

Price Discovery in a Transition Economy:
Market Development in the Romanian Feed Sector

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Paper Presented at

Agrarian Prospects III.

Sustainable Development

University of Agriculture Prague

Prague, Czech Republic

27-28 September 1994

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Newly privatized farmers in transition economies face an environment of price uncertainty. Getting the "price right" is central to their success as new entrepreneurs. A key objective of the program described here, a 1993 U.S. sponsored commodity import program to Romania, was a "price discovery" experience as well as technical assistance for newly privatized farmers. Additional objectives were to assist in the alleviation of feed supplement shortages, and advance the issuance of land titles.

The program was initiated with a United States Government grant of \$10 million to the Romanian Government, in the form of soybean meal supplement and technical assistance. The International Fertilizer Development Center (IFDC) conducted the program under the auspices of the United States Agency for International Development (USAID).

The primary task of the program was the importation and sale of 16,525 tons of high protein swine and poultry feed supplement. Supplement was sold exclusively to newly privatized farmers at sealed bid auctions to assist and encourage privatization and market reforms. Technical assistance included pre-auction seminars informing farmers of supplement quality and use, and post auction monitoring of feed supplement use on private farms. Allocation of supplement to private farmers was based upon free market prices discovered through multiple unit sealed bid discriminatory price auctions. Revenue generated by the auctions in local currency was directed to the Romanian Ministry of Agriculture for eventual use in making land survey and other equipment purchases to quicken the issuance of land titles to private farmers.

The following discussion presents a description and analysis of the price discovery component of the program. First the auction procedures are described. Then, results from the auctions are used to determine: (1) whether auctions are a useful way to teach newly privatized farmers about price discovery in emerging market economies, (2) whether a private market exists for feed supplement at internationally competitive prices, and (3) whether economic incentives exist for private market infrastructure development.

General Description of Romanian Auctions

Twenty-four separate auctions, 16 in June and eight in September/October, were held in eight locations throughout Romania. The 16 auctions in June were for swine feed supplement and were held at eight locations on consecutive days with bid opening at 10:00 A.M. and 12:00 noon at each site. The four June locations with the greatest product demand were later selected for a second series of eight auctions conducted over a 10 day period in late September and early October. At these later auctions, both swine and poultry feed supplement were sold separately but simultaneously with bid opening at 10:00 A.M. at each site.

Procedures were established to assure that (1) only private farmers participated, (2) the financial integrity of the cadastral (land) survey fund was maintained, (3) program information was widely disseminated, (4) broad and equal participation was available, (5) program logistics were not overextended, and (6) a price discovery experience for private farmers was obtained.

Private farmer exclusivity was maintained by enforcing bidder eligibility criteria involving documentation of farm ownership. Excluding state farms was important since private farmers were not well served by the existing large scale state distribution system for farm inputs.

Financial integrity was maintained by requiring all participants to acquire a bank guarantee before the auctions, and to tender bids, which in total were not greater than the bank guarantee. This assured that every bid was financially covered, that proceeds from successful bids were transferred automatically to the cadastral fund, and also helped to avoid problems like adverse selection, where a bidder without the ability to pay would bid high prices. A floor price of 157 lei/kg (\$256/ton) was established to assure a minimum revenue level for the cadastral survey. This price was calculated at 80% of an estimated import parity price, which was the estimated c.i.f. price (minus duties and taxes) at Constanta, Romania's major port.

A first step to assure broad farmer participation was information dissemination. Information about the program was disseminated widely through many outlets including: posters at banks, regional ministries of agriculture, and universities; advertisement through national and regional newspapers, television, and radio; personal correspondence; and through IFDC attendance and participation at agricultural fairs.

For June auctions, broad farmer participation was further facilitated by; pre-auction seminars held in eight regions of the country during May, regional auctions at the same sites in June, an upper purchase limit of 500 tons for a single farm, and elimination of the credit guarantee requirement for farms submitting a single bid for only 10 tons. The eight seminar and auction sites were selected based on two criteria; concentration of private swine farms, and accessibility by local farmers.

The imposition of a minimum bid level of 10 tons and product delivery at one location, the eastern port of Constanta, negatively affected participation for small farmers. Many family farms had insufficient animal units to utilize the minimum quantity of feed, while the need for some to transport the product long distances from the delivery port discouraged participation and/or lowered the potential bidding price. With the U.S. Government mandate that supplement could not go to state farms, successful bidders could not resell the supplement to other farms except on a case by case basis. The minimum bid quantity and single point delivery were dictated by the limited logistic capabilities of the program and the existing input supply network.

The June price discovery experience was enhanced by holding two auctions at each of eight regional sites, scheduling auctions on consecutive days, and making the results of each auction immediately available to bidders and the public. Increased information for bidders reduces their uncertainty resulting in higher bid prices. The pre-auction seminars, held one month before the auctions, enhanced the price discovery experience by allowing potential bidders to become acquainted with the process and to prepare adequately for the auctions.

The second series of auctions conducted in September and October involved several changes from the June auctions. First the number of auction sites was reduced from eight to the four with the greatest participation in the June auctions, Cluj, Bucharest, Iasi, and Braila. The October shipment contained 3,905 tons of swine supplement and 2,400 tons of poultry supplement, compared with 10,220 tons of swine supplement in June. Rather than 10:00 A.M. and 12:00 noon auctions at each location, the swine and poultry supplements were sold separately but simultaneously at one bidding session. Reflecting the smaller total shipment, the maximum award quantity was reduced from 500 to 300 tons per bidder. The minimum lot size for multiple lot bids remained at ten tons. However, individuals could tender *single bids* for one half lot equaling five tons.

Bank guarantees were required for all bidders in the October auctions, including single lot bidders. In the June auctions, a state farm financially supported several private farmers who made single lot bids, thus violating the intent of not having state farm participation. This incident prompted the change in bank guarantee requirements for single lot bidders. Finally, due primarily to inflation the reserve price was revised upward from 157 to 210 lei/kg.

The Price Discovery Experience

Are auctions a useful method of teaching newly privatized farmers about price discovery in emerging market economies?

Sequential sealed bid auctions were a very efficient learning experience. First, farmers adjusted quickly to the auction bidding procedures by participating in both 10:00 A.M. and 12:00 noon auctions in June and by attending multiple auction sites in October. Additionally, market clearing prices approximated international prices for fortified soybean meal supplement, indicating market efficiency in price setting.

Ordinary least squares regression analysis was used to identify the relation of the average award price at the auctions to demand, supply, prior price information, and transport distance (between farms and port of delivery) (Hellwarth 1994). The relation of the above market factors to the auction award prices reveals that the auction markets were acting rationally. Increased demand had a positive influence on price, while supply and transport distance had a negative influence on price. Furthermore, prior price information had increased influence on the current auction prices in the October auctions, implying that farmers were increasingly sensitive to price as a signal of market information.

An unanticipated occurrence was the movement of unsuccessful bidders among sequential auctions, especially during the October auctions (Table 1). After the first bidding experience, unsuccessful bidders were better informed of auction clearing prices, and often traveled to the next region to bid aggressively and satisfy most of their supplement demand. As noted in Table 1 bidders from each region satisfied a higher quantity of their demand at auctions other than their own regional auction.

Table 1. Romanian Private Farmer Auctions, October 1993: Regional allocation of feed supplement by auction sites.

Sequential Regional Auction Sites and Dates	Quantity Awarded by Bidder Region (tons)				Quantity Offered
	Cluj	Bucharest	Iasi	Braila	
Cluj (9/28)	260	0	0	<u>1,340</u>	1,600
Bucharest (10/1)	<u>630</u>	360	155	355	1,500
Iasi (10/4)	210	<u>610</u>	420	360	1,600
Braila (10/7)	200	270	<u>490</u>	645	1,605
Total	1,300	1,240	1,065	2,700	6,305

Does a Romanian private market exist for high protein feed supplement at competitive international prices?

Many prices bid by farmers clearly met and exceeded international competitive levels, especially at the October auctions. The average price paid for supplement was \$309/ton and \$493/ton at the June and October auctions, respectively, compared to estimated import costs of \$386/ton and \$398/ton. In June, 10 of the 106 bidders received supplement (400 tons) at prices above the estimated import cost. Although the import costs were higher in the October auctions, 69 of the 79 bidders (87%) bid above the estimated import cost for a total quantity of 8,955 tons. Two factors help explain the much larger quantity demanded above international prices in October; reduced uncertainty concerning product quality and delivery, and less product offered, 10,220 tons in June versus 6,305 in October.

Reduced uncertainty was the primary factor. By October, farmers were aware of the superior quality of the imported supplement based on supplement use during July, August and September. Additionally, explicit instructions regarding feed mixing ratios for various ages of livestock were given to the farmers to assist in optimal supplement usage. Also, by the October auctions it was clear that IFDC was a legitimate company standing by its contract of delivering supplement to the port of Constanta. In contrast, during the June auctions product quality and delivery had been discussed but not observed. The reduction in uncertainty allowed bidders to increase their bid prices at the October auctions and thus increased demand at prices above the estimated import cost.

Do economic incentives exist for private market infrastructure development?

Free market bids exceeding international price levels, steep discounting in bids from farmers requiring long delivery distance, and the potential for increased technology use as farm output prices rise are all positive indications favoring market infrastructure development.

As described above, at the October auctions most private farmers were willing to pay prices higher than international import costs for high protein feed supplement at the port of Constanta. The effective bidding demand (16,525 tons) represented at the auctions accounted for only about 5 percent of Romania's swine population. Large private farms were partially excluded by the maximum award quantities, small farms had difficulty using the minimum award quantities and arranging transport from the single point of delivery, and state farms were excluded completely. Thus, demand is much larger than that represented at the auctions.

Farmer bid prices reflected transportation cost discounts for distance from the delivery point, Constanta, to the farm. The level of discount, \$10.79 per ton for every 100 kilometers between their farms and the port, was estimated through regression analysis. In comparison, the state operated feed company, *Nutricomb*, provided a schedule of railway freight charges in March 1993 with a cost of \$3.82 per ton for a 100 kilometer transport, not including loading and local delivery fees. Even if these charges are included, it appears that private farmers were reducing their bid prices by more than the cost of commercial transportation. With the significant difference between commercial rail rates and the bid price reductions by the farmers, an economic incentive exists to arbitrage the transportation differential and further develop the agricultural inputs infrastructure.

Finally, with market transformations in Romania leading to higher farm output prices, there are increased opportunities for profitable use of complex inputs and new technology. The downturn in livestock production in Central and Eastern Europe has resulted in decreased demand for energy feed imports, such as corn. However, there appears to be a profitable market development opportunity for high protein feed supplement as prices for output adjust to world market levels.

The Romanian commodity import program was an early effort to bring a free market experience to transition economy farmers. Positive results include a successful price discovery experience for newly privatized farmers, verification of the potential for a feed supplement market at international prices, and the need and potential for market infrastructure development.

REFERENCES

- Hellwarth, Galen, Norman Rask, Terry Frederick, Maurice Klein, and Lewis Williams.
"Private Farmer Price Discovery in a Transition Economy: Sealed Bid Auctions in Romania." International Fertilizer Development Center, Muscle Shoals, Alabama, December 1993
- Hellwarth, Galen. "Price Discovery in a Transition Economy: Multiple Unit Feed Supplement Auctions in Romania." Masters Thesis, Ohio State University, Columbus, Ohio, 1994.

