Business Organization and Coordination in Marketing Specialty Hogs: A Comparative Analysis of Two Firms from Iowa

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Abstract

We study business organization and coordination of specialty-market hog production using a comparative analysis of two Iowa pork niche-marketing firms. We describe and analyze each firm's management of five key organizational challenges: planning and logistics, quality assurance, process verification and management of "credence attributes," business structure, and profit sharing. Although each firm is engaged in essentially the same activity, there are substantial differences across the two firms in the way production and marketing are coordinated. These differences are partly explained by the relative size and age of each firm, thus highlighting the importance of organizational evolution in agricultural markets, but are also partly the result of a formal organizational separation between marketing and production activities in one of the firms.

Keywords: Specialty hogs; coordination; contracting; organizational design; niche markets

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Introduction

Markets for specialty, or niche, agricultural products have grown considerably in recent years. Organic produce is perhaps the most prominent example, but markets for so-called "natural foods," and for foods with a regional appellation, have also expanded a great deal (Dimitri and Greene, 2002; Grannis and Thilmany, 2002). In contrast to other dimensions of the ongoing evolution of agricultural markets, the growth of specialty production is *not* the result of technical advances and improved agricultural productivity but rather is the result of product differentiation based largely on the use of retro technologies. There has been considerable research on the welfare effects and organizational changes resulting from technical change and the increasing industrialization of agriculture. Much less has been said about the consequences of agricultural "deindustrialization." We take a step in this direction by comparing the activities of two Iowa pork niche-marketing firms. We focus in particular on the organizational and coordination challenges associated with specialty-market production. The purpose of our analysis is mostly descriptive; however, we also provide normative analysis, indicating where there seem to be opportunities for improved coordination.

We frame our comparison around five generic coordination topics. These include planning and logistics, quality assurance, process verification, business organization, and profit sharing. Hog production systems are inherently uncertain (particularly so in "natural" production systems), so arrangements must be made to accommodate unforeseen events and to flexibly and efficiently manage the flow of animals from farm to

consumer. Developing a reputation for quality requires consistent production of the set of attributes desired by end consumers, and consistency requires some kind of process for quality assurance. Additionally, specialty markets typically involve provision of one or more "credence" attributes, in which case process verification is important. Finally, business organization and profit sharing are somewhat related but also separate in that many forms of profit sharing can be implemented within a given organizational structure. Although not the only possible taxonomy of coordination issues facing specialty producers, this set of topics represents a convenient grouping of issues for comparison across the firms we study.

Related Literature

Our work contributes to a larger literature that addresses various topics within the overarching theme of "specialty markets" in agriculture. One line of research documents the incidence and growth of specialty markets. Dimitri and Greene (2002) document growth in organic foods markets during the 1990's. During this period, retail sales grew 20% or more per year, and certified organic cropland and pasture more than doubled, reaching a total of 2.3 million acres by 2001. Although there are no corresponding aggregate statistics for other forms of specialty production, it is easy to point to examples.[1] Kennedy et al. (1997) also note that the term "value-added" has become widely used in agricultural markets and typically refers to some form of branding and product differentiation by farmers. Although traditional commodity markets will almost surely maintain their overall dominance of agricultural activity, these and other examples seem to point toward a future with an increasing diversity of agricultural food items.

Among work that focuses on specific cases of niche marketing, Hayes et al. (2004) document the development of three well-known "farmer owned brands" (a term which they use in reference to both "designation of origin" and "guarantee of production process" branding) and discuss the economics behind these successful branding strategies. The authors note that supply control is a key feature of successful branding strategies and

that, without supply control, successful niche markets quickly become commodity markets. Such has arguably been the case for U.S. organic producers. Buhr (2004) uses three case studies to show how a relatively small pork marketing firm can find a unique niche within a larger, mostly commodity market. Strategies range from specializing in cuts for a particular ethnic minority and season to diversifying across different kinds of sales outlets (wholesale, restaurant, retail direct to consumers).

Other authors have evaluated consumer preferences toward particular niche attributes. For example, Grannis and Thilmany (2002) study the potential market for natural pork in the intermountain west area of the United States. Using contingent value techniques and a mail survey of over 2000 primary grocery shoppers, they find a strong influence of household income and previous consumption of other natural products on mean willingness to pay for natural pork. They find that with respect to production attributes, feed additives and external effects on the environment are also important explanatory variables. Their results are somewhat ambiguous regarding consumers' valuations of product-of-origin labeling.

Finally, as in this paper, some authors have studied the organization and coordination of niche marketing. For example, González-Diaz et al. (2003) study quality assurance procedures that support branding in Spanish markets for fresh meat and note that geographical indicators and private branding (by individual firms) can be complementary in signaling multiple quality attributes. Brester (1999) presents a case study of a successful niche marketing venture in milling and baking. The case involves full integration by a single large Montana wheat farmer into the provision of milled wheat products for specialty bakers.

In this paper we focus on organization within specialty pork markets. Relative to the literature discussed above, we emphasize the communication, informational, and overall coordination requirements for marketing niche pork. In what follows, we describe the coordination issues facing a typical specialty market producer and then summarize how

each of our example firms address these issues. As we will see, there are some similarities but also significant differences in the way coordination is achieved. Additionally, relative to what one might expect, there is much less formality in the contractual mechanisms used by the various parties.

The Coordination Problem

In this section we briefly discuss a set of generic coordination and organizational issues facing any group of producers interested in selling product on a specialty market. Parts of this section are specific to issues facing natural pork producers, but some of the discussion also applies more broadly to any production and marketing operation where there are multiple individuals and production uncertainty.

Planning and Logistics

As with any production and marketing activity, delivery logistics are complex. The lack of specialized transport and delivery services for specialty products means that truck routing, animal loading, weather and road problems, and truck and compartment sizes must all be managed by the firm.

However, even ignoring these short-term issues, there are important longer-term planning and logistical issues to be addressed. The firm needs to have an idea of the magnitude of demand in any given production period. Given this information, an attempt can be made to arrange for delivery of product to meet demand. This rather simple-sounding coordination problem is complicated by the fact that gaining an idea of demand typically requires a significant amount of search effort, and in the absence of long-term contracts for future delivery, it is impossible to send accurate information to producers about how much production is needed in the future. Similarly, when searching for demand, there may be considerable uncertainty regarding future supply potential. Growers are spatially distributed, which makes direct observation of available supplies impossible, and it is costly for growers to continuously communicate anticipated supply.

Given these difficulties, it is thus inevitable that there will be times with excess demand or supply.

The cost of excess demand is either the inability to supply a new customer, and thus the loss of an opportunity to expand the firm's market, or potentially the inability to supply an existing customer, and the consequent risk of losing this customer's future purchases. Excess supply is also costly. As we will see in more detail below, production for a specialty market entails costs beyond what's required for the "commodity market." Thus, output which is produced for the speciality market, but which ultimately is sold on the commodity market, typically results in a collective net loss to the firm and producer.

Also, there are important within-firm distributional issues to manage, particularly in periods of excess supply. Establishing a steady base of demand is essential for firm success, and this requires a critical mass of producers. But in periods of low demand, there needs to be some mechanism for allocating sales to individual producers. For example, it may be important for long-run sustainability of the producer base to share the revenues of sales in low-demand periods across *all* producers; however, short-run efficiency may dictate sourcing product from one or perhaps a small number of producers. Attempts to transfer revenue from delivering producers to non-delivering producers complicates accounting, requires explicit efforts to maintain organizational transparency, and can create various incentive problems (e.g., producers delivering supplies to other outlets when opportunities are available).

Quality Assurance

For a typical consumer of specialty pork, "quality" is part eating experience (i.e., flavor, texture, aroma, color) and part belief in the marketing story of the product. Quality assurance is about developing a system to deliver a consistent set of quality attributes to consumers. This can be accomplished by measuring the relevant set of attributes in the case of eating experience, and by providing consumers with a reason to believe in the relevant marketing story. In this section, we briefly discuss measurement issues; we

discuss process verification of so-called "credence attributes" in the next section.

Genetics are perhaps the primary determinant of ultimate eating quality, though management and handling also play an important role. In both cases, growers must undertake extra effort to ensure delivery of high-quality hogs, and it is unrealistic to believe these efforts will be undertaken without a compensating reward. There is no single easily measurable attribute that is directly correlated with quality, so any reward system inevitably involves some degree of noise and uncertainty. Moreover, rewarding exclusively on one attribute can lead growers to overemphasize this attribute at the expense of other less easily measurable, but still important, attributes.

Eating experience, which depends on such things as the taste, aroma, and tenderness of cooked meat, is difficult to measure objectively. As a result, firms must identify other characteristics that have some relation to eating experience and decide to what extent these characteristics will be assured and rewarded. Measurable attributes that have been used to some extent in pork markets can be distinguished by the specific quality attribute that they proxy. Loin-eye area is used to judge size in relation to some standard which is considered a "normal" portion. Color is considered one of the most important aesthetic factors that determine the attractiveness of meat (Bass and Mabry, 1998) and is evaluated visually using a six-point scale, or with a chromometer (which measures light reflectance). Marbling is the visible fat within the boundaries of the muscle and is often assessed visually, again on a six-point scale (Jeremiah, 1998). Firmness, texture ("shear force"), and drip loss are also sometimes measured. Finally, there is some evidence that pH proxies well for a variety of important quality attributes (Baas and Sellers, 2000).

There are varying costs associated with carrying out measurement of each of these variables and varying degrees of correlation with "eating experience." For the purpose of rewarding growers for delivering high-quality hogs, there should be a strong relationship between grower actions (i.e., genetic selection and management activities) and the relevant measure.

Process Verification

Marketing and labeling play an important role in speciality markets. When labeling claims involve process attributes, such as "natural," or "antibiotic free," regulatory standards for reporting accuracy must be ensured. Moreover, final consumers must be satisfied that the relevant claims have merit. There are well-established and government-backed criteria supporting the organic label. However, there is wide variation and misunderstanding regarding the meaning of "natural." In principle, this ambiguity could be removed by offering more specific process attributes, such as "free range" and "hormone free." In this case, federal truth in labeling requirements can be counted on to provide some degree of enforcement.

If more formalized and stringent verification is required, the ISO 9000 process can be implemented. Zaibet and Bredahl (1997) discuss use of this system in the UK meat sector. Recently, the U.S. Department of Agriculture has implemented its own version of process and product verification services (U.S. Department of Agriculture, 2002). These services are mostly directed at crop and seed markets for the verification of genetic purity, though they have also found use in markets for livestock.[2]

The creation of trust through a reputational mechanism is an alternative to formal third-party verification. However, creating a reputation is costly and in some circumstances it may be more efficient to rely on a third party.

Business Structure

Perhaps the simplest means of organizing the business structure around specialty marketing activities is with a single entrepreneur and sole proprietorship. This is feasible to the extent that capital requirements are sufficiently low and can be provided by a single individual. Once outside investors become involved, independent of whether or not the "investors" are also the firm customers (as they might be in the case of a cooperative marketing effort among a group of farmers), the business must be designed to accommodate group decision making and profit sharing.

There is a fundamental friction in the organization of any sort of joint venture between those who invest funds and those who run the business. This friction is the result of putting funds at risk, and the opportunity for managerial abuse. In all business structures widely in use, there are formal mechanisms for investors to monitor the activities of management. Joint ventures among farmers have increasingly been structured under the limited liability (LLC) arrangement. Relative to the New Generation Cooperative, this arrangement allows for greater flexibility in sourcing investment funds (Brown and Merrett, 2000). Both structures offer the ability to avoid double taxation (as in a corporate structure), and to protect owners against debt incurred by the organization (i.e., limited liability). The cost of the LLC structure, relative to a cooperative, is the potential for conflict of interest among investors. The cooperative requirement that all investors be firm "patrons" essentially guarantees that all investors will be farmers, and hence that each will have similar interests.

There are other small differences between the two organizations, but all involve essentially the same trade-off. The cooperative imposes more constraints on organizational design, but these constraints ensure that investors are committed to the interests of patrons.

Sharing Returns

The way firm profits are allocated among the participants of any venture are of course of paramount importance. To begin, some portion of returns should have an incentive component in order to ensure that the interests of each of the relevant parties are properly aligned. We alluded to this above in discussing quality assurance. One way to achieve this is to pay each grower based on the value of animals delivered. However, there is typically some degree of mixing of the meat from animals across multiple growers before the value of the meat is realized when sold to customers. Although technologically feasible, it is generally prohibitively costly to market separately the meat from each individual producer's hogs. As a result, some degree of revenue pooling is unavoidable, and this

creates a need to generate a reliable measure of the relative value of each grower's animals, *before* this mixing occurs. Moreover, there is considerable variation in the value of hogs that has nothing to do with the performance of an individual grower. Shielding growers from some of this variation may have value in itself.

As a result of these difficulties, growers are normally compensated according to measure of the performance at the time hogs enter the slaughter facility (and hence well before final value has been realized). The most common measures include %lean and weight. Although imperfect measures of value, there is nevertheless a significant degree of positive correlation. Given that some *ex ante* measure(s) of value is available, there are still a wide variety of issues to address in designing a specific payment scheme, including the following:

1. *Seasonality*. Seasonality inherent in farming may make production in particular periods unattractive without an appropriate compensation. This is especially true in organic and natural animal production systems where production in winter seasons is costly.

2. *Relative performance evaluation*. Because aggregate uncertainty is often important, even independent of weather and other seasonal shocks (e.g., variation in handling across trucking services or across packing facilities), some form of relative performance evaluation may be important. That is, it may be useful to compare the performance of a given grower's hogs against only those hogs of other growers that were produced and slaughtered under like circumstances.

3. *Temporal pooling*. There is the need to balance short-run and long-run efficiency considerations. For example, as discussed earlier, in periods when demand is short, allocating available sales to the best hogs may be efficient from a short-run perspective but inefficient in the long run if doing so alienates a group of loyal members who happened to have produced low-quality hogs.

4. *Travel cost*. Growers can be reimbursed travel cost; this implicitly involves a transfer from close-by producers to distant producers.

5. *Relation to "commodity" market*. To remain competitive, the firm must not let prices charged to consumers (and payed to growers) get too out of line with the commodity market. One possibility is to tie grower compensation to the market price in some way.

6. *Profit sharing*. In a cooperative or LLC structure, there will typically be residual profits (positive or negative) after paying for growers' output. How should these profits be handled? More generally, growers can receive payment for the quantity of hogs they deliver or for the extent of their capital contributions to the firm.

Developing a payment system to accommodate these various trade-offs can be a complex task.

In the next section we describe management of each of the coordination issues discussed above by two specialty-pork marketing firms in Iowa. Information for our analysis was obtained with on-site interviews of management and a sample of growers from each firm.[3]

The Solution(s): Two Examples from Iowa

Specialty marketing of pork by Iowa producers has grown substantially in recent years. Although still a relatively small part of Iowa's overall hog economy, recent data indicates that there over 240 Iowa farms engaged in specialty pork production (Huber, 2004). Our interviews focused on participants in two different marketing efforts. One of the firms we studied is quite large, with an estimated 400 growers spread across 10 Midwestern states, Virginia, and North Carolina. Table 1 shows the distribution of the size of operations for both companies and for Iowa in general. Firm A producer sizes are more homogeneous than for Iowa in general and are concentrated around 100-999 size. Firm B

producers are much smaller on average and concentrated around 1-499 size. Neither firm has a significant number of extremely large (size category 2000+) growers. For both firms, specialty meat distributors and restaurants represent the principal market for final fresh-meat cuts.

TABLE 1. Distribution of operation sizes.

Size	Number of operations			Percentage of operations		
(marketed head)	Iowa	Firm A	Firm B	Iowa	Firm A	Firm B
1-99	1560	40	5	15.90	11.49	38.46
100-499	3040	199	6	29.40	57.18	46.15
500-999	2000	79	1	19.34	22.70	7.69
1000-1999	1820	21	1	17.60	6.03	7.69
2000+	1920	9	0	18.57	2.59	0.00

The following sections summarize the activities of each firm, roughly following the organization of coordination topics presented in the previous section.

Firm A

Firm A has a strict division between marketing and production activities, and we have very little information about the marketing end of the operation. On the production end, there is a formal requirement that producers fill out an expected delivery form covering monthly deliveries (with weekly estimates within each month) during the subsequent six months. However, the firm indicated that only about 60% of growers actually comply with this requirement in any given month. The market for niche pork has been growing rapidly in recent years, so the marketing operation has been asking the firm to both increase the number of growers and increase the level of production coming from existing sources. Firm A pays an explicit seasonal premium to growers who produce during the low supply season (May 15-August 15) and guarantees a delivery slot for an equal number of hogs during the high season (October 1-December 30). Currently, there is neither a delivery contract that guarantees producers a certain number of hogs each week or month nor any commitment implied by growers' announcements of expected future deliveries.

Firm A engages in two levels of quality assurance. All animals are purchased on a payment grid that is based on %lean and carcass weight.[4] In addition, random loads are sampled each week, and cuts from each sample are subjected to detailed quality evaluation. Minolta (color) and pH measures are taken, and center-cut pork chops are extracted for further testing. According to one of the firm's biannual-annual "pork quality reports" that are distributed to growers,

> Raw pork chops are evaluated for color, marbling, firmness, and drip loss values. Pork chops are then broiled to an internal temperature of 160 degrees. Next, the cooked pork chops are evaluated for their eating-quality values, specifically pork flavor, juiciness, tenderness, and texture. Instrom and shear force values are collected as another determinant of the samples' eating quality (tenderness and texture).

These measures are aggregated into a quality index, and over time each grower's indices are averaged and compared with those of other growers. Producers in the lower quintile of the quality distribution are required to improve their performance before their hogs will be purchased. Producers in the upper quintile are given priority in low-demand weeks when there are more hogs available than are needed to supply current customer orders. More recently, the organization has taken this system a step further by also providing explicit premia as high as $.75 per hundredweight, depending on performance measured by this quality index.

Despite this detailed quality incentive system, Firm A does not engage in any in-plant quality inspection, other than pH measurement, that goes beyond the normal procedures of the plant. However, there is further inspection of carcass quality at the next level when the marketing end of the firm takes possession of the meat for further fabrication and processing.

Firm A claims free-range production, no antibiotics or hormones, and no use of animal by-products during the entire life of the hogs. In addition, the firm uses the terms "natural" and "humanely produced" in its marketing. Each grower is required to sign an

affidavit that each of the firm's credence attributes are met, and there is an on-site inspection of each new farm that enters the organization. However, currently there is no formal auditing procedure, though potential expulsion is implicit in the event of an observed violation by firm management.

Originally, the production arm of the firm was structured as an LLC, but it recently underwent a transition to the cooperative structure. Firm management indicated that this has been necessary as a means of reducing the burden associated with immediate payment for live hogs. So called "prompt payment" provisions in the Federal Packers and Stockyards Act requires payment within 24 hours after slaughter, and this constraint can be relaxed by reforming under the cooperative structure. The cooperative structure was also adopted to further facilitate incorporation of growers outside of Iowa into the organization.

There is a clear break between the marketing and production arms of the organization. This break effectively sets up the production arm of the organization in the position of bargaining agent on behalf of growers vis-á-vis the members of the marketing arm of the organization. Growers we spoke with all indicated high levels of trust in the leader of the production group and believe that efforts are made to support grower interests. Evidence of this support comes from recent acceptance of a new pricing structure that reduces the base payment for all growers but that compensates with payment based on transport costs. This effectively redistributes returns from close-by growers to more distant growers and facilitates new-grower recruitment.

Firm B

At present, Firm B operates as an LLC but with very little formal structure as a business organization. There is a sole proprietor who created the firm's name and official label and who manages all of the marketing activities with the help of one assistant. However, the pricing of growers' product and revenue sharing within the organization are jointly administered by the manager and all participating growers. The firm has an explicit

target price per live hundredweight that it hopes to achieve. Returns above this target are put into a holding account to be paid out when returns are low (if there is money in the holding account).

Firm B is a much smaller organization than Firm A, and somewhat paradoxically this smallness generates significant logistical problems. Transportation and slaughter infrastructure is geared to large-scale commodity production, so being small is not necessarily a benefit. For example, Firm B growers must coordinate among themselves for delivery to the slaughter plant, because each grower typically does not have sufficient hogs to fill an entire delivery truck. Similarly, post-slaughter delivery to specific customers requires utilization of "less-than-truckload" carriers, which complicates things relative to delivery in company trucks, or with a dedicated service.

At any given point in time, the firm's manager has a rough idea of the number of hogs that will be ready for slaughter for the coming week and tries to find a "niche market" for everything that will be produced in that week. Once the total demand for the week has been determined, ready hogs are called in for slaughter. Any product that is not sold is purchased by the packing plant (that custom slaughters for the firm) at prevailing market prices. Simultaneously, the firm's manager searches for future customers and communicates with growers needed about future supplies. Remarkably, there are no formal commitments among any of the parties that interact with Firm B (growers and customers). This is in part made possible by management having developed personal relationships with each of the relevant customers and growers.

Firm B markets a specific breed of hogs and to a large extent relies on this breed to deliver quality meat. The meat of this breed has a distinctive color, and each loin is visually inspected to ensure the appropriate color. Beyond this, there is no formal quality measurement of individual producer's hogs. However, the breed information for each producer's hogs is verified. Additionally, the firm markets its product as "naturally produced." For Firm B, this means that no antibiotics are used during the last two months

of feeding (though the organization is currently experimenting with complete removal of antibiotics at the request of some customers), and that the animals never receive hormones or animal by-products in their feeds. Neither the animal genetics nor the "natural" attributes marketed by the firm are third-party verified.

Because carcass measurements are not taken by Firm B, payment is made each week based on the average market performance of all animals that are delivered. Growers initially receive a target price per hundredweight and are then allocated a share of market revenues in proportion to the tons they deliver as a fraction of total tons for the week. This latter payment is retained in a "capital account" that can be used by the firm's manager in low return periods to reach the target price. Thus, in most weeks, multiple growers' animals are pooled for the purpose of computing compensation. The exception is for damaged (e.g., severely bruised) meat, whereby an attempt is made to trace back the carcass to an individual producer and make a deduction corresponding to average live weight.

The following section contrasts the relative merits of each firm's approach to solving the coordination problems discussed above.

Discussion

The first lesson to be drawn is surely that there is no unique organizational arrangement that solves every problem. The firms we studied each use somewhat different approaches for solving the coordination problems discussed in this paper. This is partly due to the different size and age of the respective firms but also partly reflects the nature of each firm's product. In one case breed is explicitly marketed while in the other the "natural" attribute is more heavily emphasized.

The principal logistical difficulty for each firm is matching supply with demand. Neither firm has a completely stable set of buyers, and both are constantly searching for new markets. Given the time lag and uncertainty involved in production, particularly if new growers must be recruited, it is impossible to respond instantaneously to new

markets, and there are inevitably periods in which the firm is either long or short on product. Both firms make an effort to be in a position with excess supply, so that the orders of existing customers can be filled with absolute certainty, and so that new and unforeseen opportunities can be seized. Being in such a position also provides incentive to constantly search for new markets. However, the cost of hedging in this way is the excess supply that must be sold on the commodity market. Prices in these markets do not fully cover the extra cost associated with the production of specialty hogs.

Figure 1 plots average prices received by growers in firms A and B during 2003. Calculations are based on reported prices and use data on the carcass characteristics of each animal delivered to the relevant firm. For comparison, these same animals are evaluated on a number of widely used "commodity" pricing grids. Note that Firm B's price premium is consistently above Firm A's, and both far exceed commodity prices. The price premium offered by Firm B in relation to Firm A to some extent reflects differing levels of maturity in the marketing end of the respective operation. In effect, growers for Firm A are paying for a substantial marketing effort and a national reputation.

Average discounts that would be applied to the "niche" hogs sold on commodity grids are not much different than discounts received on specialty grids. For example, over all hogs delivered to Firm A in 2003, average premiums paid were -2.91. These same hogs evaluated on commodity grids would have received average discounts of -1.05, -2.58, -0.75, -3.63, and -2.99 for Excel, SiouxPreme, Tyson, Morrel, and Farmland, respectively. Interestingly, the discounts charged for Firm A are typically for hogs that are too *lean*, while the discounts charged for the same hogs sold on a commodity grid are for hogs that are too *fat*!

Both firms struggle in their attempts to find markets for *all* parts of the hog. Specialty (high value) markets can normally be found for fresh loins, but much of the rest of the carcass must often be sold on the commodity pork market. Both firms have undertaken efforts to develop further processed meats (e.g., hams, bacon, sausages) as a way to

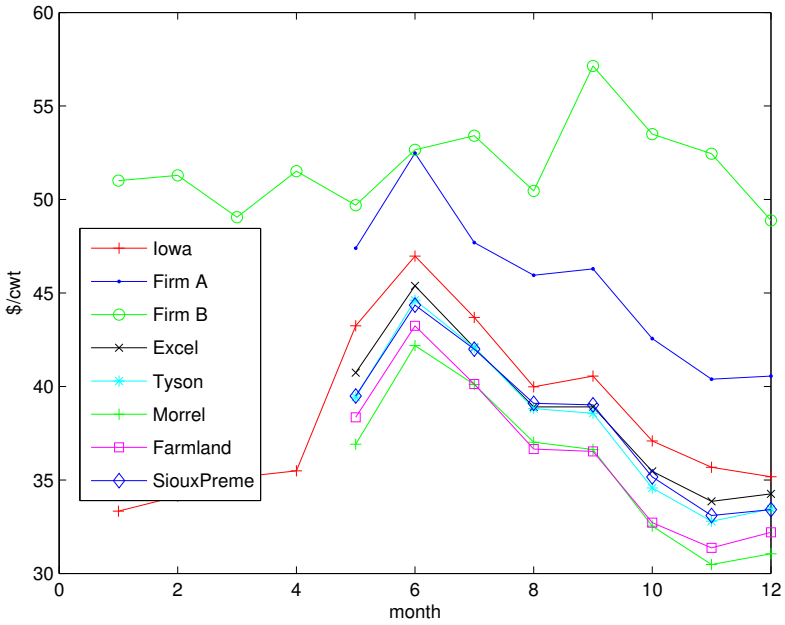

FIGURE 1. Comparison of average price across niche and commodity marketing of niche hogs (source: authors calculation).

increase specialty sales. Products of this nature also increase the shelf life for a given week's slaughter, thus increasing the set of market opportunities.

Only one of the firms we studied measures carcass attributes for each animal with a tracking system that can associate an animal with a grower. However, given the relatively small size of the organization without such a system, it is plausible that casual observation is sufficient to identify poor-performing growers. Also, growers in the organization without such a system all produce the same breed of hog, so there is much less variability in carcass characteristics.

Perhaps one of the more surprising discoveries from our investigation of each firm is the relatively small amount of effort devoted to process verification. Although there is an initial check for new growers, there are no formal auditing procedures in place for either organization. One of the organizations uses a third party "seal of approval," but this third party does not have any formal enforcement or oversight responsibilities. Despite this, we

saw no indication, and found no anecdotal evidence, that either firm experiences problems with non-conforming growers. For these firms, it appears that the incentives associated with wanting continued access to each respective organization is sufficient to ensure performance by growers. Similarly, each firm has developed sufficient reputational capital to persuade customers that the relevant set of credence attributes exists.

Although not the only factor, management of each firm indicated that the decision regarding business structure was influenced by the need to manage working capital. The federal Packers and Stockyards Act requires "prompt payment," which means that growers must be paid shortly after slaughter. This is typically well before cash is received from sales, so that there is need for short-term working capital. One firm avoids the prompt payment requirement because of it's size while the other firm is currently undergoing a transition to the cooperative structure partly to address issues related to payment timing.

Although difficult to quantify, loyalty is clearly important in both organizations. Growers in both organizations expressed satisfaction in the pricing policies of their respective firms, and management likewise expected loyalty from growers. Neither firm uses a formal contract with growers (though both firms indicated interest in developing producer contracts). However, both firms have highly transparent pricing systems, in which it is clear that all growers are treated equally. In one case, growers are payed a premium above the prevailing market price, and there is effectively collective negotiation on the premium level by the growers with the marketing end of the operation. The other organization promises to pursue a target price that is considered reasonable by all participating growers. Each week sales are verbally reported and growers exercise intensive oversight over the handling of revenues that exceed the target price.

Conclusion

This paper presents the results of a comparison of two pork niche marketing firms, focusing on coordination issues that are unique to niche marketing. Standard logistical

problems are similar to those encountered in most any production and marketing activity. However longer-run planning and coordination of supply and demand is somewhat more difficult than in more traditional commodity markets. This is due to production uncertainty and the relatively low level of liquidity in specialty markets. In contrast to commodity markets, there is more uncertainty about future demand conditions and considerably more effort devoted to market search activities. Given this uncertainty about future demand, it is not possible to provide exact information to growers about future supply needs. Both firms we studied struggle with this issue, and neither has developed a "solution." However, both firms have indicated interest in developing a firmer commitment from growers, perhaps with some form of delivery contract, for future deliveries.

Quality assurance and process verification are managed somewhat differently across the two firms. In the case of quality assurance, much of the difference can be attributed to the different nature of the product that is marketed. In one case, breed is the essential product that is marketed, and given that there tends to be much less within-breed variation in carcass attributes than across breeds, there is less of a need for individual carcass measurement as a way of evaluating grower performance. Somewhat surprisingly, neither firm uses formal third-party verification of process attributes (e.g., hormone and antibiotic free). This observation suggests that the extra benefit form process verification, beyond what can be obtained from reliance on reputational mechanisms, may be small in comparison with the cost of implementing such a system.

For the firms we studied, access to working capital appears to be a key concern when choosing the structure of business arrangement. Both firms indicated that the need to pay growers promptly after slaughter (in accordance with the Packers and Stockyards Act) has influenced how their respective organizations are structured.

Finally, one of the firms we studied uses a sophisticated quality-based compensation system to pay growers, while the other firm engages in direct profit sharing. This outcome is to some extent due to a formal separation between the production and marketing

operations of the firm that uses quality incentives. The marketing operation in this firm engages in activities other than marketing specialty hogs, so it is likely difficult to separate profit specifically attributable to Iowa hog producers. However, this difference in the structure of compensation arrangements may also have something to do with the relative size of each organization. The relatively small firm that does not explicitly measure the performance of individual producers may find it necessary to do so as the firm grows.

Endnotes

1. See, www.eatwild.org and www.meadowraisedmeats.com in the case of grass-fed meats, and www.farmtotable.org and www.foodroutes.com for "locally grown" produce.

2. Examples can be found at http://www.nichepork.org/resources.asp#certification.

3. At the request of the management of each firm that participated in our study, we maintain confidentiality throughout our analysis by referring to the firms as Firm A and Firm B.

4. Since 2001, each carcass has also been measured for pH, though at present there are no direct premiums associated with this measure alone.

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