COOPERATIVES AND CONTESTABLE/SUSTAINABLE MARKETS

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A primary reason for the organization of cooperatives by farmers has been perceived market failures. A conviction that the local farm supply business was exploiting a monopoly position or that the network of livestock markets and dealers was hopelessly inefficient often has been the rationale for establishing a cooperative. Historically there has been much acceptance of E. G. Nourse's dictum that the goal of the cooperative is to serve as a competitive yardstick--a goad to investor-owned firm (IOF) competitors to keep their costs and profits in line.

Some new developments in theory by such illustrious economists as Baumol give new emphasis to the implications of low barriers to entry and exit (Baumol, Panzar, and Willig). This literature argues that in certain conditions defined as contestable markets any type of market structure yields highly competitive results. This paper examines some of the implications of those theoretical developments for the theory of the large cooperative and for the application of antitrust laws to cooperatives.

A key element in the new literature is the idea of a "contestable market." A contestable market is one that is easily entered by new competitors. A "perfectly contestable market" has two characteristics: (1) Entrants have no disadvantages on either the cost or demand sides as compared to the incumbents and (2) exit can be costless if the entrant were to find the market unprofitable. The implications are obvious. In markets in which entrants can pounce on above-competitive profits or inefficient cost structures, those types of market failures cannot persist. Degree of market concentration does not matter if the incumbents must operate in fear of being overrun by numerous entrants. Public policy measures then focus on promoting ease of entry--and exit--rather than on degree of structural concentration.

The narrow focus of this theory must be emphasized. Its market failures arise from lack of competition. Any market failures arising from the inherent uncertainty of future events are ignored. Shaffer argues that the unique characteristics of cooperatives give them advantages in dealing with certain types of real world uncertainty. Such advantages are ignored in this analysis because the contestable markets analysis ignores them. Cooperatives are treated here solely in terms of their usefulness as a competitive yardstick.

Thus, in perfectly contestable markets, there is no special need or opportunity for cooperatives. Regardless of the fewness of IOFs serving the farm supply or marketing needs of farmers, there would be no market failures of the type that typically have called forth cooperatives.

The potential entrants serve as well or even better than cooperatives as the competitive yardstick. Of course, incumbent cooperatives certainly could continue as long as they competed effectively. Why would cooperatives ever

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have entered such a market? Presumably for historical reasons. Perhaps the market once was not contestable or was perceived that way by farmers or the farm organization that organized the cooperative.

Given the redundancy of cooperatives in perfectly contestable markets, shall we conclude that such markets are rare in agribusiness or that cooperatives no longer are needed? While a full and complete answer would require much research, it is immediately clear--and Baumol, Panzar, and Willig agree--that the assumptions for perfect contestability are demanding indeed. The traditional literature on entry has stressed the difficulties to an entrant of breaking through the web of customer allegiances to the incumbents' array of differentiated products. It appears that a perfectly contestable market must have virtually no product differentiation. Also, in a perfectly contestable market, the incumbents must have no cost advantage due to secret or patented processes or sole access to scarce resources.

Large economies of scale may limit the number of potential entrants, but they are not in themselves disadvantageous to entrants that can raise the necessary capital. Nevertheless, generally it has been argued that any entrant will hesitate to commit large capital resources if they cannot be retrieved readily. Solution of the capital retrieval problem is the essence of the costless exit assumption of perfectly contestable markets. Its proponents argue the importance of the degree to which capital is **"sunk"** in a market, i.e., the extent to which it cannot be salvaged readily through depreciation or removal to other markets or sale (at reasonably full recovery) to other firms. Their favorite example seems to be in the airlines. Planes, the largest capital item in airlines, can be moved readily from a new route (market) to other routes if that market proves to be disappointing to the entrant. The capital costs in airlines are high but the sunk costs in any given market are much lower. Consequently, airlines have moved briskly into--and sometimes out of--new markets in the recent era of deregulation.

Without significant sunk costs, the entrant is freer to switch rather than continue to fight. Incumbents find it impossible to defend above-competitive profits[1] from the hit-and-run tactics of the completely mobile entrant. On the other hand, if there will be important sunk costs, an entrant must assess the risks of taking on incumbents that may choose to fight. Incumbents can likely protect some extra profits from less mobile would-be aggressors, because the latter realize that the post-entry environment might be so inhospitable as to prevent the recovery of their sunk costs.

Contestable Agribusiness Markets

How well do the markets for agricultural commodities and farm supplies fit the conditions for perfectly contestable markets? Product differentiation does play a rather limited role in many agricultural markets because of the homogeneous nature of farm commodities and some farm inputs. Patents and the high costs of R and D deter entry into the manufacture of many farm chemical pesticides and heavy farm machinery but are not important in many other farm supplies. Fixed costs appear quite pervasive in both manufacture and

distribution of supplies and in commodity marketing. However, fixed costs are not necessarily sunk, so generalizations about sunk costs should be made cautiously. There is likely a continuum within agricultural markets with a few markets that are quite contestable (very low barriers to entry and exit), a few markets that have high barriers to entry and exit, and most markets somewhere in between.

The likely least contestable **markets--**the manufacture of tractors and complex equipments and pesticides--are markets that cooperatives have not been able to enter. Ironically, the easiest markets for cooperatives to enter are the most contestable **ones--**in which cooperatives have the least to offer as competitive yardsticks. Historically, the economic accomplishments of cooperatives have been greatest in those markets of moderate barriers--where the rewards have been worth seeking and have not been so protected that cooperatives could not achieve them. Some parts of agriculture are more vulnerable to even short-run exercise of market power than are others. Producers of highly perishable commodities are especially vulnerable to even temporary exploitation of market power by buyers. Consequently, cooperatives have been important in fluid milk handling for example.

Sustainable Market Structures

Baumol, Panzar, and Willig also introduce the concept of a "sustainable" industry structure. That is the set of firms that can supply most economically the desired industry output at a competitive price. Included are the requirements that each firm be at equilibrium and that there exist no incentive for entry. One begins by asking what is the minimum number of firms that can satisfy these conditions. In some markets, one firm may be the answer. Obviously, if one firm can supply industry demand at its minimum average costs, then two or more firms (with access to similar production functions) can do no better and must do worse if all the firms have the same textbook, U-shaped average cost curves. In fact, with significant fixed costs and a U-shaped average cost curve, one firm overloaded to some point to the right of its minimal average costs still can supply an industry more cheaply than can two underutilized firms. With the requisite information on the shape of the cost functions, one can readily determine the number of firms that provide any given output at minimum total industry costs.

Sustainability is a necessary condition for equilibrium in a perfectly contestable market. However, in markets that are imperfectly contestable, sustainability is not a necessary condition for equilibrium. For example, an efficient set of firms may enjoy higher-than-competitive profits behind an effective barrier to entry. Even an inefficient set of firms may do the same. Obviously, there are limits to the size of the profits and/or the degree of inefficiency that any given entry barrier can protect. While there is no necessity for sustainability in many real-world markets in which cooperatives may operate, the concept is useful in exploring various market possibilities for cooperatives.

<u>Imperfectly Contestable Agricultural Markets</u>

We turn now to imperfectly contestable agricultural markets. Structure is of little theoretical interest in perfectly contestable markets because performance is essentially perfectly competitive regardless of structure. In imperfectly contestable markets, structure makes a difference.

<u>Natural **Monopoly** Markets</u>

Consider first those markets in which a single firm is the most efficient structure. Bressler's classic studies of milk distribution in the 1950s focused professional attention on this type of natural monopoly market. Entry is not necessarily difficult, although it could be (patents, huge economies of scale, R and D costs, sole access to raw materials). Two or more firms may be competing in this market for various historical reasons. If social policy permits, a single firm eventually is likely to survive in this market because it is the most efficient industry configuration.

Under certain conditions, a cooperative is the most desirable monopoly (monopsony) in this type of agricultural market. By the imperfectly contestable assumption, the incumbent is not disciplined completely by potential entrants; it has some leeway to be inefficient and/or to enjoy above-competitive profits. If the cooperative monopoly can match the efficiency of the **IOF,** then it will benefit both consumers and farmers more than would an **IOF** monopoly. The reasons are argued in another paper (Rhodes 1983). To summarize the argument: Much of above-competitive earnings of the cooperative go to farmer-members and the latter tend to respond with larger output, benefiting consumers. This view is opposite the pessimistic scenario that a cooperative provides the direction that makes farmers into an effective output-controlling cartel. That scenario assumes that the cooperative can direct farmers and that all farmers are ready to go along with a cartel so that it has no free riders. Neither assumption is likely to be met.

Thus a cooperative monopoly may be socially desirable provided it is as efficient as an **IOF** counterpart. If the cooperative is substantially less efficient, the **IOF** may be socially more desirable.

Assuming the social desirability of the cooperative monopoly, is it likely **to** exist? If the earnings of an incumbent cooperative within the oligopoly behind the entry barrier are substantial, the cooperative gradually may grow to the monopoly position. [4] If there is no cooperative within the incumbent oligopoly, or monopoly, can a cooperative enter successfully? While one would hesitate to predict for any specific real-world case, because of all the uncertainties of managerial decisions and rivalrous reactions, the probabilities are on the side of the cooperative challenging the incumbent, if the entry barrier is surmountable. This type of market failure has been the traditional incentive for the organization of a cooperative.

The reasons already have been developed as to why sunk costs give pause to the prudent challenger. These reasons apply more strongly to an **IOF** than to a cooperative. A challenger fears being met by reduced margins--the farm

supply retailers start selling at lower prices and margins or the elevators start paying farmers more for grain and suffering reduced margins. These reactions to an entering **IOF** may mean substantial operating losses for an entrant and eventually an abandonment of its sunk capital. In contrast, these reactions to a farmer cooperative would help farmers as buyers or sellers even more than they hurt the margins of the cooperative. Farmers can well afford to subsidize the operations of the cooperative that has become such an effective competitive yardstick. Thus the cooperative challenger logically has less fear about incumbent reactions than does the **IOF** challenger. It must be admitted, however, that cooperative members may take a view more short-sighted and more self-oriented than is implied by this scenario. Their attitude may vary by the commodity produced. Those producers of perishables may count their vulnerability so high that **they take** the long view.

Suppose that a cooperative has successfully become the only firm in this market. It is easy to visualize some farmers organizing a second cooperative in the name of competition **"to** keep the cooperative management on its **toes."** Such an effort would be wasteful of resources because only one firm is sustainable in this market. However, some members may benefit from intercooperative competition if it can be maintained.[3]

In sum, provided the cooperative suffers no inefficiencies <u>because</u> it is a cooperative, it is socially desirable that it be the firm in natural monopoly markets. If entry barriers are too high, a cooperative may not be able to enter. However, a cooperative has some advantages as an entrant. If the cooperative is one of two or more incumbents in a natural monopoly market, it is a bit more likely to emerge as the sole survivor.

<u>Natural **Duopoly** Markets</u>

Suppose that two firms in a market are the most efficient structure. Possible natural duopoly configurations are two **IOFs,** or two cooperatives, or one of each. Farmers, for reasons enunciated earlier, would prefer one of the latter two structures. Assuming moderate to high entry barriers, the nature of the duopolistic interaction affects performance. The presence of **a** cooperative need not necessarily pressure down earnings. Presumably, diseconomies of scale prevent either rival from a serious attempt to grab the entire market or even a much larger market share. Diseconomies of scale is a limitation often not present in duopoly models, but it follows from the assumption that two firms are more efficient than one firm in this market. Without further assumptions, it is impossible to project the type of duopoly rivalry and performance. To the extent that the duopoly performs like a monopoly, the two-cooperative structure would be most preferable socially and the two **IOF** configurations would be least preferable. To the extent that the duopoly performs in a highly competitive way, there is no social preference among the three configurations of **IOFs** and cooperatives.

A natural duopoly market does not automatically have precisely two firms. One strong firm might be able to obtain monopoly control for a time. More probably, three or more firms might try to operate in this market. By assumption, only a duopoly structure is likely to be sustainable in a

long-run sense. Few things could be less useful to farmers than for them to try to maintain three or more cooperatives in this market. Likewise, the governing boards of two incumbent cooperatives should not permit aggressive attempts by either cooperative's management to grow at the other cooperative's expense. Such aggression would be costly to farmers in the short run and carries no promise of social benefits. Of course, normal competition between the cooperatives would be useful. The concern here is with the aggressive, vindictive competition that sometimes occurs between cooperatives.

Natural **Three-** to Nine-Firm Markets

Assuming that firms in some kinds of markets have average costs with a flat-bottomed section, the efficient number of firms in a market is no longer determinate. For example, three "large **firms**" (operating at the <u>maximum</u> outputs on their flat bottoms) may produce as efficiently as nine **"small** firms" (operating at the <u>minimum</u> outputs on their flat bottoms). In this case, other combinations such as one large and six small firms also would be an efficient configuration. While these assumptions may seem contrived, it appears quite possible that many oligopoly situations are of this type in which various small-number structures could be equally efficient. Particularly successful differentiation of products or services may be the key to the firms that survive or that become **"large."**

As in the natural duopoly, market performance may range from competitive to monopolistic (within the limits allowed by entry barriers). Farmers would likely feel the need for a cooperative competitive yardstick. One or more cooperatives of various sizes might exist. The same points made previously apply to the type of competition useful between cooperative competitors. It again is possible, although not as likely, that farmers would be organizing more cooperatives to obtain more competition when the more useful approach might be to merge small cooperative incumbents. If entry barriers are not very high, any overly optimistic assessment of opportunities may lead to the to farmers in the short run and carries no entry of too many firms **(IOF** <u>and</u> cooperatives). When there are too many firms, one or more will be **operating** at an output lower than permits minimal average costs. Such firms are motivated to **"slug** it **out"** for a larger, more efficient market share. The outcome is an initial underutilization of resources and the eventual loss of sunk costs for some of the contenders.

Vertically integrated processors may have economies of scale that lead to several firms in the national processing market but that encourages geographical monopsony in the assembly of farm raw materials. It would be economically sensible for farmer-members to divide up the assembly areas of their cooperatives to obtain the most efficient cooperative <u>system</u>. f course, farmers would have no means to guide the assembly of **IOF** competitors, so cooperatives would likely face one or more **IOFs** in their assembly territories. Such cooperative collusion would raise policy questions. It hardly could be detrimental to consumers. The key question might be one of impact on **IOF** competitors. Would the cost savings from a national cooperative assembly plan be sufficient to drive the **IOFs** out of the processing market? If so, perhaps assembly should become a monopoly of a set

of cooperatives that then dealt at arm's length with all **processors--**
cooperative and **IOF.** That alternative might be feasible for some commodities
and not others depending on the impact of vertical integration on transaction
costs.

Natural Many-Firm Markets

Agribusiness markets in which many firms compete in exactly the same market
are not common. Food service firms in larger cities is an example. Cheese
plants in the Lake States may be another.

The existence of many firms suggests low entry and exit barriers and fairly
(but not perfectly) contestable markets. Even though economies of scale are
likely not very large, the average cost curves may have a flat section so
that the most efficient number of firms is indeterminate. Both the many-firm
structure and low entry barriers suggest quite competitive market
performance. Consequently, cooperatives have no unique role as competitive
yardsticks. Cooperatives may exist and may yield modest returns and
satisfaction to their members, but their beneficial externalities are
virtually nil.

Cooperatives and Economies of Scope

Baumol, Panzar, and Willig define economies of scope as those cost reductions
arising from simultaneous production of several products and/or services in a
firm, as compared to production of each by a separate firm. They show that
economies of scope are a necessary and sufficient condition for multiproduct
firms in perfectly contestable markets. Where economies of scope do not
exist, then a specialized entrant will take sales away from a higher-cost,
multiproduct firm. Where economies of scope do exist, the multiproduct firms
outcompete the specialized firms.

The extent of economies of scope is an empirical question. While observation
seems to elicit some obvious examples, generalizations should be made
cautiously. Economies of scope often arise from common use of an input--a
facility and/or a **staff--** that is used to produce one product and can produce
another as well at little or no extra cost. The combination of farm supplies
and grain marketing in local cooperatives appears an obvious example. In
contrast, livestock and milk marketing's specialized needs have kept them as
specialized activities and ordinarily in separate firms.

The nature of economies of scope at the regional level of cooperatives is
less clear. Milk marketing is generally specialized, but there are
exceptions. Most regional cooperatives perform multiple services and produce
multiple products. Some of those regionals appear to be trending toward
fewer products, but some are becoming more conglomerate. Much the same
diversity as to situation and trends is evident in the **IOF** competitors. In
perfectly contestable markets, we could be confident that efficiency prevails
among the various observed configurations of specialized and multiproduct
firms. In imperfectly contestable markets, efficiency may not be the only

determinant of firm configurations. One wonders what role that economies of scope are playing in the organization of regional cooperatives.

Summary

Any new theory generally causes a look at economic relationships in some slightly different perspective. The theory may be useful in causing us to ask new questions or in leading to better answers to old questions. At the same time, we must remember that the theory rests on extreme assumptions and has been subjected to searching criticism (Shepherd).

Some of the new developments in the theory of contestable markets have been used to reconsider the role of agricultural cooperatives. The conclusions must be very tentative because empirical research has not been done to answer the new questions as to how contestable are agribusiness markets. The literature presumably has the most to contribute where markets are perfectly contestable. It is doubted that many agribusiness markets are perfectly or even highly **contestable.**[4] Nevertheless, a study of deviations from perfect contestability leads to some insights.

The sustainability concept focuses on low production costs as being the key to long-term competitive success. This model has more to offer in the long term (say 1 to 3 decades) than in the short term. Much of the previous discussion of **cooperative-IOF** competition implicitly accepts the crucial role of comparative costs. While product differentiation is fairly minor in many areas in which agricultural cooperatives compete, it ordinarily does exist and its influence has been understated in the previous analysis. A higher cost firm with a superior product may out-compete its rivals. This analysis also largely ignores the important impacts that uncertainty has on firm behavior. For example, uncertainty often deters entry that would have been profitable, while it also may sometimes lead to unprofitable entry. By ignoring uncertainty, we ignore the contributions cooperatives make to farmer-members in dealing with various kinds of uncertainty. Thus the previous analysis possibly is biased toward a more restrictive role for cooperatives than would result from a more realistic theoretical model. The analysis may have more bearing on buy-sell grain marketing and farm supply cooperatives than on those cooperatives marketing perishables or specialty crops.

The sustainability concept also focuses attention on the configuration of firms that can provide the desired industry output at minimum costs. This analysis emphasizes the social wastefulness of too many competitors. It warns farmers that, for example, more farm supply firms are not necessarily better. To achieve the most economical farm supplies or the best market prices for their commodities, farmers often may need to merge cooperatives rather than encouraging competition among them. This approach focuses attention on the need for empirical research on the shapes of cost curves. Some of the more useful generalizations depend knowing whether the market is a natural monopoly, a natural duopoly, or is capable of sustaining several firms.

Notes

1. Although Baumol, Panzar, and Willig do not note the possibility, even normal competitive profits could be endangered by completely mobile entrants that have a slightly optimistic expectation about potential profits.

2. That scenario is developed in Rhodes 1983.

3. See Rhodes, 'Competition Among Cooperatives," in this volume.

4. **Connor** et al. argue that markets in food manufacturing are not perfectly contestable.

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