

An Updated Evaluation of the U.S. Cattle Cycle

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Perhaps no area of the U.S. food supply has been disrupted and stressed as much over the past few years as the U.S. beef sector. The volatile nature of the U.S. beef industry in the recent past has created a difficult landscape for cattle producers faced with making production decisions today that ultimately determine the productivity of the industry in the future. The expansion and contraction of the beef cow herd that results from producers responding to market signals and from the biological lags that exist in animal production creates a cyclical inventory pattern that is often referred to as the “cattle cycle.” These cycles typically last 9 to 13 years; the current cattle cycle began in 2014.

The purpose of this fact sheet is to examine the current cattle cycle and update information included in [Evaluating Cattle Cycles: Changes over Time and Implications](#) that was published in February 2017.¹ Data used in the following graphs and tables come from USDA National Agricultural Statistics Service (NASS).

Cattle Cycle Overview

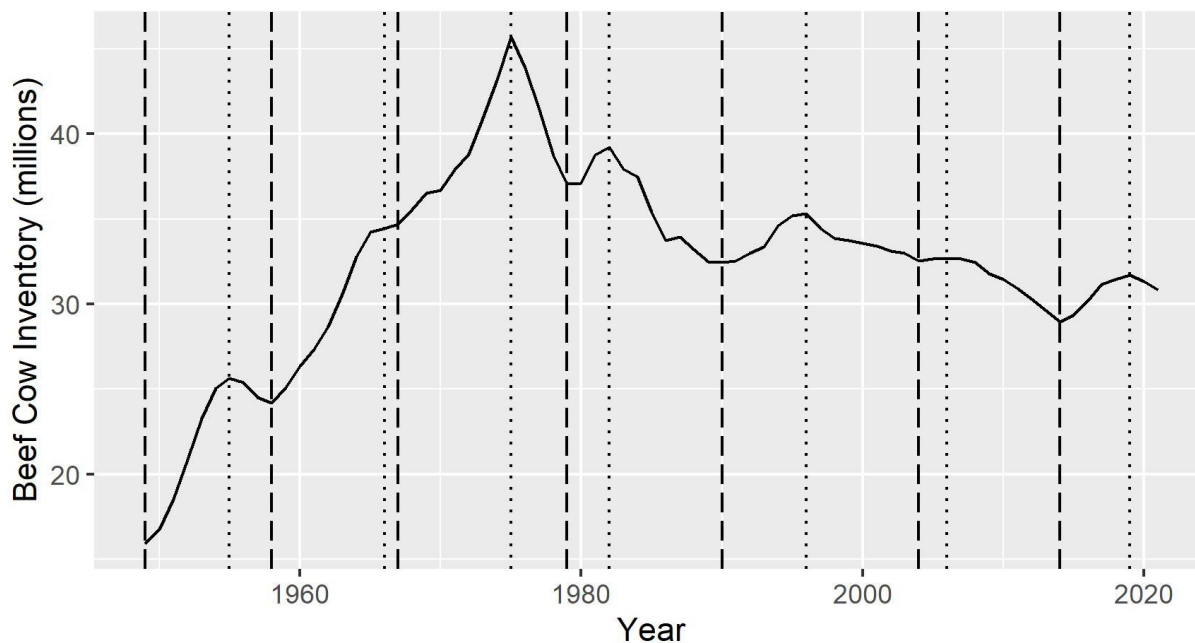
Cattle cycles have changed significantly over the past 70 years. The number of beef cows has seen a steady decline since 1976, yet beef production has increased. The range from peaks to troughs in beef cow inventory has dramatically decreased. The range of the current cycle looks to be in line with the previous two cycles. Figure 1 graphs the expansion and contraction that has occurred in beef cow inventory since 1949. Dotted vertical lines indicate peaks in the cycles while dashed lines are troughs. The present cattle cycle, currently in its ninth year, peaked in 2019 and has been declining since. This decrease in beef cow inventory may leave producers curious about when the next trough will occur or if it is occurring currently. Important factors to consider are cow calf profitability and the demand for beef. Estimated average cow calf returns were negative from 2018 through 2021. However, positive returns of \$53 in 2022 and \$173 in 2023 are predicted to occur according to a forecast published by Livestock Marketing Information Center on March 18, 2022.² Demand for U.S. beef, both domestic and export, remains strong. This positive outlook for cow calf producers may signal that the end of the current cattle cycle is nearing. More information on the future of the beef industry can be found in [Beef-Cattle Outlook](#).³

¹ Tonsor, G.T. and J.L. Mitchell. (February 2017). “Evaluating Cattle Cycles: Changes Over Time and Implications.” Available at <https://agmanager.info/livestock-meat/production-economics/evaluating-cattle-cycles-changes-over-time-and-implications>.

² Livestock Marketing Information Center (LMIC). (March 2022.) “Annual Cattle Prices.” [PowerPoint Presentation.]

³ Tonsor, G.T. (March 2022). “Beef-Cattle Outlook.” [PowerPoint Presentation.] Available at <https://agmanager.info/beef-cattle-outlook-7>.

Figure 1. Cattle Cycles Over Time



It's worth taking a closer look at the evolution of cattle cycles over time to better understand the current trends. First, consider that beef cow inventory is trending downward and the magnitude of expansion and contraction in beef cow inventory over the course of a single cattle cycle has decreased substantially over the years. Table 1 summarizes beef cow inventory over each of the cattle cycles. Notably, the relative range, which is the ratio of the range to the average inventory in the cattle cycle, has trended downward over the cycles. Thus, cattle cycles have become less pronounced over time.

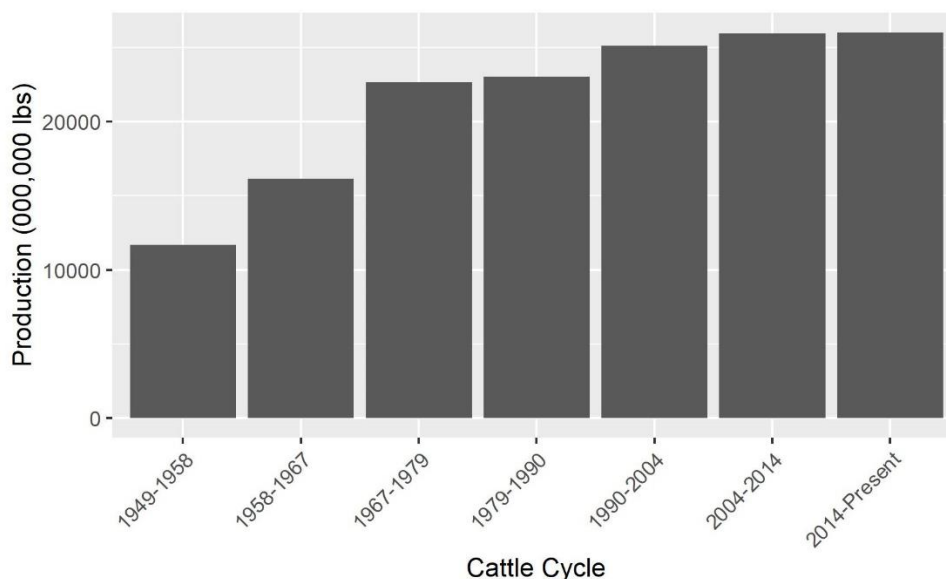
Table 1. Beef Cow Inventory (000's head)

CATTLE CYCLE	AVERAGE	STD DEV	MIN	MAX	RANGE	RELATIVE RANGE*
1949-1958	21,772	3,867	15,919	25,659	9,740	44.7%
1958-1967	29,300	3,898	24,165	34,442	10,277	35.1%
1967-1979	39,505	3,520	34,708	45,711	11,003	27.9%
1979-1990	36,033	2,373	32,487	39,229	6,742	18.7%
1990-2004	33,688	909	32,454	35,318	2,864	8.5%
2004-2014	31,704	1,108	29,631	32,702	3,071	9.7%
2014-PRESENT	30,620	1,025	28,956	31,690	2,734	8.9%

* Relative range is calculated as $100 \times \text{range} / \text{average}$.

However, even as beef cow inventory continues on a downward trend, beef production is increasing as evidenced by Figure 2. For example, average annual beef production in the current cycle is 15% greater than it was in the 1967-1979 cycle although beef cow inventory is 22% smaller.

Figure 2. Average Annual Beef Production by Cattle Cycle



The industry is able to produce more beef with a smaller beef cow herd due to increasing slaughter weights, carcass yields, and decreasing death loss. In essence, more beef is being produced for every cow in the breeding herd. This increase in efficiency is likely the result of improved genetics, nutrition, health management, and other factors. Table 2 outlines the differences in dressed slaughter weights over each of the cattle cycles.⁴ The current cattle cycle has the greatest relative range in dressed slaughter weights. This is likely due to the complications Covid-19 caused for the packing sector. As packing plants were forced to slow or halt operations due to the pandemic, producers were left with limited options to take their finished cattle for processing. As a result, cattle remained in feedlots longer than originally planned until processing availability improved.

Table 2. Dressed Slaughter Weight (lbs.)*

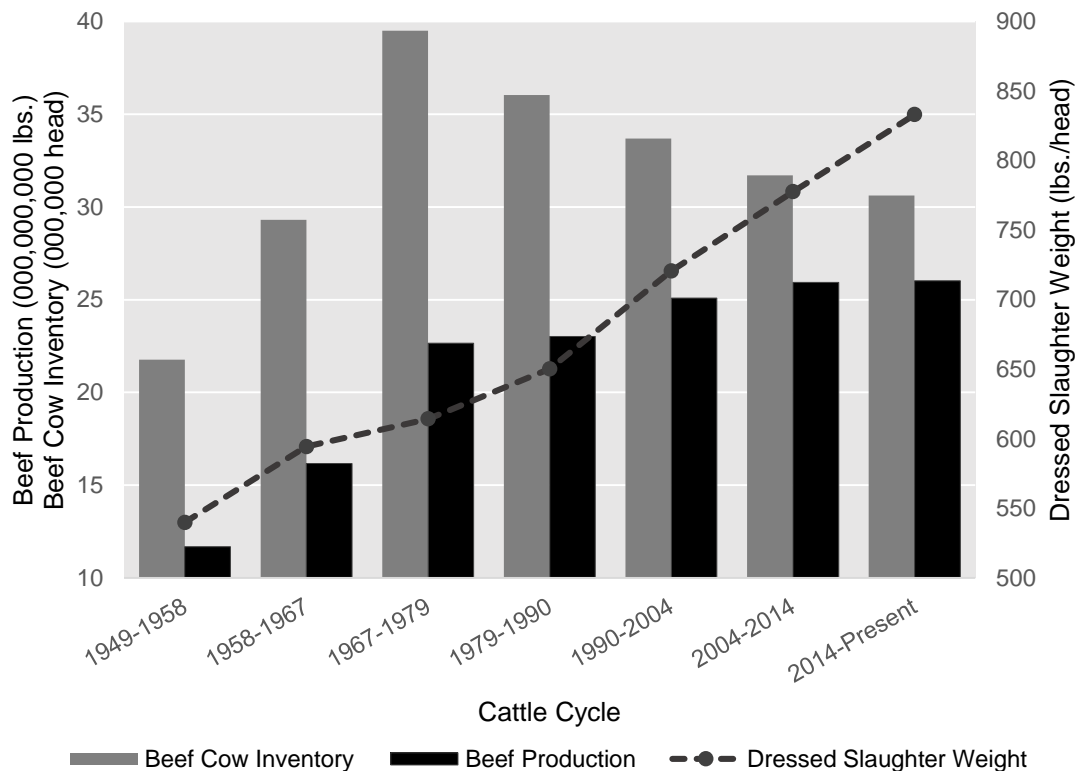
CATTLE CYCLE	AVERAGE	STD DEV	MIN	MAX	RANGE	RELATIVE RANGE
1949-1958	539.9	8.5	526.0	552.0	26.0	4.8%
1958-1967	594.4	11.0	575.0	608.0	33.0	5.6%
1967-1979	614.3	13.4	588.0	634.0	46.0	7.5%
1979-1990	650.3	17.3	630.0	683.0	53.0	8.2%
1990-2004	720.7	23.5	686.0	765.0	79.0	11.0%
2004-2014	777.6	11.2	756.0	796.0	40.0	5.1%
2014-PRESENT	833.1	34.9	808.0	916.6	108.6	13.0%

* (steers & heifers greater than or equal to 500 lbs., commercial, Federally Inspected)

⁴ We do not include parallel information on weaning percentage, calf weight, or other important metrics of productivity applicable earlier in the production process. Regardless, we recognize efficiency gains have occurred throughout the industry.

Thus, the crux of this fact sheet is represented in Figure 3. Because the average slaughter weight has increased over cattle cycles, beef cow inventory can decline while beef production can still increase. Stated differently, it takes fewer beef cows today to increase beef production and keep up with beef demand than it did in the past.

Figure 3. Average Inventory, Production, and Slaughter Weight across Cattle Cycles



Summary

Cattle cycles exist within beef production because producers respond to market signals and expand and contract their herds accordingly, but biological lags inherent in livestock production lengthen this process to create a cyclical inventory pattern. The U.S. beef cow inventory is declining while beef production is increasing because of improved production efficiencies (i.e. increased amount of beef produced/head). This has led to cattle cycles becoming less pronounced over time. The current cycle began in 2014 and hit its peak in 2019. Estimated returns to cow calf production are projected to be positive in the near future, and the demand for beef remains strong. These factors are important for cattle producers to consider as they make production decisions and anticipate the end of the current cattle cycle.

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