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**PRICING PROBLEMS IN THE FOOD INDUSTRY
(With Emphasis on Thin Markets)**

A compendium of papers presented at the Symposium on Pricing
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THIN MARKETS IN THE FRUIT AND VEGETABLE INDUSTRY

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The processing segments of the fruit and vegetable industry have different types of thin market problems than those in the fresh market segment. Fresh market thinness arises from the changing marketing institutions and the associated declining number of participants, transactions and data base. The processing market thinness problems are a phenomena of changing market structure, reliance upon contracts for buying commodities and methods of establishing contract price bases. As a market becomes thinner, it becomes more closed and may lead to less cooperation in supplying data voluntarily for reporting.

In either case, the primary concern about thin markets is embodied in the lack of information to provide a basis for sound pricing decisions. As the negotiation process is reduced from a larger number of buyers and sellers in close proximity in the terminal market facility to more isolated transactions in production areas, the need increases for information from a third party source to bring about an efficient price. This market information substitutes for the information gathered directly by the buyer in the terminal market setting.

In contract purchase of processing commodities, numerous terms relating to quality differentials, delivery, production activities or inputs are generally incorporated into the agreement. This obviously makes it difficult for producers, or even a bargaining group, to determine how the terms offered compare against alternative offers. Difficulties in comparing diverse contract terms are exacerbated when structural problems exist in the industry. The information base becomes "thin" and could be hypothesized to lead to less than efficient pricing decisions.

FRESH MARKET

In the fresh market for fruits and vegetables, the role of the central market such as wholesale terminals in major consumption areas has declined significantly. Increasingly, purchases are made in the production area directly by chain store buyers or by brokers representing retailers or wholesalers. Production area sales prices and related terms of exchange are negotiated between two parties, usually by telephone. The competition to make purchases or sales may be as keen as in terminal market sales, especially in times of surpluses or shortages. But in times of normal supplies, competitive bidding may be less vigorous and an efficient "market price" may not be generated.

But probably the potentially more important problem related to the declining volume of wholesale transactions is the decreasing availability of supply data represented by shipments of fresh fruits and vegetables. The volume data provided through the market news service over the years has been derived from reports of shipments provided by the railroads. Decreasing importance of rail shipments in addition to the decline in the wholesale markets has led to less central availability of volume data. This data becomes

increasingly difficult to obtain when sales are made on a contract basis or a local agreement basis between retailers and shipping firms. When there are numerous independent truckers or chain store trucks involved in moving fruits and vegetables to the retail outlet, there is no focal point for gathering such data. Chain stores may become less willing to provide such quantity and price data on direct purchases. As the availability of reportable data decreases, the thinness of the market becomes more pronounced and the market is increasingly negotiated on a less sufficient data base. Consequently, the price derived in the individual negotiations becomes a less reliable indicator of the true market supply and demand situation. While this scenario does not yet exist, shifts toward it have occurred and there is some interest in mandatory supply reporting to offset any significant trend in that direction.

For some commodities, the numbers of actual buyers for a commodity has decreased to a point which may be a cause for concern about the methods by which transaction prices are derived. For example, the spot market for partially refined sugar to be further refined into final products is characterized by so few actual trades that a pricing committee has been established to determine appropriate "prices" for non-transaction days to provide a basis for settling any possible disputes on futures contract deliveries. With so few actual transactions and participants, what is the resulting pricing efficiency?

Lettuce

The lettuce industry in California illustrates some of the problems associated with a thin market and one approach to overcoming its effects. The structure of the lettuce industry includes less than 30 growers selling to a small number of brokers representing Eastern buyers. The Central California Lettuce Growers Association was organized for purposes of negotiating more favorable terms of trade with the relatively small number of brokers. They feel that their negotiating power derived some changes in their favor. The growers were formerly paying 10 cents per carton to the brokers who actually worked for the Eastern buyers. This charge was shifted to the buyers at an estimated value of \$1.5 million per year to the growers. They also claim to have shifted the frequency with which shipments are made on the basis of acceptance on arrival in the East relative to f.o.b. California. That has obvious advantages in assuring growers that the quality delivered and prices received reflect the value of the commodity they produced, not what may have resulted in transit.

Perhaps the most significant activity of the Central California Lettuce Growers Association is estimating shipments 1 to 2 weeks ahead, attempting to bring some degree of quantity and price stability to the highly volatile lettuce market. They also occasionally set suggested floor prices below which members agree not to sell. This activity resulted in antitrust suits for price fixing, but a favorable verdict supporting the cooperative's antitrust exemption was obtained. In a highly volatile market such as lettuce, this activity could benefit producers, handlers, and consumers if it is successful in reducing fluctuations.

Sugar

While sugar is not a fruit or vegetable, it is a specialty crop which we have defined into our area of interest. The sugar industry provides a classic example of thin markets. Major traders make the market for partially refined cane sugar, and transactions are

very lumpy, occurring only sporadically but involving large volumes. There may be transactions on only 10 to 15 percent of the trading days, but the New York Sugar Exchange has established a sugar quotation committee which issues prices each day, including those days when no actual transactions occur. Thus, while very few transactions occur, they establish a pricing base for much of the industry.

This becomes a particular problem in trying to administer the sugar programs legislated by Congress. To carry out the administration of such a program requires a knowledge of prices received in order to determine the level at which compensation must be paid to achieve target prices. If prices are being set on a thin trading base by a few industry participants, there is obviously room for manipulation. In fact, an incentive to manipulate could be created if the program is operated in a manner to allow traders to benefit by manipulating such prices. That does not mean that manipulation is occurring or that the intent of the traders is undesirable, but it certainly presents the opportunity for large effects on the market by a very limited number of participants.

The thin market in cane sugar may also be very important to the competing sugar beet growers. Prices for sugar have tumbled in recent years from the record high a few years ago. This has made it extremely difficult for sugar beet producers to compete profitably. Since most producers' sugar beet contracts are based on sharing in processors' net returns, the growers prefer that the price received by processors be at as high a level as possible while remaining competitive. Therefore, they must be accurate in assessing the market. If the market based on a very small number of cane sugar transactions gets out of line with the true supply-demand situation, it could bring dire consequences to the entire sugar beet industry.

With the higher prices, there also was an incentive to produce sugar from corn. If the corn sugar industry expands further, it will be even more important that cane and sugar beet prices are set competitively. Does the thin nature of the market allow the market price to be set at the best level for the industry or for the best level of a few concerns? Does it create the possibility for capturing short-term monopoly profits through manipulation by the relatively few traders involved in the sugar market?

PROCESSED PRODUCT MARKETS

Terminal markets as once existed for fresh markets were never significant for processed fruits and vegetables. Direct purchasing is long established, largely in the form of contracts to purchase raw commodities for some price and terms of trade. Negotiation may occur or terms may just be offered on a take-it-or-leave-it basis by proprietary firms. The fruit and vegetable processing industry also involves a producer-owned processing cooperative segment.

Transfers of title which required price determination traditionally occurred between grower-processor, processor-wholesaler, wholesaler-retailer, and retailer-customer. This four-tier system has been shortened. Retailers have assumed many of the former wholesale functions, so that price determination for products sold through chain retail food stores does not occur between wholesaler-retailer. Chains procure directly from canners on the basis of product reservations during or preceding the processing season, based on estimates of the quantity the chain may require for the next marketing season. These reservations often do not reflect actual volumes purchased, and seldom is price a part of the reservation system in retail-pack canned fruits and vegetables. The

frozen food industry does not use the reservation system, due in part to packaging and labeling requirements which differ from bright-stacked canned goods. The traditional system still reflects much of the movement of canned products to institutional users, accounting for about one-third of industry purchases.

Basis for Price Determination

The problem of commodity pricing becomes important as firms seek to find a basis for compensating growers when "open" market prices do not represent conditions adequately for equity in prices paid relative to "actual value." Some processing cooperatives and some proprietary firms having joint ventures or long-term supply contracts with cooperatives rely on "commercial market value" as a basis for paying growers for raw product deliveries to proprietary firms, or as a basis for comparing returns to members relative to returns to other producers. Three alternative methods are commonly used to establish a commercial market value by cooperatives. One is an arbitrary decision at the discretion of the cooperative's board of directors, based on whatever criteria they wish to use, including but not limited to returns paid by proprietary processors.

A second alternative is to base raw product price on the weighted average price paid in the procurement region for similar products used for similar or related purposes. This alternative requires a decision input by the board of directors, but leaves less discretion for arbitrary determination.

Still another variation uses prices reported by the Crop and Livestock Reporting Service to reflect commercial market value, either by cooperatives or between a cooperative and other firms in a joint venture. Since reported prices are collected through voluntary reporting, there has been dissatisfaction expressed, at least in the California wine grape industry, with the accuracy of prices or how precisely the reported prices reflect actual prices paid or raw product value. For example, a large proprietary firm purchasing a relatively small quantity of a specific variety from growers, but having substantial production of that variety from its own farmers, can pay a handsome price for the small quantity purchased. This would embarrass any cooperative that returns lower prices to its growers based on market value of the finished wines for which the grapes are used. Allegedly, this or a similar occurrence prompted enactment of legislation requiring wineries to report prices paid to growers for grapes for crushing on a weekly basis. The reports must be filed with the market news service by January 10. These prices are used as the basis for determining grower prices in at least one arrangement between a publicly held wine corporation and the cooperative which have a long-term supply contract.

An interesting problem of price determination has occurred in Michigan. Pro-Fac Cooperative is a New York-headquartered agricultural marketing cooperative with members in New York and Michigan who produce certain vegetables and fruits, all of which are processed by Curtice-Burns, a New York processor. The agreement between Curtice-Burns and Pro-Fac provides for the determination of "commercial market value," based on prices paid for similar products, but with which the boards of directors of both firms must concur.

Should a dispute arise as to the determination of "commercial market value," the marketing agreement provides that "the dispute be submitted for binding arbitration to a three-member committee consisting of the Chairman of the Board of Curtice-Burns,

the President of Pro-Fac, and most notably, the General Manager of Pro-Fac who is also Senior Executive Vice-President and a Director of Curtice-Burns.¹ If the net proceeds of finished products exceed "commercial market value," the resulting earnings are divided on the basis of the respective contributions by the two firms to the overall equity invested in the two companies.

A dispute has led to a court case in which the defendant alleges that it is in the interest of Curtice-Burns to have as low a "commercial market value" as possible, since Curtice-Burns shares in the proceeds exceeding that value. According to the complaint, Curtice-Burns has the incentive and ability to establish, and allegedly has established, "commercial market value" at significantly lower levels than would be established by "agricultural industry generally."

Thus, legal as well as economic considerations may enter the process of determining grower compensation in absence of an open market.

Thin Market Problems

We focus on three specific problems of thin markets in the processed fruit and vegetable industry in the sections that follow. These are (1) the importance and effect of contract procurement; (2) role of bargaining cooperatives; and (3) changing role and relative position of processing cooperatives. There is much interrelation among these three topics.

Contracting for supplies of some fruits and most vegetables for processing is common, and in nearly all cases, prices and quantities subject to the contract are specified prior to purchase. As the number of buyers decreases, as has been occurring for at least 30 years, the basis for determining product value diminishes; prices in resulting thin markets may not accurately reflect value, and growers may have no alternative outlets to test the market prices being offered. With large volumes of output being grown and sold under contracts, growers may also have inadequate economic information relative to buyers of their products. In each case, there is a reduced amount of information available to rationalize prices.

The problems of pricemaking where bargaining exists to negotiate prices between a grower cooperative and processors vary among commodities. Thin markets develop as processor concentration increases. Hence, prices determined by negotiation may reflect the relative bargaining strength of the respective parties rather than market value.

The third problem, the increasing importance of processing cooperatives, becomes acute when they become the major outlets available to growers. In such cases, thin markets develop as a large volume of industry output does not go through at least one market level. Since cooperatives are obligated to return to their members the achieved (sales) price less costs, they do not face the necessity of establishing a grower price at the time of raw product delivery. Thus, when cooperatives account for a substantial part of the industry raw product supply, the prices that might be developed from the remaining proprietary firms may have little relation in the short-run to actual value, because they may not reflect industry utilization of the commodity. Of course, in the longer run the proprietary firms would have to pay close to market value to avoid losing ground to the cooperatives.

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EXAMPLES OF THIN MARKET SITUATIONS

Contracts

Thin market problems related to contracting for production and associated availability of information are illustrated by potatoes for processing and by Minnesota-Wisconsin processing vegetables.

Potatoes for Processing. The potato processing industry is concentrated in three major areas — the western late potato area, the Red River Valley, and Maine. Processors contract for a portion of their processing potatoes — perhaps 50-60 percent — and buy the remainder on the open market. There is widespread bargaining on behalf of growers to establish price and trade terms. Most contracts specify a price with variations from the base price determined by quality and other factors identified in the contract.

The potato processing industry bargaining groups have been concerned with the lack of directly related information for developing pricing appropriate to their supply and demand situation. They felt that an adequate basis for establishing reasonable prices to growers did not exist based on individual areas negotiating with the processors who tend to be represented in at least two or maybe all three processing areas. This is a form of thin market from the viewpoint of the producer groups who need to have some basis for establishing price.

They have established an umbrella organization sponsored by the producer bargaining groups to provide information exchange among areas. The attempt to establish a coordinated mechanism represents their recognition of the thin market phenomenon as the volume of potatoes produced under processing contracts continue to increase relative to total potato sales. It provides them better insight for bargaining over price and quantity terms in the contract.

Processing Vegetables in Minnesota-Wisconsin. Vegetables grown under contract for a relatively few major processors in the Minnesota-Wisconsin area are also grown in the Pacific Northwest, where bargaining associations negotiate with processors for prices and terms for the processing of vegetables. However, Minnesota-Wisconsin producers are not organized into strong bargaining associations and are essentially in the position of being price takers from the processors involved. They have very little information available from which to determine whether or not they are receiving a fair market value or a reasonable price for the commodity. Perhaps, their only real concern needs to be whether the price offered is competitive with their alternatives. If processing vegetable prices are not satisfactory, a farmer in Wisconsin or Minnesota can usually produce grains or other substitute commodities on the same land. In fact, some sweet corn production contracts contain an escalator clause tied to field corn prices to encourage production of sweet corn during years of high field corn prices.

Bargaining

Several examples of commodities grown in California for processing illustrate problems associated with bargaining activity and thin markets. Freestone peaches and canning tomatoes reflect two different types of problems.

Freestone Peaches. Freestone peaches are utilized in four basic product forms — fresh, canned, frozen, and dried. Market structures for each product form differ, and

traditionally there have been four different pricing systems even for peaches of the same quality and variety. Although the California Freestone Growers Association was created to bargain with canners for grower prices, changes in production utilization, changes in market structure, and changes in consumption have resulted in the Association pushing for a single price system for all uses. Where previously canners were the dominant processing entity, canning and freezing uses now each require about 20 percent of the production, about 6 percent is dehydrated, and over half the crop is sold for fresh consumption.²

The ownership of firms differs substantially in the canning and freezing segments of the peach processing industry. Entering the 1978 season, there are four freestone canners in California, with two other firms purchasing small quantities of baby food and nectar. Of the four canners, three are cooperatives which together account for 74 percent of canned volume. The fourth firm is Del Monte. By contrast, there are seven freezer firms, none of which is a cooperative.

Pricing for four product forms is complex, and often unpredictable. For example, freezers dominated the 1973 season pricemaking process, but canners resumed industry dominance in 1974. The Association attempts to maintain an advantage over buyers by keeping abreast of market and industry trends in all four product forms.

Potential Problems:

1. With 3 of 4 canners being cooperatives, their price impact or role in the open market is uncertain. If cooperatives enter into an agreement to absorb a larger proportion of the crop or take over a part of the industry product oversupply, there could be strengthening of open-market prices.
2. If Del Monte were to cease processing freestones, total output would be in the hands of cooperatives and there would be no open-market price for raw product.
3. The Freestone Association could conceivably enter into an agreement with Del Monte, providing favorable terms or concessions to induce them to remain in the market. This could work to the disadvantage of total returns to growers.
4. Continued recognition of the Association as the negotiating agent for growers by the dominant open-market buyer is essential for the Association to keep pricing from becoming even less "thin." The existence of even the present price structures will be questionable if several freezing firms succeed in their desire to contract directly with growers at individually negotiated prices.

For these reasons, the Association is seeking to equate prices for all alternate uses to reduce the further deterioration of open pricemaking in the canning subsector.

Tomatoes for Canning. The California canning industry is not characterized by processing cooperative dominance, nor of small open-market volume. Over a 20-year period, California acreage has increased substantially, to about 84 percent of the Nation's production of tomatoes for canning. Annual production contracts are offered to growers, of which slightly more than 75 percent are members of the California Tomato Growers Association. The Association provides members with a unique price discovery service. It writes a letter to each canner announcing the Association's readiness to start negotiations several months prior to planting time. Later it discusses individually with canners the prospects and economics of alternative crops available to growers,

changes in tomato growers' incomes and production costs, and status of finished product markets, with indications of needed acreage in the state. They try to reach a consensus of a price for growers. The Association does not take title to its members' production, but the membership agreement requires that members not sign contracts with processors until the Association has reached its consensus with the respective canners.

Problems of thin markets associated with other commodities do not generally exist for tomatoes. But in some years, a price leader declines to reach an agreement within a reasonable timeframe. The Association then experiences a thin market, because it is unable to negotiate successfully with other firms until an industry leader has made a commitment.

There is another type of market thinness wherein competing areas produce a marginal amount of commodity but are influenced by the price established in the dominant production area. For example, the value of tomatoes for processing grown in Indiana and Ohio are at least indirectly affected by prices determined in negotiations between California tomato processors and the California Tomato Growers Association. California dominates the whole tomato and concentrated tomato product markets, while Midwest tomatoes are used mainly for juice and catsup. Yet, the grower prices in the California industry certainly have some impact on processing tomato value in Ohio and Indiana. If the California price is a single negotiated price varying according to quality, location, and other terms, is it truly representative or reasonable as a pricing base for tomatoes grown in Ohio and Indiana? Does it represent a less desirable base for pricing tomatoes than when processing tomatoes were produced in a large number of areas and not under control of one organization?

Cooperatives

Cling peaches and canning pears are two commodities that illustrate pricing problems that arise when processing cooperatives emerge as the major entities in the industry. Such disappearance of open market tonnage is continuing in California and some other parts of the country, and it may require new pricing mechanisms. Will bargaining associations need to bargain with processing cooperatives over processing margins rather than price?

The extent of the problem in California is illustrated by the percent of the processing tonnage now handled by cooperatives — about 25 percent for tomatoes, 35 percent of the canned asparagus, over 50 percent for cling peaches, 60 percent for apricots and pears, 85 percent for freestone peaches, and 60 percent for spinach.

Cling Peaches. Prices of cling peaches have been negotiated by the California Canning Peach Association since 1922, when there were over 50 processors. Presently, there are twelve canners, four of which are cooperatives. One of the proprietary firms is phasing out of clings. The two largest processors account for 35 to 40 percent of total industry output, with Del Monte accounting for 25 to 30 percent of total supply, and Libby with an estimated 10 percent.

The Bargaining Association contracts with all proprietary processors, excluding cooperatives except when they purchase cling peaches from non-members. A master contract is used with all processors, specifying grading procedures, methods of negotiating prices, designating circumstances for payments of premiums, and similar terms.

The contract specifies that arbitration will be required if agreements are not reached on price and other terms subject for negotiation, or if negotiations are not progressing. Arbitration is carried out by one person representing the Bargaining Association and one for the processor, who together appoint the third member to this committee.

Pricing formerly was carried out by the Association establishing a target price, around which negotiations were held with individual processors. Presently, the Association's board establishes parameters for prices and grades, and armed with this authority, the manager tests the market on a weekly basis starting in mid-March with industry price leaders until an acceptable price is reached.

Canning Pears. A similar trend is occurring with pears grown for canning in California. There are 13 buyers, four of which purchase No. 2 fruit for nectar and baby food, leaving 9 processors as purchasers of No. 1 fruit for canning. Since four are cooperatives, negotiations are carried on with the remaining five who together account for 40 percent of the canned pear output. Two proprietary firms recently have announced they no longer will can pears, leaving an even thinner market than before.

It is difficult to project what, if any, changes may occur in the pricing mechanism since the numbers of proprietary canners is down to two for cling peaches and three for canning pears.

ALTERNATIVE PRICING SYSTEMS

Having identified several types of problems associated with market thinness in the fruit and vegetable industry, it is appropriate to examine ways to minimize their effects. Some possibilities follow, though the list is not exhaustive.

Share of Consumer Price. As traditional bases for establishing prices become unacceptable, growers face the problem of devising and getting accepted new methods for determining product value. One method is sharing of prices at some stage closer to the consumer. In 1977, the Napa Valley Grape Growers Association priced wine grapes to five wineries based on the retail price of the wines produced from each variety of grapes. The formula takes into consideration the number of bottles of wine from a ton of grapes and the retail price of the wine, to arrive at a "ton wine value." A factor reflecting growers' production costs is determined and entered into the equation to arrive at a price per ton for grapes delivered to the winery. This calculation is made for each variety. Each winery's selling price is based on its California posted retail price during the last quarter of the calendar year.

Individual Commodity Pools. Where the major share of industry output is handled by processing cooperatives, internal changes may be required to permit products to reflect market values more clearly. Many multi-product processing cooperatives operate multiple commodity pools, requiring the board to determine commercial market value based on industry prices. When earnings permit, cooperatives with multiple commodity pools are able to allocate returns to growers in such manner as to reflect needs, rather than actual prices earned. Thus, some cross-subsidization can occur among commodities.

However, as the basis for estimating commercial market value deteriorates, cooperatives operating under multiple commodity pools lack the objective values established by proprietary firms, and must make these decisions with imperfect information. Such

decisions are somewhat arbitrary and may induce grower resentment. To avoid or minimize these problems, such cooperatives may need to shift to individual commodity pools that reflect to the grower actual prices received for each commodity. A loss of flexibility will result, but perhaps this may minimize internal conflicts among producers.

Bargaining with Retailers. As much as 15 years ago, it was suggested that bargaining associations may need to bargain with retail food chains or volume users, with processing done on a custom-specification basis by processing firms, as bargaining associations reached limits in income transfers from proprietary firms. This may still be a viable alternative; in fact, it may be the one realistic alternative available for some commodities.

More Market Involvement. As processing cooperatives emerge as major sources of industry output, the role of bargaining cooperatives may change completely. Instead of attempting to establish equitable grower prices in thin markets that do not reflect actual value, bargaining cooperatives may need to shift emphasis from price determination to programs that influence demand for their commodity. New product development could be licensed to processors, which by definition may be mainly cooperatives. And they could become more active proponents of industry matters with Government agencies, legislative bodies, and trade associations. Or perhaps bargaining associations will need to work more with processing cooperatives in pricing the processed products.

The alternative pricing systems identified above may not be the best ones. More thinking and analysis is needed to determine which of these or other possibilities offer realistic solutions to the problems which exist or appear to be developing.

NOTES

¹Amended answer by Defendant, Agricultural Marketing and Bargaining Board, Case No. 75-2819-CZ, Paragraph 12.

²Agricultural Statistics, 1977, U.S. Department of Agriculture, Washington, D.C.