12-1-1960

States Share in Creating Hog Cycle

Raymond R. Beneke
Iowa State University

Donald R. Kaldor
Iowa State University

James Herendeen
Iowa State University

Follow this and additional works at: http://lib.dr.iastate.edu/farmscience

Part of the Agriculture Commons

Recommended Citation
Available at: http://lib.dr.iastate.edu/farmscience/vol15/iss5/3

This Article is brought to you for free and open access by the Iowa Agricultural and Home Economics Experiment Station Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa Farm Science by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

These sharp ups and downs are clearly related to shifts in hog supplies. Spring farrowings, for example, jumped from 7.4 million sows in 1958 to near 8.3 million in 1959. The 1960 comeback in hog prices followed a 15-percent cutback in spring farrowings from 1959.

Not a New Pattern: This roller-coaster pattern in hog numbers and prices isn't new. Sow farrowings have been fluctuating cyclically with the hog-corn price ratio for many years. Nobody seems to like the hog cycle—except a relatively few producers who, by plan or accident, operate counter-cyclically or against the cycle. In terms of income, however, producers as a group, processors and consumers would be better off without the cycle. Yet it persists.

To gain a better understanding of the hog-price cycle, we've analyzed statistics on hog production to try and find if there's any geographic source or basis for the ups and downs in farrowings. In this article, we want to report what we found on a national or regional basis about the pattern in sow farrowings. Later on, we'll look more specifically at the pattern within the state as well as the factors we found associated with shifts in farrowings on 100 selected Iowa farms.

We studied hog production figures from 1948 through 1958—an 11-year period coinciding with two complete hog cycles. We omitted the 21 least important hog states from our study. Each of these accounted for less than ½ percent of total national farrowings and all 21 for only about 3 percent of the total. The USDA farrowing reports round to the nearest 1,000, and this results in wide percentage variations for states where only a few thousand sows are farrowed. So including these states would have distorted the pattern of relative variation.

To measure the amount of absolute variation in hog production in each state, we found out how much hog production changed each year, whether up or down, for each state. We divided the total of these differences by 10 (for 10 year-to-year shifts over the 11-year period) to find the average variation from year to year. We computed this variation yardstick for each of the 27 states and also for the total. We worked separately with spring and fall crops. Following the reporting pattern of the USDA reports, the spring crop included December-June farrowings, and the fall crop included July-November farrowings.

Main Hog States: Generally we found that the states producing the most hogs have the most year-to-year variation in sow farrowings. This is because they raise the most hogs; even a small percentage variation in farrowings
results in a large change in total numbers. Thus, the important Corn Belt states— Iowa, Illinois, Nebraska and Minnesota — showed the most variation. By computing the percent which each state's year-to-year difference is of the total year-to-year difference for all states, we get a rough measure of the relative part of each state in the national variation in hog production.

Iowa, of course, leads the parade in sows farrowed—nearly 23 percent of the total over the 11 years. But Iowa also leads the parade in the amount of variation contributed to the total, about 22 percent of it. Though there are some exceptions, the states that contributed most heavily to the
variation in spring farrowings also had the greatest fluctuations in fall farrowings.

We analyzed a number of factors other than the sheer volume of hogs produced to see if they were related to the variations in hog production. We found, for example, little relationship not accounted for by other factors between the variation in sow farrowings and the variation in numbers of beef and dairy cattle. The volume of feed-grain production — and particularly the stability of feed-grain production — on the other hand, does seem to influence stability of hog production.

States with heavy feed-grain production showed more variability (other things being equal) in hog production than states with a lesser production of feed grains. And states with greater variation in feed production had more variation in hog production than states with a more stable feed production.

**Counter Forces:** The amount of year-to-year variation in the different states doesn’t tell the whole story. One state or region, for instance, could have a great variation in farrowings and yet contribute little to the troublesome ups and downs in the total national hog supply. That is, a state or region could have a pattern of decreasing hog production in periods of generally increasing supplies and vice versa. These would be counter-cyclical adjustments. Whenever this happened, it would tend to dampen both the national production and national price cycles.

To check on this, we found the directions in which total sow farrowings shifted in each of the 27 states for spring and fall farrowings over the 11-year period. Each state had 10 opportunities to change spring farrowings and 10 opportunities to change fall farrowings for a total of 20 chances to shift with or against the national trend.

We found no evidence of any real counter-cyclical movements in the major hog-producing states. Only the southern states, where few hogs are produced, showed any counter-cyclical tendencies. Florida, Louisiana and South Carolina appeared to move in a different direction from the rest of the nation 50 percent of the time. Close examination of these shifts, however, shows that they’re chiefly a lag in the way these states change their pattern in relation to other areas. These states continued to increase their farrowings for a few months after others had started to cut back. And, at the other end, they continued to reduce farrowings after other states had shifted to heavier farrowings.

**Who Adds Most?** We indicated earlier that the states studied contribute to the total year-to-year ups and downs in total hog production roughly in proportion to the numbers of hogs produced. But do some states contribute more than their share of the variation considering the volume of hogs they produce?

To answer this question, we found the average percentages by which hog production in different areas varied from the national trend over the 11-year period.

We found that the states with the greatest percentage variations tended to be among the Great Plains and South-Central states. Of the 20 states included in this part of the analysis, Iowa ranked thirteenth in percentage variation in spring farrowings and fifteenth in fall farrowings; only seven and five states, respectively, had more stable patterns percentagewise.

Generally the states with the highest percentage variations produced relatively small numbers of hogs. So, while the less important hog-producing states show greater relative instability, they don’t contribute greatly to the variation in national hog production. Five states of the 27, for example, with the greatest percentage variation in their spring pig crop (Texas, Kansas, Mississippi, Louisiana and Arkansas) farrowed only 6½ percent of the total number of spring sows and accounted for only 11½ percent of the total instability over the 11 years.

Nebraska, however, showed up as an exception. It’s a heavy hog-producing state and also ranks highest of all states in the percentage variability in both spring and fall farrowings. It farrowed 5½ percent of the spring litters during the 11 years but accounted for 9½ percent of the total variation in spring farrowings. Its fall farrowings accounted for 3½ percent of the total crop while contributing 6 percent of the variation.

**Summing Up:** The results of our studies indicate that all sections of the country contribute to the ups and downs in total hog production. There’s a high degree of uniformity in the production cycle in all states. Producers all tend to expand and contract farrowings together. Most of the variation is not caused by marginal areas moving in and out of production. It’s the areas of heaviest hog production that add most to the total variation in production — even though their percentage fluctuation is somewhat lower.

Hog producers all across the country seem to be caught in the same "cobweb"—basing their farrowing plans on present cost and price relationships. When immediate feed-hog ratios are favorable, they encourage expansion in production. The resulting larger supplies, because of the nature of the demand for pork, result, in turn, in a sharp drop in hog prices. This is followed by a general reduction in farrowings. Hog prices again rebound, and the stage is then set for the whole cycle to repeat itself.

It seems from this, that the best strategy for an individual producer would be to work against the tide — reducing his production when others are increasing and vice versa. But this is more difficult than it seems. The timing of the ups and downs vary enough from one cycle to another to make any counter-cyclical planning uncertain. And a successful counter operation by a sufficient number of producers would tend to eliminate the production and price cycles, making their counter operations less profitable.

In a following article, we'll report on a study of how individual hog producers in Iowa respond to the cycle. Some of them apparently have been successful in out-guessing the cycle a high percentage of the time.