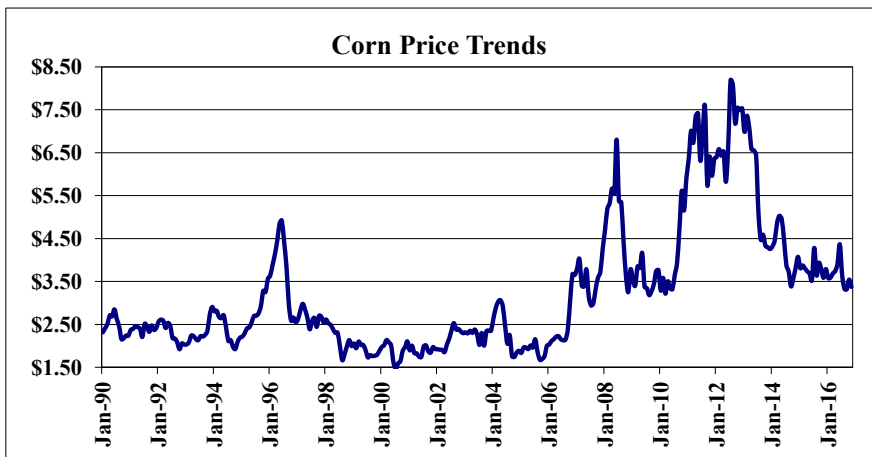
# Commodity Prices – Cash Receipts vs. Next Year Equipment Sales

**USDA's November 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 November crop report was better than October, with cash receipts proxy forecast up 5% y/y in 2016/2017 vs. prior estimate of up 2%. Corn yield forecasts improved to 175 from October's forecast of 173 bu/acre. Corn and soybean price forecasts increased 2% from October's estimate, while wheat pricing was flat.



# 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 2016													
US Corn Balance Sheet - USDA Long Term Forecast (Feb 2016)													
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
Planted	95	91	88	95	90	90	90	90	90	89	89	88	88
Harvested	88	83	81	87	83	83	83	82	82	81	81	80	80
Yield (bu/acre)	158	171	168	175	170	172	174	176	178	180	182	184	186
Beginning Stocks (MM bu)	821	1,232	1,731	1,738	1,755	1,730	1,740	1,755	1,775	1,785	1,790	1,785	1,735
Production (MM bu)	13,829	14,216	13,601	15,226	14,035	14,200	14,355	14,465	14,535	14,610	14,680	14,740	14,900
Imports (MM bu)	36	32	55	50	30	30	30	30	30	30	30	30	30
<b>Total Supply (MM bu)</b>	<b>14,686</b>	<b>15,480</b>	<b>15,387</b>	<b>17,013</b>	<b>15,820</b>	<b>15,960</b>	<b>16,125</b>	<b>16,250</b>	<b>16,340</b>	<b>16,425</b>	<b>16,500</b>	<b>16,555</b>	<b>16,665</b>
Feed & Residual (MM Bu)	5,036	5,315	5,250	5,650	5,550	5,650	5,750	5,850	5,925	6,000	6,075	6,150	6,225
Food, Seed, & Industrial Total	6,501	6,568	6,610	6,735	6,615	6,595	6,595	6,550	6,530	6,485	6,465	6,445	6,425
Ethanol & By-Products	5,134	5,209	5,250	5,300	5,225	5,200	5,200	5,150	5,125	5,075	5,050	5,025	5,000
Domestic Use	11,537	11,883	11,860	12,385	12,165	12,245	12,345	12,400	12,455	12,485	12,540	12,595	12,650
Exports	1,917	1,864	1,725	2,225	1,925	1,975	2,025	2,075	2,100	2,150	2,175	2,225	2,275
<b>Total Use</b>	<b>13,454</b>	<b>13,747</b>	<b>13,585</b>	<b>14,610</b>	<b>14,090</b>	<b>14,220</b>	<b>14,370</b>	<b>14,475</b>	<b>14,555</b>	<b>14,635</b>	<b>14,715</b>	<b>14,820</b>	<b>14,925</b>
Ending Stocks	1,232	1,731	1,803	2,403	1,730	1,740	1,755	1,775	1,785	1,790	1,785	1,735	1,740
Ending Stocks/Use	9.2%	12.6%	13.3%	16.4%	12.3%	12.2%	12.2%	12.3%	12.3%	12.2%	12.1%	11.7%	11.7%
Weeks Carryover	4.8	6.5	6.9	8.6	6.4	6.4	6.4	6.4	6.4	6.4	6.3	6.1	6.1
<b>Average Farm Price (\$/bu)</b>	<b>\$4.46</b>	<b>\$3.70</b>	<b>\$3.60</b>	<b>\$3.30</b>	<b>\$3.65</b>	<b>\$3.70</b>	<b>\$3.70</b>	<b>\$3.70</b>	<b>\$3.70</b>	<b>\$3.70</b>	<b>\$3.70</b>	<b>\$3.75</b>	<b>\$3.75</b>
Value of Production	\$61,677	\$52,599	\$48,964	\$50,246	\$51,228	\$52,540	\$53,114	\$53,521	\$53,780	\$54,057	\$54,316	\$55,275	\$55,875
% change y/y	-17%	-15%	-7%	3%	2%	3%	1%	1%	0%	1%	0%	2%	1%
U.S. Soybean Balance Sheet - USDA Long Term Forecast (Feb 2016)													
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
Planted	77	83	83	84	82	82	82	82	81	81	81	81	81
Harvested	76	83	82	83	81	81	81	81	80	80	80	80	80
Yield Per Harvested Acre (Bushels)	44	48	48	53	47	48	48	49	49	50	50	51	51
Beginning Stocks	141	92	191	197	421	382	348	323	299	275	270	270	265
Production	3,358	3,927	3,929	4,361	3,810	3,850	3,890	3,920	3,940	3,980	4,020	4,035	4,065
Imports	72	33	30	30	30	30	30	30	30	30	30	30	30
<b>Total Supplies</b>	<b>3,571</b>	<b>4,052</b>	<b>4,150</b>	<b>4,588</b>	<b>4,261</b>	<b>4,262</b>	<b>4,268</b>	<b>4,273</b>	<b>4,269</b>	<b>4,285</b>	<b>4,320</b>	<b>4,335</b>	<b>4,360</b>
Crush	1,734	1,873	1,880	1,930	1,920	1,940	1,960	1,980	1,995	2,005	2,020	2,030	2,045
Exports	1,647	1,843	1,740	2,050	1,835	1,850	1,860	1,870	1,875	1,885	1,905	1,915	1,925
Seed & Residual	98	145	34	32	124	124	125	124	124	125	125	125	124
<b>Total Use</b>	<b>3,479</b>	<b>3,861</b>	<b>3,654</b>	<b>4,108</b>	<b>3,879</b>	<b>3,914</b>	<b>3,945</b>	<b>3,974</b>	<b>3,994</b>	<b>4,015</b>	<b>4,050</b>	<b>4,070</b>	<b>4,094</b>
Ending Stocks	92	191	400	480	382	348	323	299	275	270	270	265	266
Stocks/Use	2.7%	4.9%	10.9%	11.7%	9.8%	8.9%	8.2%	7.5%	6.9%	6.7%	6.7%	6.5%	6.5%
<b>Average Price (\$/bu)</b>	<b>\$13.00</b>	<b>\$10.10</b>	<b>\$8.85</b>	<b>\$9.20</b>	<b>\$8.80</b>	<b>\$8.95</b>	<b>\$9.00</b>	<b>\$9.10</b>	<b>\$9.20</b>	<b>\$9.20</b>	<b>\$9.20</b>	<b>\$9.30</b>	<b>\$9.35</b>
Value of Production	\$43,654	\$39,663	\$34,772	\$40,121	\$33,528	\$34,458	\$35,010	\$35,672	\$36,248	\$36,616	\$36,984	\$37,526	\$38,008
% change y/y	0%	-9%	-12%	15%	-16%	3%	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 2016 (continued)

### U.S. Wheat Balance Sheet - USDA Long Term Forecast (Feb 2016)

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
Planted	56	57	55	50	51	52	52	52	52	52	52	52	52
Harvested	45	46	47	44	43	44	44	44	44	44	44	44	44
Yield Per Harvested Acre (Bushels)	47	44	44	53	46	47	47	47	48	48	48	49	49
Beginning Stocks	718	590	752	976	928	842	784	739	707	688	677	669	669
Production	2,134	2,026	2,052	2,310	2,000	2,035	2,050	2,065	2,080	2,095	2,110	2,130	2,140
Imports	169	144	120	125	130	135	140	145	150	155	160	165	170
<b>Total Supplies</b>	<b>3,021</b>	<b>2,760</b>	<b>2,924</b>	<b>3,410</b>	<b>3,058</b>	<b>3,012</b>	<b>2,974</b>	<b>2,949</b>	<b>2,937</b>	<b>2,938</b>	<b>2,947</b>	<b>2,964</b>	<b>2,979</b>
Food	955	960	960	963	981	988	995	1,002	1,009	1,016	1,023	1,030	1,037
Seed	77	81	66	69	70	70	70	70	70	70	70	70	70
Feed&residual	223	111	140	260	215	210	200	190	180	175	175	175	175
Exports	1,176	855	780	975	950	960	970	980	990	1,000	1,010	1,020	1,030
<b>Total Use</b>	<b>2,431</b>	<b>2,007</b>	<b>1,946</b>	<b>2,267</b>	<b>2,216</b>	<b>2,228</b>	<b>2,235</b>	<b>2,242</b>	<b>2,249</b>	<b>2,261</b>	<b>2,278</b>	<b>2,295</b>	<b>2,312</b>
Ending Stocks	590	753	978	1,143	842	784	739	707	688	677	669	669	667
Stocks/Use	24.3%	37.5%	50.3%	50.4%	38.0%	35.2%	33.1%	31.5%	30.6%	29.9%	29.4%	29.2%	28.8%
<b>Average Price (\$/bu)</b>	<b>\$6.87</b>	<b>\$5.99</b>	<b>\$4.90</b>	<b>\$3.70</b>	<b>\$4.50</b>	<b>\$4.60</b>	<b>\$4.65</b>	<b>\$4.70</b>	<b>\$4.75</b>	<b>\$4.80</b>	<b>\$4.85</b>	<b>\$4.90</b>	<b>\$4.95</b>
Value of Production	\$14,661	\$12,136	\$10,055	\$8,547	\$9,000	\$9,361	\$9,533	\$9,706	\$9,880	\$10,056	\$10,234	\$10,437	\$10,593
% change y/y	-16%	-17%	-17%	-15%	5%	4%	2%	2%	2%	2%	2%	2%	1%

### Total Acreage and Value of U.S. Corn, Soy and Wheat Production - USDA February 2016 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
Planted (mm acres)	228	231	225	228	223	223	223	223	222	222	221	220	220
Harvested (mm acres)	209	212	210	214	206	207	207	207	206	205	205	204	204
Yield (bu/acre)	92	95	93	102	96	97	98	99	100	101	102	103	104
Production	19,321	20,169	19,582	21,897	19,845	20,085	20,295	20,450	20,555	20,685	20,810	20,905	21,105
Average Price (\$/bu)	\$6.21	\$5.18	\$4.79	\$4.52	\$4.72	\$4.80	\$4.81	\$4.84	\$4.86	\$4.87	\$4.88	\$4.94	\$4.95
<b>Value of Production</b>	<b>\$119,992</b>	<b>\$104,398</b>	<b>\$93,790</b>	<b>\$98,914</b>	<b>\$93,756</b>	<b>\$96,359</b>	<b>\$97,656</b>	<b>\$98,898</b>	<b>\$99,908</b>	<b>\$100,729</b>	<b>\$101,534</b>	<b>\$103,238</b>	<b>\$104,476</b>
% change y/y	-11%	-13%	-10%	5%	-5%	3%	1%	1%	1%	1%	1%	2%	1%

Source: USDA, Cleveland Research estimates



# U.S. Acreage Planted Per Crop Year

