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FARMER COOPERATIVES IN INTERNATIONAL GRAIN AND OILSEED MARKETS

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In recent years, grain and oilseed producer cooperatives have aggressively innovated international marketing and financial arrangements. Some of these include: the formation of InTrade, an international commodity trading organization formed by cooperatives from the Federal Republic of Germany, the Netherlands, France, Canada, and the United States whose 1979 total sales volume surpassed $17 billion; the expansion of Japanese cooperatives into the handling and storage functions of the U.S. grain export system; integration by Italian cooperatives into processing industries located in developing countries; and the enlargement of the intraregional cooperative Farmer's Export Company into the fourth largest U.S. grain exporter.

We suggest that these innovations are preliminary signals of a structural change in the international grain and oilseed trade. The objective of this paper is to increase understanding of the changing role of farmer cooperatives in the complex international arena of grain and oilseed trade. More specifically, four phenomena are explored: 1) farmer cooperative situs in the world coarse grain, wheat and soybean market structure, 2) market share trends of U.S. grain cooperatives at the local, regional and export levels, 3) the increasing importance of foreign cooperatives in the international grain trade, and 4) factors that might constrain or enhance the growth of farmer cooperatives in the world grain trade.

World Grain Market Structure

Grain marketing cooperatives play a significant role in most market economies. In first handler functions of grain assembly, storage, and elevation Knutson estimated that cooperatives handle 45 percent of the grain produced in exporting nations. However, in the higher risk functions of export marketing, cooperative activity is more limited. Overall it is estimated that grain cooperatives are involved in approximately 9 percent of the direct world grain exports and 10 percent of the imports. The greatest cooperative participation in grain export trade exists in Argentina, Brazil, France, and the United States. The grain importing countries which have substantial cooperative involvement include Japan,

Table I. Comparison of grain importing and exporting country concentration ratios by commodity and by proprietary, cooperative and state trading market shares for the largest eight exporting and importing countries, 1977-78.

	Soybeans and meal	Coarse grain	Wheat
	----------Percent----------		
Exporting countries			
4 country share	100	79	86
8 country share	100	86	95
State trading share 1/	0	6	27
Proprietary trade share	90	83	65
Cooperative share	10	11	8
Importing countries			
4 country share	45	47	36
8 country share	67	72	51
State trading share	0	21	90
Proprietary trade share	80	67	10
Cooperative share	20	12	0

Source: Cook et. al. 1980.

1/ State trading, proprietary or cooperative share is the estimated percent of the total volume of direct grain exports or imports by state traders, proprietary firms, or cooperatives for the eight largest importing or exporting countries.

the Netherlands, Federal Republic of Germany and Belgium.

Notable structural differences can be observed in the international grain market (Table I). High levels of country concentration exist in both soybean and coarse grain exports while lower levels of concentration prevail in imports. State trading in these commodities is relatively unimportant. International trade in soybeans and coarse grains is dominated by the proprietary grain trading companies in exporting, importing, and market intermediary roles. The market shares for cooperative exports of coarse grains and soybeans are estimated at 11 and 10 percent, respectively, and their imports from 12 and 20 percent.

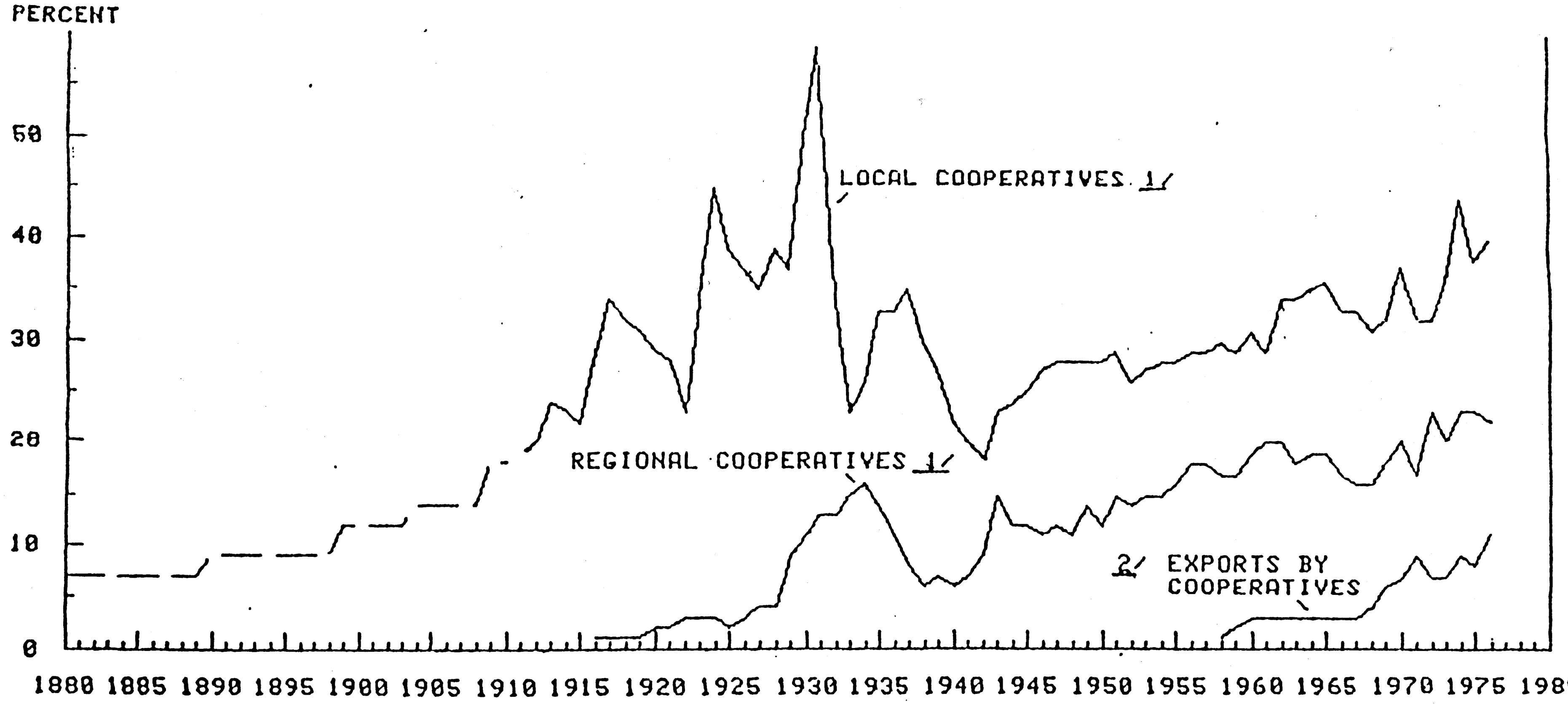
The international wheat market structure is considerably different from the coarse grain and soybean structure. Exporting country concentration remains high, yet importing country concentration relatively lower with an eight country concentration of 51 percent. State traders are much more important in wheat than in the coarse grains and soybean trade. They are estimated to account for 27 percent of the exports and 90 percent of the imports of wheat. Cooperative involvement in wheat trade is relatively small with 8 percent of the exports and no significant volume of imports.

U.S. Grain Cooperative Marketings

Cooperatives in the U.S. have been involved in first handler grain marketing for over 120 years, but only recently have they entered into the activities of direct exporting.

Figure I shows the share of U.S. marketings of grain handled by local and regional cooperatives from 1880 to 1977. The entry of U.S. cooperatives into grain marketing initally occurred at the local, first handler level

Figure I. Share of Grain Marketings by U.S. Local, Regional and Export Cooperatives, 1880-1976.



1/ GRAINS AND OILSEEDS MARKETED BY COOPERATIVES AS A PERCENT OF FARM SALES. ESTIMATES PRIOR TO 1910 ARE BASED ON DATES OF ORGANIZATION AS REPORTED BY ESTABLISHED COOPERATIVES IN 1924.

2/ DIRECT EXPORTS OF GRAINS, EXCEPT RICE, AND OILSEEDS BY COOPERATIVES AS A PERCENT OF U.S. EXPORTS OF THESE COMMODITIES. SOME INDIRECT EXPORTS INCLUDED FROM 1960-1970.

during the mid 1800's. Prior to 1880 efforts at establishing grain marketing cooperatives were mostly scattered and unsuccessful.[2/] From 1880 until 1890 efforts were more organized and more widespread but still largely unsuccessful. The "maintenance clause" introduced in 1890 provided financial stability and thereafter local cooperatives commenced a period of rapid growth.[3/] By the mid 1920's the share of grain marketings originated by local farmer cooperatives ranged from 35 to 45 percent.

Several authors have described these early efforts at farmer organization (Knapp, 1969; Gardner; Federal Trade Commission, Cooperative Marketing = year = ? ; Federal Trade Commission, 1923) as actions resulting from adverse economic and social conditions.

In order to ameliorate the effects of some of the adverse economic conditions during the 1920's the U.S. government entered the agricultural policy-making arena. In 1929 the Agricultural Marketing Act established the Federal Farm Board. The Board's chief objective was to stabilize product prices by assisting cooperatives chiefly through loans to finance storage operations. During 1930 and 31 local cooperative grain marketing shares reached 50 and 59 percent respectively. But after the failure of the Federal Farm Board and its stabilization efforts the share of marketings handled by cooperatives reached a 20 year low. From that time the share of grain marketings by local cooperatives has increased gradually to 40 percent by the late 1970's.

[2/] A notable exception was the establishment of numerous "Patrons Joint Stock Companies" between 1872 and 1875. With the weakening of the Granger movement and improved marketing conditions most of these elevators failed.

[3/] The "maintenance clause" provided that members pay the cooperative a fixed fee per bushel marketed regardless of to whom his grain was sold, for the purpose of maintenance of the cooperative.

Thus the development of local cooperatives in grain marketing began with a period of experimentation and learning and later a period of rapid growth. Both of these periods are characterized by adversity felt directly by farmers in marketing <u>their</u> grain. The adversities included unacceptably low prices, monopolistic practices by existing merchants and rail lines, unfair or discriminatory treatment, and lack of services.

In the post World War II period adversity does not appear to be as an important a factor in grain cooperative market share expansion. We suggest that growth in this period is more a function of "action driven by opportunity," and has resulted from aggressive management direction.

Development of U.S. regional grain cooperatives follows a pattern similar to that of the local cooperatives (Figure I). That is, there is a period of experimentation with alternative regional marketing organizations lasting from about 1915 to 1925. From about 1925 to about 1935 regional cooperatives developed rapidly, stimulated by the Federal Farm Board experiment. Growth in the market share since that time has been much more gradual. Several writers have described the adversity farmers perceived in not being able to effectively market the grain sold to local cooperatives without some control over outlets in the terminal markets (Knapp, 1973; Gardner; American Institute of Cooperation; U.S.D.A.).

There is an important difference in the rapid growth of regional cooperatives from that of local cooperatives. In 1929, just as regional grain cooperatives appeared to have established themselves as permanent institutions and to significantly expand their share of marketings, they were absorbed into the Farmers National Grain Corporation (FNGC). The FNGC provided significant government financial support for regional cooperatives in grain marketing.

In 1938, after 9 years of operation, the FNGC discontinued its operations and the regional cooperatives re-established themselves with only a 6 to 7 percent share of marketings. The share of marketings then increased sharply to 15 percent in 1943, declined slightly and since World War II has increased gradually, reaching 22-23 percent by the mid 1970's.

The development pattern of U.S. grain cooperative export marketings appears to be similar to that of local and regional cooperatives. The first major sustained attempt at export marketing came with the establishment of Producers Export Company (PEC) in 1958. Reynolds describes the primary objective of PEC as "developmental" and the data indicate a relatively minor share of export sales (Figure I).. When PEC terminated operations in 1969, several cooperatives had established export operations, drawing heavily on the experience gained through PEC. Since 1968, horizontal integration at the export level under the auspices of Farmers Export Company has led to a significant increase in the share of direct export marketings. By 1977 cooperatives directly exported 11 percent of the United States grain and oilseed shipments.

In addition to direct export sales, U.S. cooperatives in 1977 sold indirectly but put through their own port elevators an additional 6 percent of U.S. exports, making cooperatives the seller or handler of over 17 percent of U.S. exports of grains.

Foreign Country Grain Cooperative Marketings

Is post World War II expansion in share of grain marketings by U.S. grain cooperatives unique or can similar trends be observed in other major grain and oilseed exporting countries? A review of recent producer cooperative activities in the major grain and oilseed exporting countries suggests that this change in marketing structure is not restricted to the U.S. export scene.

The major non-U.S. grain and soybean exporting countries include Canada, Australia, Argentina, Brazil, France, and South Africa. The grain export systems of Canada, Australia and South Africa are dominated by sole export authority grain marketing boards and, therefore, the role of farmer cooperatives in these countries, although important, is generally limited to first and second handler functions. In Argentina, Brazil and France, grain cooperatives not only fulfill important roles at the first and second handler level but are becoming increasingly prominent at the export level.

In Argentina a grain cooperative growth pattern similar to that of the United States can be observed. The Argentine local grain cooperatives originated assembly of grain in the latter 1800's and by the late 1970's handled 50 percent of the grain at the first handler level (Braidot). During the 1920's the local cooperatives integrated into regional grain cooperatives and currently market approximately 25-30 percent of all Argentine grain and oilseeds. Argentine regional cooperatives began exporting previous to their U.S. counterparts but have received several setbacks due to government monopolization of the grain exporting activities during 1946-59 and 1973-76. However, after each period of government intervention these producer organizations have recuperated. Cooperative export shares of over 17 percent in 1979 surpass the 16 percent attained in the pre-intervention year of 1973.

Producer cooperatives are a more recent marketing phenomena in Brazil than in either the U.S. or Argentina. The major soybean exporting cooperatives had their origins in the late 1950's and have only been exporting since the mid 1970's. Sixty percent of Brazilian soybeans are assembled at the first handler level by local cooperatives. Regional exporting cooperatives receive 60 percent of the export licenses, but direct export only a small (8 to 10 percent) but increasing volume (Knutson). Rapid integration by cooperatives into transportation, processing, export facilities and export institutions has occurred during the late 1970's and suggests that Brazilian soybean marketing cooperatives intend to at least maintain if not increase their market share in the world oilseed market in the near future.

In France, local marketing cooperatives handle approximately 70 percent of grain produced (Sharp, Knutson). Regional cooperatives separately and with joint ventures are the largest exporters of grain in France.

Cooperatives also play a significant role in the major grain and oilseed importing countries. In Japan the largest feed compounding and feed grain importer is Zen Noh, a large multiproduct cooperative. Zen Noh dominates the feed compounding industry with approximately 40 percent of the market share. In the Netherlands two diversified supply cooperatives process over 60 percent of the feed used. Like Zen Noh in Japan, the Dutch cooperatives are experienced international importers and have participated in various international cooperative marketing arrangements. Cooperatives also dominate the feed compounding industries in the Federal Republic of Germany and Belgium and are significantly large in Italy, Spain and South Korea.

Conclusions

Examination of the aforementioned trends reveals that farmer cooperatives in the major exporting and importing countries are taking a more active role in the export/import functions in the world trade of grains and oilseeds. The descriptive results presented raise a number of questions about the future structure of the international grain and oilseeds trade. We want to briefly address three of these issues. What environment existed to have fostered the observed trends? What factors in this environment have led to the increasing market share of farmer cooperatives in the international grain trade? And will these positive factors of export growth continue to outweigh factors that might act as constraints to future growth?

Environment Creating Change

In much of the literature reviewed, both U.S. and international, a persistent yet undefined theme emerges - the general business environment that creates change in cooperatives has switched from "action because of adversity" to "action because of opportunity." Particularly, in the development of United States, Argentine and Brazilian marketing systems, cooperative entry into grain marketing is preceded by adversity experienced by producers in gaining access to profitable markets for their products. The trends in Figure 1 suggest that United States cooperatives at all three marketing levels, local, regional, and export, experienced learning periods of little market share growth during their first 10 years of existence. But, after this initial learning period market expansion was rapid and is characterized by most students of these phenomena as "growth because of adversity." In the later periods, increase in market share controlled by grain cooperatives is more gradual and is identified as more a function of "opportunity in the market exploited by management." Development of cooperative grain marketing at the local and regional levels in the other major market oriented exporting countries follows a similar adversity-market opportunity pattern (Braidot, Knutson).

Studies of farmer cooperative grain market development suggest that adversity was less important for expanding into export markets than it was at the local and regional levels. Entrance by farmer cooperatives into the export markets was more a result of market opportunity exploitation than reaction to adversity, particularly in Argentina and the United States (Braidot, Reynolds).

Factors Influencing Trends

Following is a list of factors hypothesized to have had a positive association with the observed upward trend in cooperative export marketings. 1) Grain cooperatives in all major grain exporting countries have solid and resourceful cooperative bank systems assisting in their capital aquisition ventures,[1] 2) grain cooperatives originate between 40 and 50 percent of all the grain and oilseeds in the market oriented exporting nations, 3) in all of the market oriented grain exporting countries a well organized network of regional cooperatives exists, 4) local and regional grain cooperatives control a large percentage of the grain storage capacity in the major exporting countries, 5) except in Argentina grain

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[1] In an evaluation of the factors most frequently associated with growth in regional marketing cooperatives Skinner found that five of the most important factors are related to financial and banking elements.

cooperatives own or control a substantial percentage of the export and import facility capacity, 6) grain importers perceive the quality of grain traded by cooperatives to be higher than the product of non-cooperatives, and 7) cooperatives in all major grain importing and exporting nations have been beneficiaries of various public policies.

The following list highlights several factors that potentially might constrain the rate of growth of cooperative export marketings: 1) the nature of the imperfectly competitive structure of the world grain trade, 2) in many local and regional markets rivalry between cooperatives is often fierce - perhaps even self defeating, 3) the management incentive system in many cooperatives is not conducive to expanded cooperative exports, 4) most importing and exporting cooperatives have decentralized decision-making systems not always sensitive to the requirements of international trade, 5) the basis of policymaking (i.e. member-user board of directors) is rooted in the productivity of land and not the marketing-demand aspect of grain sales - particularly at the international level.

Do Constraints Outweigh Advantages?

Do the factors that might potentially hinder expansion of the cooperative market share in the world grain and oilseed trade outweigh the hypothesized positive factors? It depends. Numerous, exogenous factors such as the world economic and the world grain situation will invariably influence the slope and sign of the trend. But of the factors that can be controlled by cooperatives it is often argued that member-user commitment and risk management are the two most important. We suggest that risk management is the paramount factor. In a recent study of cooperative systems of the largest grain exporting and importing countries Knutson found institutionalized local and regional cooperative commitment to be insignificant in explaining increases in market shares at any level. It should be pointed out, however, that there is a scarcity of empirical work on this subject and that the Knutson study found a number of trade arrangements between importing and exporting cooperatives existed and had played an important role at the initial stages of international trade between the associations.

Nevertheless, preliminary evidence suggests that the quality of grain cooperative management worldwide has increased in recent years (Knutson, Braidot). In conclusion, we hypothesize that farmer cooperative Board of Director awareness of the complexity of risk management in the international grain trade and their willingness to meet the challenge by employing management equal to the task will determine the future slope and sign of the export market share curve.

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