



## US Animal and Product Production, 2018-2021

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Production of animals and products is an important US economic activity, especially in rural America. Their production has been buffeted by a series of disruptions, starting with the tariff war in 2018, followed by the COVID-19 pandemic in 2020 and 2021 and high corn and soybeans prices in 2021. This article examines beef, milk, and pork production since 2017. Production is currently projected to average 8% higher for the three animals and products in 2021 and 2022 than average production in 2016-2017. One factor facilitating higher production is likely to be the sizable *ad hoc* assistance payment made to cattle, dairy, and hogs in recent years, especially given a notable decline in feed price ratios in 2021. By encouraging animal and product production, *ad hoc* assistance has resulted in higher feed grain and oilseed prices than otherwise would exist. Net benefit of *ad hoc* assistance to animal and product producers is thus likely to be less than the dollar value of their *ad hoc* assistance.

### Data

Production data are from USDA, WASDE (US Department of Agriculture, *World Agricultural Supply and Demand Estimates*). Production estimates are available for the current (2021) and next (2022) calendar year. To allow comparison of measures that differ by animal and product, production is expressed as a ratio (i.e., percent) to average production for 2016 and 2017. These 2 years predate the disruptions that began in 2018 with the tariff war. To illustrate interpretation of this ratio, production of pork in 2020 was 112% of average 2016-2017 production, or 12% higher in 2021 than 2016-2017.

An indicator of profitability in producing animals and products is the ratio of output prices to feed prices, hereafter referred to as feed price ratios. They are available from USDA *Quick Stats* for steers and heifers, pork, and milk. Feed price ratios for 2018, 2019, 2020, and 2021 are expressed relative to the average ratio for 2000-2017. This period is used because of the time needed to breed and grow animals

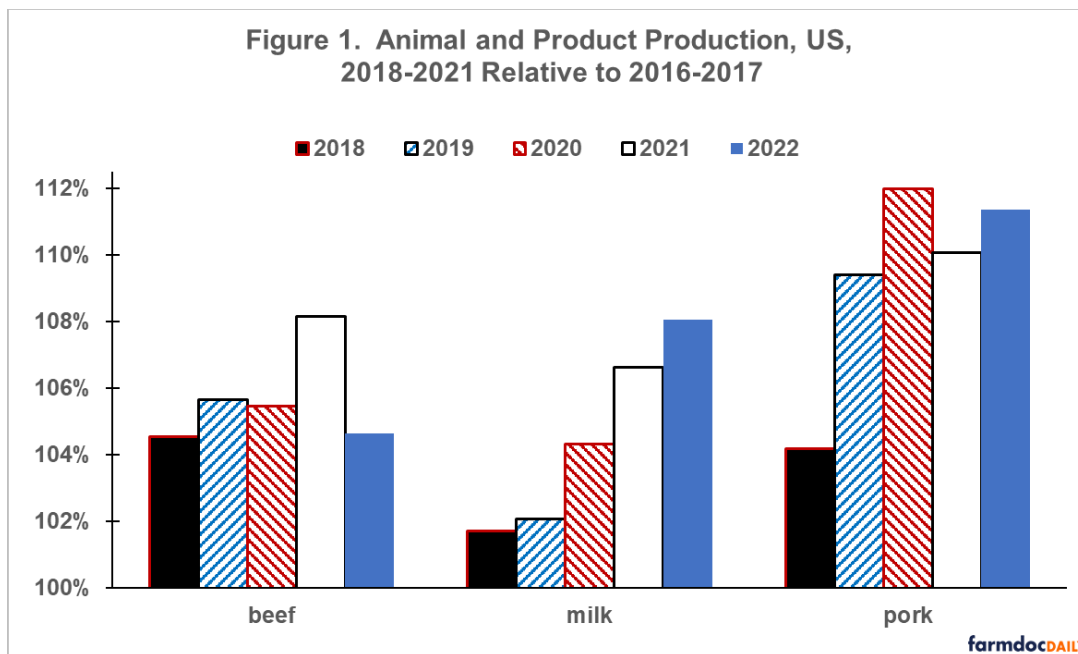
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and products, counterbalanced by changes over time in demand, production systems, and production efficiency. The former argues for a longer comparison period; the latter for a shorter period. To illustrate interpretation of this ratio, the feed price ratio for milk in 2020 was 94% or 6% lower than over 2000-2017, suggesting profitability of producing milk was somewhat less in 2020 than 2000-2017.

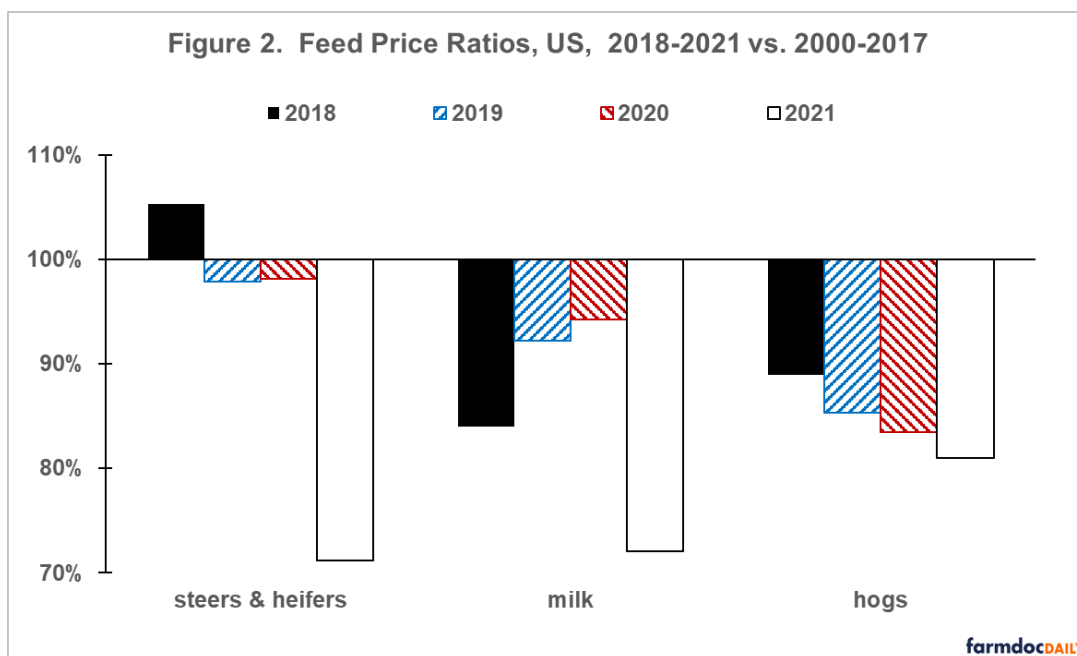
### Production

Production of beef, milk, and pork in each year since 2017 has exceeded average 2016-2017 production (see Figure 1). Current projections for 2021 production range from 7% higher (milk) to 10% higher (pork) than 2016-2017 production and for 2022 production range from 5% higher (beef) to 11% higher (pork).



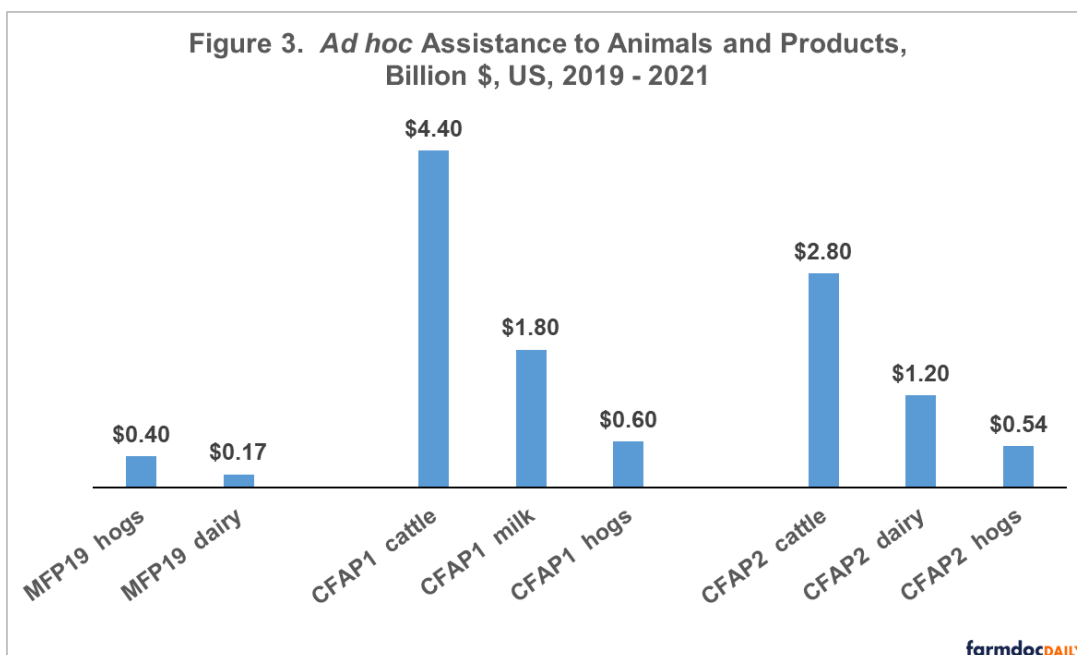
### Feed Price Ratios

Relative to 2000-2017, feed price ratios for steers and heifers, milk, and hogs were lower in all years from 2018 through 2021 (so far) except for steers and heifers in 2018 (see Figure 2). Moreover, the ratio is lowest in 2021, especially for steers and heifers, and milk. A key reason for low 2021 ratios is high corn and soybean prices, reflecting production issues in the US (derecho and late season drought in 2020), Ukraine (drought in 2020), and Brazil’s safrinha corn crop (late planting, drought, and frost in 2021) as well as stronger than expected US and world feed demand for corn and soybeans.



### Ad Hoc Assistance

Due to biological lags in breeding and the time needed to raise animals, the relationship between current profitability and current production is not straightforward. However, higher profitability generally leads to more production. The negative relationship between 2021 feed price ratios (low) and production (high) thus is somewhat unexpected, especially given that feed price ratios for 2018-2020 suggest limited profits. Many factors are undoubtedly involved. One likely factor is *ad hoc* assistance to cattle, dairy, and hogs by MFP (Market Facilitation Program) in 2019 and CFAP (Coronavirus Food Assistance Program) in 2020 and 2021 (see Figure 3 and Data Note). These payments could be used to offset losses or enhance profits, thus incentivizing stable to higher production. Of these 3 animals and products, only milk has a standing commodity program. DMC (Dairy Margin Coverage) made payments to dairy production totaling \$0.71 billion over 2016-2020 (see Data Note 2). *Ad hoc* assistance to dairy totals \$3.17 billion. Dairy producers also received some of the payments for cattle but a breakout of cattle payments to dairy producers is not available.



## Assessment

Despite feed price ratios that suggest limited to below average profitability in 2018, 2019, 2020 and 2021; US production of beef, milk, and pork remains above production levels prior to the start of disruptions in 2018.

This situation likely reflects many factors with *ad hoc* assistance to animals and products among them. Minimizing declines in production would be viewed as a success for *ad hoc* assistance. But, by encouraging animal and product producers to continue to produce, *ad hoc* assistance has also resulted in feed grain and oilseed prices that are higher than they otherwise would have been.

Net benefit of *ad hoc* assistance to animal and product producers is thus likely to be less than the dollar value of their *ad hoc* assistance.

Moreover, the assistance may only have postponed and perhaps exacerbated adjustments in supply. It is not uncommon for the net value of a public policy action to be determined by events after the public policy is enacted. The sharp drop in feed price ratios so far in 2021 is foreshadowing the need to not expand and likely reduce production. *Ad hoc* assistance may thus have only postponed needed reductions in production.

Will new assistance be provided to animal and product producers to forestall this reduction in production? Will assistance to animal and product producers become permanent? Is the US in the process of moving to a permanent livestock safety net?

Last, feed grain and oilseed producers, including corn and soybean farmers, have benefited from the *ad hoc* assistance to animals and products via higher prices for grains and oilseeds. However, these higher prices also stimulate grain and oilseed production in the rest of the world, which in turn may reduce future US grain and oilseed production.

In conclusion, success or failure of recent *ad hoc* assistance to animal and product producers (and grain and oilseed producers) has likely not yet been determined.

## Data Notes

(1) *Ad hoc* payments to all animals and products were \$0.57 billion by MFP 2019, \$6.90 billion by CFAP 1, and \$4.70 billion by CFAP 2, for a total of \$12.17 billion.

(2) DMC payments were \$10.39; \$0.02; \$250.01; \$294.550; \$150.59 million in 2016, 2017, 2018, 2019 and 2020 respectively. Source is the USDA, Economic Research Service, Farm Income and Wealth Statistics.

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