



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

PROCEEDINGS
of the
WESTERN FARM ECONOMICS ASSOCIATION

THIRTY-SIXTH ANNUAL MEETING

JULY 24, 25, 26, 1963

UNIVERSITY OF WYOMING
LARAMIE, WYOMING

PRODUCER SUPPLY RESPONSE TO CHANGES IN BASE BUILDING INCENTIVE

Rondo A. Christensen
Utah State University

Base-excess pricing plans have been used extensively by producer cooperatives and federal milk marketing orders to encourage more uniform producer deliveries of market milk throughout the year. They have generally been successful in doing this. For instance, with an increasing use of base-excess pricing, seasonal variation in deliveries of market milk in Utah decreased from 28 per cent in 1948 to 10 per cent in 1962.

Base-excess pricing plans have also been used to some extent to control total producer deliveries of market milk. Whether they have been successful in accomplishing this objective is more debatable. Some economists contend that base-excess plans have little if any effect upon total deliveries of milk. Others claim that base-excess pricing of milk often encourages increases in total deliveries by causing producers to engage in what are known as "base races."

To test their effectiveness in controlling total deliveries of milk, the base-excess pricing operations of two Utah producer cooperatives were analyzed for the years 1955 through 1961. During this period cooperatives in Utah were attempting to control variations in both seasonal and total producer deliveries of milk.

Cooperatives in Utah have attempted to exercise control over total deliveries of milk by varying the amount of base that can be earned relative to a given increase in deliveries during the base-building period. Base building rules among the two cooperatives have varied from open base building, wherein base was increased as much as deliveries were increased; semi-open base building, wherein base was increased but less than deliveries were increased; to closed base building, wherein no increase was made in base regardless of how much deliveries were increased. Each producer's base was decreased 10 percent one year by one of the cooperatives to encourage a reduction in deliveries.

It is theorized that the more liberal the base building rules, the greater the incentive to increase deliveries in order to increase base, and that the more restrictive the rules the less the incentive. Economics as well as psychology probably play a part in this. The more base that can be earned with a given increase in deliveries, the greater the average price that can be subsequently received for additional units of production. It follows that the higher the price the more producers that will find this price to be greater than their marginal cost of production, and therefore, the more producers that will increase their deliveries. Also, the more liberal the base building rules, the greater the chance that one's neighbors will increase deliveries to earn more base, and therefore the more likely each individual producer will feel compelled to do the same in order to maintain his share of the fluid market.

The effectiveness of base-excess pricing plans in controlling total deliveries of milk was tested by correlating changes from one year to the next in base building incentive and deliveries per producer. To do this a base building incentive ratio was developed for each cooperative for each year of the study. The ratios were established by analyzing base building rules and determining how much base could be earned during each base building period by increasing average daily

deliveries of milk one pound above the number of pounds of daily base currently owned. The more base that could be earned the greater the ratio and the greater the incentive to increase deliveries; the less base that could be earned, the smaller the ratio and the less the incentive to increase deliveries. The ratio was 1.0 during years when base building was completely open, 0 when base building was closed, and between 0 and 1.0 when base building was semi-open.

Changes in base building incentive ratios and per cent changes in average daily deliveries per producer were correlated for two time periods--base building periods and production years. The base building periods used were those months each year during which base could be built, or when it normally could be built if base building were allowed. Production years began with the base building period of a given year and extended to when the base building period began or normally would begin the following year. Production years were studied to determine if the changes in deliveries experienced during the base building period resulted in similar changes during the remainder of the year.

For Cooperative A, the correlation coefficient was +.80 for base building periods and for production years. The coefficients were significant at the 10 per cent level. This indicates that producers of Cooperative A responded to a considerable extent to changes in base building incentives. Per cent changes in deliveries ranged from -1.8 to +27.3. The greater the incentive ratio, the greater the increase in deliveries. Since the coefficients were the same for base periods and for production years, it is apparent that changes made during the base building period tended to be continued until the beginning of the next base building period.

For Cooperative B, the correlation coefficient was -.08 for base building periods and -.29 for production years. These values indicate no effective producer response to changes in base building incentives during either period for Cooperative B.

After analyzing these results and the manner in which each cooperative administered its base-excess program, it was concluded that if base-excess pricing programs are properly set up, clearly understood by producers, and rigidly administered (as in Cooperative A), they can be reasonably effective in controlling total supplies of market milk, particularly in controlling the rate of increase. On the other hand, if base-excess programs are loosely administered and special adjustments are commonly made for individual producers (as in Cooperative B), little if any response can be expected to efforts to limit deliveries through restrictive base building rules.

Since there is a positive relationship between producer deliveries of milk and their ability to build base, it follows that: 1, future deliveries could be reduced through use of well managed closed or semi-open base building programs; 2, Class I bases or quotas could be used effectively in limiting deliveries since there would be no incentive to increase deliveries to increase base; and 3, federal orders stimulate deliveries of milk because the orders that use base-excess programs have liberal base building rules.