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The Effect of Marketing Cooperatives on Innovation

Kyriakos Drivas

University of Nebraska-Lincoln

Konstantinos Giannakas

University of Nebraska-Lincoln

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CORNHUSKER ECONOMICS

The Effect of Marketing Cooperatives on Innovation

Market Report	Yr Ago	4 Wks Ago	9/26/08
<u>Livestock and Products,</u>			
<u>Weekly Average</u>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.....	\$95.25	\$99.32	\$97.79
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.....	124.77	120.00	113.90
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.....	121.44	114.83	109.42
Choice Boxed Beef, 600-750 lb. Carcass.....	146.68	161.23	158.60
Western Corn Belt Base Hog Price Carcass, Negotiated.....	57.56	*	70.80
Feeder Pigs, National Direct 50 lbs, FOB.....	50.32	34.57	48.00
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean.....	62.36	82.80	75.01
Slaughter Lambs, Ch. & Pr., Heavy, Woolled, South Dakota, Direct.....	98.50	94.75	95.50
National Carcass Lamb Cutout, FOB.....	259.65	275.59	270.39
<u>Crops,</u>			
<u>Daily Spot Prices</u>			
Wheat, No. 1, H.W. Imperial, bu.....	8.35	7.23	6.34
Corn, No. 2, Yellow Omaha, bu.....	3.29	5.54	5.26
Soybeans, No. 1, Yellow Omaha, bu.....	8.97	13.02	11.06
Grain Sorghum, No. 2, Yellow Dorchester, cwt.....	5.71	8.39	7.82
Oats, No. 2, Heavy Minneapolis, MN, bu.....	2.77	*	*
<u>Feed</u>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.....	135.00	190.00	190.00
Alfalfa, Large Rounds, Good Platte Valley, ton.....	87.50	77.50	77.50
Grass Hay, Large Rounds, Premium Nebraska, ton.....	*	85.00	85.00
Dried Distillers Grains, 10% Moisture, Nebraska Average.....	*	180.00	167.50
Wet Distillers Grains, 65-70% Moisture, Nebraska Average.....	38.50	58.50	58.50
*No Market			

Cooperative organizations constitute an integral part of the increasingly industrialized agri-food system, accounting for 25 to 30 percent of total farm supply and marketing expenditures. When compared to profit-maximizing investor-owned firms (IOFs), a distinguishing feature of cooperatives (co-ops) is that the owners are also the users of the services provided by the organization. With members as both owners and users of its services, a co-op is typically assumed to focus on maximizing member welfare rather than profits.

The economic ramifications of the different objective functions of the cooperative organization have received considerable attention in the relevant literature, with the main focus being on the effect of different types of co-ops on the equilibrium conditions of various mixed market settings. A key result of this literature is that the presence of co-ops results in more competitive conduct and increased welfare.

Being an integral part of the industrialized agri-food system, many co-ops have responded to the pressures of the increasingly competitive marketplace by trying to position themselves via their research and development (R&D) activities. Recognizing the increased cooperative involvement in R&D, Giannakas and Fulton (2005) (G&F, hereafter) examined the market and welfare effects of the involvement of input supplying co-ops in cost-reducing, process innovation activity. G&F show that the presence of the cooperative organization in an oligopolistic agricultural input market (a) can increase total process innovation activity, and (b) enhances economic welfare by reducing the prices of agricultural inputs.

An important feature of the input-supply co-ops studied in G&F is that they constitute a backward integration of their members – i.e., they are formed by agricultural producers to produce inputs (such as seeds,

chemical fertilizers, pesticides, etc.) used in agricultural production. Thus, the members/owners of an input supply co-op are part of the demand side of the co-op's market as they buy the product supplied by the co-op.

Unlike supply co-ops that constitute a backward integration of their members, the other important type of cooperative organizations, the marketing co-ops, constitute a forward integration of their members. In particular, marketing co-ops are formed by producers to process and market the agricultural produce of their members. Thus, the members/owners of a marketing co-op are part of the supply side of the co-op's market as they supply the co-op with an input in its production process.

Given the prevalence of these fundamentally different types of cooperative organizations, the question that naturally arises is, "*Does the type of cooperative organization matter when considering the market and welfare effects of cooperative involvement in innovation activity?*" A study completed in the Department of Agricultural Economics and soon to be published in the *Journal of Rural Cooperation*, answers this question by determining the effects of the involvement of marketing co-ops in process innovation activity, and comparing the results with those of G&F.

In particular, the study develops game-theoretic models of market interaction to examine the market and welfare effects of the involvement of marketing co-ops in cost-reducing process innovation activity in the agri-food system. The study analyzes the consequences of cooperative involvement for the amount of process innovation, the pricing behavior of firms, and social welfare in the context of a mixed oligopsony where open-membership marketing co-ops and IOFs compete in procuring an agricultural product from farmers.

The research shows that the involvement of marketing co-ops in cost-reducing process innovation is welfare enhancing – the presence of member welfare maximizing co-ops is shown to result in increased producer prices and welfare gains for all farmers, members and non-members of the co-op. In terms of innovation activity, the effect of marketing co-ops on process innovation is shown to depend on the relative quality of the products supplied by the co-ops and the IOFs, the degree of producer heterogeneity, and the size of the innovation costs. Interestingly, even though total innovation activity can fall with an increase in the relative quality of the marketing co-ops, the pricing strategy of the member welfare maximizing co-ops results in agricultural producers benefitting the most when the co-ops are high quality firms.

Intriguingly, the key findings on the effects of the involvement of marketing co-ops in process innovation activity are consistent with the results of G&F on the

effects of input-supplying co-ops. As mentioned previously, while the nature of innovation activity considered in the recently completed study is the same as the innovation activity in G&F (both studies focus on cost-reducing process innovation activity), the types of cooperative organizations and market structures considered in the two studies are different, in that the marketing co-ops constitute a forward integration of their members and are part of a mixed oligopsony, while the input-supplying co-ops constitute a backward integration of their members and are part of a mixed oligopoly. An important implication of this is that, when considering the effect of cooperative involvement in process innovation activity, the type of the co-op and structure of the market do not seem to matter. Regardless of whether they are a backward or a forward integration of their members, parts of an oligopolistic or an oligopsonistic market structure, the involvement of cooperatives in cost-reducing innovation activity *can* increase the innovation activity in the market, is welfare enhancing and, thus, socially desirable.

Kyriakos Drivas
Ph.D. Candidate

Dept. of Agricultural and Resource Economics
University of California, Berkeley

Konstantinos Giannakas, (402) 472-2041
Professor

Dept. of Agricultural Economics
University of Nebraska–Lincoln
kgiannakas2@unl.edu

Note: This article is based on Drivas' M.Sc. thesis at the University of Nebraska. The journal articles referenced are:

Drivas K., K. Giannakas. "Process Innovation Activity in a Mixed Oligopsony: The Role of Marketing Cooperatives." *Journal of Rural Cooperation* (2008): in press.

Giannakas K., M.E. Fulton. "Process Innovation Activity in a Mixed Oligopoly: The Role of Cooperatives." *American Journal of Agricultural Economics* 87(2)2005:406-422.