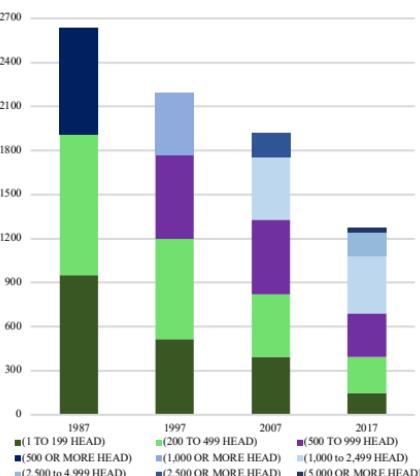
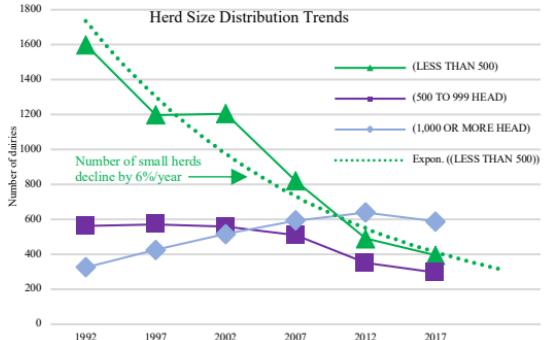




Number of Dairies by Herd Size



Herd size distribution evolution. California milk production and revenue grew remarkably until 2007, but has been relatively constant since then. Here, we explore how herd size has evolved using U.S. Censuses of Agriculture, which provide relatively consistent data every five years for many decades. Despite growth in numbers of cows, the numbers of dairies declined from 1987 to 2007 by 27%. From 2007 to 2017, with severe economic challenges and static number of cows, more dairies declined by one-third in just 10 years. From 1987 to 2007, the decline in number of dairies was among those with fewer than 500 cows. More recently, the data shows a decline in numbers of dairies with between 500 and 999 cows, and even a slight decline in numbers of dairies with between 1,000 and 2,499 cows. Since number of cows has not fallen much, there has been substantial consolidation with some larger operations growing despite high feed prices and low milk prices.



California milk revenue distribution. Distribution of revenue by size category indicates industry evolution. In 1992, California dairies with fewer than 500 cows continued to generate more than 25% of the industry revenue and farms with less than 1,000 cows still generated almost 60%. But, by 2017 the revenue share from farms with fewer than 500 cows had fallen to less than 6%, and the share of farms with less than 1,000 cows was about 18%. In California, a significant part of the revenue from herds with less than 500 cows is earned by organic dairies which tend to have smaller herds, but very high milk prices.

The census reports do not provide separate categories for larger herd sizes until 2007 when herds between 1,000 and 2,499 cows generated 35% of revenue and herds with 2,500 cows or more generated 37% of revenue. By 2017, the revenue share of herds with 1,000 to 2,499 cows was about 37% and the revenue share of herds with 2,500 cows or more was about 45%. In 2017, about 14.5% of revenue was earned by herd of 5,000 cows or more.

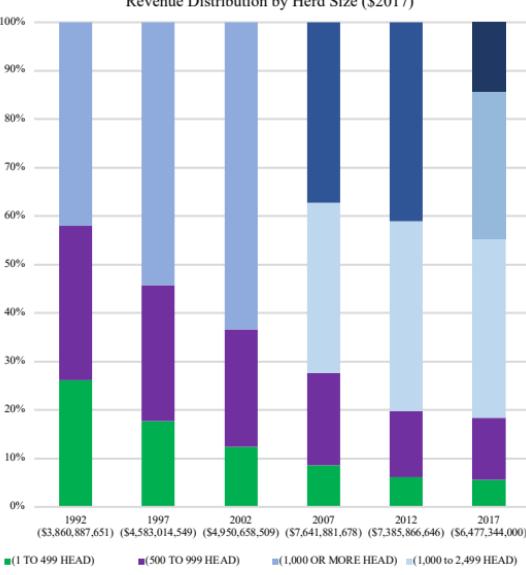
Part of the pressure on the California dairy industry has been driven by productivity and management improvement among dairy farms in other states. Milk per cow and other indicators have risen rapidly in the rest of the United States. Herd consolidation has proceeded even more rapidly in several other major dairy states than in California.

California and other states. In Idaho, the share of revenue earned by herds with less than 1,000 cows was already less than in California by 2012 and by 2017 the smaller herds generated about 12% of revenue compared to 18% in California. Idaho herds of 2,500 cows or more generated about 65% of revenue in 2012 compared to 41% of revenue in California and that share rose by 5 percentage points to 70% by 2017, while in California it only grew by 4 percentage points to 45%. Remarkably in 2017 about 55% of revenue was generated on farms with 5,000 cows or more.

Herds in Wisconsin continue to be much smaller than herds in Western states, but consolidation is now even more rapid. The share of revenue from farms with less than 500 cows fell from about 63% in 2012 to 54% in 2017. The share of revenue of more than 1,000 cows grew from 23% in 2012 to 29% in just five years.

Final Remarks. California milk producers face many challenges, among them how to manage the consolidation process that has been underway for decades. Consolidation can help the industry embrace productivity and market enhancing innovations that are rapidly transforming the dairy farming and milk product marketing globally.

Revenue Distribution by Herd Size (\$2017)



Revenue Distribution by Herd Size for Idaho and Wisconsin (Thousands \$2017)

