

# **2018 Baseline Update for Livestock and Dairy Markets**

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Large supplies of meat and dairy products continue to pressure market prices. While domestic demand has been strong for most livestock products, the trade situation has been mixed. A continuation of existing tariffs on U.S. meat and dairy exports to China and Mexico would cloud prospects for growth in international demand, particularly for pork. Input cost increases are not expected to be burdensome due to large national harvests of feed crops, though certain areas of the country are struggling with hay and forage supplies and water availability due to drought.

The amount of meat available to U.S. consumers is poised to set a new record in 2019, after falling to a 23-year low in 2014. Combined per capita availability of beef, pork, chicken and turkey will be nearly 19 pounds higher this year relative to 2014, a 9.5 percent increase. With a further 3.5 pound increase projected for next year, domestic meat demand must remain very strong to keep product from piling up in freezers or having to move through markets at a significant price discount. As a result of supply pressure, fed cattle, hog, and chicken prices are all projected to decline in 2019.

With announcements regarding tariff policies and trade renegotiations being made on a regular basis around the time of this release, it is difficult to pin down just how much additional meat and dairy product production will find its way into export markets. Beef export demand has been strong thus far in 2018, particularly to South Korea and Japan. For the first half of the year, beef exports grew by 196 million pounds relative to 2017, offsetting some of the 480 million pounds in production growth for the January-June period. For pork, exports are up 176 million pounds compared to production growth of 422 million, though much weaker prices for pork have been needed to facilitate these shipments.

Beef cow herd expansion has slowed greatly during 2018, as dry weather in many important cow-calf producing states has stressed forage and water supplies. Hay production in 2018 as estimated by the August Crop Production report is at the second-lowest level since 1988, trailing only 2012. This reduced production also comes at a time when hay stocks going into this growing season were relatively low. Feedlot returns have struggled as large cattle slaughter runs have pushed beef packer margins to much higher levels in 2018. Cattle and beef prices will remain under pressure as beef production continues to grow through 2020. Good domestic demand for beef, particularly higher-quality product, continues to moderate what could have been even larger price declines if traditional production growth/price decline relationships were in place.

The hog breeding herd jumped by 110 thousand head during the second quarter of 2018 and is now 465 thousand head (7.9 percent) larger than four years ago, at the highest point since 1999. Increases in sow numbers combined with rising productivity have pushed pork production higher for four consecutive years, with growth expected to continue through at least 2020. While export growth offset a large percentage of production increases and left per capita domestic supplies nearly unchanged through last year, trade uncertainty and continued production expansion will push pork domestic supply per consumer to its highest level since 1981 next year. With elevated supplies of beef and chicken also a

factor, hog prices will decline to their lowest level in a decade, leading to financial losses for most producers. This situation will likely persist until the size of the hog herd is reduced and production growth is halted. Domestic pork demand has remained solid, though the pork belly price jump experienced in the spring and summer of 2017 due to incredibly strong bacon demand has not been repeated this year.

The national composite wholesale chicken price spent three weeks this spring above \$1.20 per pound, a weekly average level that had only been achieved two other weeks in history (during the spring of 2014). These elevated chicken prices were a pleasant surprise given the projected chicken production increases in 2018 and the fact that stocks of chicken in cold storage have been more than 10 percent above year ago for most months in 2018 thus far. Chicken prices are expected to retreat next year, as more historical demand levels return, and production continues to grow. Turkey prices continue to struggle as has been the case for much of the past 18 months. A third consecutive year without production growth in 2019 is projected to allow for some modest price recovery. Egg demand appears to be on more solid footing this year, following two years of prices that both averaged lower than any year since 2006.

The U.S. dairy cow herd will likely expand again in 2018, even as milk prices average the lowest level since 2009. Though July marked the largest monthly decrease in the herd since January 2016, larger cow inventories in Texas, Colorado, Kansas, Idaho and Arizona will keep the 2018 monthly average slightly above last year and result in the fifth consecutive annual increase. With average cow numbers largely unchanged, the 1.0 percent rise in 2018 milk production is largely due to increases in milk production per cow. Cow numbers are expected to fall in 2019. Butter prices have remained above \$2.00 per pound for 20 consecutive months, but lower projected annual cheese (lowest since 2009) and nonfat dry milk prices (lowest since 1978) have resulted in milk margins low enough to trigger payments from the Margin Protection Program for Dairy frequently in 2018, depending upon producer-elected coverage levels. Dairy product exports have been impressive for the first half of the year, with milk fat exports up 34 million pounds (relative to production growth of 77 million pounds) and skim solids exports 357 million pounds higher (vs. a 126 million pound production increase) for January-June.

Annual growth in the CPI for food will remain below 2.0 percent for the fourth consecutive year in 2018. This year will also mark three straight years of the CPI for food increasing less than the overall inflation rate. The strong domestic economy has contributed to food away from home inflation averaging over 2.5 percent, even as the CPI for food at home in July was identical to the level of July 2014. Food inflation is expected to increase modestly in 2019, led by increases in cereal and bakery, dairy, and food away from home inflation.

This baseline update was prepared in collaboration with the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri. FAPRI, also a part of the Integrated Policy Group in the MU Division of Applied Social Sciences, prepared the crop and biofuel projections consistent with the livestock and dairy information in this report. A brief summary of crop price projections is included with this report and more detail regarding crop and biofuel outcomes is available from FAPRI's companion report, accessible at <http://www.fapri.missouri.edu>.

## U.S. Cattle Sector

Calendar year	2016	2017	2018	2019	2020	2021	2022	2023
	(Million head)							
<b>Beef cows (Jan. 1)</b>	30.2	31.2	31.7	31.8	31.7	31.4	31.1	30.8
<b>Dairy cows (Jan. 1)</b>	9.3	9.3	9.4	9.4	9.3	9.3	9.3	9.3
<b>Cattle and calves (Jan. 1)</b>	91.9	93.7	94.4	94.6	94.1	93.2	92.3	91.4
Calf crop	35.1	35.8	36.4	36.4	36.2	35.9	35.6	35.3
Calf death loss	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1
Calf slaughter	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5
Beef cow slaughter	2.6	2.8	3.1	3.4	3.5	3.5	3.3	3.2
Dairy cow slaughter	2.9	3.0	3.1	3.0	2.9	2.9	2.9	2.9
Bull slaughter	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Steer and heifer slaughter	24.7	25.9	26.5	27.0	27.2	27.2	27.0	26.8
Total slaughter	31.2	32.8	33.9	34.5	34.7	34.6	34.3	33.9
Cattle imports	1.7	1.8	1.8	1.9	2.0	2.0	2.0	2.1
Cattle exports	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cattle death loss	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.5
Residual	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
<b>Cattle and calves (Dec. 31)</b>	93.7	94.4	94.6	94.1	93.2	92.3	91.4	90.7
<b>Cattle on feed (Jan. 1)</b>	13.2	13.1	14.0	14.4	14.5	14.5	14.4	14.3
	(Million pounds)							
<b>Supply</b>								
Beginning stocks	683	757	649	676	693	709	713	712
Imports	3,012	2,993	3,037	3,072	3,098	3,114	3,119	3,129
Production	25,288	26,250	27,205	27,923	28,300	28,323	28,203	28,068
Total	28,983	30,000	30,891	31,671	32,091	32,146	32,036	31,910
<b>Disappearance</b>								
Domestic use	25,669	26,492	27,105	27,732	28,071	28,120	28,053	28,013
Exports	2,557	2,860	3,110	3,246	3,311	3,312	3,270	3,186
Total	28,226	29,352	30,215	30,978	31,382	31,432	31,323	31,199
Ending stocks	757	649	676	693	709	713	712	711
<b>Per capita consumption</b>								
	(Pounds)							
Carcass weight	79.3	81.3	82.6	83.9	84.3	83.8	83.1	82.4
Retail weight	55.5	56.9	57.8	58.7	59.0	58.7	58.2	57.7
Change	2.9%	2.5%	1.6%	1.6%	0.5%	-0.5%	-0.9%	-0.8%
<b>Prices</b>								
	(Dollars per hundredweight)							
Total all grades, 5-area direct steers	120.86	121.52	116.59	111.43	110.19	111.58	115.37	119.99
600 - 650 #, Oklahoma City feeder steers	153.44	155.82	158.51	145.90	141.06	144.29	152.49	162.14
Utility cows, Sioux Falls	71.45	66.74	63.25	61.23	60.18	61.58	64.71	68.51
Boxed beef cutout	206.68	209.74	213.45	204.75	203.35	208.37	216.94	226.71
	(Dollars per pound)							
Beef retail	5.96	5.91	5.97	5.89	5.85	5.96	6.15	6.40
Change	-5.2%	-0.9%	1.0%	-1.2%	-0.8%	1.9%	3.3%	3.9%
<b>Cow-calf returns</b>								
	(Dollars per cow)							
Receipts	728.97	799.87	765.43	730.35	719.31	744.00	789.25	834.51
Feed expenses	392.35	387.67	419.83	429.77	431.99	434.12	436.09	437.34
Non-feed expenses	259.44	268.06	281.40	283.41	287.48	295.17	306.05	317.82
Net returns	77.18	144.14	64.20	17.17	-0.16	14.71	47.11	79.35

## U.S. Swine Sector

Calendar year	2016	2017	2018	2019	2020	2021	2022	2023
	(Million head)							
<b>Breeding herd (Dec. 1*)</b>	6.00	6.11	6.18	6.33	6.28	6.15	6.03	5.95
Gilts added	3.07	3.10	3.24	3.13	2.98	2.88	2.83	2.83
Sow slaughter	2.91	2.97	3.03	3.11	3.04	2.94	2.84	2.80
Sows farrowed	12.00	12.25	12.49	12.69	12.58	12.35	12.16	12.07
Pigs per litter (head)	10.50	10.60	10.72	10.83	10.95	11.07	11.19	11.31
<b>Market hogs (Dec. 1*)</b>	62.9	65.4	67.5	68.7	69.5	69.5	68.9	68.6
Pig crop	125.9	129.8	133.8	137.5	137.8	136.8	136.1	136.6
Barrow and gilt slaughter	115.0	118.0	122.2	126.0	127.0	126.7	126.0	126.0
Hog imports	5.7	5.6	5.4	5.5	5.5	5.6	5.6	5.6
Hog exports	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Death loss/residual	14.0	15.3	15.8	16.2	16.2	16.2	16.1	16.1
<b>Market hogs (Nov.30)</b>	65.4	67.5	68.7	69.5	69.5	68.9	68.6	68.7
	(Million pounds)							
<b>Supply</b>								
Beginning stocks	590	507	554	567	585	592	589	583
Imports	1,091	1,116	1,137	1,162	1,133	1,124	1,108	1,104
Production	24,957	25,598	26,660	27,603	27,948	28,005	27,985	28,107
Total	26,638	27,221	28,351	29,332	29,666	29,721	29,682	29,794
<b>Disappearance</b>								
Domestic use	20,892	21,035	21,863	22,648	22,811	22,735	22,626	22,633
Exports	5,239	5,632	5,922	6,099	6,263	6,397	6,474	6,575
Total	26,130	26,666	27,785	28,747	29,073	29,133	29,100	29,208
Ending stocks	507	554	567	585	592	589	583	586
	(Pounds)							
<b>Per capita consumption</b>								
Carcass weight	64.5	64.5	66.6	68.5	68.5	67.8	67.0	66.6
Retail weight	50.1	50.1	51.7	53.1	53.2	52.6	52.0	51.7
Change	0.7%	0.0%	3.2%	2.8%	0.0%	-1.0%	-1.2%	-0.6%
<b>Prices</b>								
Barrows & gilts, national base	(Dollars per hundredweight)							
51-52% lean equivalent	46.16	50.48	44.24	41.33	44.49	48.36	52.33	53.72
Pork cutout value	78.36	84.02	72.32	67.58	73.13	80.19	87.55	90.33
	(Dollars per pound)							
Pork retail	3.75	3.78	3.71	3.60	3.70	3.86	4.05	4.18
Change	-2.7%	1.0%	-1.8%	-3.0%	2.5%	4.6%	4.8%	3.3%
<b>Farrow - finish returns</b>	(Dollars per hundredweight)							
Receipts	47.01	50.75	44.67	41.71	44.92	48.85	52.87	54.29
Feed expenses	27.59	26.29	26.84	26.94	27.89	28.21	28.29	28.07
Non-feed expenses	19.88	20.03	20.41	20.60	20.71	20.88	21.14	21.42
Net returns	-0.47	4.43	-2.58	-5.83	-3.68	-0.24	3.44	4.81

\* Preceding year

## U.S. Poultry Supply and Use

Calendar year	2016	2017	2018	2019	2020	2021	2022	2023
<b>Broiler</b>	(Million pounds)							
Production	40,261	41,217	42,128	43,009	43,604	44,152	44,795	45,530
Imports	131	126	133	136	134	136	138	140
Domestic use	33,802	34,473	35,345	36,084	36,523	36,910	37,379	37,924
Exports	6,645	6,791	6,916	7,049	7,209	7,377	7,549	7,738
Ending stocks	778	856	856	867	874	875	880	888
<b>Turkey</b>								
Production	5,981	5,981	5,933	5,931	5,991	6,066	6,144	6,224
Imports	50	25	25	28	29	29	30	30
Domestic use	5,384	5,352	5,320	5,328	5,363	5,418	5,480	5,543
Exports	569	622	630	640	659	675	691	707
Ending stocks	279	310	317	308	305	307	309	313
<b>Eggs</b>	(Million dozens)							
Production	8,579	8,808	8,990	9,140	9,191	9,239	9,312	9,401
Imports	130	34	22	27	27	27	27	27
Domestic use	7,326	7,507	7,628	7,744	7,791	7,831	7,894	7,969
Hatching egg	1,010	1,035	1,060	1,079	1,081	1,082	1,085	1,090
Exports	304	355	336	340	347	354	361	368
Ending stocks	142	88	75	80	80	80	80	80
<b>Prices</b>	(Cents per pound)							
Nat'l comp. whlsle. Broiler	84.33	93.54	99.30	94.20	93.67	95.46	96.91	98.09
Broiler retail	189.73	187.56	188.89	188.07	187.89	191.38	195.29	199.11
Natl. wholesale turkey hens	117.11	96.08	81.94	88.14	92.51	94.34	96.15	97.11
Turkey retail	155.27	158.21	151.56	154.11	160.86	165.46	169.32	172.73
	(Cents per dozen)							
NY grade A large egg	85.70	100.90	137.35	118.40	113.66	117.05	118.68	120.31
Shell egg retail	168.42	146.71	187.78	182.85	177.65	181.61	185.41	189.13
<b>Per capita consumption</b>	(Pounds - retail weight)							
Broiler	89.7	90.8	92.5	93.7	94.2	94.5	95.1	95.8
Turkey	16.6	16.4	16.2	16.1	16.1	16.2	16.2	16.3
	(Eggs)							
Eggs	271.6	276.3	278.8	281.0	280.7	280.2	280.5	281.3
<b>Feed-price ratios</b>	(Ratios)							
Broiler	4.7	5.4	5.7	5.2	5.0	5.0	5.1	5.2
Turkey	9.2	7.2	5.4	6.0	6.2	6.3	6.4	6.6
Eggs	5.9	7.7	11.2	9.0	8.1	8.3	8.4	8.6

## U.S. Dairy Sector

Calendar year	2016	2017	2018	2019	2020	2021	2022	2023
<b>US milk supply</b>								
Dairy cows (thou. head)	9,325	9,392	9,397	9,346	9,302	9,278	9,278	9,292
Milk yield (lbs.)	22,779	22,941	23,170	23,529	23,835	24,151	24,456	24,748
Milk production (bil. lbs.)	212.4	215.5	217.7	219.9	221.7	224.1	226.9	230.0
<b>Min. FMMO class prices</b> (Dollars per hundredweight)								
Class I mover	14.80	16.45	14.64	15.19	15.74	16.38	16.82	16.99
Class II	14.35	16.04	14.64	14.76	15.55	16.14	16.54	16.75
Class III	14.87	16.17	14.49	15.04	15.59	16.23	16.67	16.84
Class IV	13.77	15.16	13.94	14.06	14.85	15.44	15.84	16.05
<b>All milk price</b>	16.34	17.69	16.11	16.53	17.15	17.76	18.19	18.37
<b>Wholesale prices</b> (Dollars per pound)								
Butter, CME	2.08	2.33	2.25	2.14	2.13	2.14	2.14	2.16
Cheese, Am., 40#, CME	1.58	1.61	1.52	1.57	1.61	1.66	1.70	1.71
Nonfat dry milk, AA	0.85	0.88	0.79	0.86	0.95	1.01	1.07	1.08
<b>Dairy product production</b> (Million pounds)								
American cheese	4,769	5,072	5,135	5,212	5,271	5,335	5,404	5,480
Other cheese	7,413	7,587	7,699	7,819	7,923	8,035	8,150	8,274
Butter	1,839	1,847	1,890	1,914	1,941	1,980	2,017	2,055
Nonfat dry milk	2,312	2,365	2,477	2,504	2,525	2,569	2,639	2,712

## U.S. Consumer Food Price Inflation

Calendar year	2016	2017	2018	2019	2020	2021	2022	2023
(Change from the previous year)								
<b>FOOD</b>	0.3%	0.9%	1.6%	2.2%	2.5%	2.7%	2.7%	2.7%
<b>Food at home</b>	-1.3%	-0.2%	0.8%	2.0%	2.4%	2.6%	2.6%	2.6%
Cereal and bakery	-0.3%	-0.5%	0.4%	2.8%	2.5%	2.4%	2.4%	2.4%
Meat	-4.9%	-0.7%	1.6%	0.8%	2.0%	2.9%	3.1%	3.0%
Dairy	-2.3%	0.1%	-0.3%	2.4%	3.1%	3.1%	2.9%	2.8%
Fruits and vegetables	0.8%	-0.2%	1.0%	2.2%	2.4%	2.4%	2.3%	2.3%
Other food at home	0.1%	0.2%	0.2%	2.2%	2.2%	2.2%	2.2%	2.2%
<b>Food away from home</b>	2.6%	2.3%	2.6%	2.4%	2.5%	2.7%	2.8%	2.7%



## Selected Crop Prices

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Marketing year	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
Corn (\$/bu.)	3.36	3.40	3.62	3.83	3.85	3.87	3.85	3.79
Wheat (\$/bu.)	3.89	4.73	5.12	5.11	5.16	5.21	5.16	5.16
Soybeans (\$/bu.)	9.47	9.35	8.73	8.95	9.29	9.39	9.23	9.14
Soybean meal (\$/ton)	316.88	350.00	314.65	319.72	327.53	330.50	326.51	323.86
Soybean oil (cents/lb.)	32.55	30.00	29.61	31.21	32.37	32.77	32.44	32.34
Upland cotton (cents/lb.)	68.00	68.00	75.16	71.20	71.04	69.83	70.19	69.98
Rice (\$/cwt)	10.40	12.50	12.25	12.64	12.55	12.32	12.36	12.34
All hay (\$/ton)	129.00	140.00	165.55	167.41	167.46	167.01	166.37	165.23

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