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The Role of Competitive Market Institutions¹

By Allen B. Paul

Continuous reorganization of markets is implied by the process of economic growth, wherein specialization, enlargement of scale, and applications of technology keep marching onward. Under a regime of private property, there are continual adaptations of different means for mobilizing capital that are more or less appropriate to different situations—means that mitigate the hazards of loss to the individual or firm. In agriculture, a host of enterprise-sharing arrangements have developed. These should be separated into ones that result in meaningful market prices and ones that merely divide up the residual rewards. A number of market tendencies and problems are noted.

Keywords: Competitive market; Competition; Economic growth; Contracts; Forward trading; Futures trading; Joint accounts.

The state of competition in agricultural markets seems to require continued study and debate. This paper explores the role of competitive market institutions in the agricultural sector in the context of economic growth—a vantage point that deserves more attention.

Different Theories of Markets

The usual approach to the study of competition uses models grounded in static equilibrium theory. One need not argue that agricultural markets are or ever have been competitive in the usual textbook sense to find such models useful. They often guide analysis through the economic maze of commodity markets and offer good results (3).

But for our purposes, the nature of competition and pricing, and the problems they pose, probably can be understood better in the context of economic growth and market expansion. We are concerned with markets in disequilibrium rather than equilibrium. Such disequilibrium is an essential feature of an expanding economy. We seek a continuous process by which change in market organization is generated. The assumptions of static equilibrium theory do not lead us down this path.

The processes of economic growth are complex and somewhat intractable to analysis. Yet one outstanding trait suggests an insight. Viewed over a long period, economic growth under a regime of private property has shown a momentum of its own. Kuznets (9) concludes that over the past century, the real product of the non-Communist developed countries has increased 15-fold; per capita product, 5-fold; and population, 3-fold.

These rates are general and they seem far in excess of anything that had occurred in earlier centuries.

The momentum of economic growth can be partially understood in terms of the continuous unfolding of scientific discoveries, the cumulation of the stock of useful knowledge, and its widening applications. Yet scientific knowledge had been accumulating in earlier centuries without dramatic effects on economic life. Why? According to Hicks (7), increases in the level of real wages came only after machines could be made by other machines rather than by hand. This set in motion a process of continual improvement in the quality of machines and a lowering of their unit cost. Thus more and better machinery could be supplied without additional savings out of current income. Wage earners could garner the fruits of technological advance and therewith provide a continually growing market for output.

The Process of Market Reorganization

Whatever the merits of this explanation of sustainable growth, our interest here is in the reorganization of markets that is implied by such growth. The reorganization must occur on two levels, one "real" (commodities, machines, land, labor), the other institutional (customs, procedures, rules and regulations affecting property ownership and exchange).

Growth implies a continued reorganization of production by more efficient methods. The lowering of unit costs in an industry is associated with expansion of its output, or release of resources to other industries. As one industry expands, it therewith furnishes a larger market for the output of other industries, which then find it feasible to further rationalize their own produc-

Notes are on page 47.

tion. The latter industries either grow or release resources. If they grow, they furnish enlarged markets to still others. If not, the released resources enter other employments and expand output. And so the process feeds on itself with potentials for specialization, economies of scale, and applications of technology to become heightened in various places. Industry after industry becomes caught up in the need to modernize, write off old equipment, retrain personnel, make different products, and so on—or it will eventually decline.²

The process of growth exposes the individual (or firm) to large hazards. Encroachment on his economic opportunities may arise from substitute products, processes, or modes of business. When this occurs, he must consider whether to further specialize, invest in new equipment and knowledge, or change activity.

Big firms may have more staying power but they do not escape. On such issues Galbraith (4) concluded that the competitive market is obsolete. Market uncertainties are intolerable to the firm that must carry out a technically difficult and costly set of operations to bring its products to market. Instead, the firm must decide on a price line and then hold to it, if necessary, by more promotion and advertising.

There is some validity to this view—even in the food industry—but it can be misleading. Big firms are not as much in control of markets as this view supposes. A mechanism is needed to insure consistency of individual plans. This is what market prices are about. It would be quite accidental that each firm could by itself decide on the right price for its output and hold to it for long. Even acting jointly they may not do well. The biggest economic units—national governments—have suggested this by abandoning fixed currency values in favor of floating values. It is possible that they are not in sufficient control of basic economic forces, nor able to predict them well enough, to set a price line that will hold for long. The more financial reserves at the command of the firm, the longer it can hold to its price. But sooner or later it will divert products to less profitable outlets, deal off list, offer more for the money, reset its schedule of prices, or lose out to other firms that do so.

It may now be evident that here we attach another meaning to competition than that given in static equilibrium theory. We recognize that many firms have some degree of market jurisdiction (socially acceptable or otherwise) but do not imply by this that they necessarily have strong control over their destiny. In this sense a competitive market is one in which the forces over which a firm has no control greatly exceed those over which it has control. Here, trade occurs largely at prices that the firm must sooner or later accept.³

The principal technique for individual survival is to divide up the financial commitment to any hazardous undertaking and share it with others. The preponderant share of one's capital ordinarily must not be tied up in one venture. The larger the scale of production, the more capital is required, hence the more urgent the need to devise suitable ways to spread out the economic responsibility in order to mobilize the necessary capital.

There are two separate though not mutually exclusive routes to mobilize capital through enterprise sharing. One, of course, is the pooling of sufficient capital under the command of a single economic unit to survive the most hazardous ventures that the managers may elect. Syndicates, partnerships, and corporations—in their various forms—are the main arrangements. Cooperatives, for example, are partnership or corporate units whose distinguishing mark is that residual rewards go primarily to (or are reserved for) patrons of the enterprise who also are its main owners.

The other route is to bind sufficient capital to a specified course of production by voluntary agreements among sovereign economic units. Joint-account production, contract farming, forward purchases, participation agreements, and organized futures trading are the usual instruments. It is beyond the scope of this paper to compare the merits and survival power of the two different routes for mobilizing capital. I only need to point out that any deal between two sovereign economic units implies that a mutually determined exchange has occurred. In the real world, this is what a market is about, whatever its complexities, strengths, or deficiencies.

In addition to the emergence of these private market arrangements for mobilizing capital, various public means have emerged for fostering investment—price and income supports, tax concessions, underwriting of loans, and so forth. Indeed, the Employment Act of 1946, declaring that it is the continuing policy of Government to promote maximum employment, production, and purchasing power, as much as anything signaled the beginning of wider public acceptance of responsibility for mitigating pervasive economic hazards.

Both public and private means for mitigating hazards of loss have this in common: They amount to a "pooling of risk." But there is an important interaction between them. The more public assurances that are devised, the more the encouragement to private investment for new products, processes, or modes of business wherein there are hazards specific to the undertaking. Put another way, the pursuit of the untried is encouraged by freeing of venture capital from financing projects that now appear sure-fire, by substituting loan capital.⁴

This appears to lead to an interdependent process on

the financial side which is one of the self-reinforcing mechanisms of economic growth: Private ventures into new realms promote the growth of output, growth of output tends to promote the spread of public measures that allow more individuals to escape big economic hazards, and this, in turn, tends to promote more private investment in new realms.

Status of Competitive Pricing in Agriculture

What is new about present contractual arrangements in the agricultural sector? Historically, many of these arrangements were responses to the desire of dealers or processors to assure supplies needed for their daily businesses, like fresh vegetables needed for canning and fluid milk for bottling. These perishable items could not be stockpiled nor distantly transported. Under binding agreements, one party, in effect, hired another to do a specific job.

Even items that could be shipped long distances were not always available as needed. Hence various contractual arrangements arose early to assure the supply. Wells Sherman (19), writing in 1928, noted that every vegetable growing region of importance which had to ship any considerable distance to market was financed by large dealer advances. He noted that the bulk of the money to produce the enormous canteloup crop of the Imperial Valley had always been supplied through shippers and handlers, the Colorado Mountain lettuce industry was stimulated and fostered by dealers who financed production and marketing, Mississippi tomatoes were financed as cotton was formerly financed, and about 40 percent of the money needed to produce the 1926 early potato crop came from distant sources through the hands of dealers to growers.

Evidently dealers had an advantage over bankers in financing production because they could spread the risks over a wide range of products, seasons, and localities. The banks could not. The financing was either part of a joint account or an advance purchase arrangement with growers to produce the commodity. In the latter case, the dealer agreed to take the crop at a fixed price per unit of a given grade and to make certain payments in advance, or at different periods of its growth or maturity, or for specific expenses. In any case, dealers were motivated to develop arrangements with growers in distant regions to assure themselves of constant supplies for eastern markets.

Such arrangements tend to change with the times. Today more contracts in fresh vegetables for market are in evidence between growers and shippers than between growers and eastern dealers. Besides vegetables, contracting with farmers for output historically appeared in

other commodities, especially though not exclusively during the early stages of their expansion—for example, cotton or soybeans. Each has its own interesting set of circumstances.

What appears to be new about some contract arrangements is their ability to spread decisive cost-cutting methods. This role goes well beyond the usual one, arising from enterprise sharing, that permits production to be organized on a more efficient basis by enlarging the scale of the individual unit and applying more machine methods. Rather, we have seen, especially in the poultry industries, a very rapid push of biological breakthroughs, via closely supervised production contracts. Because of a favorable economic setting there was a major restructuring of production in a short time.

Many thoughtful people have entertained the proposition that such revolutionary changes in business methods for producing broilers are the wave of the future for other commodities. Protagonists still can be heard on both sides of this issue. To get my bearings, I have found it instructive to view all of animal agriculture, except dairy, in cross section. One can compare the recent share of U.S. output of each industry—cattle, hogs, sheep and lambs, eggs, turkeys, and broilers—that was produced under closely coordinated arrangements with the amount that farm prices for the commodity had declined from 1947 to 1970. This is shown in figure 1.⁵

Despite deficiencies of data and method, the strong negative relation suggests that cost reduction was the driving force behind the spread of these closely coordinated arrangements and, moreover, that effective price competition had prevailed despite market imperfections.⁶

It suggests that such closely coordinated arrangements could come in elsewhere rapidly, if important economies could be realized, although it is not clear that cattle, hogs, and sheep are the most likely prospects. Engleman (18) has long argued against hogs soon going this route, and his reasons still sound plausible.

There are few permanent reasons for present contract arrangements. Production and financing advantages, however great, can prove transitory. Technical knowledge is transferable; so are the alternative sources of capital. Except for cultural lag, tax advantages, or other subsidies, a particular organization for commodity production will survive as long as it satisfies the basic problems of production and investment as well or better than other arrangements.⁷

More than a decade ago, I noted that forward buying and selling of broilers might serve about the same purpose as contract production of broilers, wherever the latter provided for sharing of the enterprise responsibility (14). Today we see the beginnings of activity in

RELATIONSHIP BETWEEN SHARE OF U.S. OUTPUT UNDER CLOSELY COORDINATED PRODUCTION AND CHANGES IN AVERAGE PRICES RECEIVED BY U.S. FARMERS

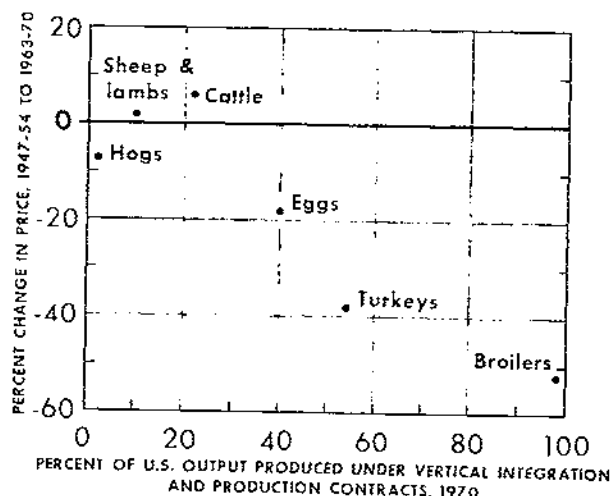


Figure 1

formalized buying and selling of broilers for forward delivery under the aegis of organized futures trading.⁸ The same thing has happened for fed cattle and hog production. Contract production (called "custom feeding" in the cattle industry) and hedging in live cattle and hogs in futures are institutional substitutes (13).

Space does not permit analyses of such institutions of trade. But it is important to note that the expanding economy has served up a new requirement, namely, the need to develop more effective ways of pricing services. These services are produced by someone as a selected enterprise and used by another who decides that a commodity will be forthcoming, but does not wish to be involved in actual production.

Thus, the types of services that are now bought and sold are legion and they result in commodity transformations in form, place, and time. This is where one should look for the meaning of the secular rise of organized futures trading, forward dealing in "actuals," and contracting for the services of growing, processing, transporting, and storing commodities.

There is developing a broad-gaged market in the pricing of services, but one that is not readily perceived nor often correctly interpreted. The problems of pricing arising in this context are varied and include, among other things, the need for more reporting of prices for services—for example, poultry contract prices and other terms; custom-feeding charges and other terms; and prices for an increasing number of other operations

performed for others in the growing, assembly, processing, and distribution of commodities.

Some Market Tendencies and Problems

The growth process, as we have described it, depends on the rise of markets. Hicks has made this point the central feature of his book, *A Theory of Economic History* (7). However, many problems of markets arise because of the very growth that markets foster. Institutions of trade tend to get out-of-date because products, processes, modes of organization, and ideas of property change. The lag in adjustment causes distortions and inequities that might be relieved through conscious effort.

There is obsolescence of grading factors, inspection methods, packaging, contract terms, financing and insurance methods, and techniques for searching the market, negotiating transactions, and redressing grievances. Also, public tolerance for negative external effects of economic processes is not constant, as recent experience teaches.

Economists could be busier than they are in clarifying the issues, measuring costs, and suggesting improvements. It probably would be a good use of their time. The problems are much too big to discuss here. Rather, I will abstract from these issues and discuss, instead, two general tendencies in markets for agricultural products that cause general concern.

Increasing dispersion of price structure. Growth signifies more variety of goods and services. More considerations of value arise because buyers now find shades of difference in time, place, and form (as well as options and guarantees) to be important, and sellers now find more ways to specialize output and vary offers. This could create more problems of arbitrage, wherein price differences should be brought into line with costs of implied commodity transfers. The larger number of prices tends to enlarge the task of acquiring information about offers and performance guarantees. Hence, there could be a widespread tendency for prices of different variants of a commodity or service to move independently.

Professor Stigler said that markets should not be faulted for this. Thus if it costs, say, \$25 per lot to search the market for a better offer, then prices in different parts of the market may trade as much as \$25 apart without any sacrifice (20). There remains a question as to whether the necessary information could be obtained for \$5, through some arrangement. How serious this matter is in markets for agricultural products is an empirical question.

Each participant need not incur the cost of searching

the entire market as long as there are overlapping patterns of search. Conceivably each participant need canvass but one or two alternatives. Competition would force prices well into line across the market wherever the marginal cost of search was quite small. This result might not hold where buyers were few, but this is a matter of monopoly and not the costliness of trading.

We also need to know more about how markets actually function in related respects. For example, the role of terminal markets continues in doubt. No one seems to know how "thin" a central market can become before its use as a pricing base to settle contracts distorts pricing throughout the system.⁹ The tendency is to infer performance largely from the numbers, size, and behavior of firms. Among other things the number count is sensitive to where the economic boundaries of the market are drawn, and these seldom conform to the boundaries of terminal markets. One needs to analyze the interaction of prices—farm, local, terminal, spot, forward, and so on—that are established throughout the entire system. We do have some studies of this kind (2, 6), but too few to narrow appreciably the area of debate.

Even some of the simpler pieces of information would be helpful. For example, the rise of retail chains that buy produce directly at country points has been well noted. Yet probably in the aggregate well over one-half of the fresh fruits and vegetables moving to market in the United States still are sold in the cities by wholesale receivers or brokers via private treaty or auction (22). Buyers are retailers, restaurants, institutions, Government agencies, and intermediates themselves. The aggregate figure has been stable for the last 5 years but has varied between cities and commodities.¹⁰

We also need more insight into the pricing of contracts with growers for supplying commodities for processing. Are there different prices to different growers in a region? If so, do these represent differences in what is being contracted for? If terms offered are uniform, are they the most suitable to different growers' needs? When there are complaints, it should be possible to document pricing and other practices as a basis for an assessment and a search for remedies.¹¹

Increasing vulnerability of firms to price changes. Increased specialization of production tends to decrease the elasticity of supply because equipment and skills tend to become highly specialized and less mobile. Other things equal, the greater the specialization, the more unstable the returns. The relevant price spreads become narrower and given percentage changes in price for commodities bought and sold can cause a larger percentage change in returns.

The instability is compounded wherever there is

decreasing price elasticity of demand for a product—as a result of its becoming a smaller item in household budgets or having fewer substitutes as an intermediate good.

Yet specialization in food and agriculture has proceeded in the face of such an adverse setting. It has done so by finding ways to lessen exposure of the firm to loss as noted earlier. Public measures, such as surplus removal, price support, supply management, and deficiency payments, have been called into play. Apart from these, the search has been for various enterprise-sharing arrangements that are suitable.

The full range of such instruments can be seen today, for example, in the U.S. cattle feeding industry, wherein syndicates, partnerships, corporations, contract feeding, and forward contracts for feed, feeder cattle, and fed cattle are simultaneously in evidence. What are the issues and problems?

There are difficult problems of valuation under any arrangements where different interests participate in a given course of production. A distinction should be drawn between agreements that create meaningful prices and those that do not. In the case of cattle feeding, meaningful prices are established for a set of services to be produced by one party for another (through custom feeding, or through hedging in futures).

While the agreed price determines in large measure the sharing of returns from cattle feeding among the parties, it also provides a significant message to other firms contemplating a similar course of production. On the other hand, a partnership agreement between two or more parties to feed cattle provides only a formula for sharing the returns. By itself, the agreement is not necessarily significant to anyone else who might contemplate feeding cattle. Yet the two methods of limiting exposure of the parties are substitutes, as noted earlier.

Any formula for sharing returns is important to the participants. Its performance affects the durability of the agreement. Landlord-tenant agreements in farming have evolved over the centuries (indeed, residual-sharing agreements probably antedate the market system itself, being governed by rules of traditional society). What seems new today is the effort by larger commercial units which assemble, process, or distribute products, to enter cooperative agreements with each other for mutual benefit (5). Here the range in which terms can be fixed more favorably to one party than to the other, without either party pulling out of the joint agreement, can be large indeed.

Whether particular terms of a partnership affect resource use requires study of the facts of the case. Wherever efficiency implications are minor, equity becomes the main basis for appraisal. Any problems come

down to the distribution of power, and what can and should be done about it. Antitrust action is one possibility and collective bargaining the other. Each has its effective uses. The subject is too big and difficult to deal with here.

One should also explore the empirical conditions that simultaneously foster partnership agreements and deter the market in providing ways of sharing enterprise. Thus, farmers and processors often enter into various agreements to share the residual reward where either or both of the parties undertake a long-term investment. They seek to assure supplies or outlets, and coordinate effort at each level, for both to be successful. Examples appear in the production of sugarbeets, tree fruits, grapes, broilers, and shell eggs. Are these commodities whose technical conditions (such as perishability or bulkiness) limit how far the competitive market could develop its own enterprise-sharing techniques?

Put another way, under what conditions, if any, can we expect an institution of the competitive market to thrive in a highly integrated, highly concentrated, or otherwise imperfectly competitive industry and thereby broaden competition? I once thought this question was a contradiction of terms; now I am not so sure. Wherever there are latent competitive elements (often the case in agriculture), easier access to the market may bring them out. Something like this caused the breakdown of cartelization of the copper market by the rise of organized futures trading in copper. With organized futures trading recently being imposed on new commodity areas—like frozen concentrated orange juice, fresh eggs, and iced broilers—we soon may have opportunities to sharpen our insights into the role and suitability of the different types of market and non-market arrangements for subdividing enterprise responsibility and mobilizing resources for a given course of production.

Of course there are other ways to promote competition apart from trust-busting or installation of organized futures trading machinery. These include updating of the institutions for the conduct of modern business—such institutions as commodity grades, inspections, price reporting and other market information, means of borrowing, contract security, the laws and regulations respecting fair dealings, the use of patents, and so on. These are the great body of arrangements that facilitate access to economic opportunity and that need serious attention.

Indeed, with modern electronic technologies, the capacity for one individual to get in touch with another is better than ever. A great challenge is to exercise our imagination on how to effectively use the powers of industry and governments to realize the potentials for

improved trading arrangements.¹²

Closing Observations

This paper has dealt with economic growth in relation to the progressive reorganization of markets. We have not stopped to examine the limits to growth and to learn how an increasing anticipation of such limits might direct conscious efforts to reorganize economic life. This subject lies beyond the scope of the paper.

A short summary of the underlying process of growth that has guided our inquiry is this: Specialization of production (with attending enlargements of scale and further applications of technology) marches on in a growing economy, as both a cause and a consequence of growth, but at no faster pace than permitted by the reduction in investment hazards through public and private techniques, which techniques are themselves a cause and a consequence of economic growth.

Ways are always being sought to mobilize capital in the face of increasing hazards to its owners. The nature and meaning of complementary and competing institutions for ownership—partnerships, pools, syndicates, corporations, cooperatives, forward commodity dealings, production contracts, and organized futures trading—may be made intelligible in this context. One should distinguish between those that are instruments of exchange and thereby influence market adjustment, and those that are not.

In this context, there has been much misunderstanding of the role of bilateral contracts. All fixed-price contracts, and some formula contracts, for a commodity or a service to transform the commodity, are true instruments of exchange. A contract signifies that an interval of time exists between transaction and performance. Except for "cash-and-carry" deals, as in grocery stores, restaurants, and taxicabs, all buying and selling of goods and services at any level denotes dealing in contracts. We should be able to identify what it is that is bought and sold in any contract, despite complexity. Then we could investigate barriers to arbitrage between the different kinds of claims to the same commodity or service. This is important because it is the possibilities of arbitrage that tie the activities of the different participants together into a unified market process. We might then be better able to understand market behavior and identify sources of market failure.

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Notes

¹This article is based on a paper presented in August 1973 at the University of Alberta meetings of the American Agricultural Economics Association, the Western Agricultural Economics Association, and the Canadian Agricultural Economics Association, Edmonton, Canada.

²These ideas are rather compressed in their presentation here. Another way to suggest the central thesis in even briefer form is that growth begets specialization which begets growth (25).

³In general the definition of competition still appears to be unsatisfactory. See Morgenstern (12).

⁴This substitution is hard to observe in cases where the business firm avoids borrowing and draws upon retained earnings instead. But then the return on much of the business's equity would approximate the market rate of return on loans.

⁵Price data are from *Agricultural Statistics* (21) and production data from Mighell and Hoofnagle (11).

⁶There is no explicit model underlying the relationship shown. Were data available, one could employ a model that contained two supply response equations—one for the closely coordinated sector and one for the remaining sector.

⁷Alchian and Demsetz (1) recently followed out this thought in explaining resource allocations within the firm (in contrast to allocations between firms). They view the firm as team production, held together by a special class of contracts between the various joint input owners and a central party. Accurate assessment of productivities of individual inputs is very difficult and a large reward goes to "monitoring and metering" inputs among usages, mainly by detecting shirking—a task that can be achieved more economically within a firm than by across-market bilateral negotiations among input owners. Yet they recognize that the problem of policing inputs might be best solved in such cases by bilateral market contracts that call for farm inspections. (They cite the case of a farm commodity whose subtle quality variations can only be detected by inspecting the growing conditions.) Thus, each set of productive circumstances may have its own best type of contractual solution, either within the vertically integrated firm or across the market in some type of bilateral contract specifications.

⁸It is fairly obvious why nearly all fresh vegetables for processing must be grown by a vertically integrated processor, or under closely coordinated production contracts. The technical conditions—quality, perishability, seasonality, and bulkiness—offer little choice. But for most commodities, it is not obvious why existing arrangements—whatever they happen to be—must persist.

If today broiler producers do not have outlets for their live birds, except by entering into production contracts, this lack of outlets might reflect monopsony in processing without necessarily reflecting immutable conditions of broiler supply. One can visualize some broiler producers who understand how to care for birds, entering into forward delivery contracts rather than production contracts, with processors. The latter, in turn, might sell live-broiler futures—thus assuming the role of hedging intermediary or, more accurately, the seller of processing services. An orderly flow of birds to slaughter could be preserved by giving the processor some delivery options. Alternatively, one can even imagine greater use of toll processing for the account of the grower or retailer.

Such developments would imply several things. First, in the maturing phase of the industry, it would no longer be especially attractive for the processor to be a partner in producing broilers. Second, the broiler producer would have achieved a sufficient

level of size and sophistication to accept managerial responsibilities abdicated by the processor. Third, the market would offer the grower the necessary range of services, including loan capital, to carry forward a modern broiler-growing operation under the aegis of forward selling.

One need not predict that these conditions will emerge on a substantial basis. But they appear feasible after some threshold of market expansion has been breached.

⁹The criterion of market "thinness" often is equated with fewness of transactions. This in itself can lead to mistaken interpretations. More important is the volume of latent bids and offers, that would result in greater volume at the terminal market should anyone choose to raise or lower the going market price by committing the necessary capital.

¹⁰The survey figures for March 1972 show that under 20 percent of all arrivals of fresh produce in Boston went directly to chainstores, whereas over 60 percent did so in Washington. The weighted average for 23 main cities is 34 percent. The average figure in the original survey by Manchester (10) was somewhat lower.

¹¹While these are costly studies to make, various studies along these lines have been made (for example, 8, 15, 17, 23).

¹²A recent start in such directions is revealed in reports of several USDA Marketing Teams (for example, 24).