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Intrastate Produce Sales: Efforts to Sell NYS Produce to State Institutions*

by

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Statement of Problem

Recent declines in commodity prices have put many farmers in financial duress. Concerns about the continued viability of the agricultural sector have been referred to state legislatures both by farmers concerned about maintaining their own farms and the public which views farming as an aesthetic, social and economic resource. State government personnel are typically limited in the assistance they can provide to a large and diverse sector like farming with its strong dependence on natural agricultural and macroeconomic policies. However, in at least one regard

states *do* have a direct contact with agriculture, through their role as procurer of fresh foods for consumption in state institutions (prisons, hospitals, etc.). Indeed, many states have implemented programs to assure their buying potential was exploited to its fullest to benefit the state farm population.

Objectives

This paper provides an *ex ante* analysis of such efforts in one state, New York. New York has both a large agricultural sector with 1985 farmgate sales in the neighborhood of \$2.7 billion (N.Y. Agricultural Statistics, 1986)

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and a large institutional population. Apparently concerned that current procurement practices and/or market forces were inadequate to maximize the utilization of New York grown produce, two procedures were set in motion in 1985. These consisted of a new law mandating the purchase for state institution use of stipulated New York State agricultural commodities, and the consideration of an electronic marketing mechanism to link growers and wholesalers with state institutions. Here is described the pre- and probable post-change procurement procedures. This analysis begins with a brief overview of the New York produce sector and the utilization of fresh produce items by state institutions. It then examines the new state legislation regarding produce procurement, along with the economics of electronic produce marketing. The conclusion identifies alternatives for channeling greater amounts of locally grown produce to state institutional purchasers.

Methodology

Information on current procurement volumes, and practices followed by buyers, growers and wholesalers was collected through mail surveys in 1985. Prior to sending the questionnaires, field testing and personal interviews were carried out with a selected sub-sample. The sample frame was a mailing list of growers and wholesalers maintained by the N.Y. Department of Agriculture and Markets. The Governor's Office staff assisted in supplying a list of head buyers at the 100 largest institutions with feeding programs.

Among the 100 institutional buyers surveyed, 40 (40%) responded. Twenty-five of the 115 full line wholesalers queried (22% response rate) replied. These firms had annual sales levels of over \$1,000,000 to one with just \$100,000. A total of 225 growers (30% response rate) responded from 39 of the 55 principal agricultural centers in the state. About half of this group was limited to growing activities; the remainder combined some wholesaling functions.

Information on the costs of operating computerized trading systems was compiled exclusively from secondary sources, especially

Epperson et al., 1984, and Epperson, 1985. An existing commercial system, Computer Aided Marketing of Produce (CAMP) was used as the basis for computing the cost of using a time-share system. A cost calculation based on one of the other commercially available systems could lead to a somewhat different outcome.

Current Status of Production and Procurement

Fresh Fruit and Vegetable Production In New York

New York is ranked fifth in the production of fresh market vegetables in the United States. It is among the top ten states for production and value of potatoes and processed vegetables. In addition, New York is the second largest producer of apples, grapes and tart cherries, and fourth in the production of pears (N.Y. Agricultural Statistics, 1986).

In 1986, total production of the 11 principal vegetables for fresh market exceeded 1.1 billion pounds and 778 million pounds of potatoes. Furthermore, 671,550 tons of fruit were utilized in both the fresh and processed markets, of which about half was destined for processing (N.Y. Agricultural Statistics, 1986). Together these three crops represented a \$342.6 million farm value in 1986.

In 1982, 70 percent of the 3,228 vegetable farms in New York State had 25 acres or less in production (How, 1984). However, this group represents only 10 percent of the state's total production, while more than 70 percent of vegetable production comes from 325 farms with 100 or more acres in production. Approximately 20 percent of the vegetables harvested in 1982 were produced on intermediate-sized farms between 25 and 100 acres.

New York State fruit production contributed more than \$129 million worth of farm-valued commodities to the state economy in 1986, with two-thirds accounted for by apples alone. There were in 1986 112,000 acres of bearing-age trees and vines in production, of which 65,000 were apple, 35,800 grapes and 2,800 pears along with a number of minor crops. Production for apples is concentrated

in three major areas of the state: western New York along Lake Ontario, the Hudson Valley and the Champlain Valley with 66 percent of the production coming from the western producing region. In 1985, 379 million pounds of apples were marketed for fresh consumption, or 40 percent of the total apple production in the state. This generated a fresh market value at the farm level of more than \$43.6 million (N.Y. Agricultural Statistics, 1986).

Volumes Purchased by New York State Institutions

Currently the largest 100 state institutions purchase at least 12 of the major fresh commodities produced by New York farmers at an economically meaningful level. According to the information provided by the surveyed buyers, the annual farm value of these commodities exceeds \$1.1 million, or in volume less than one percent of total production. These buyers also purchase a significant amount of processed agricultural products from New York State. It is probable that these buyers hold potential for expanding purchases from New York since, at present, they are forced to seek other sources when New York farmers either are not able to produce a commodity (such as oranges or pineapples) or when the product is not available outside the limits of the normal growing and storage season.

Procurement Procedures for New York State Institutions

Currently New York State institutional procurement is divided into two distinct zones, Centralized and Decentralized. All institutional procurement is closely regulated by the "Finance Law" (Chapter 710, Article 11, Section 174 of the Laws of 1985).

Centralized Zone Procurement. The centralized zone comprises 17 counties in southeast New York State and constitutes four separate purchasing zones. The commodities procured for individual institutions within each zone are collectively bid on by suppliers through the mail in sealed bids. Deliveries, however, are made directly to each institution.

The bid, stipulating a price per pound, must be for all the commodities in the quantities specified in the bid request; partial bids are rejected.

The prices quoted include delivery to the institutions and unloading. Contracts are awarded to the lowest bid which conforms to the published standards and specifications. These include USDA grades and standards, as adapted by the New York State Department of Agriculture and Markets, and the demonstrable ability to deliver the requested quantities on the dates specified. Failure to meet delivery schedules usually results in the shipment being rejected and the commodities needed purchased on the open market. The contractor must make up any price difference (including reinspection fee) for replacement commodities (OGS Specification No. 695).

At the time of delivery all commodities are inspected by a New York State Department of Agriculture and Markets inspector, or by a designated third party. Expenses for such inspections are the responsibility of the seller. Payments to the supplier are usually made by check 45 days after receipt of the invoice by the state, unless otherwise noted.

Decentralized Zone Procurement. The decentralized zone comprises the remaining 48 counties throughout the state. Under decentralized procurement practices, each institution is responsible for its own bidding and procurement of fresh fruit and vegetables. These institutions are regulated by the finance law and are required to solicit a minimum of three bids, either over the telephone or in writing, from local suppliers. Payment and inspection procedures are similar to the centralized zone procurement except bids are on a per-institution basis only. In addition, suppliers must adhere to the delivery schedule and additional specifications adopted by each institution.

In an attempt to provide flexibility to the institutional procurement process, and to expand opportunities for state growers, institutions were granted permission to purchase up to \$1,500 per item ordered (say, potatoes) of fresh fruits and vegetables directly from suppliers without prior approval from OGS. Bids

exceeding \$1,500 must be approved by the Commissioner of OGS.

Procurement Practices by Institutions.

On average, 75 percent of the institutional stewards responding to the mail survey buy from wholesalers the great bulk of the time. One institution buys from a broker, seven purchase from local growers, five from retailers and two are on OGS central contracts. Less than a third of the respondents ever bought directly from New York growers.

In the mail survey, buyers were asked to rate, in order of importance (1-4), the critical factors in their institutions' purchasing decisions. By far the largest number of buyers (68%) felt that quality was the most important criterion, although nearly one-third believed that price ranked as the most critical factor. Ninety-four percent of the respondents ranked variety either third or fourth.

Thirty-five percent of the buyers felt there were problems with purchasing New York State grown fresh fruits and vegetables. The most frequently mentioned problems were poor quality and limited variety offered by suppliers, inspection costs and multiple deliveries. Interestingly, however, of those responding, nearly one-half (47%) indicated there were no fruit and vegetable supplier problems. Nine buyers did indicate a need to have vendors better identified.

Institutional Marketing Practices of Wholesalers and Growers. Nearly 50 percent of the responding full-time wholesalers sold to state institutions at some time. About 40 percent felt there are major problems in selling to these institutions, the most significant of which are low prices, rigid delivery schedules mandating frequent, small deliveries, and slow payment. A plurality felt the current grades and standards are adequate to deal indirectly, including through an electronic exchange.

In contrast to the specialized wholesalers, but 6 percent of the responding growers were presently selling to state institutions and fully 87 percent did not have access to current information on requirements for institutional

markets. Despite this general lack of knowledge, 37 percent perceived problems with institutional sales. The most frequently mentioned included red tape as well as quality inspection costs, delivery schedules, slow payment and small quantities purchased.

Preference Law

The so-called New York "preference law" of 1985 mandates the purchase of stipulated New York State agricultural commodities by all institutions and agencies operating feeding programs. The Commissioners of the Department of Agriculture and Markets and Office of General Services are responsible for preparing a list of fruits and vegetables which are authorized for direct purchase from New York State suppliers, and the times of the year they are available. The law further requires these institutions to give preference to New York producers who meet the grade and quality specifications at fair market prices, as determined by the Commissioner of the Department of Agriculture and Markets.

Electronic Produce Exchange

Application of Electronic Trading Systems

Electronic marketing networks, in their many forms, are generally expected to increase the overall efficiency of conventional marketing systems. They have the potential to increase technical efficiency by eliminating the traveling expense of traders to central markets and by decreasing the number of times commodities are handled. Pricing efficiencies are also expected through: broader trader interaction, centralized price discovery, accurate collection and dissemination of market information that reduce information search costs and the potential for misinformation which can lead to distorted transaction prices. Theoretically, information helps balance the market power between small and large traders, resulting in a more perfectly competitive market (Epperson et al., 1984, 1978; Epperson, 1985).

There have been several types of electronic trading systems developed and implemented over the past twenty years. The most

common are 1) telephone, 2) teletype, and 3) computer-based. All share the characteristics of organized trading, descriptive selling, remote access through electronic media and post-sale delivery. The systems differ largely in the degree of electronic sophistication and the use of the system for negotiation as opposed to the simple posting of buy-sell offers (Henderson, 1984).

Telephone systems involve either conference calls or an operator acting as a "bulletin board." Telephone systems are limited in the amount of information which can be transmitted (although it is not certain that the New York institutional market requirements for information are of such magnitude that they cannot be handled by means of telephones) and also in the number of participants who can be engaged simultaneously. Moreover, users must be available whenever the market is in operation, an important requirement in many cases. Teletype systems function as simultaneous auctions, usually of the Dutch type, with participants signalling a completed transaction by pressing a key. For their part, teletype systems require much of the same infrastructure as a computerized system but employ outdated, single-purpose equipment.

A computerized electronic trading system allows buyers and sellers to interact directly and negotiate the terms of a trade through a network of computer terminals located at their residence, place of business or cooperative assembly and grading station. Traders are connected into a central processing unit (CPU) via their telephone and an electronic coupling device (a modem) which allows buyers and sellers to communicate with each other through a network of microcomputer or teleprinter terminals from remote locations. The CPU manages the communications and facilitates trade negotiations.

In a generic sense, the process may involve a simple listing of buyers and sellers of various commodities in a manner similar to an electronic bulletin board. Alternatively, individual commodities may be listed providing certified grades, quantities offered, fixed terms of trade and other market information. In addition to listing product descriptions and

trade information (payment terms, inspection requirements and fees, transportation notices and costs, commodity delivery notices and risk of product lost by third parties), standardized contract conditions may be negotiated.

Through the use of computerized electronic trading systems many traders can be handled simultaneously. This is an important ingredient to centralized competitive trading and efficient pricing. With many dispersed buyers and sellers there is broader trader interaction. This contributes to competitive price discovery for all traders (and especially small growers) by providing access to complete market information, in most cases at a reduced cost (Henderson, 1984).

Costs of a Computerized Trading System

Computer-based trading systems may use purchased hardware, leased hardware, or leased time from a time-share firm. The first two options require, additionally, considerable initial costs for software creation and system hardware/software maintenance. Considering the relatively small volumes involved in the New York institutional market, the costs of preparing a ground-up system are considered prohibitive. Helmreich and Epperson (1982) and Turner et al. (1983) reached similar conclusions. They felt that the time-share system using existing software is the least costly. Presently, at least three major companies provide this service, CAMP, FRESHNET, and PRONET.

Estimating the costs of operating one of these systems for the 100 largest New York State institutions involves several steps including estimating volumes per commodity, numbers of traders, and connect time per trader per commodity. CAMP is used as a basis for the cost analysis. Fixed costs, such as hardware (e.g., terminals) and for general overhead and management must be added. Based on these considerations the estimated costs of a computerized trading system applied to the New York State institutional market are \$.82/CWT *above* those presently incurred. These relatively high incremental costs are attributable to the small lot sizes and total volumes traded. Further costs to be borne by sellers, most

notably for the purchase of terminals, are not included.

Results, Conclusions and Implications

From a purely pragmatic standpoint, the current institutional procurement system functions adequately. It is simple, direct and low cost, involving a buyer and generally from one to four multi-commodity suppliers. Changing that system will likely raise marketing costs, at least in the short run. Offsetting benefits could appear in the form of lower commodity prices or increased marketing opportunities for New York growers. As the recent preference law and related legislative changes appear to be directed to the latter benefit, that is the subject of this analysis.

Purchasing directly from growers, especially smaller growers, is a far more complex process than the system used currently. Computerized exchange systems assist in the key area of exchange of bid requests and bids from a large, decentralized group. Without electronic communications this would be a slow, tedious task. However, the use of computers would be a relatively expensive proposition for buyers and sellers, especially smaller sellers. Further, the cost would likely be prohibitive for the majority of sellers unless a) a low-cost centralized access system could be established, or b) the system is expanded so that institutional sales are only a small portion of the total volumes traded. Either or both of those options need further exploration.

Yet even if the cost of the electronic marketing system can be held to a reasonable level, the direct purchase from numerous growers creates additional costs and complexities for buyers and sellers. Buyers must contend with monitoring numerous suppliers while many sellers must arrange, probably on a coordinated basis, inspection and delivery. These are not easy or inexpensive tasks in a large market like that for New York State institutions.

Overall, the direct benefits to the state from a computerized electronic marketing system seem modest. That is not to say, however, that such a system has no value. The

system could serve, for example, as a catalyst for the development of a wider electronic market which might integrate New York produce producers with a wider geographic market. This type of system could have major benefits for the state's farmers and by extension for the entire economy. But considerable effort is required to foster such a development and if undertaken would require a large, ongoing commitment by several New York State government departments.

A more straightforward approach to procuring state-produced products for state institutions might be simply to make *origin* a requirement of a successful bid. In fact, that approach is currently being used by several institutions. If the products continued to be supplied by the same group of large, multi-commodity wholesalers, then an electronic marketing system appears unnecessary. Telephone contacts, too, are more straightforward and less costly.

Electronic marketing in the final analysis appears a means to an end which is far in excess of the current needs and means of institutional markets. If, however, larger markets are indeed the final objective, then institutional sales appear a good place to initiate electronic trading. For any more limited objectives, the use of electronic trading is difficult to justify economically.

In a broader context, this analysis demonstrates a penchant by New York State officials to respond to *perceived* imperfections in the market. When the actual limitations differ from the perceived ones, such as appears to be the case examined here, state action cannot be expected to have a major beneficial impact.

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