



Overview of the United States Cattle Industry

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General

Cattle production is one of the most important industries in the United States, representing 43.8 billion in cash receipts during 2009. Modern beef production in the United States is a highly specialized system that spans from cow-calf operators that typically graze pastureland to cattle feedlots focusing on finishing cattle on grain for slaughter. The *Overview of the United States Cattle Industry* report provides an official periodic review of changes in the United States cattle industry and its impact on cattle supplies and disposition. Additionally, this report gives a brief overview of survey and estimation procedures as well as terminology used in NASS cattle publications.

United States Cattle Operations Decline

The structure of the United States cattle industry continues to change, with a greater proportion of cattle being raised on fewer and larger farms. The total number of cattle operations in the United States was 950,000 for 2009, down 1 percent from 2008. Beef cow operations in 2009, at 753,000 were also down 1 percent from 2008. During the last 20 years, the number of all cattle operations in the United States has fallen 28 percent, while beef cow operations have declined by 21 percent (Graph 1). Over this time, the average number of cattle per operation has increased by 36 percent to nearly 100 head on total cattle operations (Graph 2). In 2009, operations with 500 or more head accounted for 47.7 percent of the total cattle inventory, compared with only 38.0 percent in 1999 (Graph 3). Although less pronounced, the percent of inventory on beef cow operations with 500 or more head has increased from 14.4 percent in 1999 to 16.6 percent in 2009 (Graph 4).

Downturn in United States Cattle Inventory Continues

Current estimates for 2010 show the Nation's cattle herd down 1 percent from the previous year, maintaining the downturn in the current cattle cycle. Looking at the cattle inventory on a January 1 basis, this year's decrease continues a distinct cycle of growth and liquidation that has defined the United States cattle inventory. Measured from trough to trough, the length of cycles over the last 50 years has ranged from 9 to 14 years. Recent cattle cycles have become much less pronounced, with shorter periods of increase and more prolonged phases of decrease (Graph 5).

The January 1, 2010 inventory of cattle and calves, at 93.7 million, represents the third year of downturn in the cattle cycle after only three years of increase during the upturn (Graph 6). For the current cycle, total cattle inventory increased just 2.17 million head during the upturn compared with a decline of 2.87 million head during the ongoing downturn. The beef cow herd, the foundation of the total cattle inventory, has declined 1.33 million head since January 1, 2006, after gaining only 171,000 during the 2 year upturn. Since the United States cattle inventory peaked in 1975, total cattle inventory has declined 38.3 million head, or 29 percent.

The July 1, 2010, *Cattle* report also indicated the Nation's cattle herd declined 1 percent to 100.8 million head. Total cattle inventory fell 1.20 million head from a year earlier with 500,000 head of the decrease coming from the beef cow herd. The July 1 beef and dairy cow herd has declined from 42.4 million head in 2006 to 40.8 million head in 2010, down 1.60 million head or 4 percent. Similarly, the calf crop declined from 37.0 million head in 2006 to an estimated 35.4 million head this year, a decline of 1.62 million head or 4 percent. Beef replacement heifers decreased 100,000 head from last year, representing a 10 percent reduction since the peak in 2006 of the most recent July cattle cycle. In July of 2005, a

year prior to peak cattle inventories, beef replacement heifers represented 39.5 percent of the total of beef replacement heifers and other heifers (excluding dairy replacement heifers); five years later, they represent 36.5 percent (Graph 7). A lower percentage of beef replacement heifers would tend to indicate a leveling off or reduction of the herd.

The monthly *Cattle on Feed* report is also useful in evaluating the current and future supplies of slaughter cattle. Each report includes estimates of total cattle on feed, placements, marketings and other disappearance from feedlots with a capacity of 1,000 or more cattle being fed for slaughter. The amount of cattle placed on feedlots throughout the year depends heavily on the supply of feeder cattle outside of the feedlots. This is generally measured by deducting the January 1 or July 1 total inventory of cattle on feed from the amount of steers, other heifers and calves on hand. The supply of feeder cattle outside of feedlots has remained relatively unchanged the past five years, totaling 27.5 million head on January 1, 2010 (Graph 8). Although the supply has changed little over this time, utilization of the supply as placements on 1,000 or more capacity feedlots has fallen from 85 percent during 2006 to 81 percent for 2009. The significant increase in the price of corn over this time has challenged feedlot profitability and suppressed the amount of cattle placed in commercial feedlots through 2009 (Graph 9). On the other hand, placements of cattle on 1,000 or more capacity feedlots through November of 2010 have increased more than 4 percent from this point last year.

In addition to the monthly estimates, quarterly *Cattle on Feed* reports provide a breakdown of feedlot inventory by class. During phases of liquidation, the proportion of heifers on feed will rise due to less being retained for cow replacements. Conversely, the percentage of heifers will fall when the breeding herd is rebuilding. The October 1, 2010 *Cattle on Feed* report indicated that placements of heifers in feedlots remained high; suggesting that rebuilding of the breeding herd has not yet begun. For 2010, heifers have represented 37.5 percent of all cattle on feed throughout the year, up slightly from a year earlier. This compares with 34.7 percent in 2005 when the herd was rebuilding (Graph 10).

Although movement of fed cattle from feedlots to slaughter (marketings) represents a majority of cattle slaughtered in the United States, other slaughter relationships are important to consider. While heifer slaughter as a percent of total federally inspected slaughter has remained relatively unchanged over the past four years, slaughter of cows has increased 28.6 percent, making up 4 percent more of the total federally inspected cattle slaughter (Graph 11). Calf slaughter as a percent of total calf crop has declined from around 8 percent in the mid-1980's to less than 3 percent since 2000, a decline of nearly 2.5 million head (Graph 12). This decline in calf slaughter allows a corresponding number of calves to go into feedlots or the replacement herds.

Despite the continued reduction of the United States cattle herd, beef production in the United States has actually risen over the past 30 years. Since 1979, commercial beef production has grown by 22 percent while total cattle inventory fell by 15 percent (Graph 13). The decline in cattle inventory has been largely offset by a 23 percent increase in the average dressed weight of federally inspected cattle over this time (Graph 14). However, average live and dressed weights of cattle slaughtered during 2010 have consistently fallen below weights realized in 2009.

The supply of cattle in the United States is also influenced by imports and exports of live cattle. The Foreign Agricultural Service and the United States Census Bureau are the primary sources of these data. The majority of cattle imports for the United States come from Canada and Mexico. The bulk of imports from Canada are fed cattle ready for slaughter, while most of the feeder cattle are imported from Mexico. Total cattle imports in 2009 fell 282,000 head to 2.00 million head (Graph 15). The United States exports significantly fewer cattle than it imports. Cattle exports fell to 58,000 in 2009, compared to 107,000 during 2008. Since 2000, exports of live cattle from the United States has fallen 88 percent (Graph 16). Exports declined considerably during 2003 due to trade barriers related to BSE and other diseases.

In summary, this is the third year of the downturn in the cattle cycle and there are currently no significant signs of herd expansion. Inventory of both cows and replacement heifers have been reduced in 2010 and placements of heifers in feedlots remain heavy. Growing imports of feeder cattle from Mexico have somewhat supplemented the feeder cattle supply, but with much stronger feedlot placements during 2010, supplies of feeder cattle remain extremely tight. Also considering the fact that cow slaughter remains strong, these factors appear likely to limit the ability for herd expansion in the foreseeable future.

Statistical Methodology: Cattle

Survey Procedures: The January and July *Cattle* reports are based on probability surveys. A probability survey assumes that everyone in the target population has a positive probability of being selected. These probabilities do not have to be equal but they must be known and used in the sample selection and survey estimation process. Because a sample is used in the survey process, sampling errors are associated with the numbers. However, since the probabilities of selection are known, sampling errors can be calculated to determine levels of precision. In other words, it allows an objective evaluation of the reliability of a statistic.

The sampling universe for the cattle survey is all operations with at least one head of cattle. A sample of cattle producers from the list frame maintained by NASS is supplemented by a sample of area frame tracts to ensure complete coverage. Sampling procedures ensure that all cattle producers, regardless of size, have a chance to be included in the survey. Large producers are sampled more heavily than small operations.

A random sample of roughly 50,000 United States producers is surveyed during the first half of January to provide data for the January *Cattle* report. Data is collected by mail, telephone, and face-to-face personal interviews. For the July survey, data is collected during the first half of June from about 40,000 small and medium sized operations. These operators are contacted by face-to-face personal interviews. An additional 10,000 large producers and feedlots are contacted during the first half of July by mail, telephone, and face-to-face personal interviews. Regardless of when operators are surveyed, they are asked to report inventories as of the first of the month. Usable reports for both the January and July surveys average over 80 percent.

Estimation Procedures: The cattle estimates are prepared by the Agricultural Statistics Board after reviewing recommendations and analysis submitted by each State field office. National and State survey data are reviewed for reasonableness with each other and with estimates from the previous year using a balance sheet. The balance sheet begins with the previous inventory estimate, adds to it estimates of births and imports, and subtracts estimates of slaughter, exports, and deaths. The indicated ending inventory level is compared to the Agricultural Statistics Board estimate for reasonableness.

Estimates Published: The January *Cattle* report includes estimates of United States and State level cattle inventory by class, number of calves born during the previous year and total number of cattle on feed as of January 1. The July *Cattle* report includes estimates of United States cattle inventory by class, expected calf crop for the current year and total number of cattle on feed as of July 1. Annual estimates of the number of United States cattle, beef cow and milk cow operations by size group are published in the February *Farms, Land in Farms, and Livestock Operations* report. State level operation estimates are published in conjunction with the Census of Agriculture every five years.

Revision Policy: Revisions to previous estimates are made to improve year to year and item to item relationships. Estimates for the previous year are subject to revision when current estimates are made. The reviews are primarily based on livestock slaughter and additional foreign trade and survey data. Estimates for the previous five years are also reviewed after data from the Census of Agriculture are available. No revisions will be made after that date.

Reliability: To assist users in evaluating the reliability of estimates, the "Root Mean Square Error" is shown for selected items in each report. The "Root Mean Square Error" is a statistical measure based on past performance and is computed using the differences between first and latest estimates. The "Root Mean Square Error" for January and July cattle inventory estimates over the past 10 years is 0.5 percent. This means that chances are 2 out of 3 that the final estimate will not be above or below the preliminary estimate by more than 0.5 percent. Chances are 9 out of 10 that the difference will not exceed 0.9 percent.

Statistical Methodology: Cattle on Feed

Survey Procedures: During January and July all known feedlots in the United States with capacity of 1,000 or more head are surveyed to provide data for cattle on feed estimates. During the other months, data is collected using a monthly census of all known feedlots in 16 major cattle on feed states. These 16 States account for 98 percent of the cattle on feed in feedlots with capacity of 1,000 or more head.

Estimating Procedures: These cattle on feed estimates are prepared by the Agricultural Statistics Board after reviewing recommendations and analysis submitted by each State office. Regional and State survey data are reviewed for reasonableness with each other and with estimates from the previous month when establishing the current estimates.

Estimates Published: The monthly *Cattle on Feed* report includes estimates of total cattle on feed, placements, placement weights, marketings and other disappearance. Estimates are published monthly for the United States as well as 11 of the 16 survey states. These states include Arizona, California, Colorado, Idaho, Iowa, Kansas, Nebraska, Oklahoma, South Dakota, Texas and Washington. Data collected from the remaining 5 States are used to establish the "Other States" estimates. These 5 States include Illinois, Minnesota, New Mexico, Oregon, and Wyoming. The "Other States" category represents all cattle on feed with a capacity of 1,000 or more head for the rest of the United States.

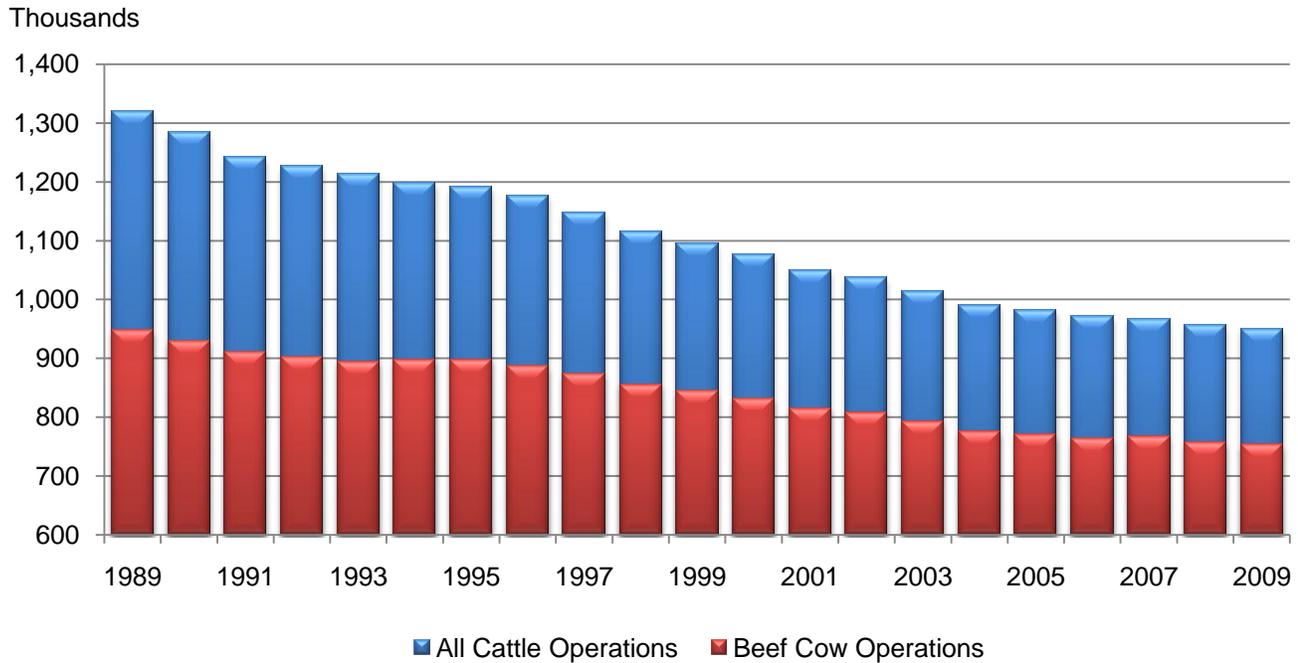
In January, April, July and October the report includes class estimates of steers, heifers, and cows and bulls currently on feed for the 11 published states and the United States. The February 1 *Cattle on Feed* report includes all previous year estimates and revisions as well as United States level size group and annual fed cattle marketings estimates.

Revision Policy: Revisions to previous estimates are made to improve month to month relationships. Estimates for the previous month are subject to revision in all States each month when current estimates are made. In February, all monthly estimates for the previous year, and the number of feedlots and annual marketings from two years ago are reviewed and subject to revisions. The reviews are primarily based on slaughter data, state check-off or brand data, and any other data that may have been received after the original estimate was made. Estimates from the previous five years will also be reviewed after data from the Census of Agriculture are available. No revisions will be made after that date and estimates become final.

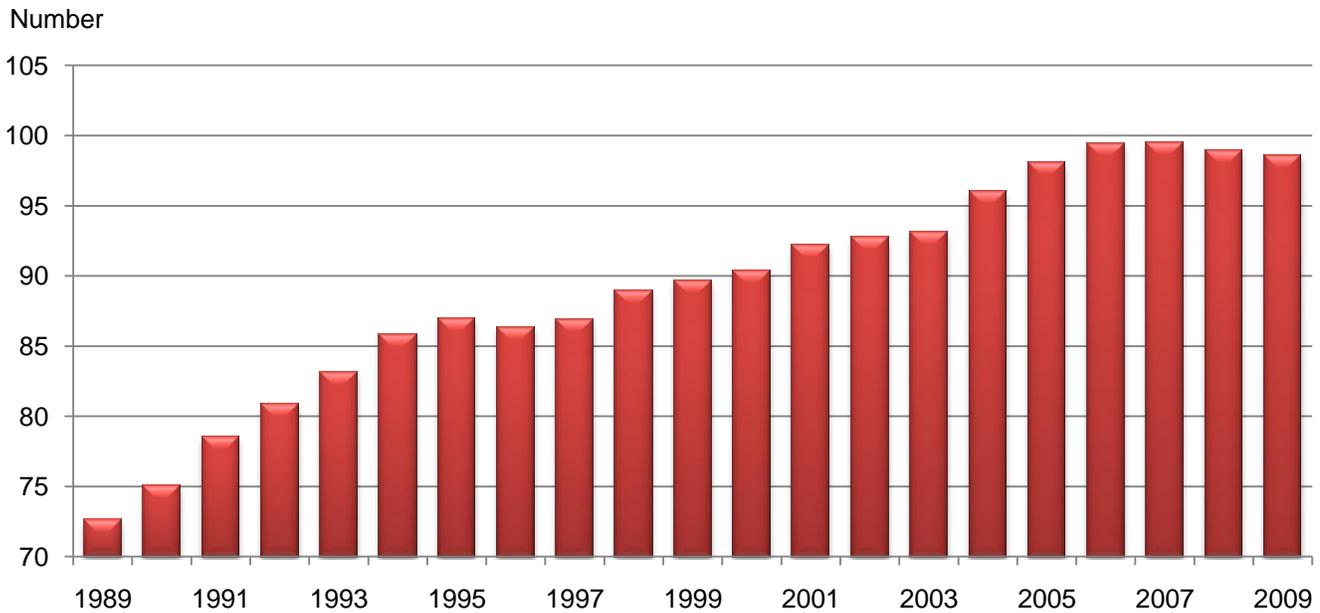
Reliability: Since all 1,000+ capacity cattle on feed operators in every State are not included in the monthly survey, survey estimates are subject to sampling variability. Survey results are also subject to non-sampling errors such as omissions, duplications, and mistakes in reporting, recording, and processing the data. The effects of these errors cannot be measured directly. They are minimized through rigid quality controls in the data collection process and through a careful review of all reported data for consistency and reasonableness.

To assist users in evaluating the reliability of estimates, the "**Root Mean Square Error**" is shown for selected items in each report. The "Root Mean Square Error" is a statistical measure based on past performance and is computed using the differences between first and latest estimates. The "Root Mean Square Error" for cattle on feed inventory estimates over the past 24 months is 0.05 percent. This means that chances are 2 out of 3 that the final estimate will not be above or below the preliminary estimate by more than 0.05 percent. Chances are 9 out of 10 that the difference will not exceed 0.09 percent.

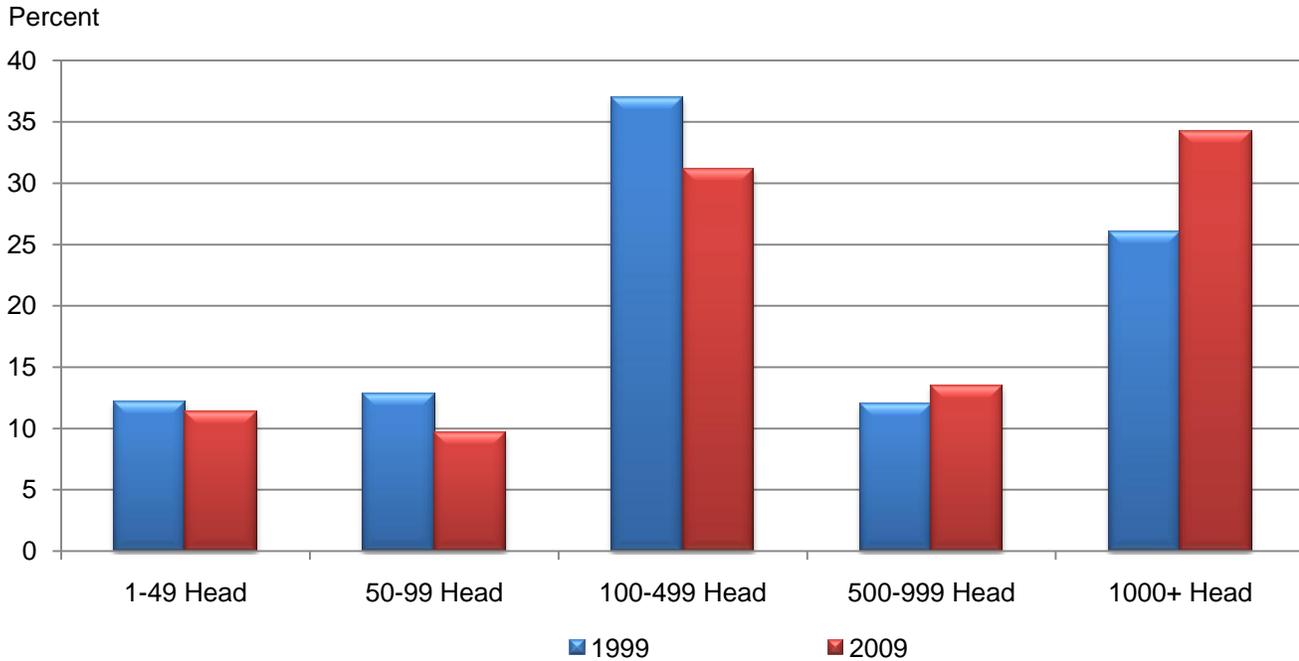
Graph 1. Number of All Cattle and Beef Cow Operations - United States



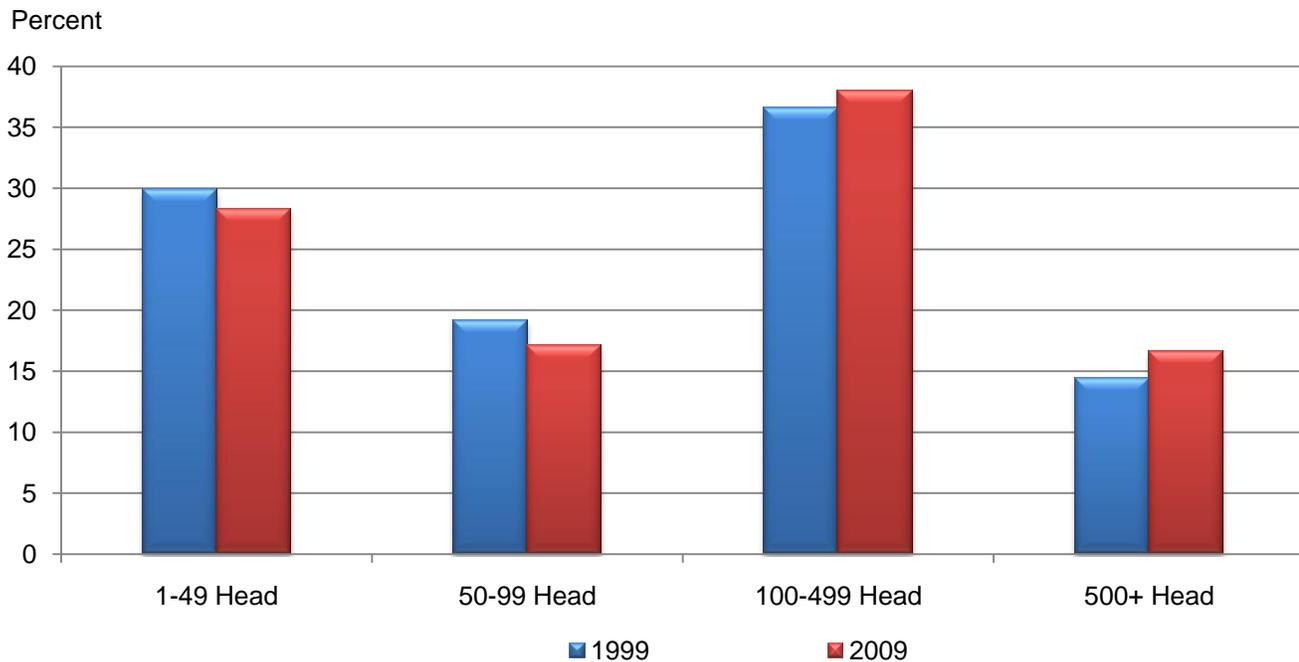
Graph 2. Average Number of Cattle per Operation, All Cattle Operations - United States



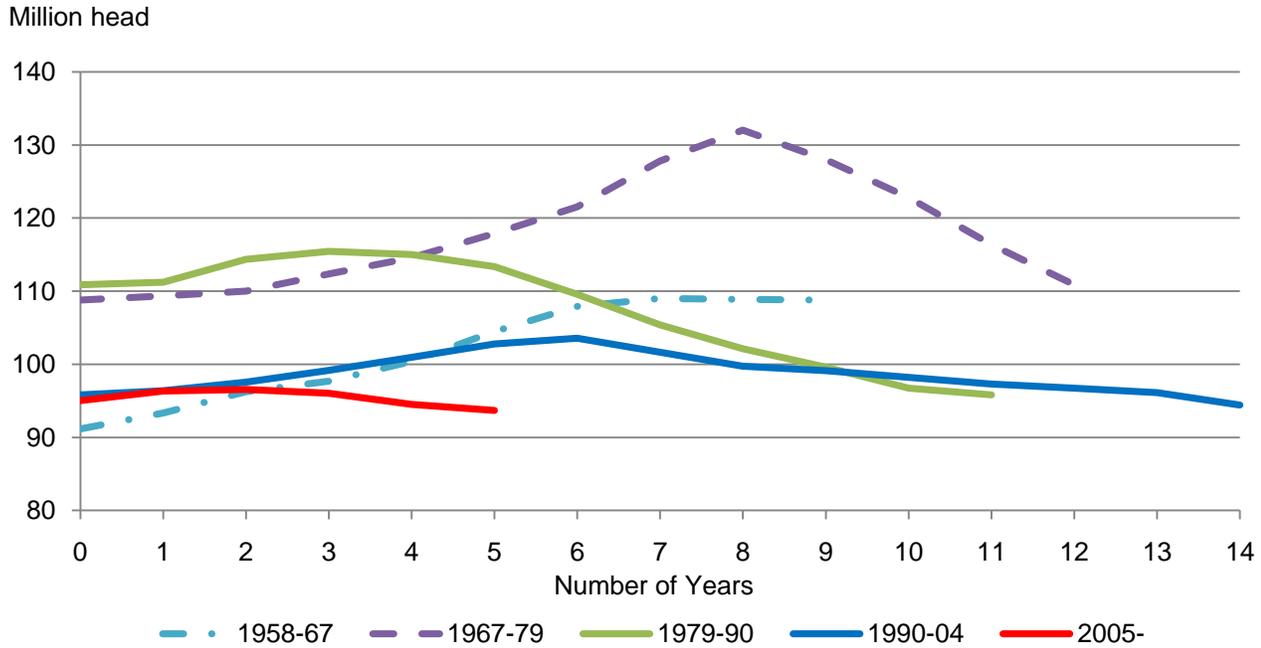
Graph 3. All Cattle Operations Percent of Inventory by Size Group - United States



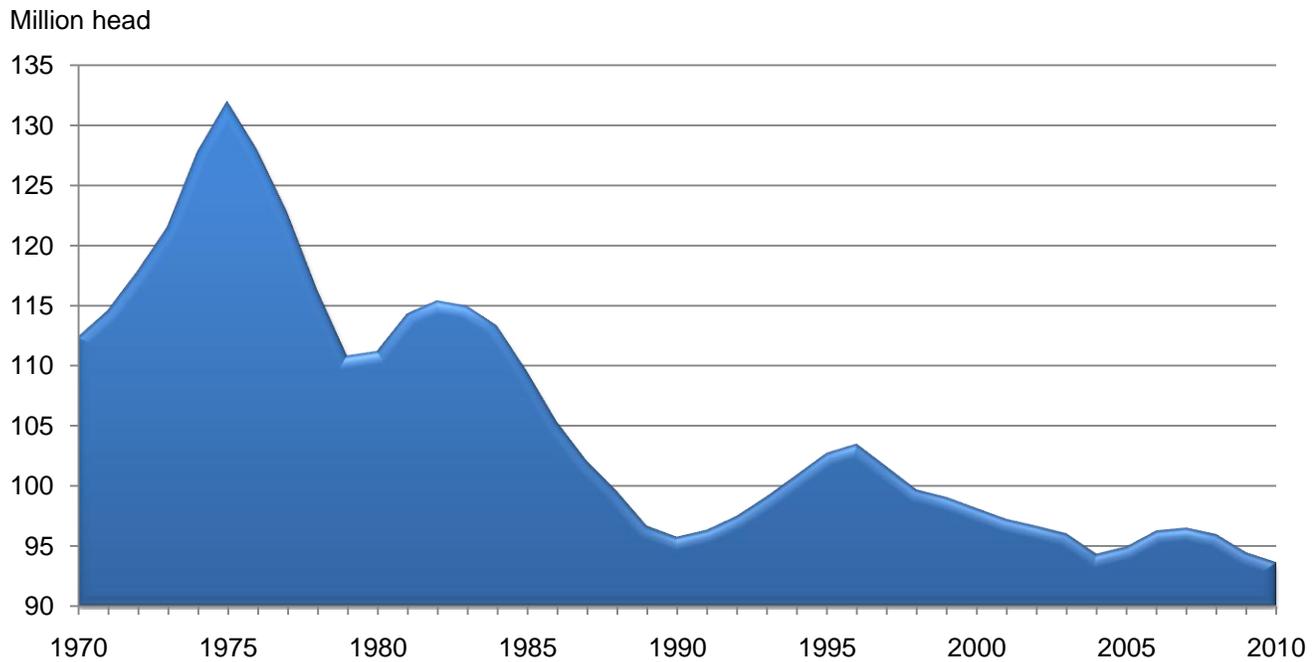
Graph 4. Beef Cow Operations Percent of Inventory by Size Group - United States



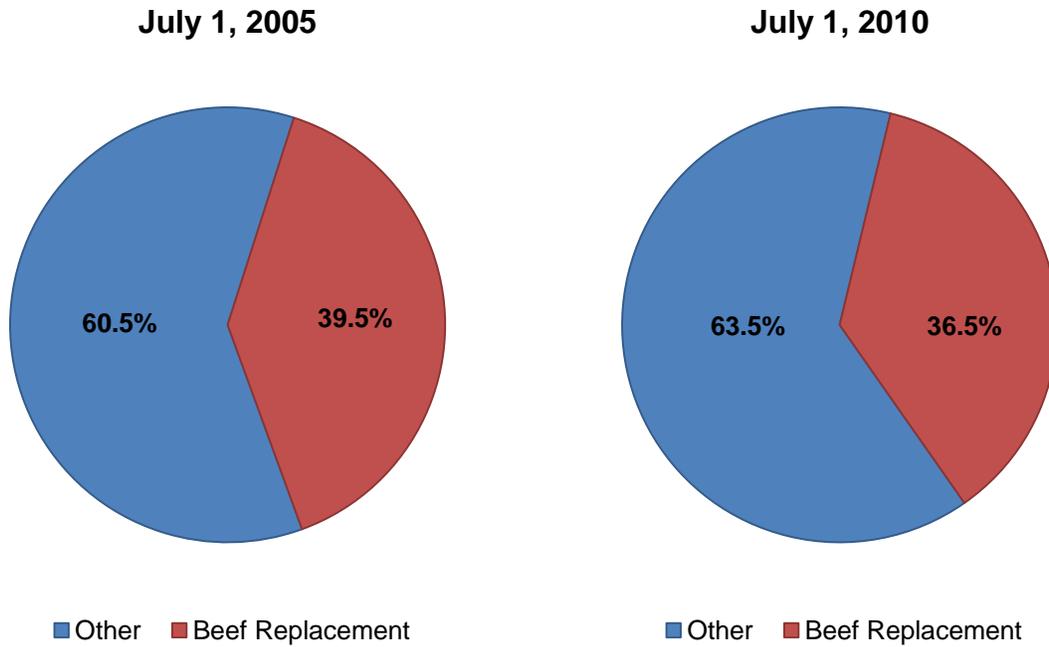
Graph 5. Total Cattle Inventory By Cycle - United States: January 1



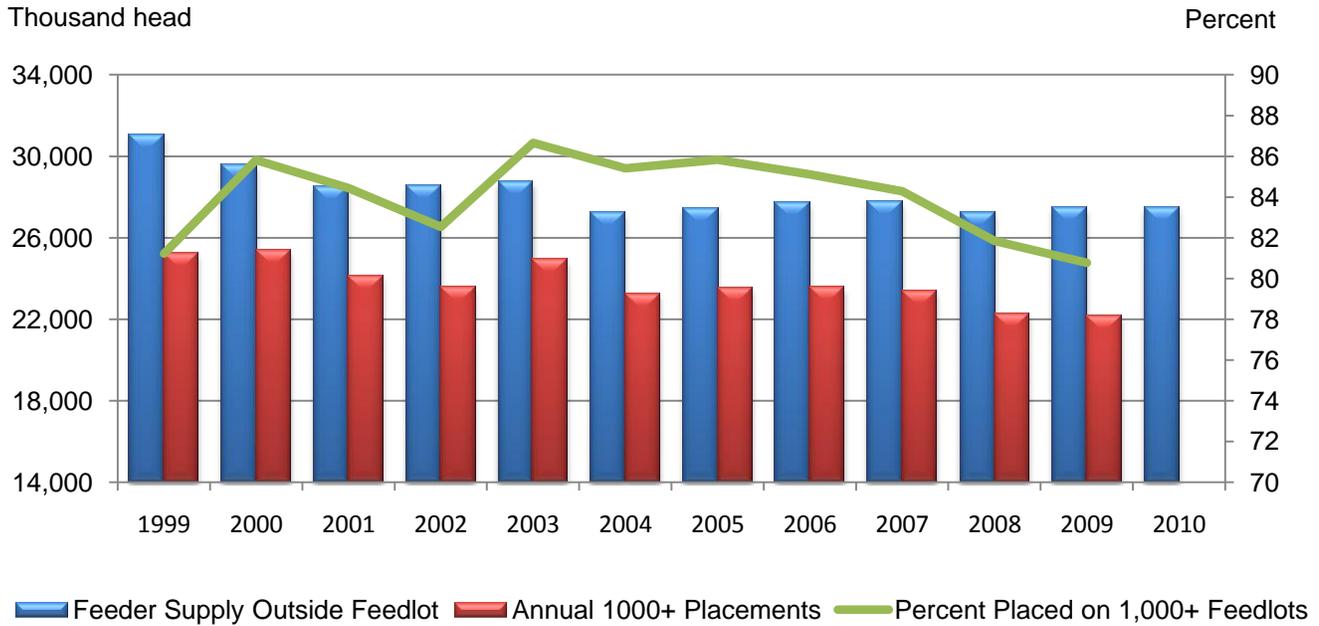
Graph 6. All Cattle Inventory - United States: January 1



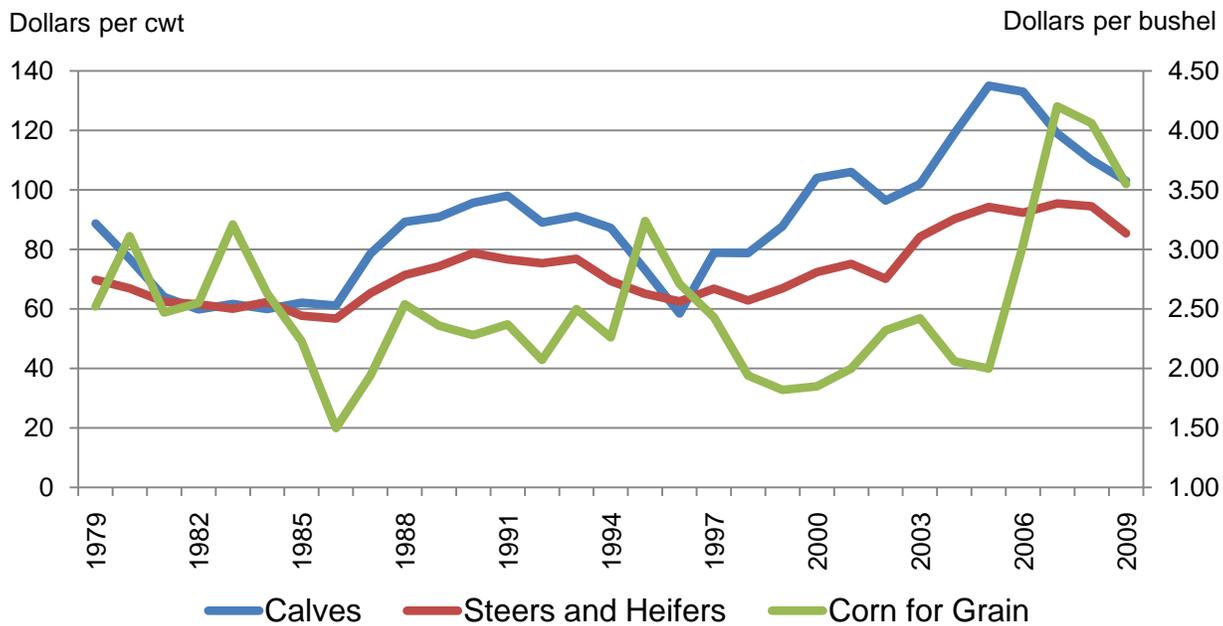
Graph 7. Beef Replacement and Other Heifer Percent of Combined Total - United States



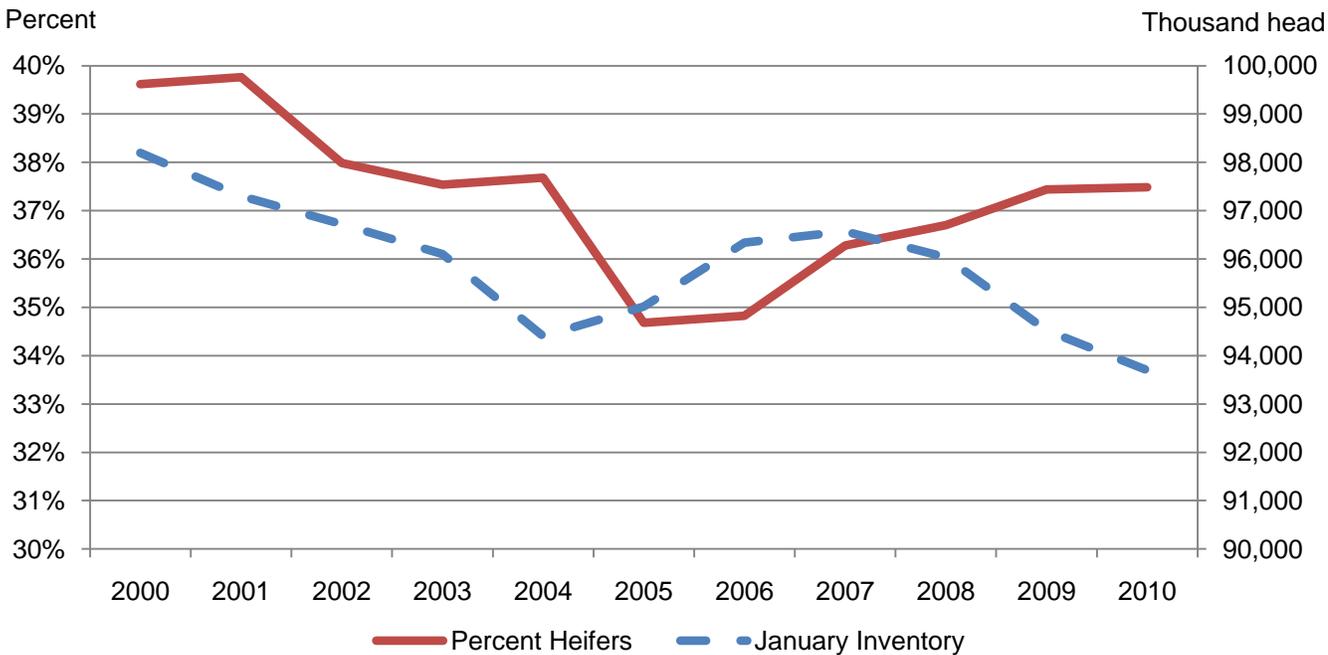
Graph 8. Feeder Supply Utilization - United States



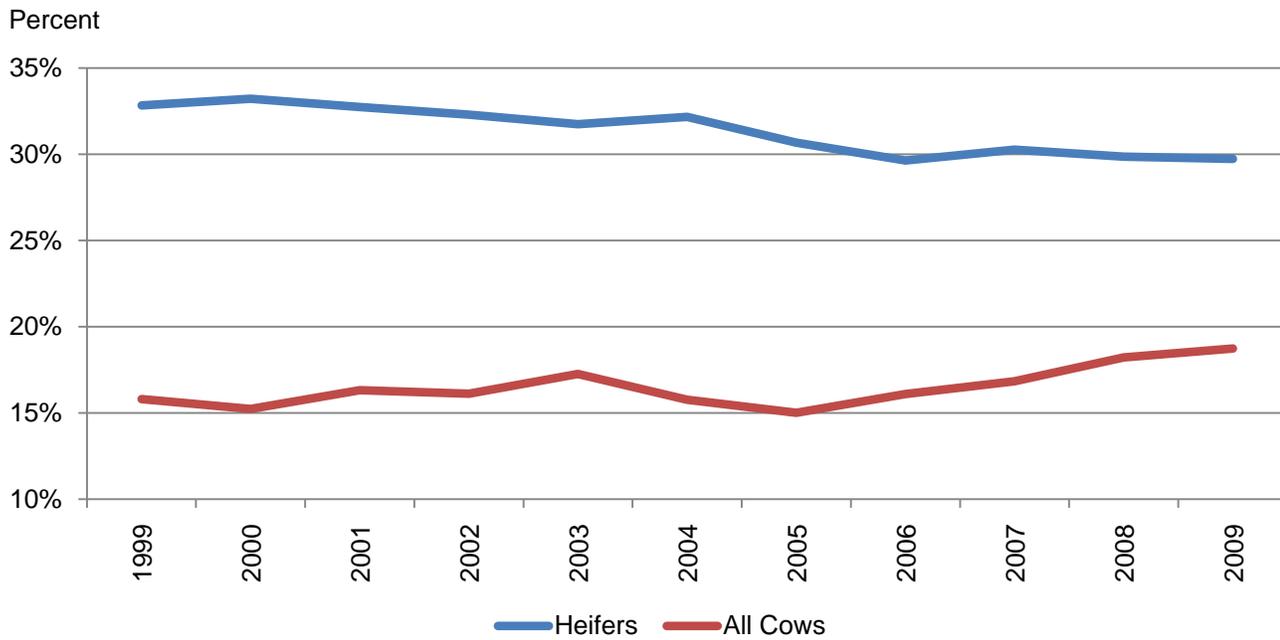
Graph 9. Prices Received by Farmers by Year - United States



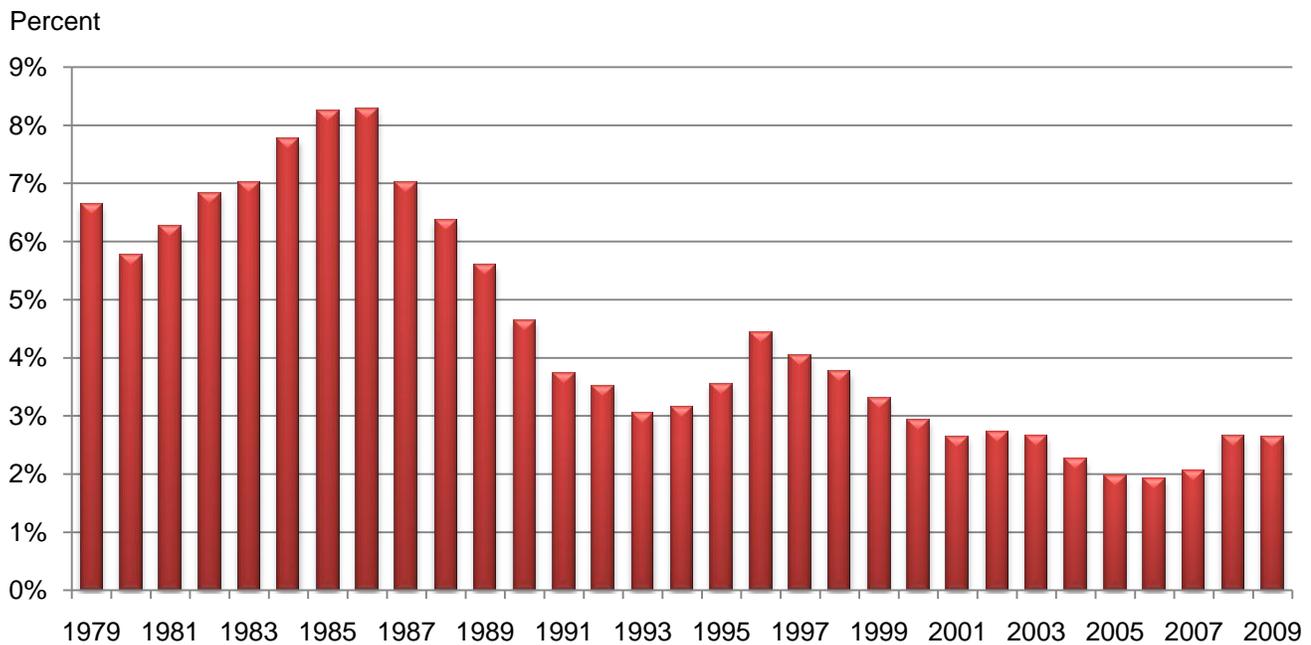
Graph 10. Heifer Annual Average Percent of 1,000+ Cattle on Feed Inventory - United States



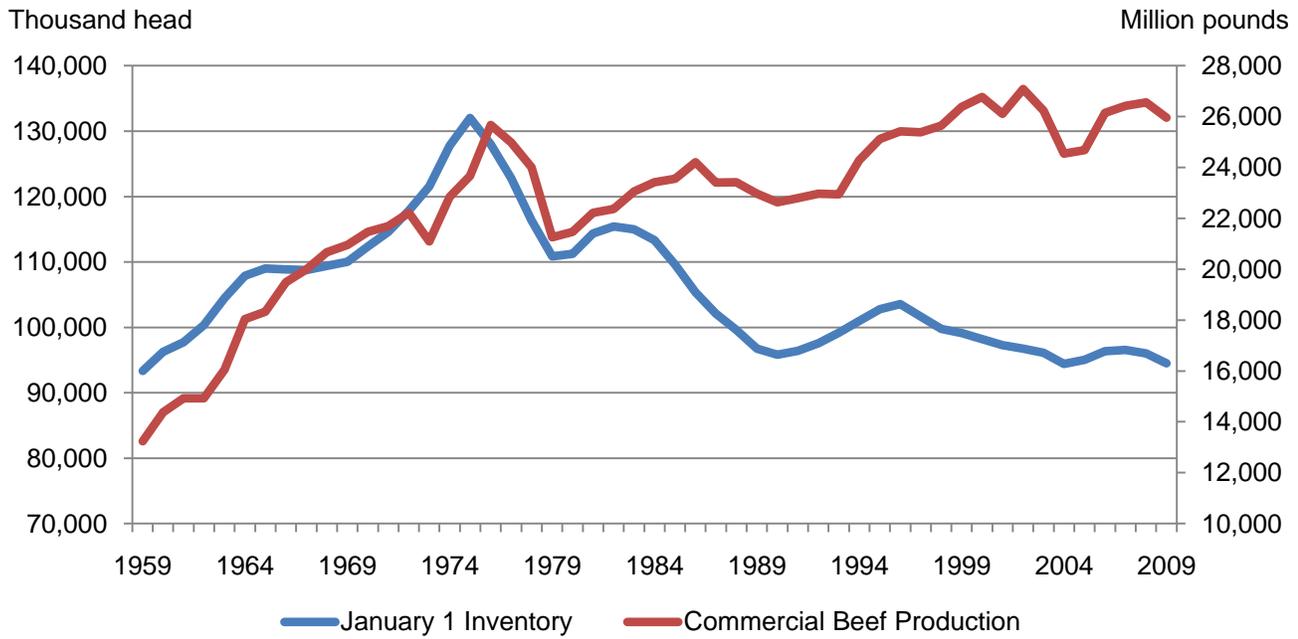
Graph 11. Annual Cow and Heifer Slaughter as a Percent of Total Federally Inspected Slaughter - United States



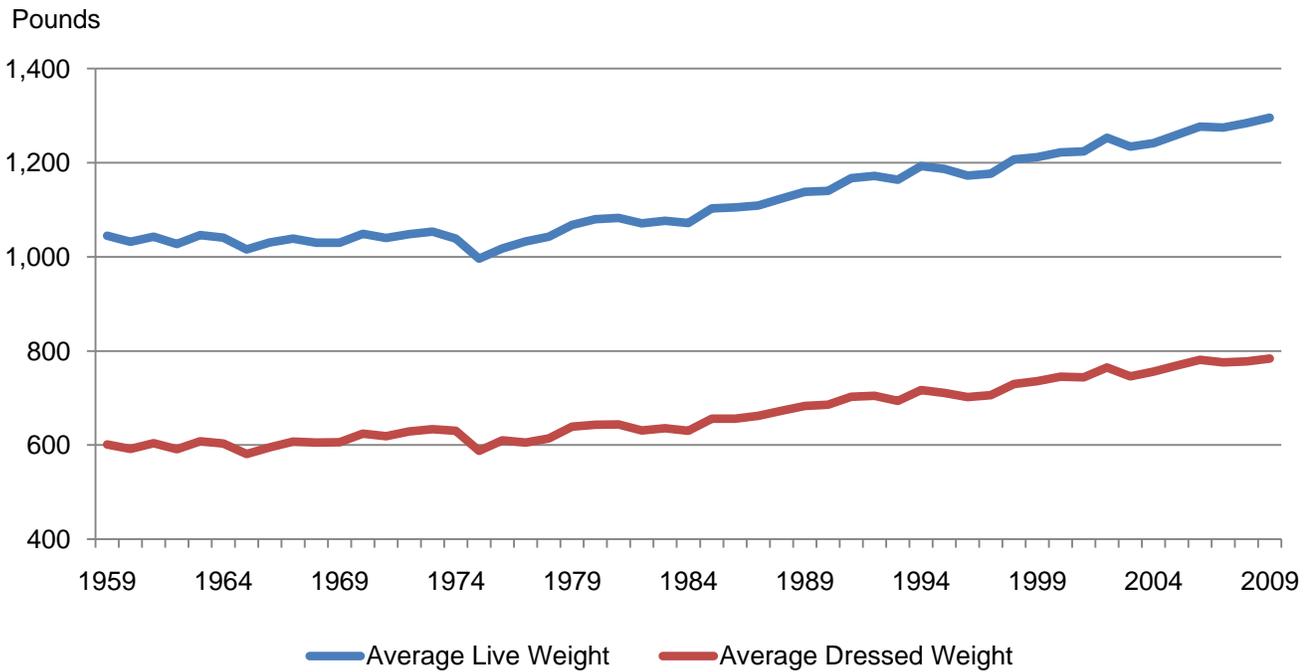
Graph 12. Calf Slaughter as a Percent of Calf Crop - United States



Graph 13. January 1 Cattle Inventory and Commercial Beef Production - United States



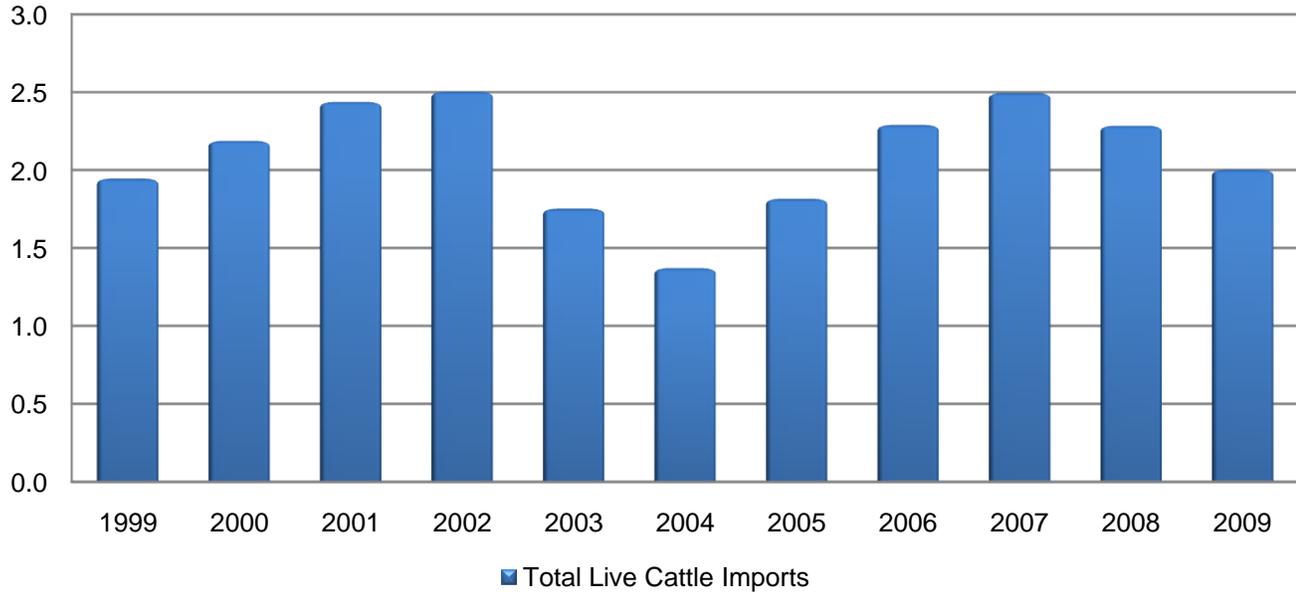
Graph 14. Average Live and Dressed Cattle Weights - United States



Graph 15. Live Cattle Imports - United States

Source: Foreign Agricultural Service and United States Census Bureau

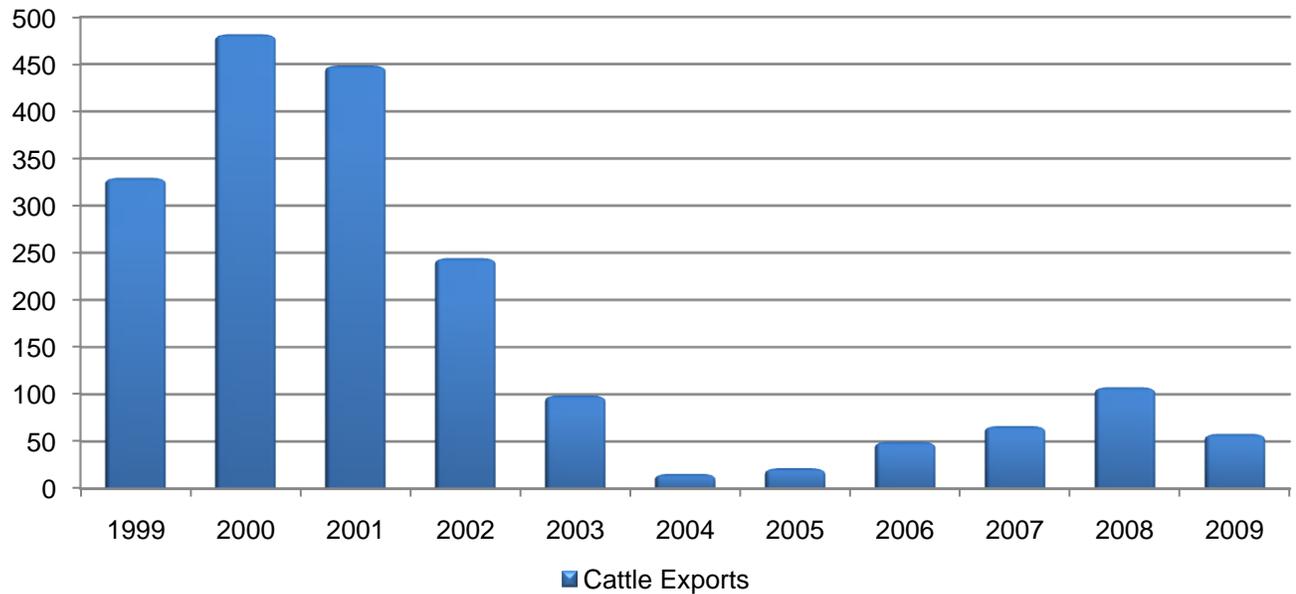
Million head



Graph 16. Live Cattle Exports - United States

Source: Foreign Agricultural Service and United States Census Bureau

Thousand head



Cattle on Feed Terms and Definitions

Backgrounded cattle: Cattle that are fed a warm up or conditioning ration that are normally fed to approximately 700 pounds and then sold as feeders or shipped to another feedlot to be finished for the slaughter market.

Calf: Any animal less than 1 year old. Calves by NASS survey classification are animals that weigh less than 500 pounds.

Cattle cycle: A period of time in which the number of beef cattle in the Nation is alternately expanded and reduced for several consecutive years in response to perceived changes in the profitability of beef production.

Cattle on feed: Animals being fed a ration of grain, silage, hay and/or protein supplement. For survey purposes these cattle will be shipped from their current location directly to slaughter market. They are expected to produce a carcass that will grade select or better. Young calves fed a high energy ration which are sold and slaughtered as vealers are not considered cattle on feed for slaughter market. Cattle being fed for home use slaughter are to be excluded as cattle on feed.

Commercial feedlot: A feedlot whose primary enterprise is to feed cattle and market them for slaughter.

Custom feedlot: A firm engaged in fattening or finishing animals on a fee basis. The firm may or may not hold title to the animals.

Farmer/Feeder: An operator who typically farms and feeds cattle on the same operation. The cattle feeding part of his/her operation is usually worked around the farming, e.g., feeding cattle before or after crops are planted/harvested, grazing stalks, etc. To be included as cattle on feed, cattle must go from the operation directly to slaughter.

Fed marketings: Shipment of cattle out of feedlots to slaughter market for food.

Feedlot capacity: The maximum number of cattle that an operator can feed at any one time during the year. Feedlot capacity is the common terminology used by commercial and custom feedlots.

Net placements: Placements minus other disappearance. This gives a true indication of actual placements into feedlots for the month.

Other disappearance: Movement of animals out of feedlots other than going to slaughter market. This includes death loss, cattle going back to grazing or pastures, and shipments to other feedlots.

Placements: Cattle put into feedlots with the intent to be shipped to slaughter, which are fed a ration that will produce a carcass grading select or better.

Stockers and feeders: Young steers or heifers, weighing approximately 400-700 pounds. These animals may be on pasture and/or a maintenance or warm-up ration until being put on full feed for slaughter market or being selected as herd replacement stock. However, if these stocker/feeders are being fed to be marketed directly to slaughter from a particular feedlot, they should be included as cattle on feed.

Vealers: Young calves fed by hand, or allowed to suck a cow. Their milk ration is supplemented with grain or high protein diet to prepare them for slaughter. Veal calves are usually sold and slaughtered before 3 months old, weighing less than 400 pounds.

Warm-up ration: A cattle ration of grain and/or silage which prepares animals for placement in a feedlot on full feed. These cattle are being "backgrounded" in preparation for full feed. If these cattle will be shipped to another feedlot before going to slaughter, they should be excluded from the cattle on feed inventory until they reach the finishing feedlot.

Information Contacts

Listed below are the commodity specialists in the Livestock Branch of the National Agricultural Statistics Service to contact for additional information. E-mail inquiries may be sent to nass@nass.usda.gov

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