

Should production determine price supports?

(Editor's Note: Should costs of production be used as a basis for establishing milk price supports? Would that system be better than the present parity system? But how do you measure costs of production? These and other questions have been explored in a detailed "Critique of Cost of Milk Production Estimates and Their Use in setting Price Supports" prepared by Blair J. Smith, associate professor of agricultural economics at Penn State. It will be reproduced in Lancaster Farming beginning in today's issue and continuing throughout June.)

Part I

INTRODUCTION

The Agricultural Adjustment Act of 1933 is the basic law under which manufacturing grade milk prices are supported through government offers to purchase certain manufactured dairy products at announced prices. The Agricultural Act of 1949 requires that manufacturing grade milk prices be supported at 75 to 90 percent of parity. The latter act has been amended a number of times by Congress, but, in the absence of such amendments to the contrary, the required level of support always returns to or remains at 75 to 90 percent.

The concept of a parity price for milk is one that will give milk the same purchasing power, in terms of the things that farmers generally buy to produce farm products, as milk had with respect to the goods and services farmers bought in the five-year period 1910 through 1914. Theoretically, if manufacturing grade milk is currently selling at 85 percent of parity, then milk has 85 percent of the purchasing power that it had from 1910 through 1914.

The federal government attempts to assure that the announced support price will be achieved in the market by offering to buy butter, milk powder, and cheese at specified prices. Prices offered for these products are at levels that are thought to permit manufacturers to cover their costs while paying farmers a price at least equal to the desired level of support. The market price that is used as the gauge of the success of the price support program is what is referred to as the Minnesota-Wisconsin manufacturing grade milk price (M-W). It is generally the monthly average price paid to farmers for manufacturing grade milk sold in these two states. Approximately 15 percent of all milk produced in the United States is still of manufacturing (Grade B) quality, and approximately 50 percent of that Grade B milk is produced in Minnesota and Wisconsin.

The "basic" price in all Federal Milk Marketing Orders (FMMOs) is the M-W. This is the minimum price that buyers must pay producers for milk that is used to produce such hard manufactured products as butter, powder, and cheese. All milk in all FMMOs is of Grade A quality, eligible for use in fresh, fluid form. Eighty percent of all Grade A milk produced in the United States, 68 percent of all milk, is priced under one or another FMMO. Milk in FMMOs that is sold in fresh, fluid form must return to producers the basic price plus a fixed fluid or Class I differential. This differential varies across markets but not across time. Thus, all the variation in required minimum Grade A producer prices over time is due to variation in the M-W.

The concept of parity as the basis for determining support prices, the price support program itself, the use of the M-W as the basic price in FMMOs, and the



FMMOs themselves have been a continue to be under critical review by a number of persons and agencies.

The focus of this bulletin is on one of the most commonly suggested alternatives to parity, cost of production. Other alternatives are: (1) A parity price based on the things dairy farmers buy rather than on those that all farmers generally buy; (2) direct payments to dairy farmers when market prices fall below desired levels; (3) subsidies to consumers when controlled prices are higher than they are willing to pay; and (4) production or marketing quotas to hold marketings down to the level that will generate the price that is desired in the market.

Interest in cost of production as a possible basis for pricing milk at the national level was evidenced in the Agriculture and Consumer Protection Act of 1973, which directed the Secretary of Agriculture to "... conduct a cost of production study of wheat, feed grains, cotton, and dairy commodities ..." The notion was that the estimates of such costs might serve as "targets" for national farm price and income policies and programs.

The plan of this publication is to develop a theoretical framework within which costs of producing milk might be measured with complete precision. Then, the practical problems associated with trying to work within that theoretical framework are discussed. A critique of cost of production studies generally is offered, followed by a specific critique of the series of estimates of the cost of producing milk that are annually conducted by the U.S. Department of Agriculture. Finally, the appropriateness of using cost of production as the basis for pricing milk, in conjunction with one or another policy instruments, is examined.

ESTIMATING THE COST OF PRODUCING MILK

Laymen probably are inclined to believe that estimating the cost of producing milk ought to be simple — that an accurate and objective figure shouldn't be difficult to come by. Yet knowledgeable students of the matter recognize that one can "crank out" costs that vary over a wide range — even



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from the same data set! Furthermore, there are many different ways of developing a data set, and each of these also may result in a different estimate of the cost of production as well.

More specifically, the primary sources of variation in estimates of the cost of producing milk result from:

- (1) The selection of a basic data set
- (2) Which items are included on both the costs and the returns side of the dairy farm business ledger.
- (3) Which accounting procedures are used to establish values for the items that are included in the computations.

Each of these potential sources of variation in estimates of the cost of producing milk will be discussed, in turn, immediately below.

CHOICE OF A BASIC DATA SET

Basic data for estimating costs of production have traditionally been generated in two ways. One is the farm survey method, the other the farm budget method. The former has the appeal of reality, but is very expensive. The second is a much cheaper method, but it is difficult to know how well the budgeted farm follows the changes that take place on real dairy farms over time. The farm survey method risks bias due to the sampling procedure used, and the farm budget method risks bias to the extent that the modeled farm is not truly typical or representative of all dairy farms.

It is common to see a combination of the two approaches used, however. Dairy farms are surveyed periodically to establish a base period, and budgeting is used to develop estimates of costs between surveys. This combinational approach is the one currently being used by the U.S. Department of Agriculture in its annual estimates of the cost of producing milk. (1,2,3,4, and 5).

Since the survey of some sort usually is involved in most estimates of the cost of producing milk, the attention of the remainder of this article will be focused on the survey method of obtaining basic data. Some workers will argue that the farm budget or economic engineering approach is potentially superior to the survey method, in both theory and practice. This author agrees on the matter of theory, but disagrees on the matter of practice. The pros and cons of the farm budget method will, therefore, not be developed in this report.

In selecting a sample of milk producers to be surveyed, a purely random procedure is seldom followed. Some further criteria are ordinarily used. For example, producers of fluid grade milk (Grade A) ought to be distinguished from producers of manufacturing grade milk (Grade B) if the cost of producing milk for fluid use is of interest. One supposes, other things being equal, that if costs more to produce Grade A than Grade B milk. If Grade B producers are included in the sample, then the cost of producing Grade A milk will be understated.

Another selection standard might be size of dairy farm in terms of numbers of milk cows. Many surveys systematically exclude farms with herds below a certain size. Then there is the definition of the dairy farm itself. What will be used to differentiate it from a non-dairy farm? Usually some test of the importance of the dairy enterprise, relative to all other enterprises, is applied. That is, some cut-off level of specialization is imposed on the sampling procedure. Finally, there is the matter of the actual collection of the data. Will it be by personal interview or mail questionnaire? One supposes the former method has the potential,

at least, of being more accurate than the latter. Important in either method is the design of the questionnaire, and the knowledge and industry of the field enumerators and editors of the questionnaire.

WHICH COSTS AND WHICH RETURNS?

This question may seem trivial to the uninitiated. All costs and all returns, of course! Yet, an examination of existing reports of the cost of producing milk reveals that workers have substantially different notions about which costs and which returns are relevant. Why would any returns be relevant in the computation of costs? Because certain returns are offsets to certain costs, as will be seen in the later section dealing with the theoretical classification of returns.

It should be noted here that if there is a bias in estimates of the cost of producing milk, it is more likely to be toward the higher rather than the lower side. This is because costs tend to be overstated relative to returns. Or perhaps more accurately, returns tend to be understated relative to costs. The reasons for these tendencies may be summarized in two statements, given the political, regulatory, and economic climate in which milk is produced in the United States:

(1) The only case that comes to mind wherein it might be advantageous to the farmer to report lower rather than higher costs of producing milk is when farm business financing is being sought and

(2) Many of the off-farm people who have been involved in estimating the cost of producing milk are sympathetic to dairy farmers. Consequently, the data gathering and interpreting methods they use often have cost escalating biases built into them.

Of some costs and returns items there is little debate as to whether they ought to be included in any estimate of the cost of producing milk. (Here, for the moment, the problem of allocating certain costs among enterprises on multiple-enterprise farms is put aside). Items such as purchased feeds, hired labor, fertilizer and lime,

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