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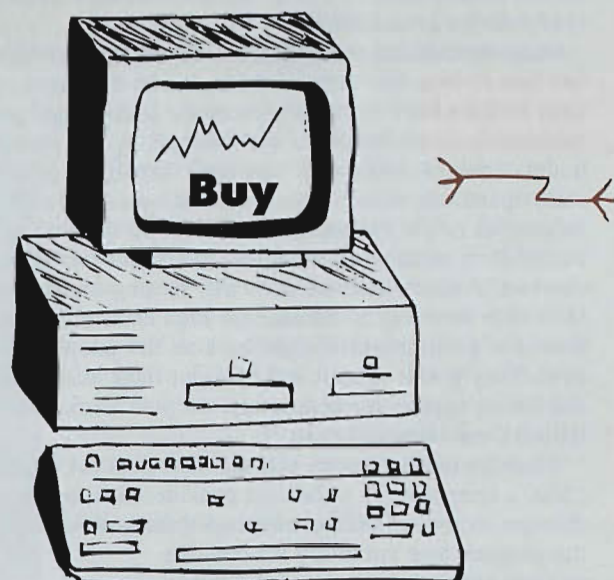
# Full Participation Markets in Contracts For Future Delivery

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by James Duncan Shaffer

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> The "farm problem" is one of poor market performance not one of a poor underprivileged group needing welfare payments. Thus, the challenge is to develop institutions that will improve the performance of the agricultural economy. I propose that selected farm commodity markets and farm price support programs be replaced with a system of contracts in which all buyers and sellers are required to participate.



**I**t is generally the case that the supply of farm commodities fails to match demand at prices equal to costs of production of the marginal unit of production. The agricultural system consistently produces too much or too little. Markets for agricultural commodities rarely generate prices as effective guides for future production. Production decisions are made on the basis of expected prices; these decisions are frequently wrong because farmers cannot predict how other producers and buyers will respond, much less what the weather will do.

Farm price support programs were intended to mitigate the situation where markets consistently fail to return the costs of production. But these programs are very expensive, distribute large benefits to many people wealthier than the average taxpayer, and have perverse effects on incentives.

## The Proposal

There is a problem with agricultural markets, but the current agricultural price support programs are not an effective response to that problem and small adjustments will not correct their deficiencies. Further, spot markets, partial contracting, and futures markets, even with existing price support programs are not effective mechanisms for industry-wide coordination. Instead, I propose replacing selected farm commodity markets and farm price support programs with markets in contracts for future delivery. The proposed markets would facilitate the coordination of supply and demand on an industry-wide basis. These institutions would, however, rely on individual production and purchase decisions. These buyers and sellers are in the best position to know about future costs and demand. In turn, the institutions would generate uniquely useful information for these buyers and sellers and would distribute rewards for actual rather than expected economic contribution. All buyers and sellers would be required to participate and prices would be widely publicized. The approach is designed to assure more predictable prices and total revenue for a crop.

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# Price Quantity

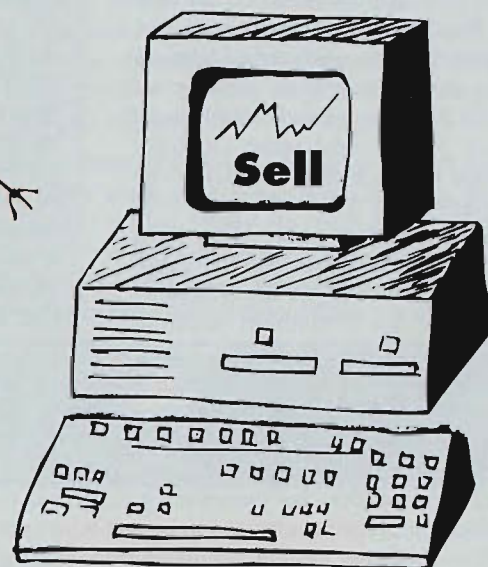
Full participation transparent markets would be set up with the following structure.

**Double Auctions:** Double auction contract markets for each farm commodity would establish terms of trade between growers who would commit to deliver specified products at specified times in the future and buyers who would commit to purchase those products. In double auctions, buyers specify their terms for purchasing specific quantities and sellers likewise specify terms and quantities for sale. Both parties are free to negotiate until a deal is struck or the negotiation collapses. All participants in the market would have open access to information on all bids, offers and agreements. Summary information would be publicized. Double auctions are an efficient means for working out terms of trade. They are capable of coordinating a vast array of information.

**Electronic Computerized Exchange:** All transactions would be carried out via computerized exchanges. Bids and offers would be entered through personal computers with modems. Modern communication and computer technology make it possible to process a large number of transactions with participants scattered throughout the world. Written confirmation of transactions could be almost instantaneous by FAX. Brokers, cooperatives, or extension offices could offer access to personal computers and provide related information services to buyers, as well as sellers.

**Contracts for Future Delivery:** Contracts for particular crops and animal products would have to be completed prior to specified dates which would be prior to critical planting or breeding decisions. In contrast to futures markets, sellers would be required to deliver the contracted amounts and buyers would be required to take delivery. Contracts would also include product specifications, prices and other contractual provisions.

**Full Participation:** No amount of commodities encompassed by the system could be bought or sold unless it had been sold and purchased through the contract exchange. Imports and exports would be included. Thus, if the USSR wished to purchase a covered commodity from the United States, it would either have to directly contract for the commodity or work with grain traders who acquired the commodity, speculating on future demand. Compliance is not expected to be



a major problem. It would be in the best interest of buyers and sellers to participate in order to assure markets and supplies at predictable prices. But situations may arise where it could be advantageous to trade outside the system. Thus, a mechanism for enforcement may be required.

## The Issue of Freedom

Some people will argue that requiring full participation in contract markets is an infringement on the freedom of those who do not wish to contract. But the reciprocal needs to be considered. The right to participate in a full participation contract is in effect denied unless all participate. The contracts would simply not be available. Therefore, it is a matter of whose rights or preferences shall prevail. I propose to leave it to a vote of the participants—buyers and sellers. And let the majority rule.

Full participation is necessary to generate the full set of information and commitments to match supply with demand at prices at least equal to each producer's perceptions of their own variable costs of production at the time of planting, or breeding, if they are livestock producers. If marginal producers can get back their marginal costs of production, lower cost producers will do even better than that.

Partial contracting leaves the production and purchasing plans of the nonparticipants uncertain. This uncertainty reduces the effectiveness of the contract system in guiding future production. Information about future supply and demand generated by a partial system is incomplete. The volatility of the residual



spot market would cause problems. In these circumstances, buyers who contract may lose out to competitors who acquire supplies at a low price in the spot market. Spot market prices greatly different from contracted prices would create incentives to cheat on contracts. As contracting increases, the spot market thins and prices become more volatile. Uncertainty and risks for participants increase. The effectiveness of the contract markets in guiding production is diminished. Required participation by all buyers and sellers avoids much of these problems.

## Rules For Settling Contracts to Adjust for The Weather

Contract settlement rules are needed to deal with production uncertainty. Weather remains an important factor in determining output of many agricultural commodities. The proposal is to develop a set of settlement rules or procedures to be included in master contracts applicable to a particular commodity. Rules would depend upon the commodity's characteristics and the preferences of growers and buyers.

The following guidelines seem appropriate. (1) Rules should provide strong incentives to fulfill the terms of the contract. (2) If an individual producer cannot meet contract terms, growers as a group should assume the obligation to the extent feasible. (3) Settlement procedures should help each participant meet contract expectations as much as possible. (4) The trading partner in the best position to minimize the costs of a deviation from contract terms should bear the risk. These guidelines are reflected in the following approaches to the settlement problem under uncertain output conditions.

- Include contingency settlement procedures as part of the contractual arrangements. Schedules of premiums and discounts could be applied to quality and quantity deviations from contracts.

- Provide procedures for transferring surpluses from growers who produce more than contracted to buyers who have contractual deficits. The computer system would identify surplus and deficit supplies and could direct minimum cost transfers.

- Growers could participate in storage agreements to balance supplies to meet contract deficits and to isolate from the market production that was in excess of contracted quantities. When total output exceeded contracted quantities by more than a pre-specified amount, the extra would enter a storage pool. In periods of deficit, stored products could be withdrawn from the pool to settle contracts. Growers who had produced a surplus would be paid the net value of the commodity—market prices less storage and transaction costs. If the pool operated at a net loss, a fee would be charged participants. A rule would limit the amount of accumulated stocks.

Buyers would generally get what they bargained for and would be protected from excess production reaching the market at prices below their contract prices. Growers would generally receive the contracted prices and as a group would probably receive larger total revenue from a crop above contracted quantities than from a deficit.

- Rules could be adopted to assure that total revenue for a crop was approximately equal to the total revenue implicit in the negotiated contracts.

If production were above quantities, growers as a group agreed to provide, growers would have the option of storing the commodity on their own account or disposing of the surplus in an agreed

upon non-competing use which would not affect the value of the commodity owned by buyers. For the amounts put in storage growers would have the option of offering it in a subsequent auction or selling it later to fulfill contract deficits of their own or of growers as a group.

When total crop production was less than contracted quantities, each buyer could receive the quantity contracted less the percentage the crop was below the total contracted quantities. Prices would then be increased to result in the same total revenue for the crop as contracted. Buyers would pay higher price than expected but the same expected total expenditure. However that price would be less than the market would be willing to pay for the quantity produced. Growers with stocks in storage from previous surplus periods would be permitted to sell them to make up the deficit in buyers contracted quantities. Prices and quantities purchased would be determined at a special auction.

With this option a good crop would not be bad news for the growers. Their combined total revenue would be unchanged. Likewise, the consequences of a poor crop would be mitigated for buyers.

Production planning by individual farmers would be well-served by predictable total revenue for each farmer's crop. The suggested procedure, however, results in predictable total revenue for the total crop, not the individual grower. In case an individual grower fell short of contract commitment by more than the average, he or she would receive less revenue than expected from the contract. The needed incentives to produce and deliver the quantities contracted would be lost if revenue for an individual grower's crop were guaranteed.

Crop insurance could help reduce the risk of crop failure. Combining crop insurance with this contract system would provide important information for the design of the crop insurance program and contribute to economical delivery and settlement.

## Other Approaches

Jim Shaffer's proposal, to replace current farm commodity markets and farm price support programs, broadens the policy debate. Your suggestions for alternative ways to deal with the farm problem, as well as reactions to this proposal are welcome. Specific comments can be sent to the Editor of *CHOICES*. The address is 12708 Oak Farms Road, Herndon, VA 22071.

*The Editor*

## Instituting The Commodity Markets

Enabling legislation would establish rules and responsibilities for participants in the markets. The following would be included:

- Guidelines for establishing an organization to provide the basic services. Economies of scale, scope and standardization suggest a single institution be chosen or created for this purpose, either a public, cooperative or private institution.

- Procedures for certification and decertification of chosen commodities. A group of growers with technical assistance from the Agricultural Marketing Service (AMS) of the U.S. Department of Agriculture and others could initiate certification procedures including defining commodities and proposing by-laws and rules including settlement rules.

All proposals would first require Secretary of Agriculture review to assure consistency with the law. The Secretary could recommend modifications and supervise a certification election. Eligible voters would be those growers with proof of sale of a minimum quantity of the defined commodity. The proposal would include settlement rules for the commodity.

To maintain flexibility, the proposed by-laws would specify procedures for changing the rules. Since defining commodities is important and difficult, they should be defined as broadly as is acceptable by growers and buyers. For example, all potatoes produced or sold in the United States could be one commodity definition; spring red skins could be a subset for purposes of settlement and pooling arrangements.



• Procedures for rule making, regulation and enforcement. For example, qualifications for participating in the exchange in terms of financial responsibility, bonding requirements and rules assuring open access to the markets would need to be specified.

## Supporting Research

Research could be very useful in designing, operating, modifying, and using the contract system. Most useful would be estimates of the consequences of bringing specific commodities into the system under alternative sets of rules. Studies of coordination performance of commodity subsectors and studies of the causes of instability of production and prices would identify problems and potential benefits. For example, for many commodities, production decisions cause more variation in production than does the weather. There are, however, large differences among commodities.

Especially useful would be simulations with knowledgeable participants "playing the game" under different sets of rules and situations. Research could help to work out the glitches before trading commenced.

Testing the system with several commodities would be prudent. Potatoes and navy beans would make especially good test commodities because they have serious problems in matching supply with demand and have some experience with contract production. Funding an initial system as a research project could demonstrate the feasibility of the policy as well as provide data for the system's larger design.

## An Evolutionary Transition

This is not a proposal for a sudden radical change in commodity markets and farm policy. It is a proposal to set up the framework to work out institutional arrangements to improve the performance of

the agricultural economy. The transition might take place gradually via the following steps.

- Provide a reliable and believable commitment to eliminate farm price supports on all or selected commodities within the life of the next farm bill. Modify current price supports to eliminate perverse incentives. Adopt some version of decoupling and compensation for loss of entitlements in current programs. This would provide income protection during the period of adjustment and an opportunity to better understand the performance of commodity markets without price supports.

- Provide funding in the farm bill for a research and development program. The funding would support the development of a tentative enabling bill, provide support for related research and subsidize the development and operation of an experimental contract market system.

- Charge the Agricultural Marketing Service of USDA with designing, promoting and evaluating voluntary auction markets in contracts for future delivery, testing the workability of alternative institutional designs.

- Enact enabling legislation well ahead of the final phase-out of price supports. If the proposed markets perform well, the enabling legislation will not be used. But, if needed, the institutional framework will be available to deal with the problems as they arise. Provide technical assistance to groups interested in certification.

- Promote dialogue, research, and development of complementary and competing institutions with the potential to improve performance of the food and agricultural economy. **C**

*This article is a revision of A Market Alternative to Farm Price Support Programs; Full Participation Markets in Contracts for Future Delivery, Discussion Paper Series No. FAP 89-02, May 1989, National Center for Food and Agricultural Policy, Resources For The Future, Washington, DC, 20036. It is based upon research supported by the Michigan Agricultural Experiment Station and USDA.*