

# ***Ag Equipment Intelligence***

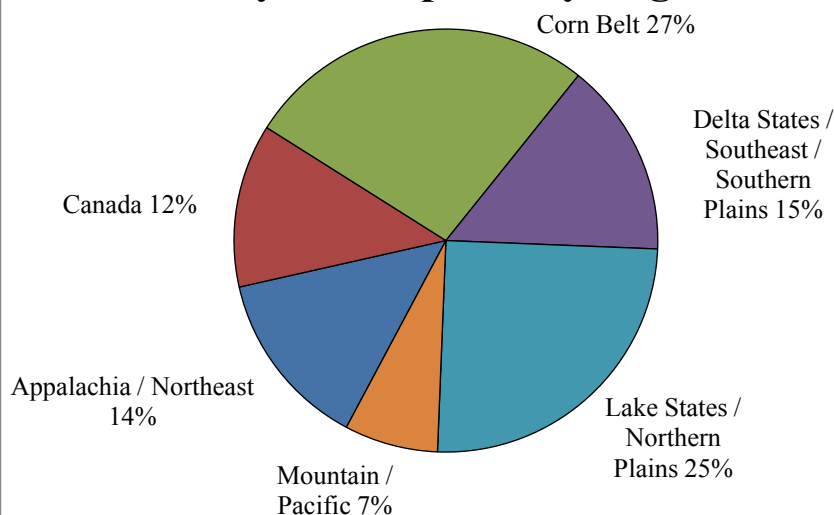
February 2018 Dealer Sentiments &  
Business Conditions Update

# Monthly Ag Equipment Intelligence North American Dealer Survey

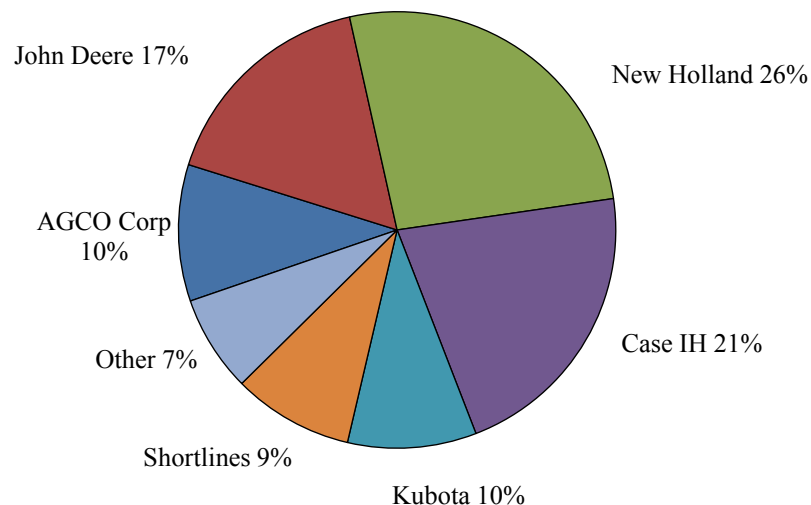
## Background:

- We are pleased to announce the results of the January 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 January survey had ~170 respondents representing combined annual revenues of roughly \$6 billion. Participants represent a broad cross section of geographies and brands are summarized in the charts below.

### Survey Participants by Region



### Participants by Brand



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

## Highlights / Summary Thoughts

- **Sales** – Average dealer sales were reported flat y/y in January, down from the 1% sales growth in December. A net 9% of dealers missed their sales budgets in January, down from the 1% that missed plan last month. Commercial and consumer lawn equipment sales showed strength, while large equipment demand remains weak but saw improvement in 2017.
- **Outlook** –The 2018 forecast is for 2% y/y growth, inline with December, with a net 23% of contacts expecting growth vs the 33% of contacts expecting growth in 4Q. 45% of contacts believe the tax bill will have a moderate (1-5%) positive impact on sales of machinery equipment in 2018.
- **Inventory** – A net 19% of dealers reported new equipment inventories as too high, better than the 22% in December. Used equipment inventories remained elevated as a net 23% of dealers reported used inventory as too high, an improvement from the 27% last month. Overall, inventories have come down from 2016 levels.
- **Pricing** – Pricing trends were flat in the month following an uptick in 4Q. Pricing trends were largely unchanged from December with large tractors reported down 3% y/y and combine pricing down 5%.

# Monthly Sales Growth

- Average dealer sales were reported flat y/y in January, down from the 1% sales growth in December. A net 9% of dealers missed their sales budgets in January, below the 1% that missed plan last month.
- A net 1% of dealers reported they are more optimistic vs the net 9% of dealers that were more optimistic in December. Optimism and sales versus expectations both fell in the month as many dealers saw a pull forward of demand in December.

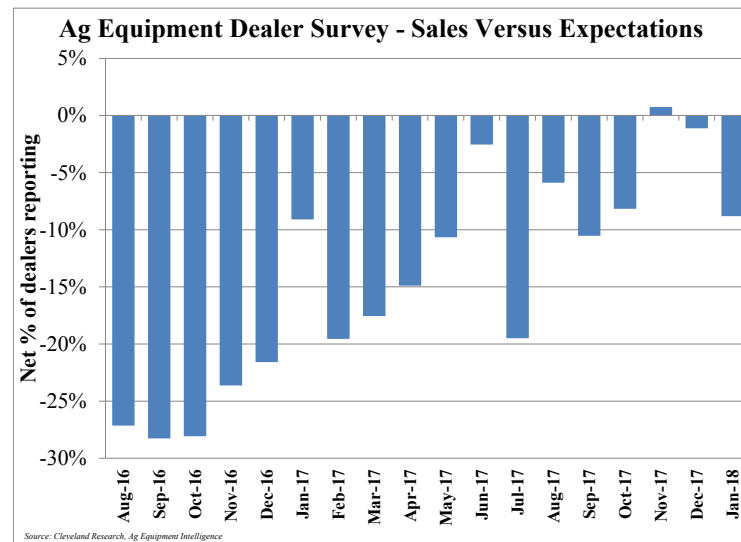
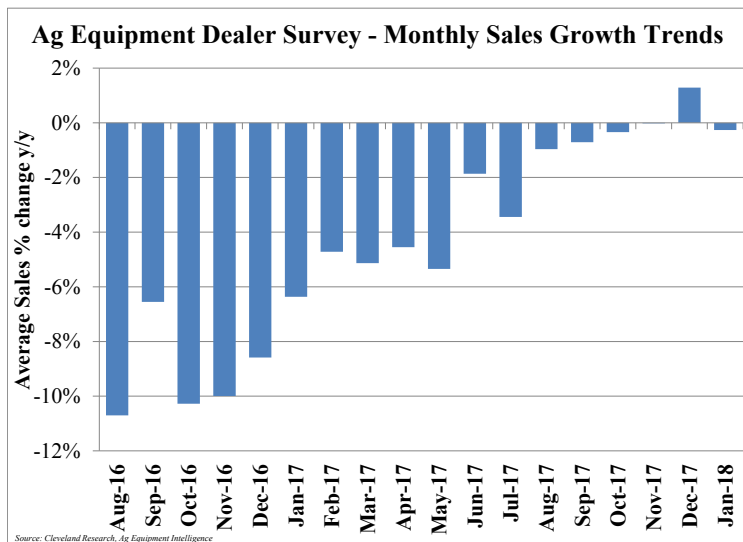
N. American Farm Equipment Dealer Survey - Average Dealer Sales Growth																		
% Change y/y	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18
AGCO	-22%	-12%	-12%	-12%	-5%	-13%	-4%	-11%	-2%	-13%	-1%	-3%	0%	-5%	2%	0%	4%	0%
John Deere	-17%	-4%	-9%	-11%	-6%	-1%	-7%	-1%	-4%	-1%	-1%	-2%	3%	5%	2%	-1%	4%	1%
New Holland	-11%	-12%	-14%	-9%	-15%	-7%	2%	-12%	-13%	-4%	-1%	-6%	0%	-4%	-11%	3%	0%	0%
Case IH	-11%	-8%	-11%	-11%	-14%	-8%	-4%	-5%	-3%	-16%	-2%	-5%	-2%	-8%	-4%	-7%	-3%	-1%
Kubota	1%	4%	1%	-1%	5%	-5%	2%	7%	2%	1%	0%	8%	12%	-4%	14%	10%	10%	5%
Shortlines/Other	-22%	-22%	-11%	-7%	-14%	-9%	5%	4%	-9%	-1%	-1%	-1%	-1%	3%	0%	-1%	-5%	-5%
<b>Total</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>	<b>-3%</b>	<b>-1%</b>	<b>-1%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>

Source: Cleveland Research, Ag Equipment Intelligence

N. American Farm Equipment Dealer Survey - Sales Versus Expectations																		
% of Dealers Reporting	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18
Better than expected	14%	14%	16%	8%	11%	16%	11%	12%	16%	19%	16%	16%	21%	21%	18%	21%	18%	13%
In line with expectations	44%	44%	40%	61%	57%	59%	58%	58%	54%	52%	65%	48%	52%	47%	55%	60%	62%	65%
Worse than expected	41%	42%	44%	31%	32%	25%	31%	30%	30%	30%	19%	36%	27%	32%	27%	20%	20%	22%
<b>Net % (Better - Worse)</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>	<b>-19%</b>	<b>-6%</b>	<b>-11%</b>	<b>-8%</b>	<b>1%</b>	<b>-1%</b>	<b>-9%</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	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	
Positive Sales Growth	19%	22%	18%	20%	26%	27%	25%	32%	34%	39%	37%	33%	41%	43%	41%	43%	41%	36%	
Flat Sales	19%	22%	15%	23%	17%	22%	31%	23%	19%	18%	32%	19%	21%	22%	20%	21%	22%	28%	
Negative Sales Growth	62%	56%	67%	58%	58%	52%	45%	47%	43%	43%	32%	48%	38%	35%	38%	36%	37%	36%	
<b>Net % Reporting Growth</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>-15%</b>	<b>4%</b>	<b>7%</b>	<b>3%</b>	<b>7%</b>	<b>4%</b>	<b>0%</b>	
<b>Average % Change y/y</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>	<b>-3%</b>	<b>-1%</b>	<b>-1%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	

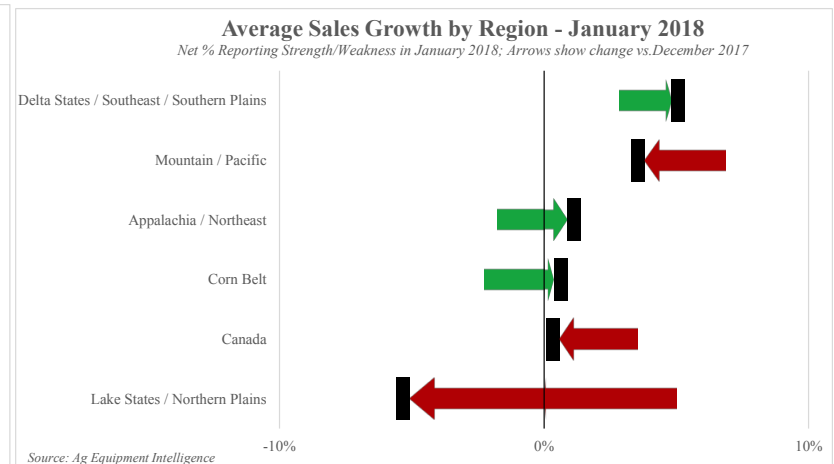
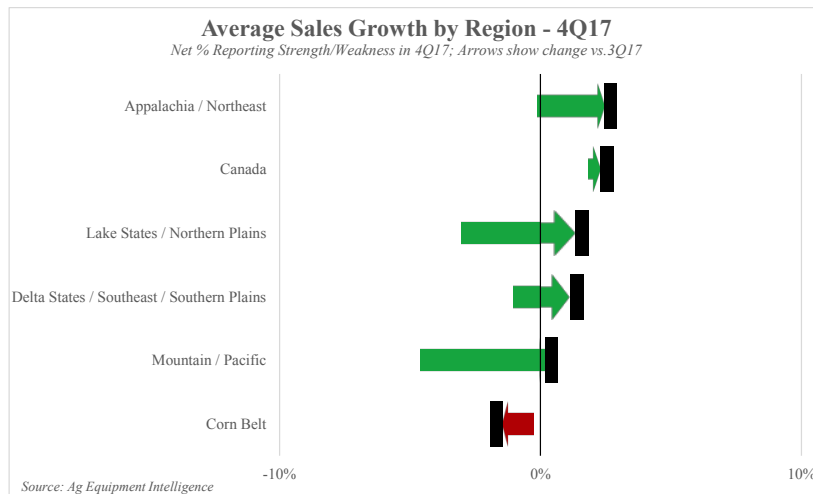
Source: Cleveland Research

Optimism/Sentiment vs. Last Month																			
% of Dealers Reporting	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	
More Optimistic	11%	14%	13%	15%	17%	31%	21%	26%	17%	19%	23%	21%	23%	23%	22%	24%	28%	21%	
Same	52%	49%	53%	60%	58%	48%	60%	47%	53%	61%	58%	47%	52%	51%	56%	63%	53%	58%	
Less Optimistic	36%	38%	34%	25%	26%	20%	19%	27%	30%	20%	19%	32%	26%	26%	22%	14%	19%	21%	
<b>Net % Dealer Optimism</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>	<b>-11%</b>	<b>-3%</b>	<b>-4%</b>	<b>1%</b>	<b>10%</b>	<b>9%</b>	<b>1%</b>	

Source: Cleveland Research

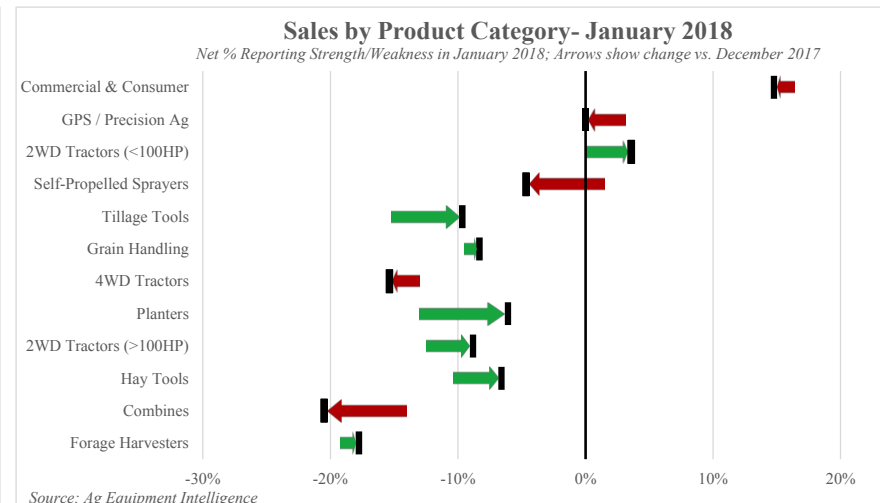
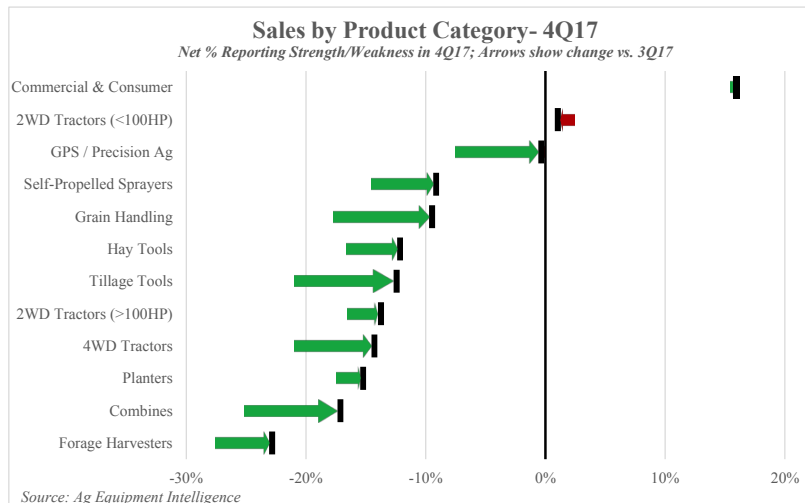
# Monthly Sales Growth by Region

- Sales trends by region improved sequentially in half of the regions in January and 5 of the 6 regions in 4Q from 3Q. The Delta States / Southeast / Southern Plains region was the strongest region in the month while the Corn Belt saw the greatest improvement from December. The Lake States / Northern Plains region saw a sequential softening from December which commentary suggests is weather related.

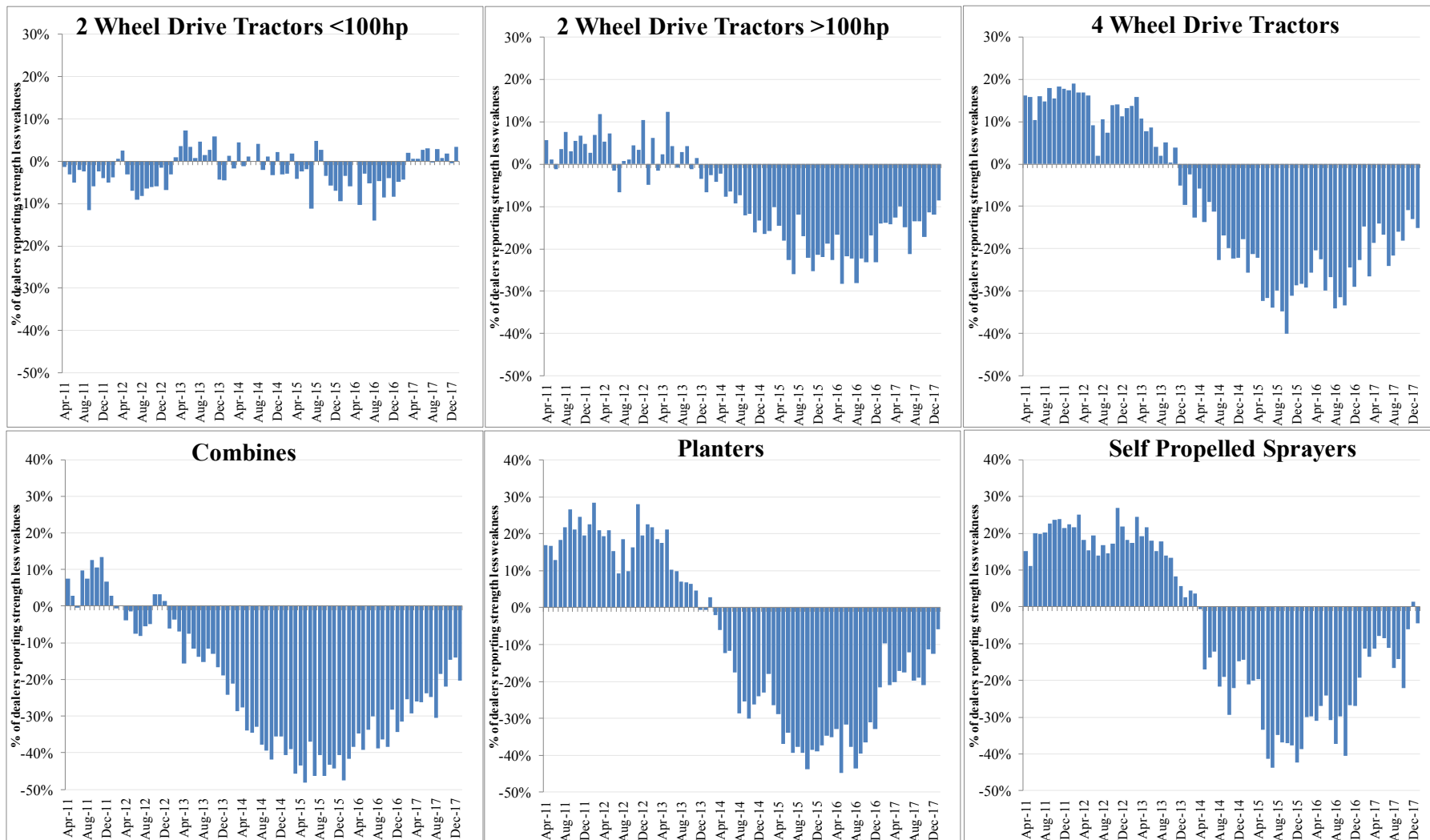


# Equipment Category Sales Trends

- Sales by product category was mixed in January while nearly all product categories saw sequential improvement from 3Q to 4Q. Commercial & consumer saw continued strength, while large equipment remains weak but saw notable improvement in 2017.
- Commentary suggests used large equipment sales were stronger than expected in the month, inline with commentary in December.

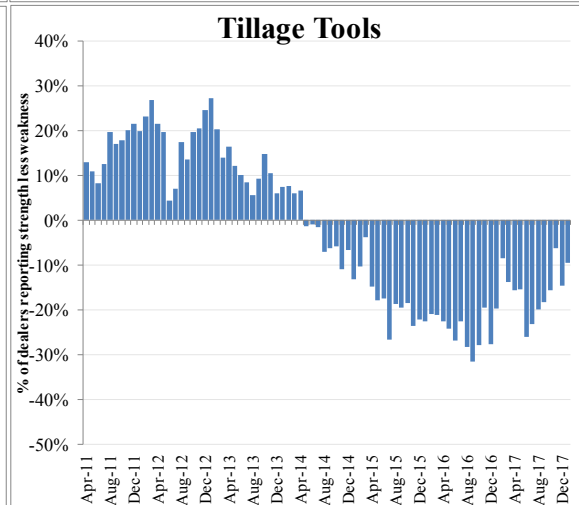
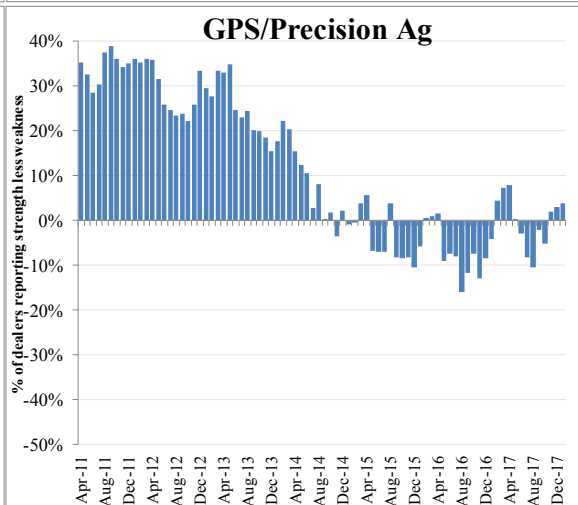
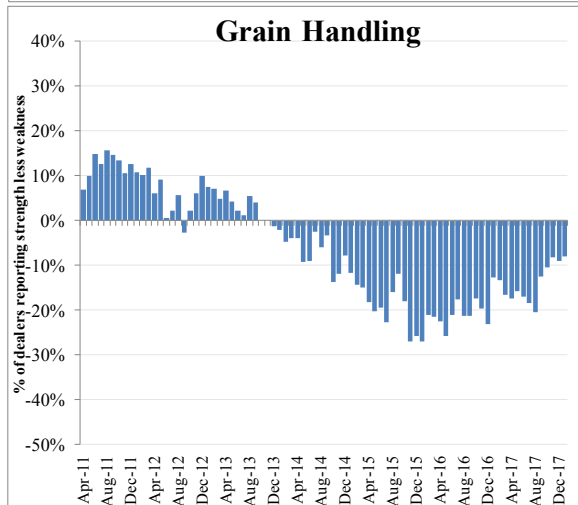
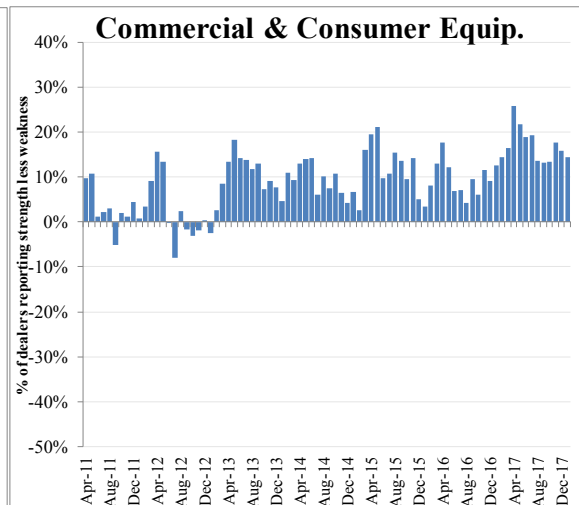
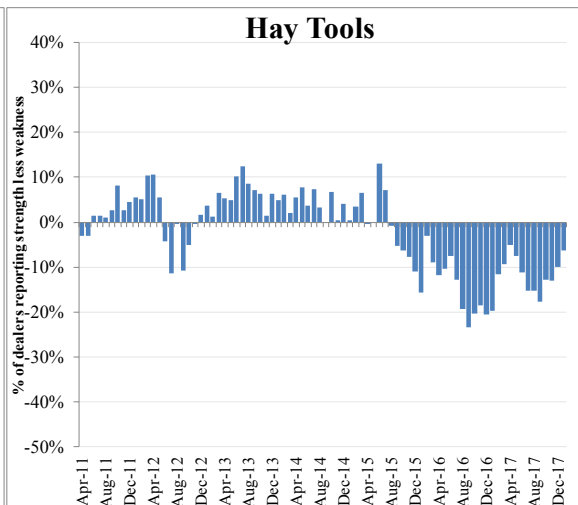
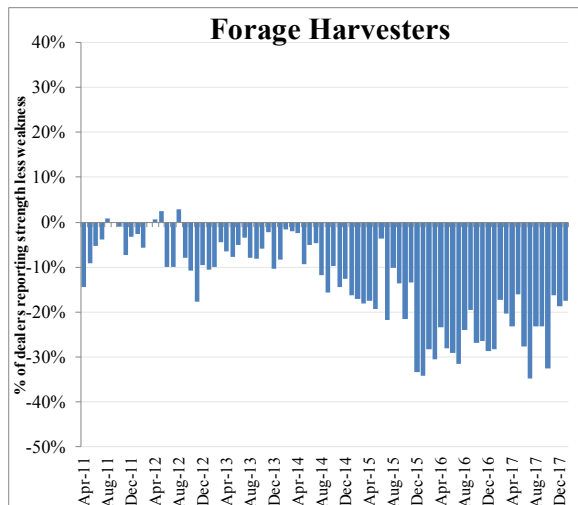


# Equipment Category Sales Trends





# Equipment Category Sales Trends (Continued)



## Average Dealer Sales Outlook

- The 2018 forecast is for 2% y/y growth, inline with December, with a net 23% of contacts expecting growth vs the 33% of contacts expecting growth in 4Q. 45% of contacts believe the tax bill will have a moderate (1-5%) positive impact on sales of machinery equipment in 2018.
- Public ag equipment manufacturers forecast NAFTA ag equipment sales flat to up 10% in 2018. The bottom table details sales outlook by region for John Deere, CNH Industrial, and AGCO Corp.

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

Source: Cleveland Research, Ag Equipment Intelligence

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

Source: Company reports, CRC estimates

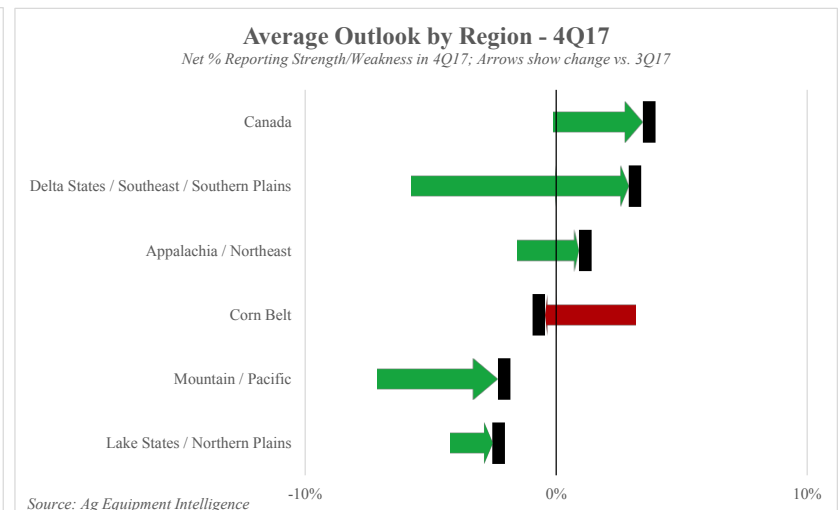
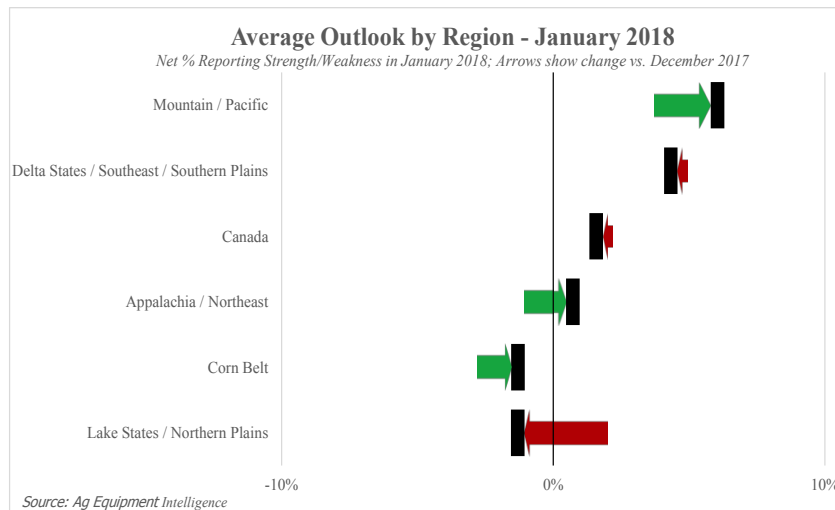
## Most Interesting Commentary - Monthly Sales and Outlook

- *There was a lot of quoting in the month. Though they did not turn to sales like we had predicted, there were more quotes than a typical January.*
- *There was strong demand for parts & service, as well as used harvesting equipment.*
- *There was increased interest in tillage equipment and new self propelled sprayers in January.*
- *January is usually a slow month for us. We were steady all month, which means we actually had more interest and sales than normal.*
- *Even though the weather was colder than average, we set a record in tractor sales.*
- *Sales of used equipment were much better than expected.*
- *January was slower than expected which we attribute to the ice storms and below average temperatures.*
- *We saw an increased demand from smaller farmers, while it appears medium sized farmers are holding off on purchasing.*
- *We are more optimistic about 2018 versus last month because we have our inventory inline and the commodity price predictions are showing an upward trend.*
- *While the outlook for our dairy customers remains weak due to commodity prices, we are seeing operators shop for more efficient machines so they can reduce their labor costs.*
- *Our manufacturer's programming is less aggressive in January versus December.*
- *We still have too many used combines and hay equipment. We are actually a little low on tractors.*
- *Our used equipment inventory has come down significantly from 2016 levels, but we still are trying to bring it down even more.*

Source: Ag Equipment Intelligence

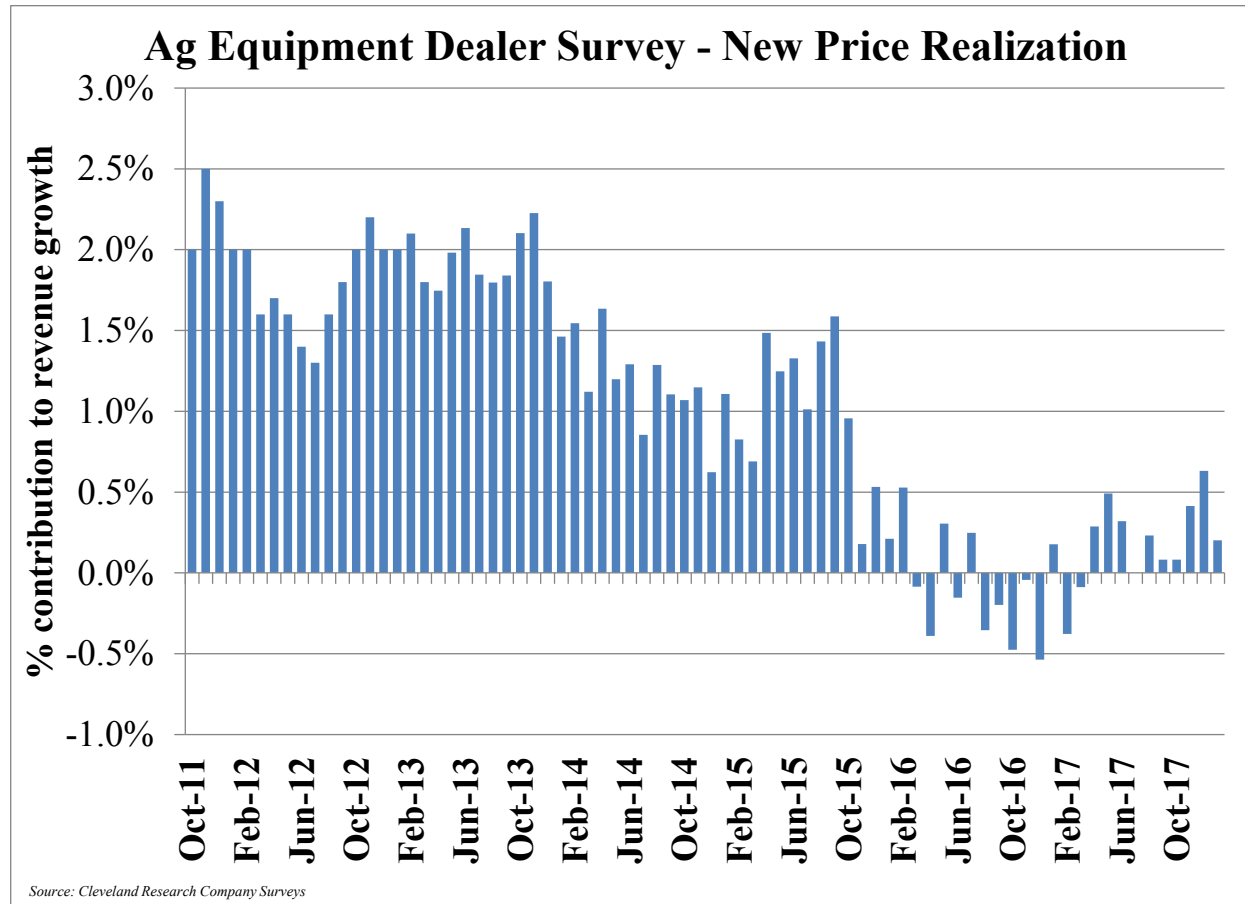
# 2018 Sales Outlook

- The 2018 outlook in January saw sequential improvement in half of the regions, while the outlook improved in all regions except the Corn Belt in 4Q. The Mountain / Pacific region posted the highest sales outlook in the month and also saw the greatest sequential improvement from December.
- The 2018 outlook in January for 2% growth is above the 1% average growth forecasts collected from July to January. Dealers are optimistic following a better outlook for commodity prices as well as tax incentives.



# Pricing Trends

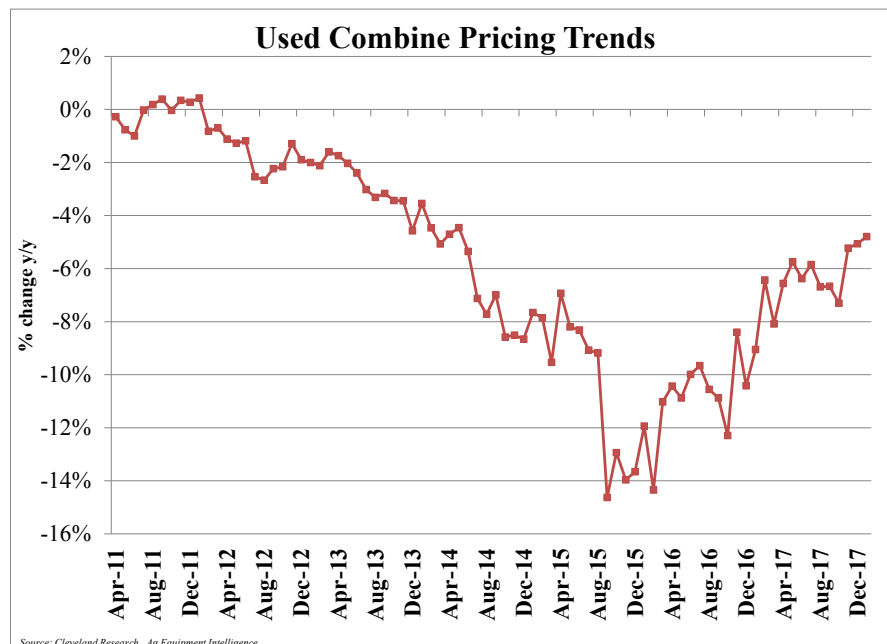
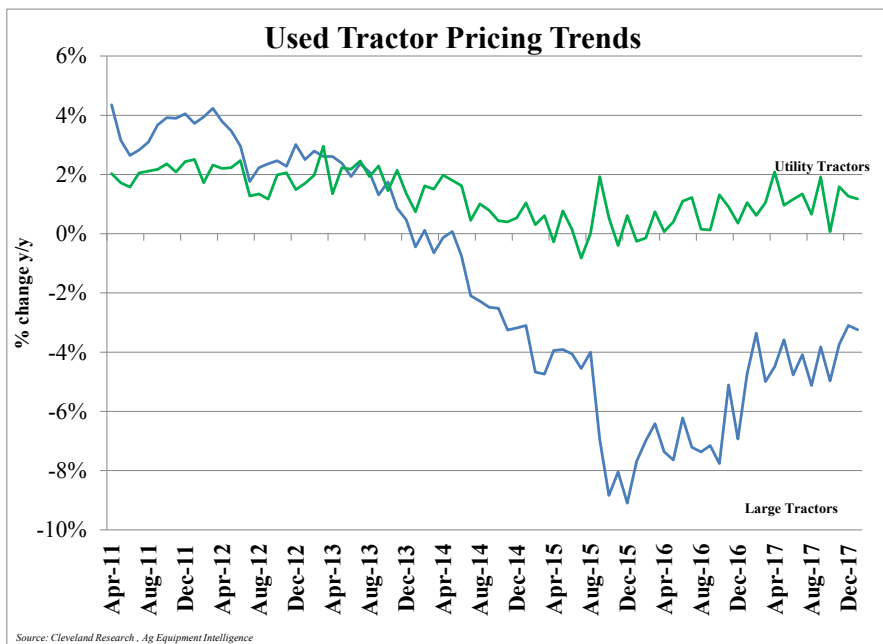
- Pricing trends were flattish in the month following an uptick in 4Q. Commentary suggests some manufacturer list price increases in the 2-3% range effective Feb. 1.



# Used Equipment Pricing

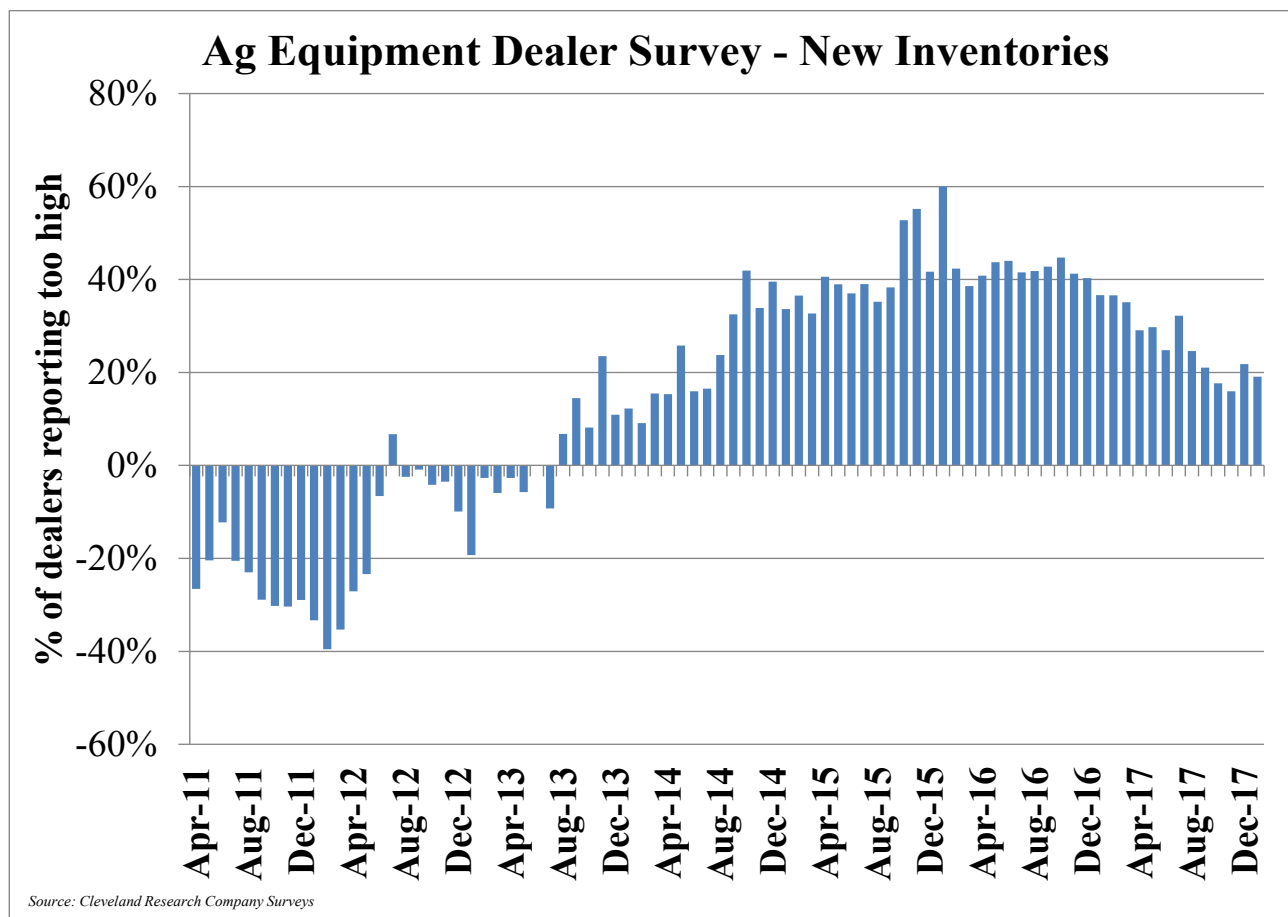
- Pricing trends were largely unchanged from December with large tractors reported down 3% y/y and combine pricing down 5%.

Used Tractor and Combine Values (Y/Y)																			
	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	
Compact (<40HP)	1%	1%	2%	2%	1%	1%	1%	1%	2%	2%	2%	1%	1%	2%	0%	2%	1%	1%	
Utility (40-100HP)	(0%)	(0%)	1%	0%	0%	1%	0%	1%	2%	0%	0%	1%	0%	1%	0%	1%	1%	1%	
Row Crop (100HP+)	(6%)	(6%)	(6%)	(4%)	(5%)	(3%)	(2%)	(3%)	(4%)	(3%)	(4%)	(3%)	(4%)	(2%)	(4%)	(3%)	(2%)	(2%)	
4WD Tractors	(9%)	(8%)	(10%)	(7%)	(9%)	(6%)	(4%)	(7%)	(5%)	(4%)	(6%)	(5%)	(6%)	(5%)	(6%)	(5%)	(4%)	(4%)	
Combines	(11%)	(11%)	(12%)	(8%)	(10%)	(9%)	(6%)	(8%)	(7%)	(6%)	(6%)	(6%)	(7%)	(7%)	(7%)	(5%)	(5%)	(5%)	



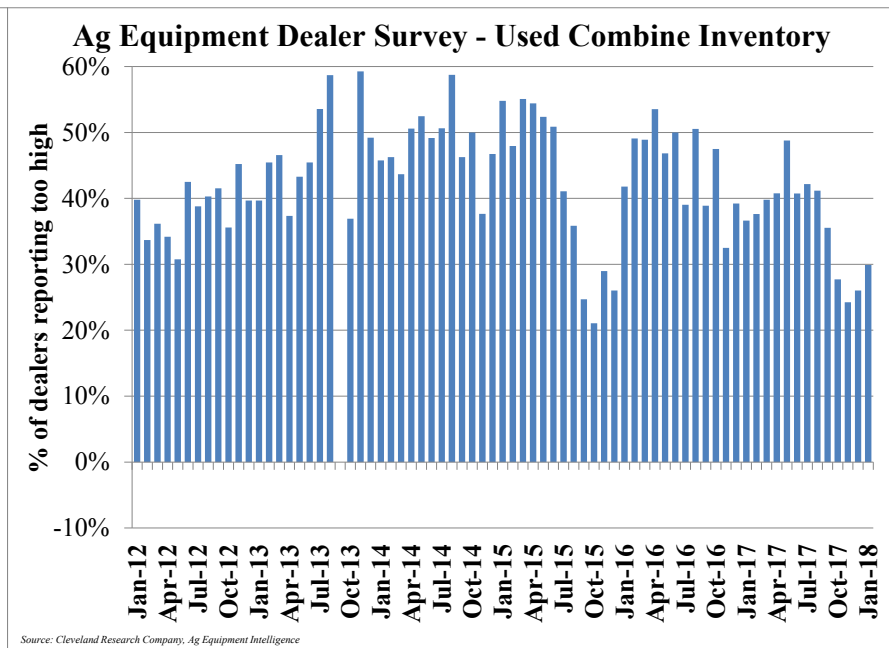
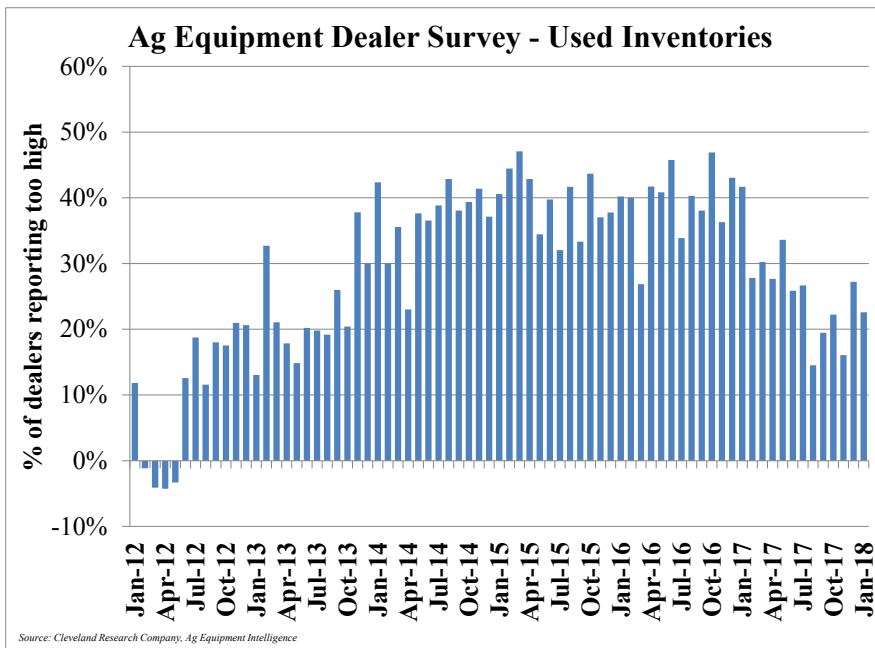
## New Equipment Inventory Levels

- A net 19% of dealers reported new equipment inventories too high (32% too high, 55% about right, 13% too low), below the 22% in December. New inventory levels have been elevated for over 3 years, but have come down over the past year.



# Used Equipment Inventory Levels

- A net 23% of dealers reported used equipment inventory as too high (32% too high, 58% about right, 10% too low), better than the 27% reporting heightened inventory in December and the 26% average in 2017. Used combine inventory levels were reported as too high by a net 30% of dealers in January, above the 26% in December, but better than the 37% average in 2017.





# North American Farm Equipment Industry Retail Sales

NORTH AMERICAN FARM EQUIPMENT RETAIL SALES														
	Units							% change year-over-year						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines
Jan-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	13,342	5,494	1,875	152	20,863	2,027	619	-7%	-22%	-24%	-43%	-14%	-26%	-23%
Aug-16	11,600	5,049	1,314	102	18,065	1,416	562	18%	-1%	-26%	-39%	7%	-27%	-17%
Sep-16	12,664	5,449	1,759	200	20,072	1,959	620	16%	2%	-9%	-20%	9%	-10%	-27%
Oct-16	13,816	6,799	2,716	610	23,941	3,326	579	7%	0%	-17%	18%	2%	-12%	-27%
Nov-16	7,416	3,651	903	205	12,175	1,108	293	21%	-2%	-22%	-8%	9%	-20%	-15%
Dec-16	10,384	6,301	2,064	325	19,074	2,389	688	19%	-1%	-20%	-37%	5%	-23%	-22%
Jan-17	6,836	3,832	1,392	147	12,207	1,539	289	15%	-10%	-30%	-40%	-2%	-31%	-36%
Feb-17	7,868	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%
Jul-17	13,806	5,583	1,443	136	20,968	1,579	656	3%	2%	-23%	-11%	1%	-22%	6%
Aug-17	11,985	5,229	1,222	170	18,606	1,392	679	3%	4%	-7%	67%	3%	-2%	21%
Sep-17	11,613	5,082	1,409	266	18,370	1,675	643	-8%	-7%	-20%	33%	-8%	-14%	4%
Oct-17	15,404	6,991	3,748	709	26,852	4,457	845	11%	3%	38%	16%	12%	34%	46%
Nov-17	8,152	4,109	952	187	13,400	1,139	334	10%	13%	5%	-9%	10%	3%	14%
Dec-17	10,964	6,276	1,974	413	19,627	2,387	699	6%	0%	-4%	27%	3%	0%	2%
Jan-18	7,261	3,960	1,423	196	12,840	1,619	275	6%	3%	2%	33%	5%	5%	-5%

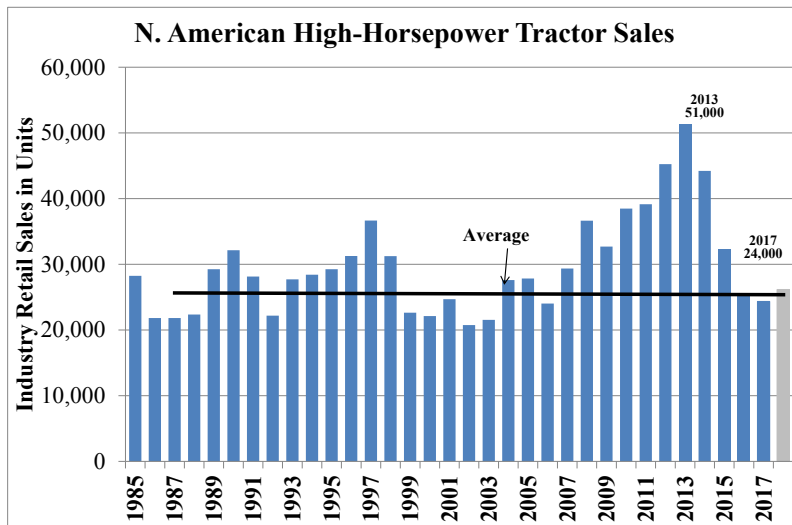
Source: AEM; Cleveland Research Company estimates. High hp tractors are row crop & 4-wheel drive.

# North American Farm Equipment Industry Inventory

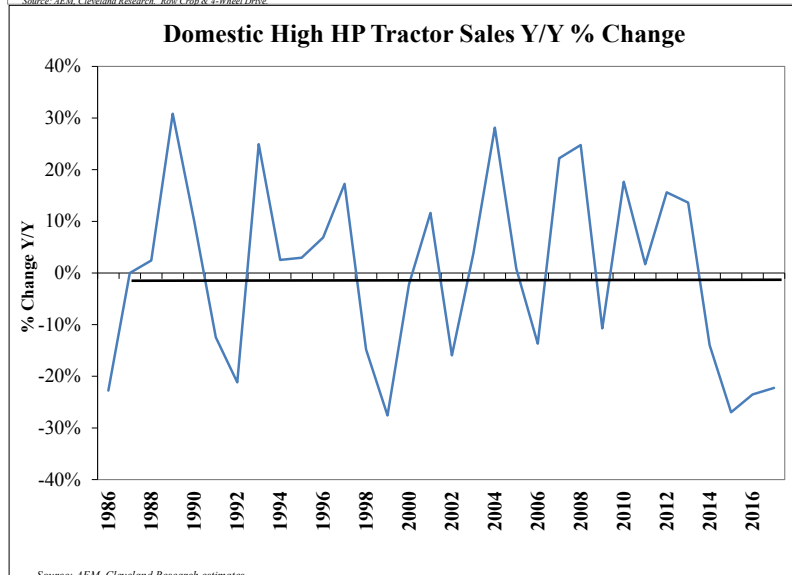
NORTH AMERICAN FARM EQUIPMENT INVENTORY														
	Inventory (Units)							Inventory to 12-mo. Sales						
	< 40 HP	Utility	Row Crop	4-Wheel	Total Tractor	Row Crop & 4WD	Combines	<40HP	Util	RC	4-WD	Total Tractor	Row Crop & 4WD	Comb
Dec-14	69,876	35,550	14,638	1,426	121,490	16,064	1,674	57%	52%	39%	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%
Jun-17	77,022	36,209	10,372	924	124,527	11,296	1,731	50%	58%	50%	29%	51%	47%	30%
Jul-17	77,490	36,223	10,210	1,001	124,924	11,211	1,604	50%	57%	50%	32%	52%	48%	27%
Aug-17	76,934	36,868	10,541	1,045	125,388	11,586	1,615	49%	58%	52%	32%	52%	49%	27%
Sep-17	75,112	36,376	11,022	1,104	123,614	12,126	1,483	49%	58%	55%	34%	51%	52%	25%
Oct-17	78,973	34,502	9,554	862	123,891	10,416	1,052	50%	55%	46%	25%	51%	43%	17%
Nov-17	84,909	35,100	10,194	977	131,180	11,171	974	54%	55%	49%	29%	54%	46%	15%
Dec-17	90,166	35,080	10,191	922	136,359	11,113	959	57%	55%	49%	27%	56%	46%	15%

Source: AEM; Cleveland Research Company estimates

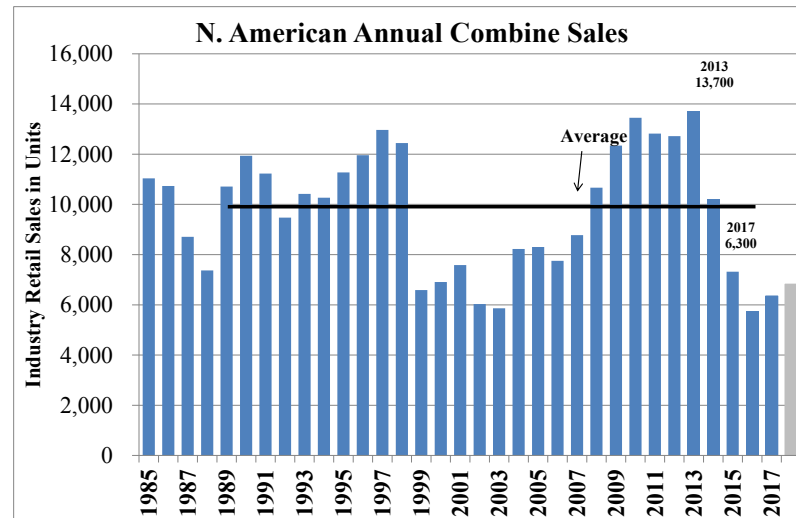
# Annual Agricultural Equipment Industry Sales (1985 - 2017)



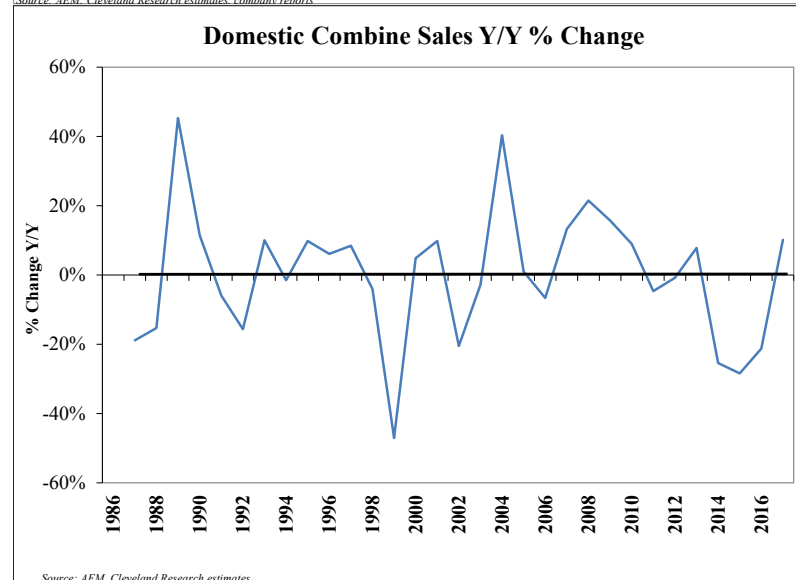
Source: AEM, Cleveland Research, Row Crop & 4-Wheel Drive



Source: AEM, Cleveland Research estimates

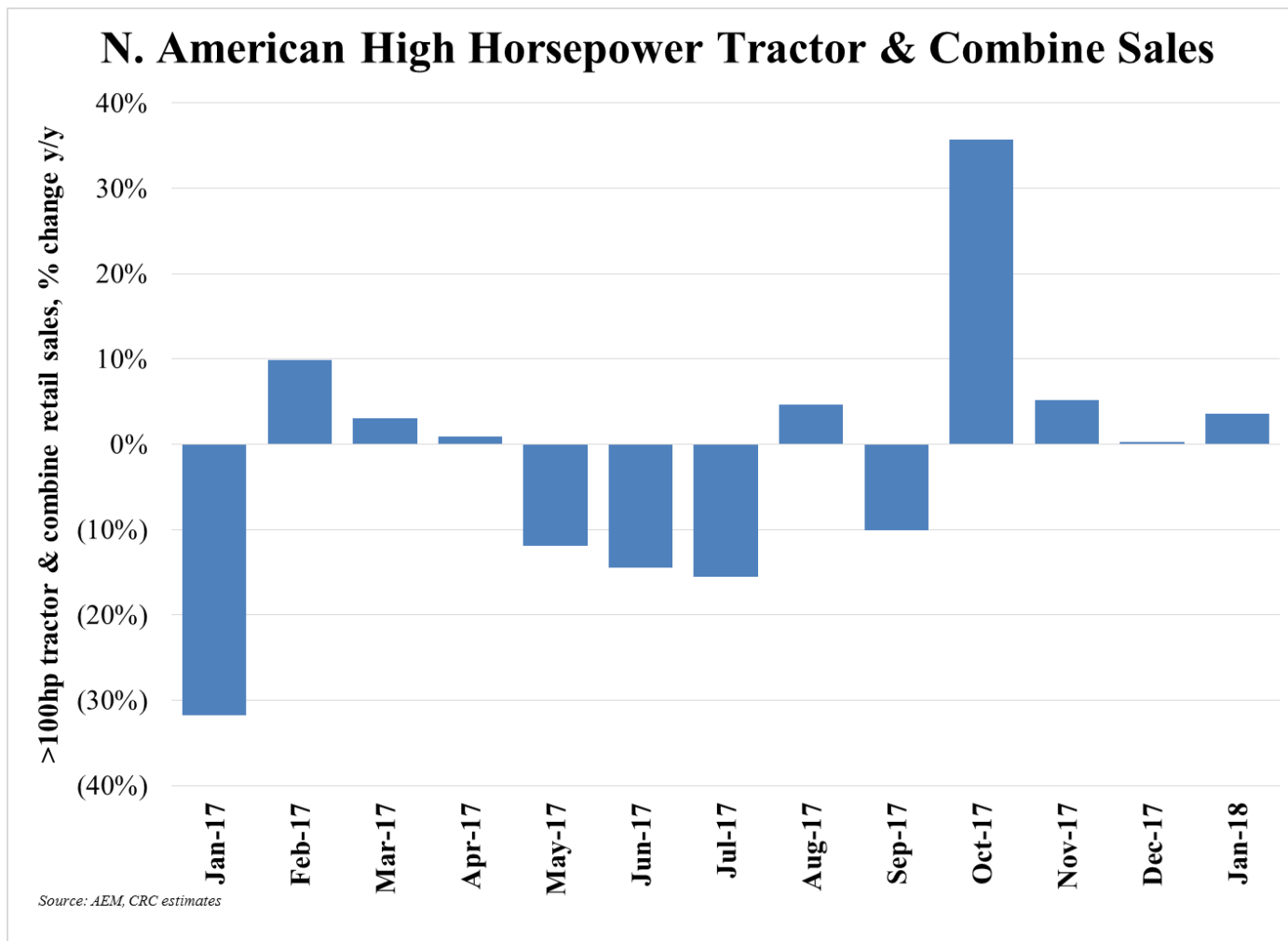


Source: AEM, Cleveland Research estimates, company reports



Source: AEM, Cleveland Research estimates

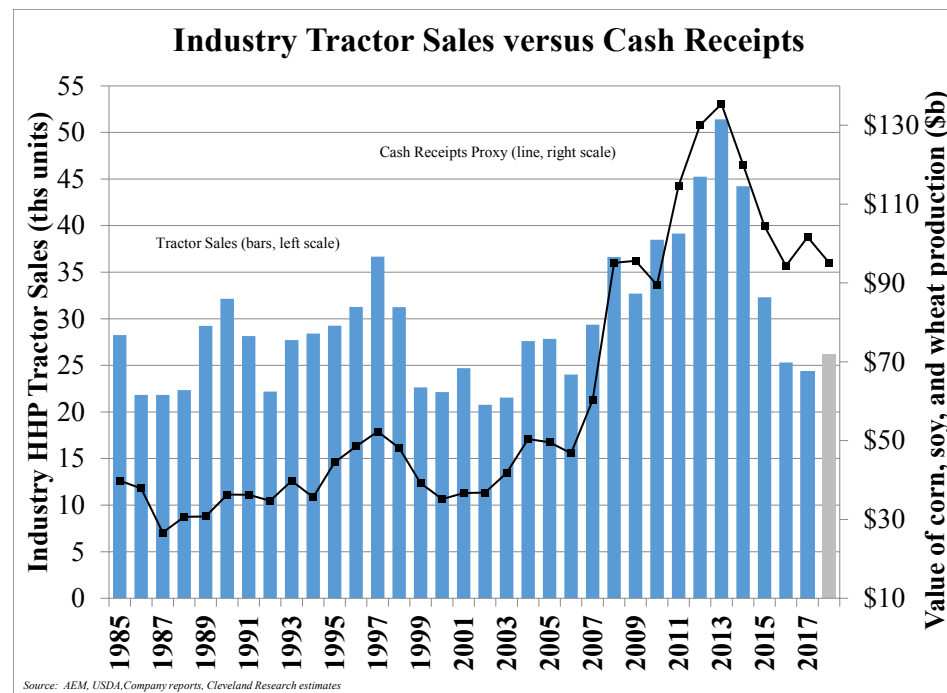
# North America Large Ag Equipment Sales



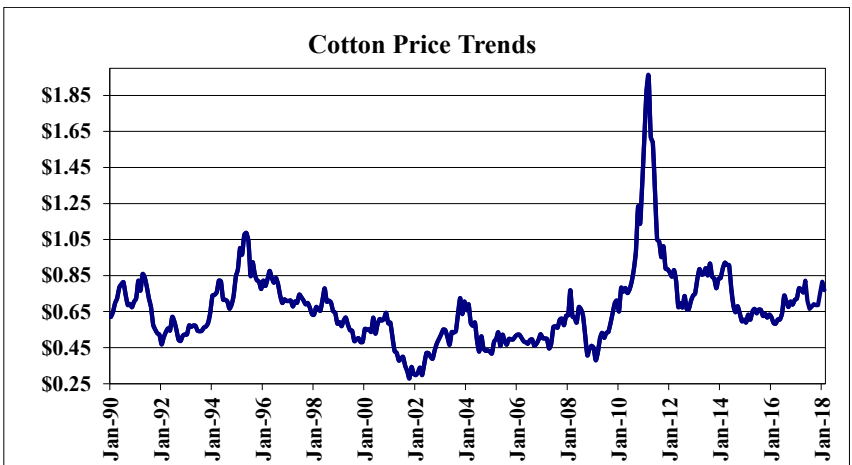
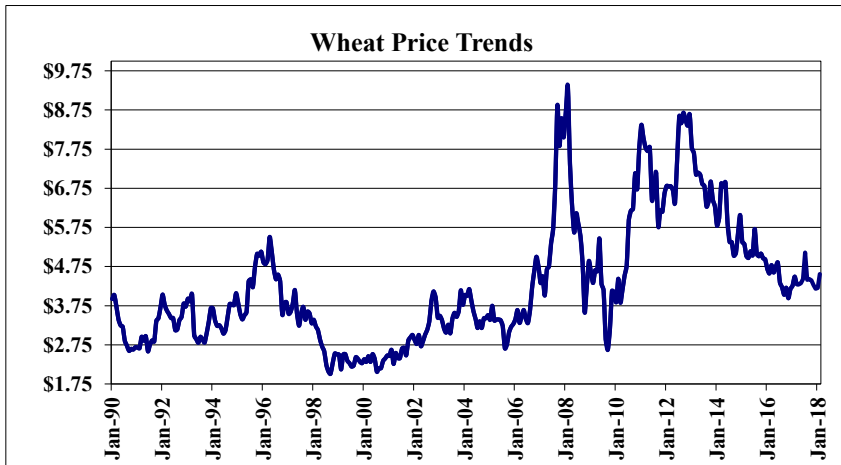
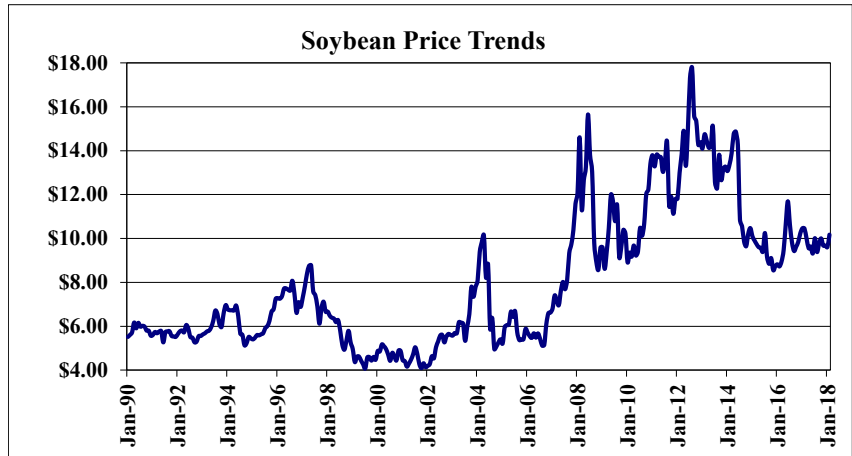
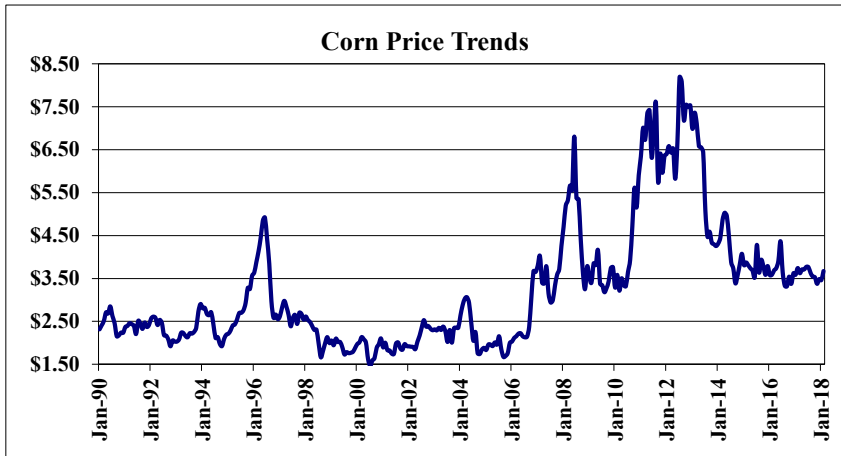
# Commodity Prices – Cash Receipts vs. Next Year Equipment Sales

**USDA's February 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 February crop report was similar to January with cash receipts proxy forecast down 5% y/y in 2017/18. Corn cash receipt forecasts improved to down 6% vs down 8% previously on better pricing, while wheat and soybean forecasts were unchanged at down 11% y/y and down 1% y/y.



# Long Term Commodity Price Trends



# Commodity Trends – Long Run Supply and Demand Projections

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

US Corn Balance Sheet - USDA Long Term Forecast (Feb 2018)													
Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	88	94	90	91	90	90	90	90	89	89	88	88	88
Harvested	81	87	83	84	83	83	82	82	81	81	81	80	80
Yield (bu/acre)	168	175	0	174	176	178	180	182	184	186	188	190	192
Beginning Stocks (MM bu)	1,731	1,737	2,295	2,487	2,607	2,597	2,637	2,647	2,657	2,617	2,632	2,627	2,607
Production (MM bu)	13,601	15,148	14,578	14,520	14,515	14,680	14,755	14,920	14,900	15,065	15,130	15,200	15,360
Imports (MM bu)	67	57	50	50	50	50	50	50	50	50	50	50	50
<b>Total Supply (MM bu)</b>	<b>15,399</b>	<b>16,942</b>	<b>16,922</b>	<b>17,057</b>	<b>17,172</b>	<b>17,327</b>	<b>17,442</b>	<b>17,617</b>	<b>17,607</b>	<b>17,732</b>	<b>17,812</b>	<b>17,877</b>	<b>18,017</b>
Feed & Residual (MM Bu)	5,130	5,463	5,575	5,550	5,600	5,700	5,750	5,900	5,925	6,000	6,075	6,125	6,250
Food, Seed, & Industrial Total	6,635	6,891	6,935	7,000	7,025	7,015	7,020	7,010	6,990	7,000	6,985	6,970	6,955
Ethanol & By-Products	5,206	5,463	5,475	5,525	5,550	5,525	5,525	5,500	5,475	5,475	5,450	5,425	5,400
Domestic Use	11,765	12,354	12,510	12,550	12,625	12,715	12,770	12,910	12,915	13,000	13,060	13,095	13,205
Exports	1,898	2,293	1,925	1,900	1,950	1,975	2,025	2,050	2,075	2,100	2,125	2,175	2,200
<b>Total Use</b>	<b>13,663</b>	<b>14,647</b>	<b>14,435</b>	<b>14,450</b>	<b>14,575</b>	<b>14,690</b>	<b>14,795</b>	<b>14,960</b>	<b>14,990</b>	<b>15,100</b>	<b>15,185</b>	<b>15,270</b>	<b>15,405</b>
Ending Stocks	1,738	2,295	2,487	2,607	2,597	2,637	2,647	2,657	2,617	2,632	2,627	2,607	2,612
Ending Stocks/Use	12.7%	15.7%	17.2%	18.0%	17.8%	18.0%	17.9%	17.8%	17.5%	17.4%	17.3%	17.1%	17.0%
Weeks Carryover	6.6	8.1	9.0	9.4	9.3	9.3	9.3	9.2	9.1	9.1	9.0	8.9	8.8
<b>Average Farm Price (\$/bu)</b>	<b>\$3.61</b>	<b>\$3.36</b>	<b>\$3.20</b>	<b>\$3.30</b>	<b>\$3.35</b>	<b>\$3.35</b>	<b>\$3.40</b>	<b>\$3.40</b>	<b>\$3.45</b>	<b>\$3.50</b>	<b>\$3.50</b>	<b>\$3.55</b>	<b>\$3.60</b>
Value of Production	\$49,100	\$50,897	\$46,650	\$47,916	\$48,625	\$49,178	\$50,167	\$50,728	\$51,405	\$52,728	\$52,955	\$53,960	\$55,296
% change y/y	-7%	4%	-8%	3%	1%	1%	2%	1%	1%	3%	0%	2%	2%

U.S. Soybean Balance Sheet - USDA Long Term Forecast (Feb 2018)													
Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	83	83	90	91	91	92	92	92	92	92	92	92	92
Harvested	82	83	90	90	90	91	91	91	91	91	91	91	91
		0	0	0									
Yield Per Harvested Acre (Bushels)	48	52	49	48	49	50	50	51	51	52	52	53	53
Beginning Stocks	191	197	301	425	376	351	324	323	325	328	321	324	331
Production	3,926	4,296	4,425	4,360	4,410	4,475	4,550	4,595	4,645	4,665	4,715	4,760	4,810
Imports	24	22	25	25	25	25	25	25	25	25	25	25	25
<b>Total Supplies</b>	<b>4,141</b>	<b>4,515</b>	<b>4,752</b>	<b>4,810</b>	<b>4,811</b>	<b>4,851</b>	<b>4,899</b>	<b>4,943</b>	<b>4,995</b>	<b>5,018</b>	<b>5,061</b>	<b>5,109</b>	<b>5,166</b>
Crush	1,886	1,899	1,940	1,970	1,985	2,005	2,025	2,050	2,075	2,095	2,120	2,145	2,165
Exports	1,936	2,174	2,250	2,325	2,335	2,380	2,410	2,425	2,450	2,460	2,475	2,490	2,515
Seed & Residual	121	128	128	128	140	141	142	142	142	142	142	143	143
<b>Total Use</b>	<b>3,943</b>	<b>4,214</b>	<b>4,326</b>	<b>4,435</b>	<b>4,460</b>	<b>4,526</b>	<b>4,577</b>	<b>4,617</b>	<b>4,667</b>	<b>4,697</b>	<b>4,737</b>	<b>4,778</b>	<b>4,823</b>
Ending Stocks	197	301	425	376	351	324	323	325	328	321	324	331	342
Stocks/Use	5.0%	7.1%	9.8%	8.5%	7.9%	7.2%	7.1%	7.0%	7.0%	6.8%	6.8%	6.9%	7.1%
<b>Average Price (\$/bu)</b>	<b>\$8.95</b>	<b>\$9.47</b>	<b>\$9.30</b>	<b>\$9.40</b>	<b>\$9.45</b>	<b>\$9.45</b>	<b>\$9.50</b>	<b>\$9.50</b>	<b>\$9.60</b>	<b>\$9.75</b>	<b>\$9.75</b>	<b>\$9.80</b>	<b>\$9.80</b>
Value of Production	\$35,138	\$40,683	\$41,153	\$40,984	\$41,675	\$42,289	\$43,225	\$43,653	\$44,592	\$45,484	\$45,971	\$46,648	\$47,138
% change y/y	-11%	16%	1%	0%	2%	1%	2%	1%	2%	2%	1%	1%	1%

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

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

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

Millions of bushels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted	55	50	46	45	46	47	47	47	47	48	48	48	48
Harvested	47	44	38	38	39	40	40	40	40	41	41	41	41
Yield Per Harvested Acre (Bushels)	44	53	46	47	48	48	49	49	49	50	50	51	51
Beginning Stocks	752	976	1,181	935	813	739	714	690	667	648	650	658	667
Production	2,062	2,309	1,741	1,815	1,869	1,928	1,944	1,960	1,976	2,032	2,048	2,064	2,077
Imports	113	118	150	135	130	130	130	130	130	120	120	120	120
<b>Total Supplies</b>	<b>2,927</b>	<b>3,402</b>	<b>3,071</b>	<b>2,885</b>	<b>2,812</b>	<b>2,797</b>	<b>2,788</b>	<b>2,780</b>	<b>2,773</b>	<b>2,800</b>	<b>2,818</b>	<b>2,842</b>	<b>2,864</b>
Food	957	949	950	950	950	950	955	960	960	965	965	970	975
Seed	67	61	66	62	63	63	63	63	65	65	65	65	65
Feed&residual	152	156	120	110	100	110	110	110	110	120	120	130	140
Exports	775	1,055	1,000	950	960	960	970	980	990	1,000	1,010	1,010	1,010
<b>Total Use</b>	<b>1,952</b>	<b>2,222</b>	<b>2,136</b>	<b>2,072</b>	<b>2,073</b>	<b>2,083</b>	<b>2,098</b>	<b>2,113</b>	<b>2,125</b>	<b>2,150</b>	<b>2,160</b>	<b>2,175</b>	<b>2,190</b>
Ending Stocks	976	1,181	935	813	739	714	690	667	648	650	658	667	674
Stocks/Use	50.0%	53.2%	43.8%	39.2%	35.6%	34.3%	32.9%	31.6%	30.5%	30.2%	30.5%	30.7%	30.8%
<b>Average Price (\$/bu)</b>	<b>\$4.89</b>	<b>\$3.89</b>	<b>\$4.60</b>	<b>\$4.60</b>	<b>\$4.80</b>	<b>\$4.90</b>	<b>\$5.00</b>	<b>\$5.10</b>	<b>\$5.10</b>	<b>\$5.10</b>	<b>\$5.10</b>	<b>\$5.10</b>	<b>\$5.20</b>
Value of Production	\$10,083	\$8,982	\$8,009	\$8,349	\$8,971	\$9,447	\$9,720	\$9,996	\$10,078	\$10,363	\$10,445	\$10,526	\$10,800
% change y/y	-17%	-11%	-11%	4%	7%	5%	3%	3%	1%	3%	1%	1%	3%

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

<b>Total Corn, Soy, Wheat</b>	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028
Planted (mm acres)	226	228	227	227	227	229	229	229	228	228	228	227	227
Harvested (mm acres)	210	213	210	212	212	213	213	213	212	213	212	212	212
Yield (bu/acre)	93	102	99	98	98	99	100	101	101	102	103	104	105
Production	19,589	21,753	20,744	20,695	20,794	21,083	21,249	21,475	21,521	21,762	21,893	22,024	22,247
Average Price (\$/bu)	\$4.81	\$4.62	\$4.62	\$4.70	\$4.77	\$4.79	\$4.85	\$4.86	\$4.93	\$4.99	\$5.00	\$5.05	\$5.09
<b>Value of Production</b>	<b>\$94,320</b>	<b>\$100,562</b>	<b>\$95,811</b>	<b>\$97,249</b>	<b>\$99,271</b>	<b>\$100,914</b>	<b>\$103,112</b>	<b>\$104,377</b>	<b>\$106,075</b>	<b>\$108,574</b>	<b>\$109,371</b>	<b>\$111,134</b>	<b>\$113,234</b>
% change y/y	-10%	7%	-5%	2%	2%	2%	2%	1%	2%	2%	1%	2%	2%

Source: USDA, Cleveland Research estimates



# U.S. Acreage Planted Per Crop Year

