

# ***Ag Equipment Intelligence***

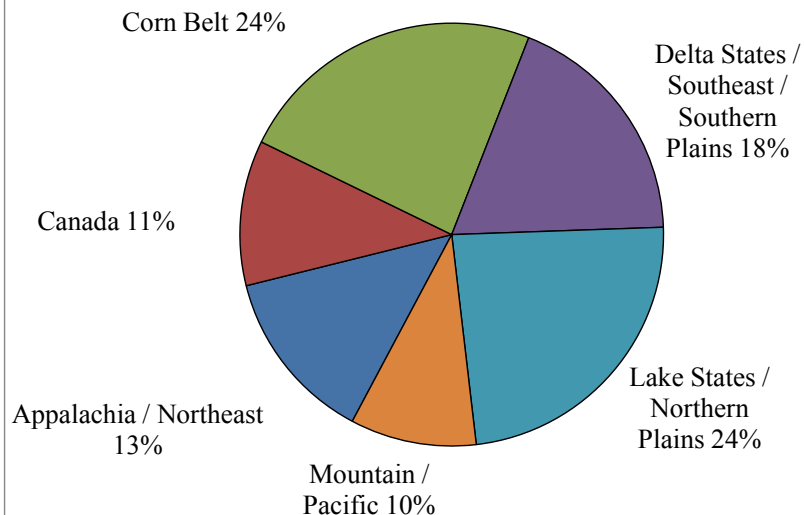
September 2016 Dealer Sentiments &  
Business Conditions Update

# Monthly Ag Equipment Intelligence North American Dealer Survey

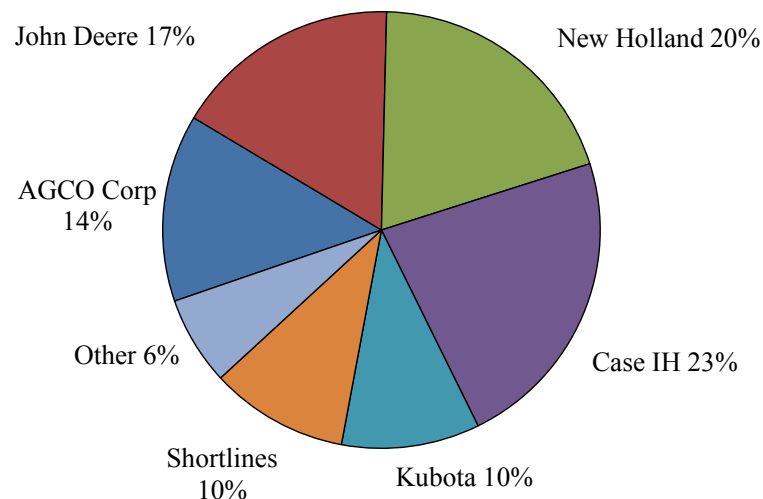
## Background:

- We are pleased to announce the results of the August 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 August survey had ~170 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. \*Note regions have been condensed.

## Highlights / Summary Thoughts

- **Sales** – Average dealer sales were reported down 11% in August vs the 8% decline reported in July. A net 27% of dealers missed their sales budget in August compared to a net 28% in July. A net 43% of dealers reported a sales decline in the month vs a net 39% citing a decline in July. 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 was reported at down 15%, down from the 12% decline forecast in July. A net 45% of dealers are forecasting a sales decline for the year vs a net 36% forecasting a decline last month. The sales growth forecast for 2017 was reported at down 13% on average compared to the initial forecast of down 8% last month.
- **Inventory** – A net 42% of dealers reported new equipment inventories as too high, inline with July. Used inventory levels were reported higher than July, as a net 40% of dealers reported inventory as too high vs. 34% 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 tractors were reported down 8% y/y on average, slightly worse than the 7% reported in July. Used combine pricing was down 11% y/y, slightly worse than July's 10% decline.

# Monthly Sales Growth

- Average dealer sales were reported down 11% y/y in August vs the 8% reported in July. A net 27% of dealers missed their sales budgets in August, a slight improvement from the 28% miss in July.
- A net 25% of dealers report they are less optimistic about overall business conditions vs 24% in July. Optimism has remained negative for 2+ consecutive years.

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

% Change y/y	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
AGCO	-12%	-24%	-13%	-14%	-22%	-27%	-9%	-13%	-7%	-18%	-4%	-1%	-19%	-7%	-22%
John Deere	-14%	-19%	-14%	-15%	-16%	-12%	-16%	-11%	-11%	-13%	-11%	-6%	-8%	-16%	-17%
New Holland	-5%	-17%	-12%	-23%	-14%	-13%	-15%	-11%	-10%	-15%	-16%	2%	-3%	-8%	-11%
Case IH	-19%	-17%	-19%	-20%	-19%	-22%	-18%	-18%	-20%	-15%	-9%	-19%	-8%	-5%	-11%
Kubota	0%	0%	-3%	-2%	2%	-5%	-13%	-8%	0%	8%	2%	6%	2%	8%	1%
Shortlines/Other	-16%	-7%	-38%	-7%	-9%	-8%	-8%	-9%	-1%	-4%	-6%	-7%	-4%	8%	-22%
<b>Total</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>

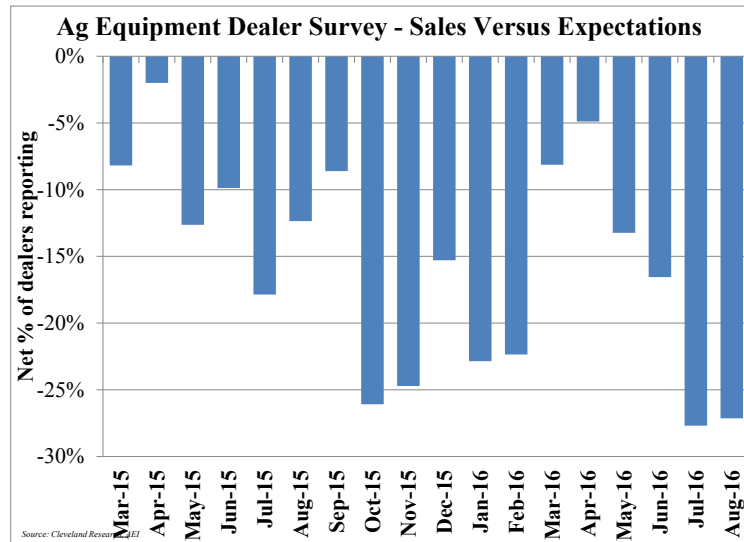
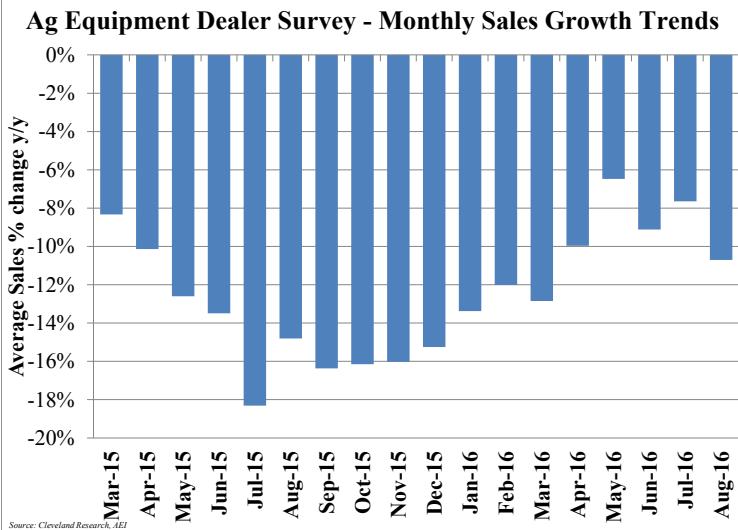
Source: Cleveland Research, AEI

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

% of Dealers Reporting	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
Better than expected	21%	18%	16%	19%	15%	12%	19%	12%	15%	20%	24%	21%	22%	15%	14%
In line with expectations	48%	45%	56%	53%	43%	51%	47%	52%	47%	52%	48%	46%	40%	43%	44%
Worse than expected	31%	36%	28%	28%	41%	37%	34%	35%	38%	28%	29%	34%	38%	42%	41%
<b>Net % (Better - Worse)</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>

Source: Cleveland Research, AEI

# Monthly Sales Growth Continued



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

% of Dealers Reporting	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
Positive Sales Growth	26%	20%	19%	24%	20%	16%	18%	14%	20%	23%	27%	29%	27%	20%	19%
Flat Sales	11%	16%	16%	16%	15%	17%	10%	22%	20%	17%	23%	16%	23%	21%	19%
Negative Sales Growth	63%	64%	65%	60%	65%	67%	72%	64%	60%	60%	50%	55%	50%	59%	62%
<b>Net % Reporting Growth</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>Average % Change y/y</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>

Source: Cleveland Research

**Optimism/Sentiment vs. Last Month**

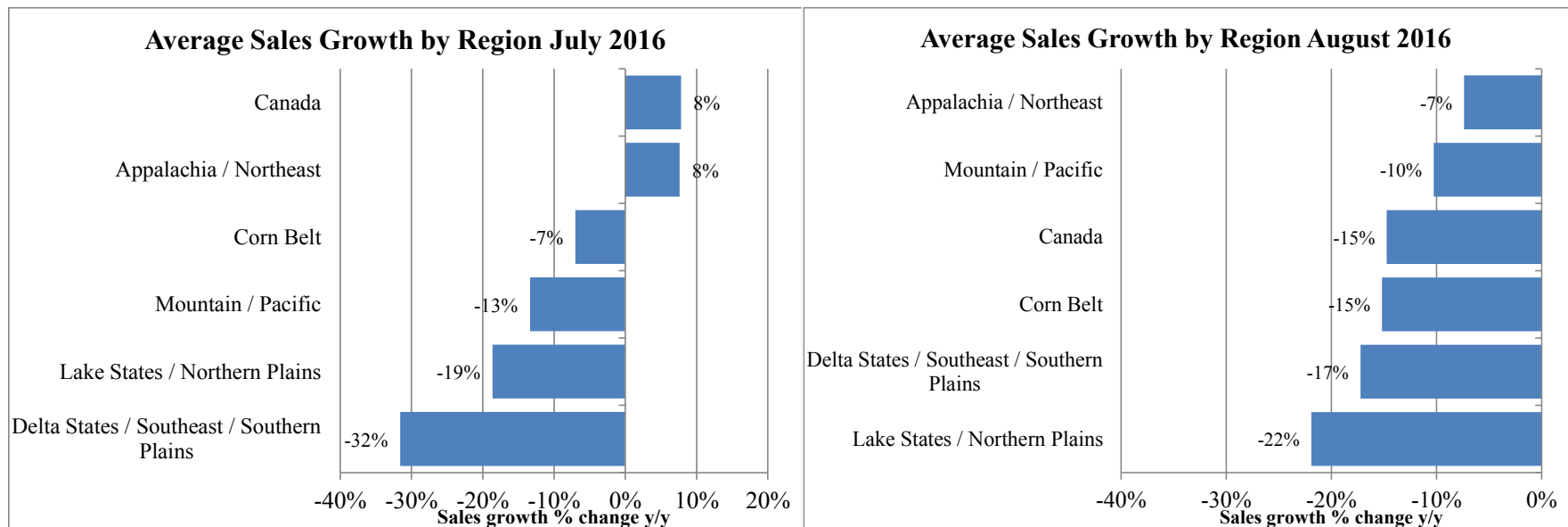
% of Dealers Reporting	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
More Optimistic	13%	14%	11%	12%	8%	10%	8%	11%	13%	17%	15%	22%	11%	16%	11%
Same	58%	52%	45%	51%	60%	52%	48%	46%	51%	55%	59%	51%	60%	44%	52%
Less Optimistic	30%	35%	43%	37%	33%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

Source: Cleveland Research

Source: Farm Equipment Magazine Survey

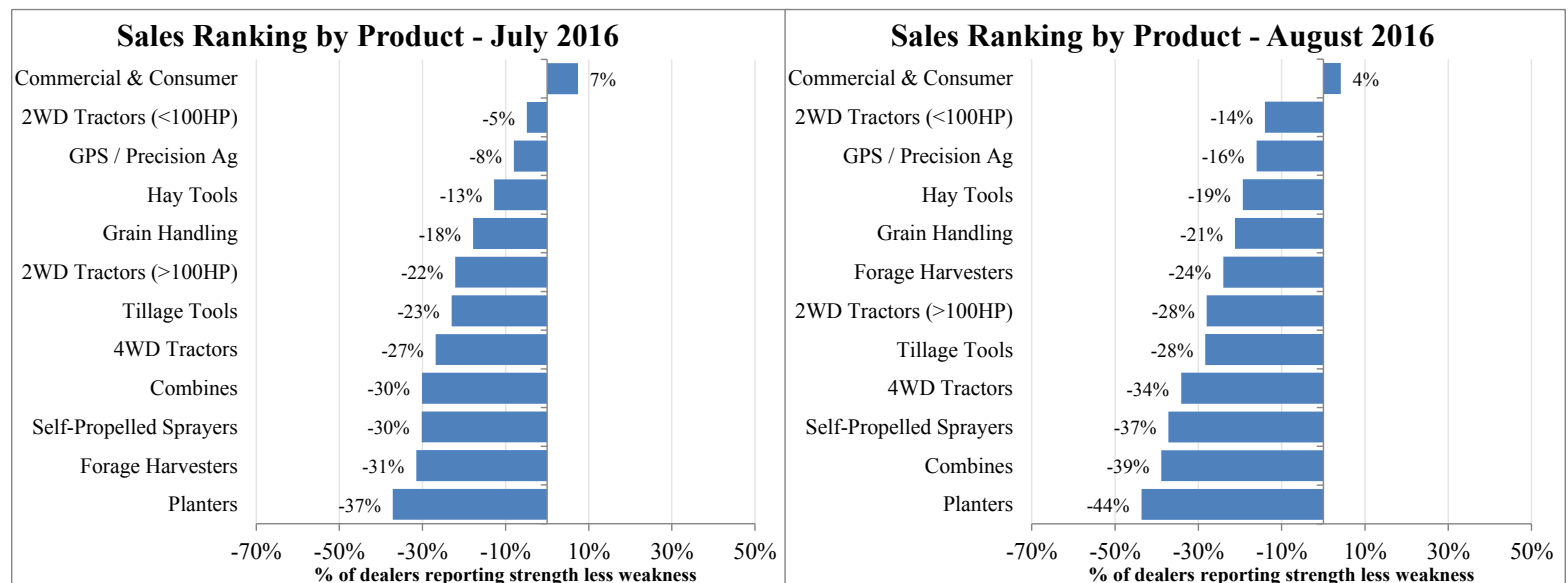
# Monthly Sales Growth by Region

- Sales trends by region were negative overall in the month, with Canada showing the largest sequential decline. There was slight improvement in the month in the Delta States/Southeast/Southern Plains and Mountain/ Pacific regions.

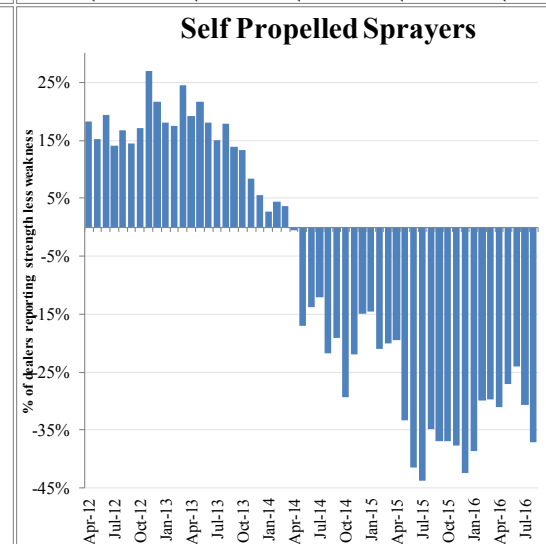
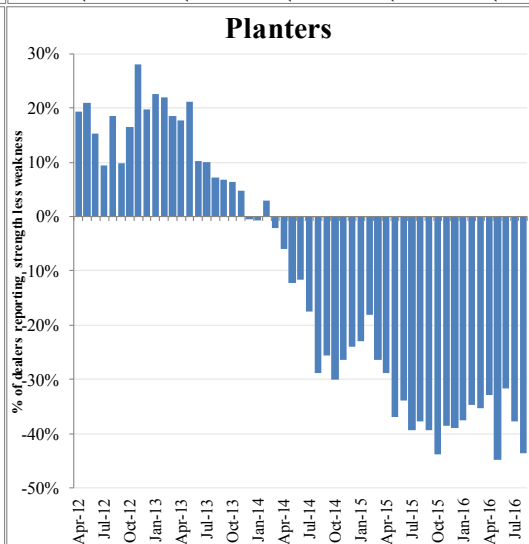
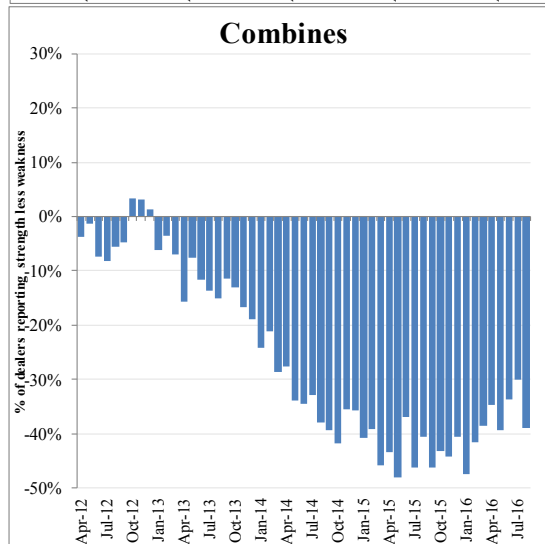
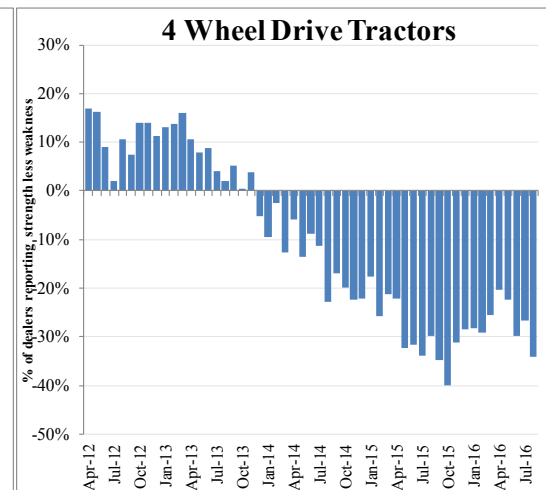
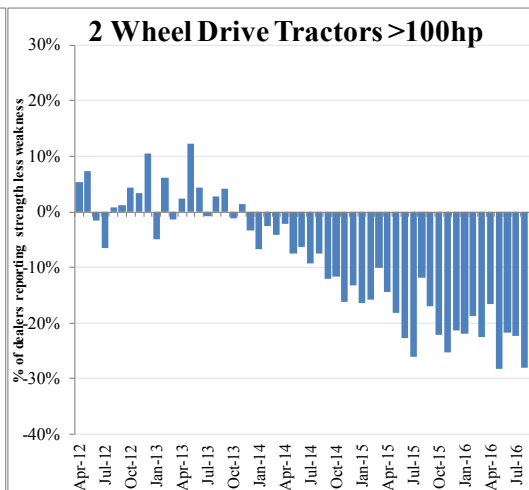
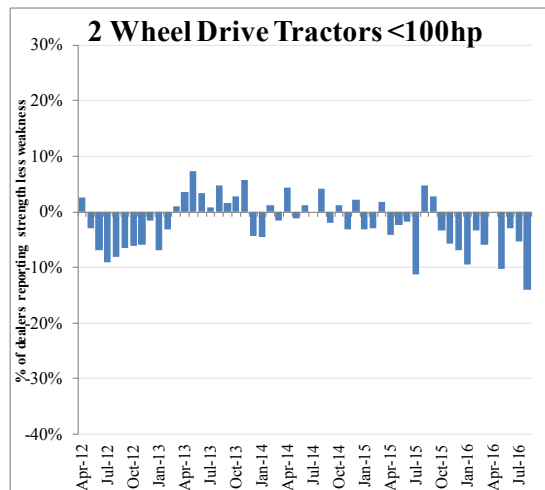


# Equipment Category Sales Trends

- Commercial & consumer lawn equipment continues to show strength in contrast to declines in other categories (combines, planters, and sprayers in particular). While GPS / Precision AG 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.

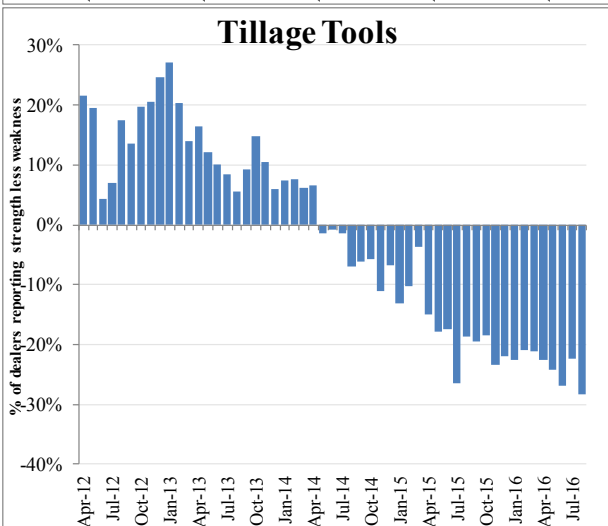
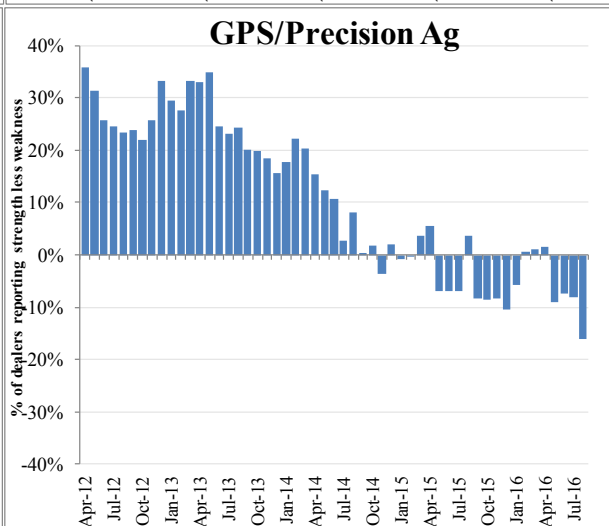
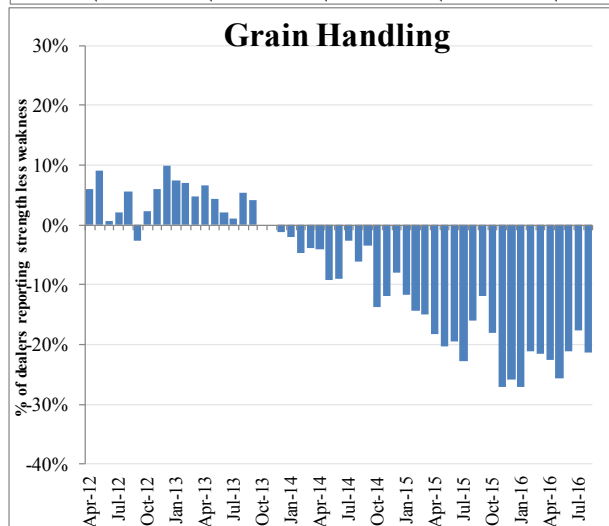
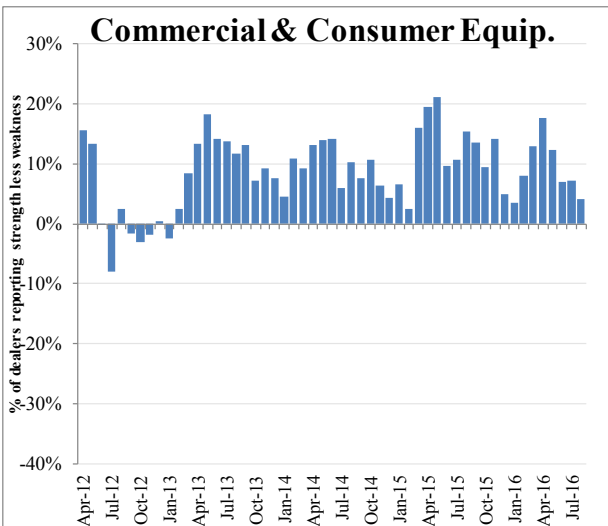
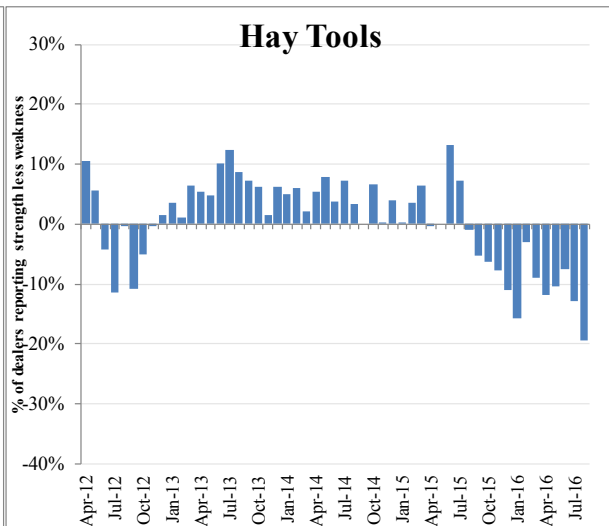
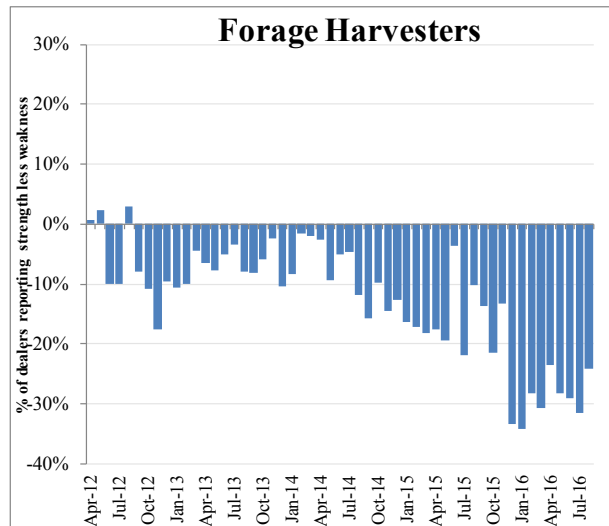


# Equipment Category Sales Trends





# Equipment Category Sales Trends (Continued)



# Most Interesting Commentary - Monthly Sales and Outlook

- *Big high horsepower tractors, large tillage and combines are not moving. Some used equipment is moving: Kubota compacts, construction track skid loaders, mini excavators, and Krause vertical till and finishers.*
- *Tillage and seeding sales are normally our bread and butter during August but this year they were almost non-existent. Tillage was much slower than normal and we had almost no interest in seeding equipment.*
- *The floor traffic is sluggish. People seem to be delaying big ticket purchases.*
- *With such low corn, soybeans and now cattle prices, we knew sales would be down. Bankers are routinely saying "no."*
- *When the price of corn fell, the customers stopped coming in. Farmers are full of uncertainty.*
- *New prices are going up very little, maybe 0-2%, but rebates and added incentives are bringing the prices down.*
- *New Holland is now offering 0% interest for 84 months on almost everything.*
- *Kubota is now offering seven year interest free terms on most products.*
- *Low grain and milk prices combined with a drought covering most of our area are making farmers hold tight. The election is the next thing farmers are worried about.*
- *The cattle market is holding together better than some thought. I am hopeful there will be some year-end business.*
- *If crop prices don't increase, I do not see large equipment selling in 2017. There may be even more used equipment for sale as farmers are leaving the business altogether. It is going to take some unforeseen event to increase sales.*
- *Row crop farmers are still very cautious about net farm income for 2016 and how any shortfall may affect their ability to repay 2016 operating loans at the bank. Therefore, any underpayment may hamper 2017 operating loan terms.*
- *Inventory is too high on tillage, combines, and tractors. Inventory is low on some smaller items.*
- *Inventory is too high of the wrong stuff: round balers, big square balers, combines and grain headers. There are too few tractors, hay swathers, and skid steers.*
- *Outside of dealer auctions, there haven't been a lot of sellers out there.*
- *It is hard to sell new equipment when the manufacturer is dumping low hour lease returns in your market. Why should I take a trade to sell a new machine at low or no margin if there is no place to sell it?*
- *There is too much used inventory so we are decreasing new equipment until used levels are manageable.*
- *Grain market is having a major impact on customers buying equipment. We feel like the bottom is not in place today but hopefully it will be soon.*
- *The only floor traffic at the moment is repair parts.*
- *New Holland offered longer floor plan terms (12 months) on high horsepower tractors in an effort to solicit new orders.*
- *The continued downward trend of grain commodity prices, specifically cash wheat now at \$2.50 a bushel.*
- *The continuing decline of parts and service sales. Producers appear to be in a "run it till the wheels fall off" mentality right now.*

## Average Dealer Sales Outlook

- Dealers forecast 2016 sales down 15% y/y, below July's forecast of down 12%. A net 45% of dealers are forecasting a sales decline (20% increase, 15% about the same, 65% decline). The 2017 sales growth forecast was reported at down 13% on average, a decline from the initial forecast of 8% declines last month.
- The second table below details the 2016 industry outlooks from Deere, CNHI and AGCO. N. American forecasts estimates have not changed through AGCO, DE and CNH's August earnings releases.

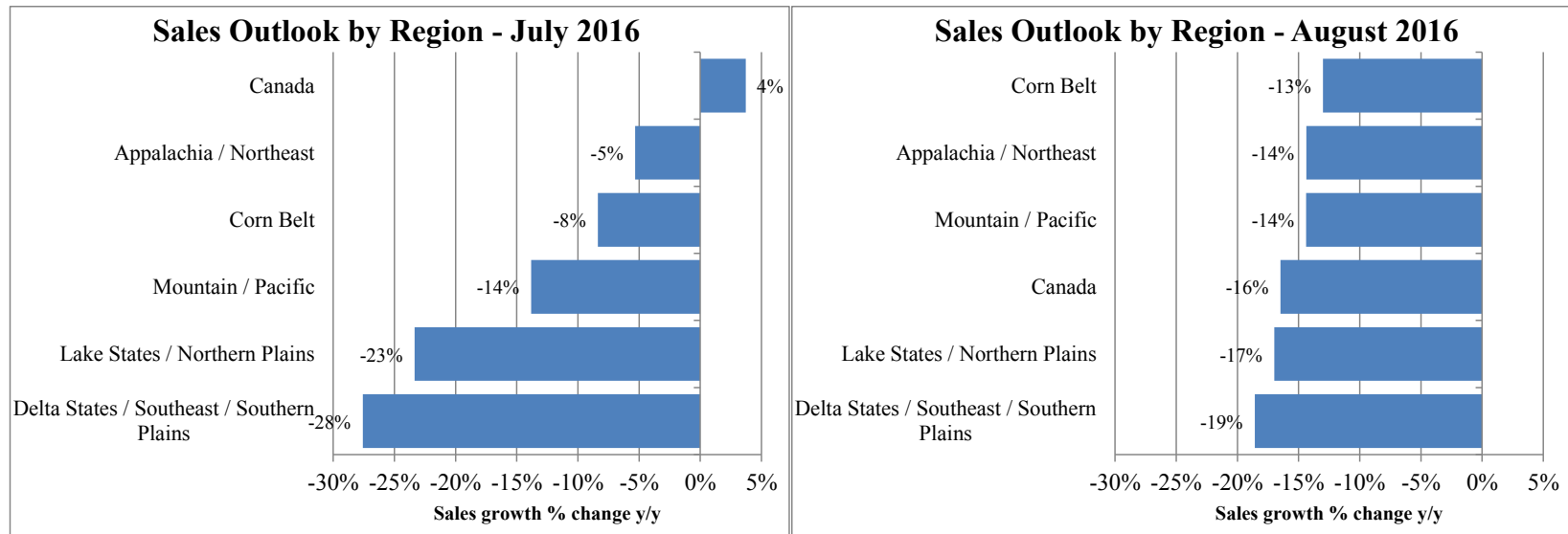
N. American Farm Equipment Dealer Survey - Full Year Sales Forecast												
% change y/y	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
AGCO	-9%	-8%	-7%	-9%	-10%	-6%	-15%	-6%	-7%	-8%	-13%	-17%
John Deere	-6%	-10%	-9%	-8%	-12%	-10%	-12%	-10%	-6%	-11%	-15%	-14%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

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 (15-20%), Combines (5-10%)	Down 15-20%
CIS or ROW	na	na	na
Asia	Flat to Down Slightly	Tractors 0-5%, Combines 5-10%	na
Source: Company reports, CRC estimates			

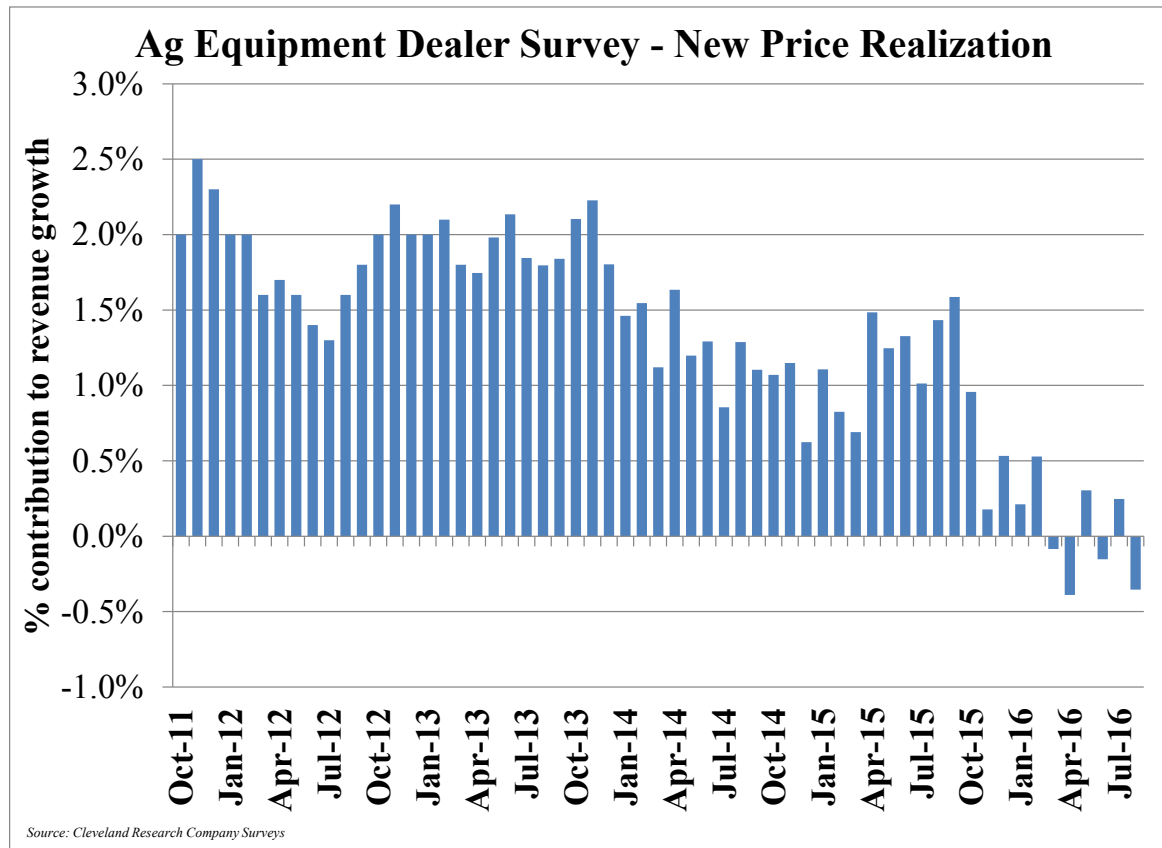
# 2016 Sales Outlook

- Trends were negative by region in the month with Canada now expecting sales down 16% in the year, after forecasts of up 4% in July attributed to a smaller and different sample. All other regions are forecasting negative sales in 2016 with the Delta States/Southeast/Southern Plains having the weakest forecast at down 19% for the year.



# Pricing Trends

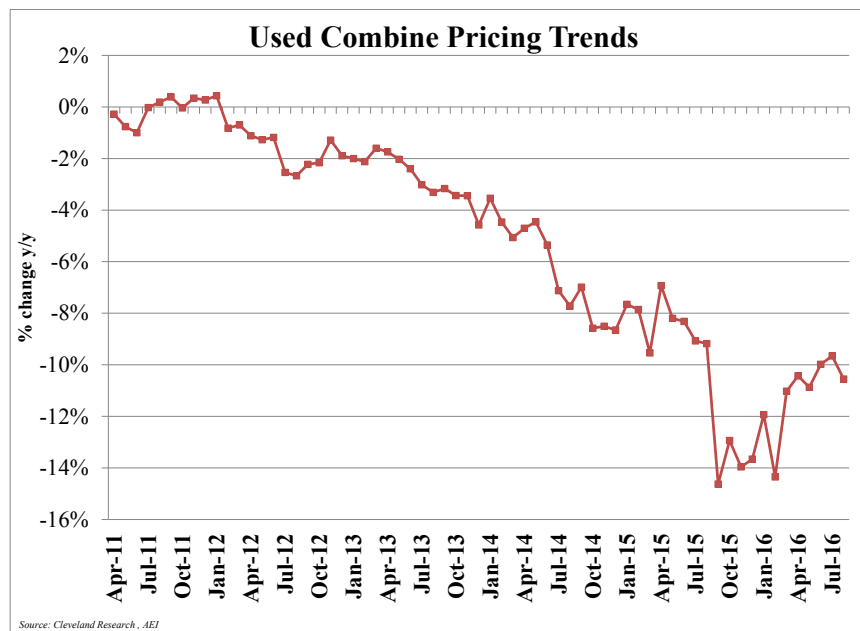
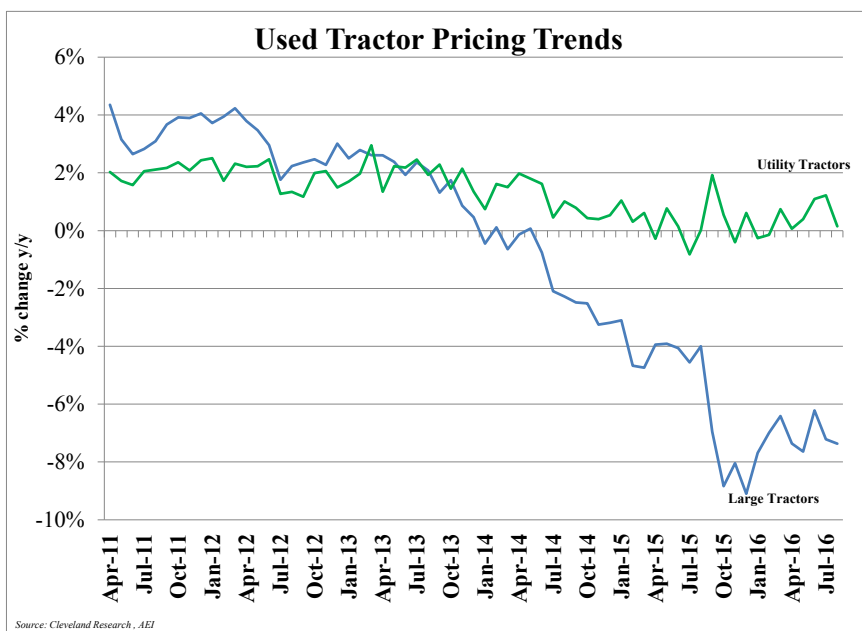
- Dealers reported relatively flat pricing over the last few months as incentives programs have more than offset list price increases back in 4Q15. The effect of the strong US dollar on Canadian exchange rate has also played a part in pricing inflation within North America.



# Used Equipment Pricing

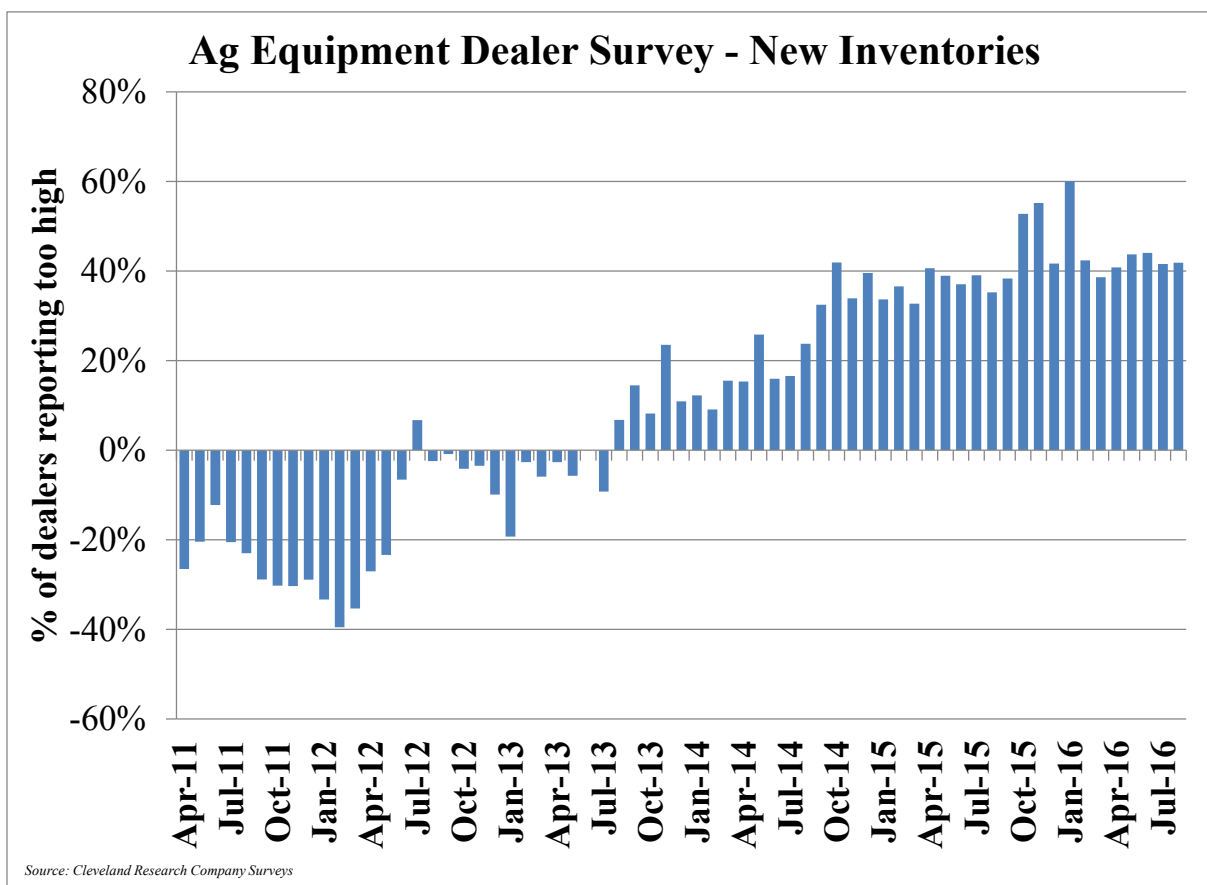
- August saw slight declines in pricing for small tractors. Used tractors were reported down ~8% y/y on average, slightly below the 7% reported in July. Used combine pricing was down 11% y/y, slightly worse than July's 10% decline.

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
<b>Compact (&lt;40HP)</b>	2%	1%	(1%)	0%	(1%)	0%	1%	0%	1%	2%	2%	1%
<b>Utility (40-100HP)</b>	2%	0%	(0%)	1%	0%	(1%)	0%	0%	0%	1%	1%	(0%)
<b>Row Crop (100HP+)</b>	(4%)	(6%)	(7%)	(7%)	(6%)	(5%)	(5%)	(6%)	(7%)	(5%)	(6%)	(6%)
<b>4WD Tractors</b>	(9%)	(11%)	(9%)	(11%)	(10%)	(9%)	(8%)	(8%)	(9%)	(8%)	(8%)	(9%)
<b>Combines</b>	(15%)	(13%)	(14%)	(14%)	(12%)	(14%)	(11%)	(10%)	(11%)	(10%)	(10%)	(11%)



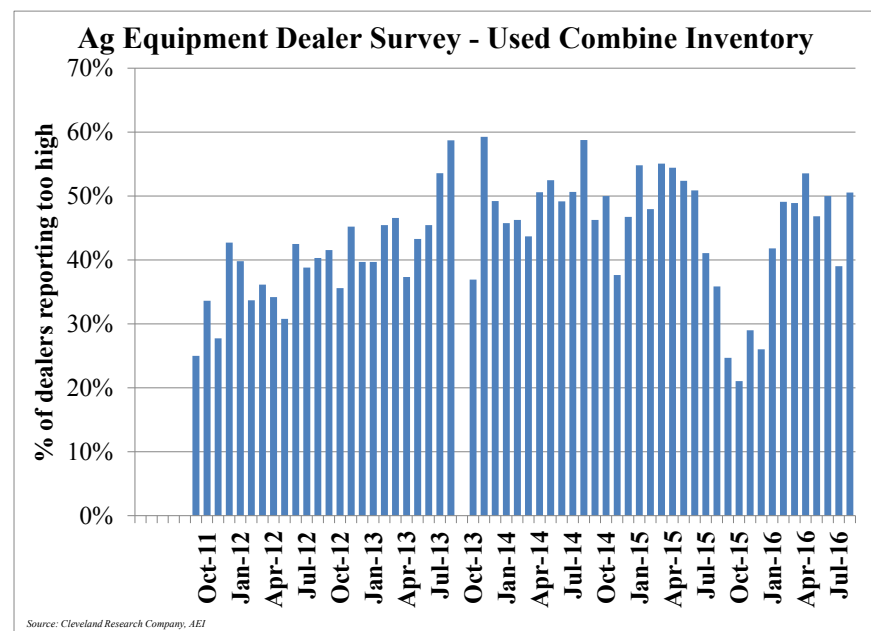
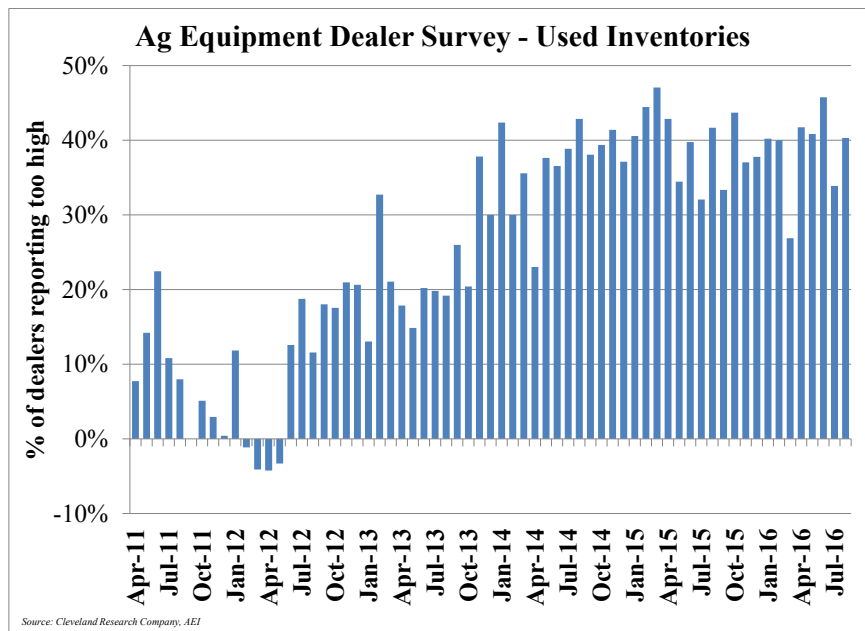
# New Equipment Inventory Levels

- A net 42% of dealers reported new equipment inventories are too high (48% too high, 45% about right, 6% too low), inline with July. New inventory levels have been reported as too high for nearly 3 years.



# Used Equipment Inventory Levels

- A net 40% of dealers reported used equipment inventory as too high (49% too high, 43% about right, 8% too low), worse than the 34% reporting heightened inventory in July (44% too high, 47% about right, 10% too low). Used combine inventory levels were reported as too high by a net 51% of dealers in August, compared to July's reading of 39% and June's 50%.





# 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	10,787	5,394	1,941	250	18,372	2,191	848	-5%	-13%	-41%	-49%	-14%	-42%	-26%
Oct-15	12,876	6,855	3,263	515	23,509	3,778	799	18%	-3%	-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%

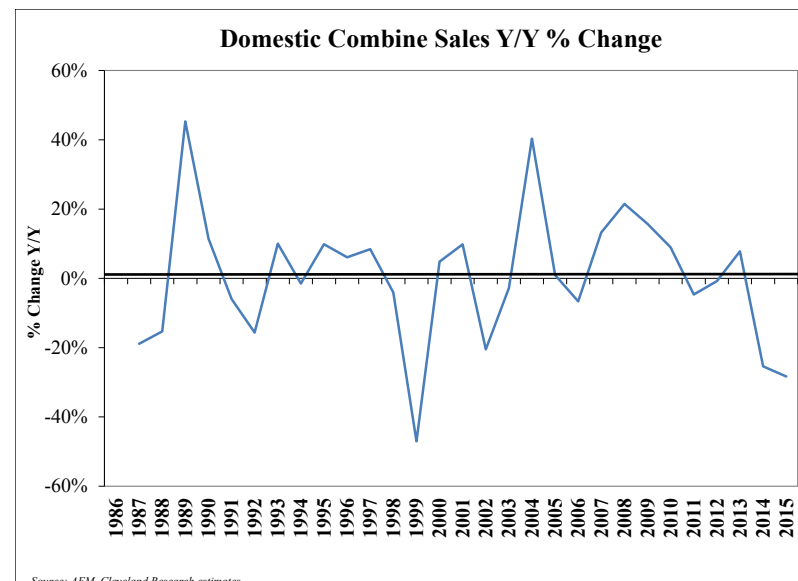
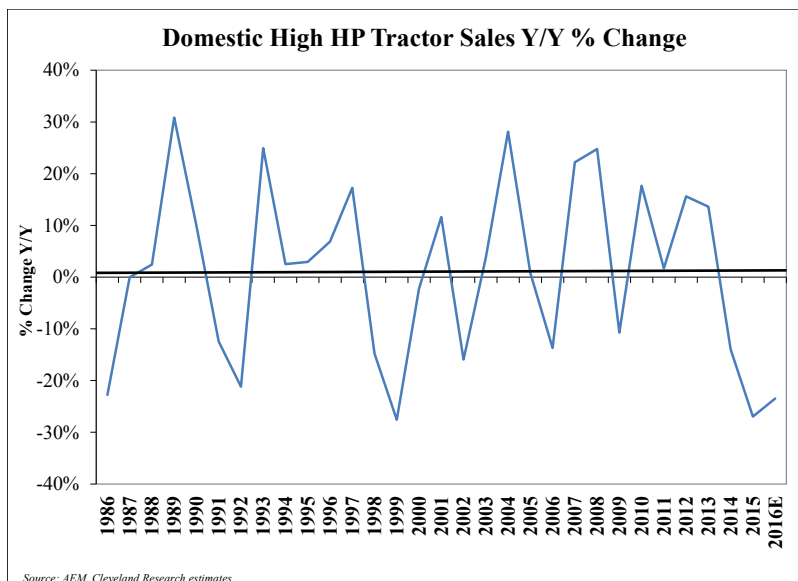
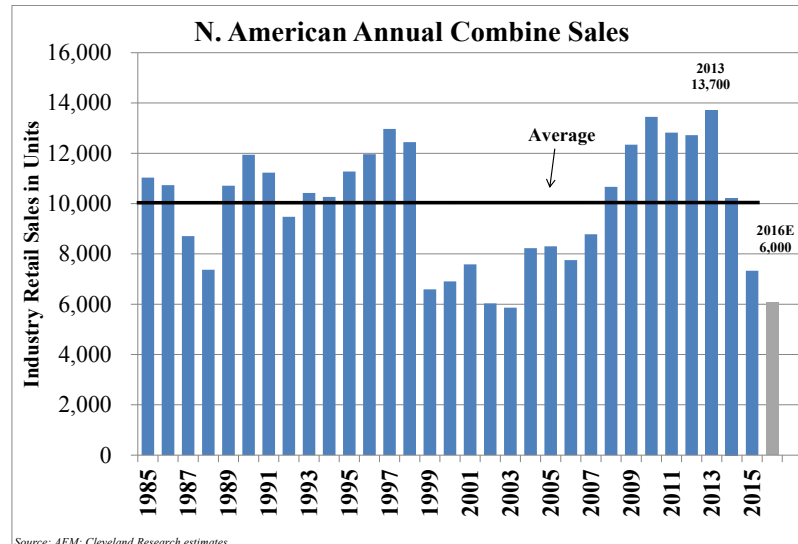
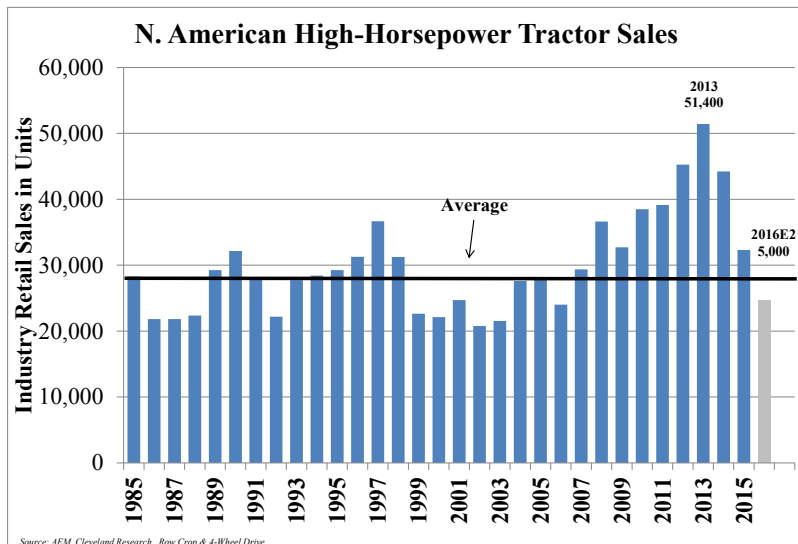
Source: AEM; Cleveland Research Company estimates. High hp tractors are row crop & 4-wheel drive.

# North American Farm Equipment Industry Inventory

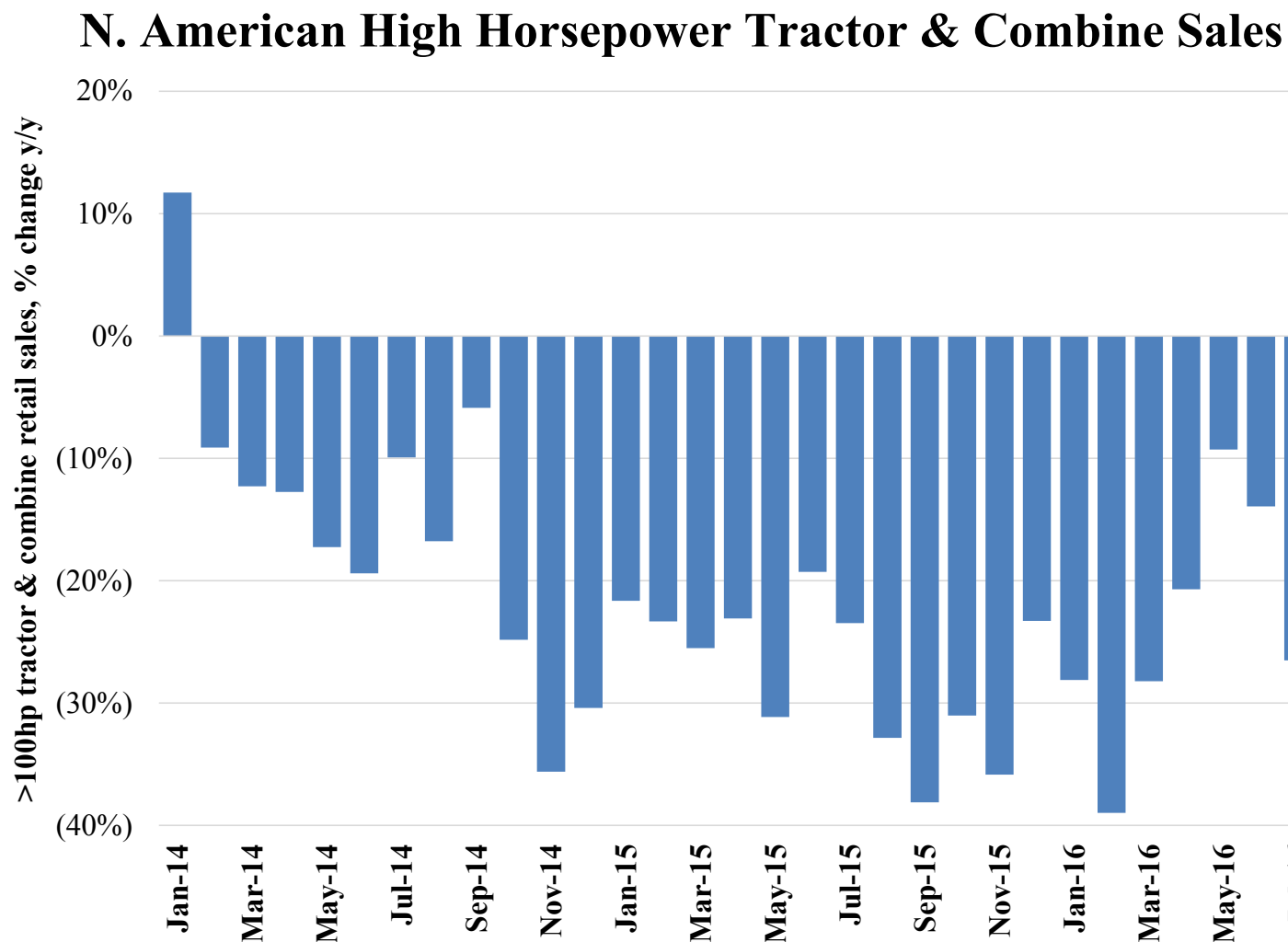
NORTH AMERICAN FARM EQUIPMENT INVENTORY														
	Inventory (Units)							Inventory to 12-mo. Sales						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	<40HP	Util	RC	4-WD	Total Tractor	Row Crop & 4WD	Comb
Dec-13	67,863	32,028	13,318	2,049	115,258	15,367	2,083	59%	50%	31%	24%	50%	30%	15%
Jan-14	69,111	33,240	12,620	2,028	116,999	14,648	1,681	60%	52%	29%	24%	51%	28%	12%
Feb-14	71,514	34,326	13,267	2,046	121,153	15,313	2,063	62%	54%	31%	25%	53%	30%	15%
Mar-14	71,249	35,256	14,058	2,218	122,781	16,276	2,456	61%	55%	33%	27%	53%	32%	18%
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	58%	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%	63%	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%	63%	49%	22%
Jun-16	82,264	42,688	12,928	1,005	138,885	13,933	1,593	60%	66%	52%	29%	60%	49%	24%
Jul-16	81,046	41,621	12,765	920	136,352	13,685	1,580	59%	66%	53%	28%	60%	50%	24%

Source: AEM; Cleveland Research Company estimates

# Annual Agricultural Equipment Industry Sales (1985 - 2015)



# North America Large Ag Equipment Sales

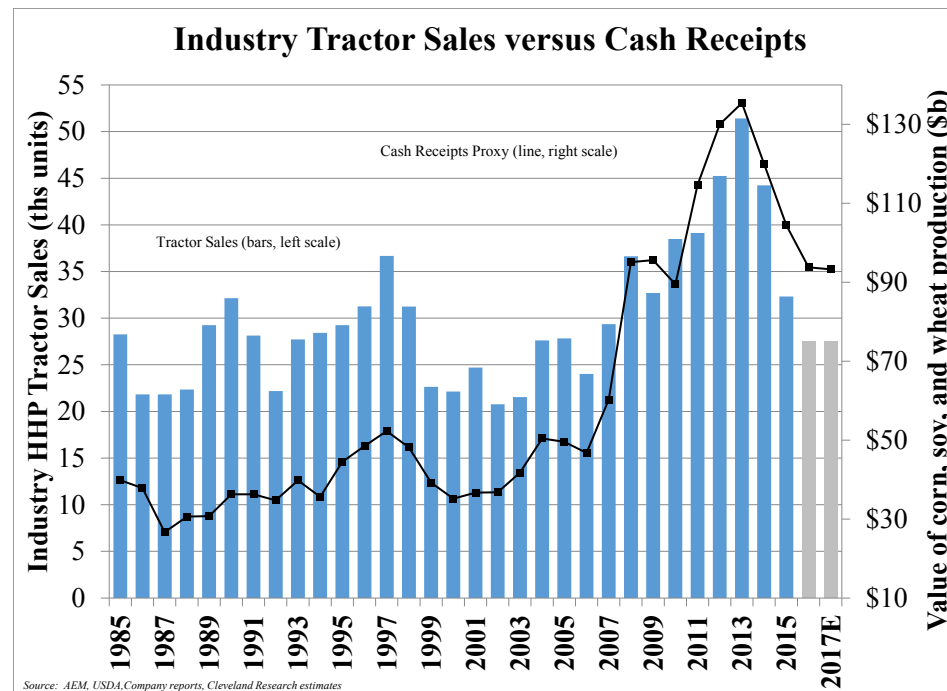


Source: AEM, CRC estimates

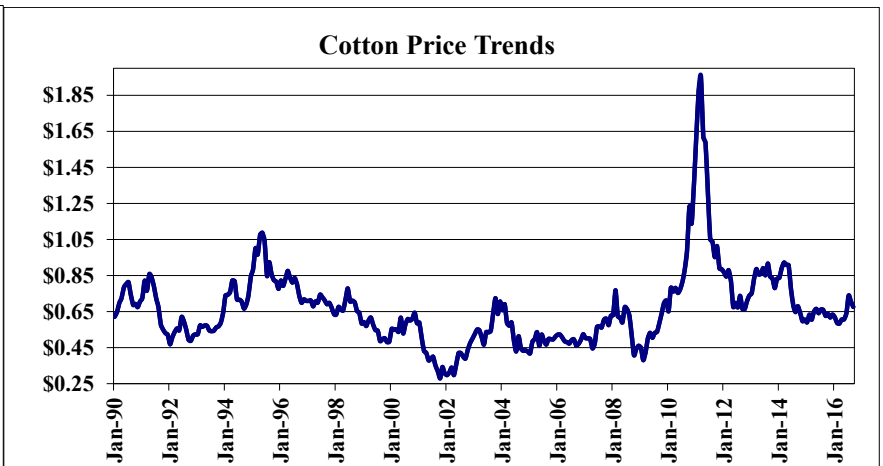
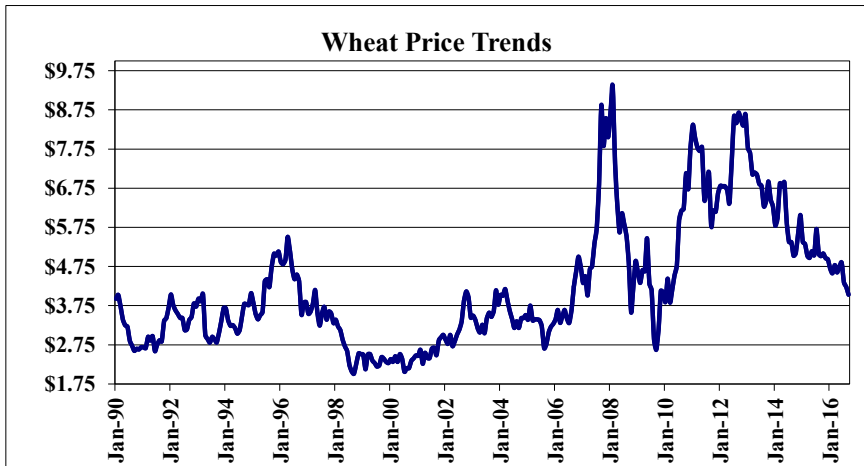
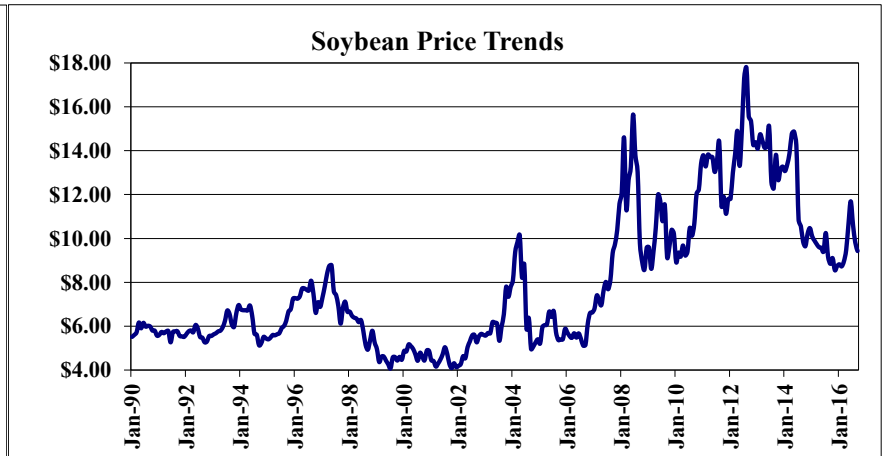
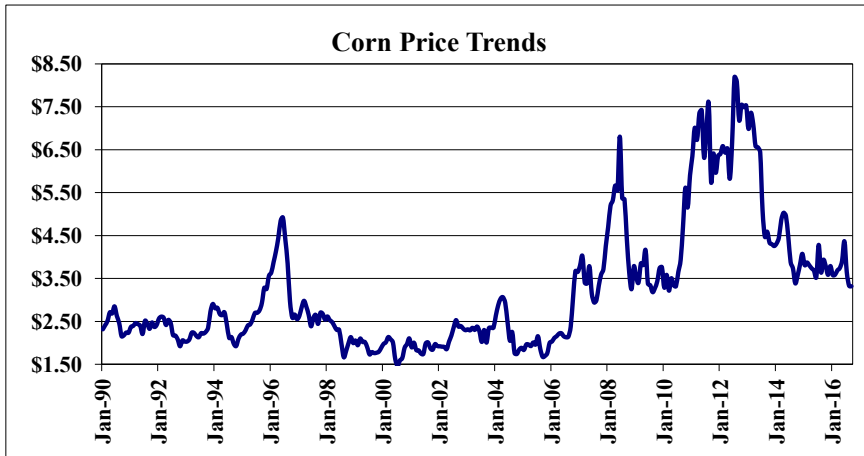
# Commodity Prices – Cash Receipts vs. Next Year Equipment Sales

**USDA's September 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 September crop report was slightly better than August, with cash receipts proxy forecast up 1% y/y in 2016/2017 vs. prior estimate of down 1%. Declines on corn yields fell from August's forecast of 175 to 174 bu/acre. Corn price forecasts increased 2% while soybean pricing fell 1% and anticipated beginning stock levels declined for soybeans while increasing slightly for corn.



# 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	94	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	174	170	172	174	176	178	180	182	184	186
Beginning Stocks (MM bu)	821	1,232	1,731	1,716	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	15,093	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>16,859</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	6,650	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	5,275	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	12,300	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	2,175	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>14,475</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	2,384	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%	16.5%	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>\$3.20</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	\$48,298	\$51,228	\$52,540	\$53,114	\$53,521	\$53,780	\$54,057	\$54,316	\$55,275	\$55,875
% change y/y	-17%	-15%	-7%	-1%	6%	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	51	47	48	48	49	49	50	50	51	51
Beginning Stocks	141	92	191	195	421	382	348	323	299	275	270	270	265
Production	3,358	3,927	3,929	4,201	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>4,426</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	1,950	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	1,985	1,835	1,850	1,860	1,870	1,875	1,885	1,905	1,915	1,925
Seed & Residual	98	145	34	31	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>4,061</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	365	382	348	323	299	275	270	270	265	266
Stocks/Use	2.7%	4.9%	10.9%	9.0%	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>\$9.05</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	\$38,019	\$33,528	\$34,458	\$35,010	\$35,672	\$36,248	\$36,616	\$36,984	\$37,526	\$38,008
% change y/y	0%	-9%	-12%	9%	-12%	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	51	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	981	928	842	784	739	707	688	677	669	669
Production	2,134	2,026	2,052	2,321	2,000	2,035	2,050	2,065	2,080	2,095	2,110	2,130	2,140
Imports	169	144	120	115	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>3,417</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	968	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	330	215	210	200	190	180	175	175	175	175
Exports	1,176	855	780	950	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>2,317</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	1,100	842	784	739	707	688	677	669	669	667
Stocks/Use	24.3%	37.5%	50.3%	47.5%	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>\$3.60</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	\$8,356	\$9,000	\$9,361	\$9,533	\$9,706	\$9,880	\$10,056	\$10,234	\$10,437	\$10,593
% change y/y	-16%	-17%	-17%	-17%	8%	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	229	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	101	96	97	98	99	100	101	102	103	104
Production	19,321	20,169	19,582	21,615	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	\$4.38	\$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>\$94,672</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%	1%	-1%	3%	1%	1%	1%	1%	1%	2%	1%

Source: USDA, Cleveland Research estimates



# U.S. Acreage Planted Per Crop Year

