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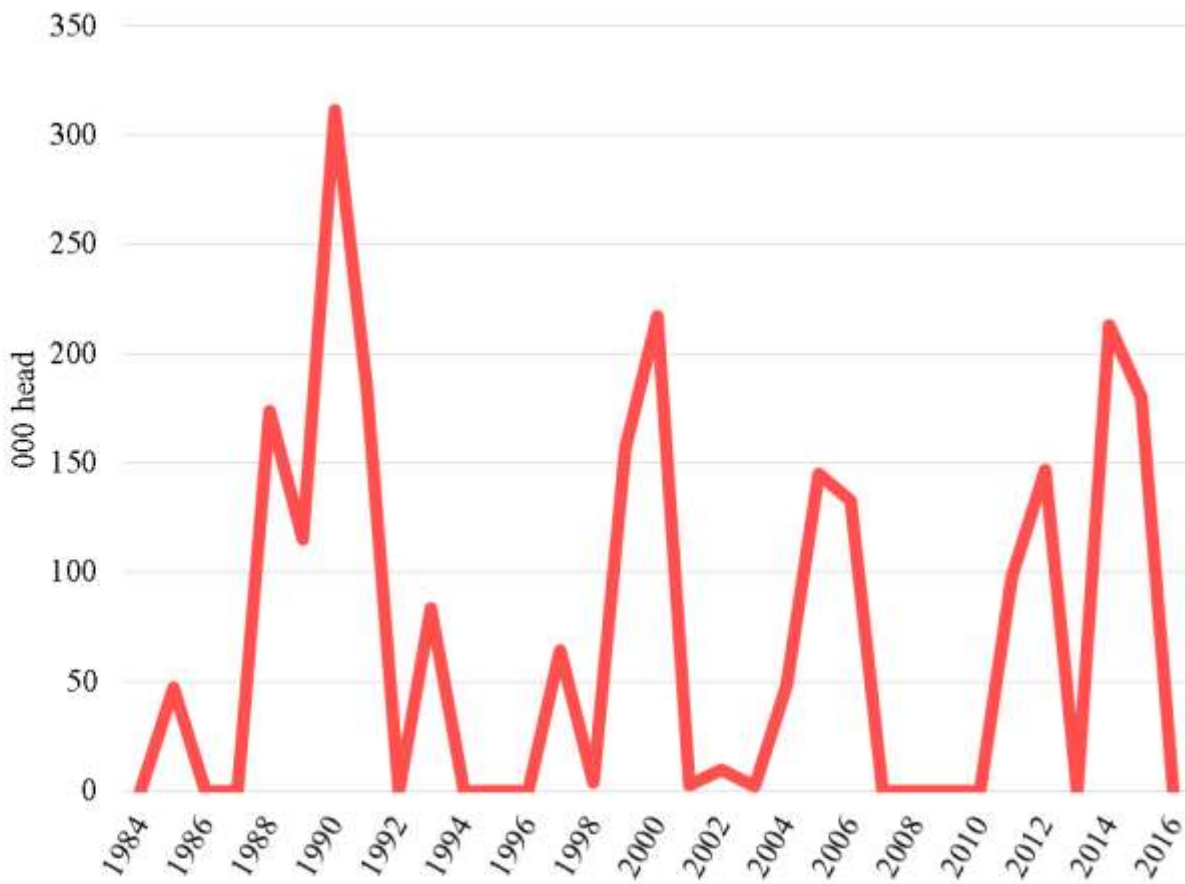
Beef and Dairy Market Relationships

The dairy industry influence on total beef production is significant. Sometimes it's complementary to beef markets. Other times it is counter to beef market adjustments. CattleFax beef audits for 2009-2013 show cull dairy cows and fed dairy cattle averaged about 20% of total U.S. beef production. About two-thirds of the dairy beef came from fed dairy cattle.

In 2014 fed cattle prices surged on tight cattle supplies and strong beef demand. Ensuing record profits pulled cattle into feedlots. Feeding out dairy calves became attractive for many feedlots, boosting demand for dairy calves.

Feedlots pulled dairy calves away from the veal industry, accelerating the decades-long decline in U.S. veal production. Essentially all U.S. veal production comes from dairy calves. Eroding veal industry demand for dairy calves coincided with surging beef feedlot demand for those animals. Additionally, the national dairy cow herd was increasing, due in part I suspect to the improved income opportunities to dairy producers in the form of feeder and fed cattle. These factors diverted dairy calves from the veal sector into feedlots.

Figure 1. Additional Dairy Calves Available to Feedlots, Annually



Data Source: USDA/NASS. Additional dairy calves available to feedlots = decrease in FI calf slaughter + 2nd quarter increase in dairy herd year over year.

Dairy calves are typically placed on feed at very light weights and stay in feedlots up to a year. This means that relatively large numbers of dairy calves impacted fed cattle markets in 2015. Using Livestock Marketing Information Center (LMIC) calculations, about 213,000 additional dairy calves were placed into U.S. feedlots in 2014 compared to 2013 (figure 1). An additional 180,000 head of dairy calves entered feedlots in calendar year 2015—thereby, impacting fed cattle markets in 2016.

Feeder cattle placed at very light weights stay on feed longer and get counted on more monthly Cattle on Feed Reports. That complicates forecasting beef production from feedlot inventory counts.

Changing economics reverse trend

Increased beef cattle inventories and lower prices in 2016 reversed the trend of a shrinking veal industry and the U.S. dairy herd providing more calves to the beef industry. Nationally beef cow numbers were up 3.5% in 2016. The 2016 U.S. calf crop was 35.08 million head, up 2.9% from 2015. A larger calf crop resulted in a 2.2% rise in estimated feeder cattle supplies on Jan. 1, 2017. For 2016, federally inspected calf slaughter was 479,800 head, which was 34,300 head above 2015. No additional, or approximately the same number of dairy calves were placed into U.S. feedlots in 2016 as in 2015.

Dairy cattle normally sell at a significant discount to beef cattle. But market forces do impact the magnitude of the discount. From 2003 through 2007 average discounts were 5% for Choice steers, 9% for Select Steers. The discount hovered between 23% to 37% for all weight classes of feeder cattle shown in table 1. In 2008 and 2009, exceptional drought in the south forced cattle liquidation. More beef cattle temporarily coming on the market ramped up discounts for Holsteins compared to historical levels. Drought again in 2011 and 2012 caused liquidation and temporarily hiked supply of cattle and discounts ramped up again, especially in feeder cattle.

In 2014 and 2015 discounts decreased noticeably on the heels of an extremely tight national beef supply and increased demand for any cattle to fill shackle and bunk space. With a relatively stable dairy herd in 2016, along with a growing national beef cattle herd, these price discounts started to increase once again.

Table 1. Discount on Holstein Steers to Beef Steers, Annual Average [1,2,3]

	Choice Steers	Select Steers	Feeder Steers			
Year	13-1500	13-1500	4-500	5-600	6-700	7-800
2003	-1%	-10%	-31%	-31%	-29%	-25%
2004	-4%	-6%	-29%	-26%	-25%	-23%
2005	-6%	-9%	-28%	-27%	-25%	-23%
2006	-7%	-8%	-28%	-28%	-27%	-23%
2007	-9%	-13%	-37%	-35%	-33%	-29%
2008	-12%	-14%	-44%	-44%	-40%	-37%
2009	-11%	-16%	-44%	-44%	-39%	-38%
2010	-12%	-14%	-38%	-36%	-32%	-30%
2011	-8%	-11%	-39%	-37%	-33%	-29%
2012	-6%	-10%	-41%	-39%	-36%	-31%
2013	-10%	-18%	-43%	-41%	-38%	-36%
2014	-6%	-8%	-34%	-36%	-30%	-30%
2015	-2%	3%	-36%	-37%	-34%	-25%
2016	-9%	-14%	-45%	-42%	-45%	-39%
Through February 10, 2017						
	-26%	-31%	-58%	-57%	-54%	-46%

Data source: USDA/AMS

[1] Iowa Choice and Select fed steers; Missouri feeder steers.

[2] Holstein fed steers – Choice 2-3 and Select 2-3; Beef fed Steers – Choice 2-4 and Select 2-3.

[3] Holstein feeder steers – large frame #3; Beef feeder steers – medium and large #1.

Dairy beef feels a squeeze

So far in 2017 steep Holstein to beef steer price discounts exist. This is for not only fed cattle, but also for feeder cattle. This imbalance could persist for many months before other adjustments bring feeder and fed cattle Holstein to beef price discounts back into alignment with historical levels. Changes in the national dairy cattle herd will eventually have impacts on Holstein steer availability. As of Jan. 1, 2017, the dairy cow inventory was 9.35 million head, up only 0.4% from one year earlier. The inventory of dairy replacements, at 4.75 million head, was down 1.2% from a year ago.

The impact of the dairy industry on beef production is always significant and has been larger than usual in the recent past due to low beef cattle numbers. Rising beef cattle inventories as the beef herd continues to rebuild will reduce this impact, along with relative price relationships, to more typical levels in the coming years.

Lee Schulz

A Preview for the 2017 Crops

With the warmer temperatures over the past couple of weeks, thoughts have turned to planting and the upcoming growing season. At the Ag Outlook Forum each year in February, USDA releases its first projections for the major crops. It shows that the potential for another round of significant crop production continues. The situation within U.S. agriculture is fairly consistent across products. The last few years have been filled with record demand, but even larger record supply. From corn and soybeans to beef and pork, agricultural markets have moved lower as the supplies are more than enough to meet demand. As agricultural producers look forward to the 2017 marketing year, they are hoping demand continues to grow and can exceed supply.

The table below details the corn market over the past 4 years and the projections for the 2017 marketing year. The crop years of 2013, 2014, and 2016 contained both record production and record demand. But with supplies exceeding demand, stocks have built up and prices have fallen. Corn plantings have been at or above 88 million acres since 2013. The expectation is that corn area will decline in 2017. USDA projects corn will be planted on 90 million acres this spring. With trend yield just below 171 bushels per acre and assuming the typical harvest rate for corn, that would lead to another large corn crop of 14 billion bushels. Stocks will bring the total corn supply up to nearly 16.5 billion bushels, roughly 500 million bushels less than we had for the current marketing year.

While corn supplies are expected to shrink, corn usage is also expected to decline. Feed and residual usage is projected to fall by 100 million bushels, but all of the reduction is set for the residual part of the category, which typically accounts for harvest and storage losses. With meat production set to exceed 100 billion pounds in 2017, feed usage should remain high. The ethanol industry's corn usage is forecast to continue at record highs, with 5.4 billion bushels being used to create biofuel. Food, seed, and other industrial usage is growing by 25 million bushels. But the largest expected usage shift is in international usage. Exports are projected to drop by 325 million bushels as international competition builds, especially from Ukraine and Brazil. Combined, corn usage is expected to drop 400 million bushels, but it is also 155 million bushels more than projected production. And with the drop in corn stocks, USDA sees corn prices rising slightly to a national season-average price of $3.50 per bushel.

Figure 1. U.S. Corn Supply and Use. Source: USDA.

		2013	2014	2015	2016	2017
Area Planted	(mil. acres)	95.4	90.6	88.0	94.0	90.0
Yield	(bu./acre)	158.1	171.0	168.4	174.6	170.7
Production	(mil. bu.)	13,829	14,216	13,602	15,148	14,065
Beg. Stocks	(mil. bu.)	821	1,232	1,731	1,737	2,320
Imports	(mil. bu.)	36	32	67	55	50
Total Supply	(mil. bu.)	14,686	15,479	15,401	16,940	16,435
Feed & Residual	(mil. bu.)	5,040	5,280	5,120	5,550	5,450
Ethanol	(mil. bu.)	5,124	5,200	5,224	5,400	5,400
Food, Seed, & Other	(mil. bu.)	1,369	1,401	1,422	1,445	1,470
Exports	(mil. bu.)	1,920	1,867	1,898	2,225	1,900
Total Use	(mil. bu.)	13,454	13,748	13,664	14,620	14,220
Ending Stocks	(mil. bu.)	1,232	1,731	1,737	2,320	2,215
Season-Average Price	($/bu.)	4.46	3.70	3.61	3.40	3.50

Soybean acreage has increased dramatically over the past several years. With the surge in acreage has come three incredible years of soybean production. Last year's crop was the first time soybean production topped 4 billion bushels. Withstanding the record crop, soybean prices rose and have set the stage for increased soybean acreage for the 2017 crop. USDA estimates 88 million acres will be planted to soybeans. With a trend yield of 48 bushels per acre, production is set at 4.18 billion bushels. That's 120 million less than last year, but still well above 4 billion bushels. Combined with stocks, 2017 total soybean supply will be a record 4.64 billion bushels.

Soybean usage has ramped up each of the past four years with growth in both domestic and international usage. Domestic crush is projected to increase by 5 million bushels as more soybean meal is required by the livestock sector and soybean oil for the biodiesel industry. Seed and residual usage goes up 7 million bushels, given the increase in planting. But the largest shift is again in exports, which increases by 100 million bushels. With usage expanding by 112 million bushels, as with corn, usage is projected to exceed production. And USDA's season-average price is expected to hold at $9.60 per bushel.

While U.S. production is projected to fall, international competition continues to grow. Several countries are projected to reach production records for corn and soybeans. For corn, the latest projections show larger corn crops in Argentina, Brazil, South Africa, and India. In fact, the Argentine corn crop is expected to be nearly 30% larger than last year's crop. Meanwhile, the Brazilian corn crop is roughly 36% larger. Barring harvest and shipping issues, South America will have plenty of corn to sell in the world market later this spring. But with the global growth in the livestock industries, there is significant feed demand as well.

For soybeans, the futures market is watching Brazil. With the latest USDA update, the Brazilian soybean crop is estimated to increase by nearly 12%, setting a new record for their production. So with both Brazil and the U.S. coming off of record production, world supplies are tremendous. However, global soybean usage also continues to grow at a amazing pace. With China leading the way in global soybean imports, soybean markets and prices have improved despite the record crops.

Figure 2. U.S. Soybean Supply and Use. Source: USDA.

		2013	2014	2015	2016	2017
Area Planted	(mil. acres)	76.8	83.3	82.7	83.4	88.0
Yield	(bu./acre)	44.0	47.5	48.0	52.1	48.0
Production	(mil. bu.)	3,358	3,927	3,926	4,307	4,180
Beg. Stocks	(mil. bu.)	141	92	191	197	435
Imports	(mil. bu.)	72	33	24	25	25
Total Supply	(mil. bu.)	3,570	4,052	4,140	4,528	4,640
Crush	(mil. bu.)	1,734	1,873	1,886	1,940	1,945
Seed & Residual	(mil. bu.)	107	146	122	128	135
Exports	(mil. bu.)	1,638	1,842	1,936	2,025	2,125
Total Use	(mil. bu.)	3,478	3,862	3,944	4,093	4,205
Ending Stocks	(mil. bu.)	92	191	197	435	435
Season-Average Price	($/bu.)	13.00	10.10	8.95	9.60	9.60

While the supply story has dominated agricultural storylines over the past few years, crop demands have been building almost as quickly. The usage growth has been multifaceted, as domestic and international usage have both surged. Feed and fuel usage have increased. That usage growth has led to modest increases in corn prices and more substantial increases in soybean prices, as evidenced by crop prices used in federal crop insurance. For the 2016 crops, corn could be insured at $3.86 per bushel and soybeans could be insured at $8.85 per bushel. For the 2017 crops, corn can be insured at $3.96 per bushel and soybeans at $10.19 per bushel. While crop margins remain tight, the markets are showing the potential for better returns on the horizon.

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