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Case Studies of Strategic Alliances in U.S. Beef Production

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Calf marketing, commercial beef carcass, and natural/implant-free beef strategic alliances were examined via case study to determine alliance structure and whether each addressed risk, transaction costs, capital availability, and other concerns. All alliances were structured differently through vertical or horizontal coordination, and each had been established within the past 12 years. Alliance administrators reported that an advantage to cow-calf producers was higher cattle prices received relative to producers outside the alliances. The alliances reduced transaction costs and increased information flow among segments. Alliances did not specifically address risk or increased access to capital for technology adoption or expansion purposes.

Key Words: cattle industry, industry structure, risk, strategic alliances, transaction costs

The U.S. beef industry has traditionally produced a product that could more accurately be described as a commodity than a branded, differentiated product. This situation is slowly changing, though branded beef products remain limited because of coordination challenges, lack of product differentiation, and resistance by some retailers (Schroeder and Kovanda, 2003). The industry continues to face additional concerns, including continued consumer misgivings associated with the healthfulness of beef, industry segmentation, and a relatively slow rate of technology adoption among cattle producers (Gillespie et al., 2000). Greater vertical and horizontal coordination in the industry could help to address some of these concerns.

One way in which coordination has increased in the beef industry is through strategic alliances. Among a number of definitions, Sporleder (1994, p. 533) defines strategic alliances as “purposive strategic relationships between independent firms that share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual dependence.”

Strategic alliances have been formed in the beef industry to coordinate activities among producers, as well as among other industry segments. No “typical” strategic

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alliance structure exists in the beef industry. Most involve cattle producers devising strategies through which they can collectively market cattle to the downstream segment (feedlot or packer, depending upon the alliance) at higher prices than they could receive outside the alliance.

In some cases, alliances coordinate more than two segments by (a) vertically coordinating, linking up- and downstream firms into a single decision entity; (b) vertically integrating, linking up- and downstream firms into a single firm; or (c) horizontally coordinating or integrating, analogs to (a) and (b) respectively, except among entities at the same level.¹ Two studies that have addressed strategic alliances specifically in the beef industry include Schroeder and Kovanda (2003), who discussed the motivations and prospects for strategic alliances, and Tronstad and Unterschultz (2005), who examined strategies of firms throughout the beef supply chain and assessed how coordination improved the ability to react to changing consumer tastes and preferences.

Various studies have described different classifications of strategic alliances (e.g., Sartwelle et al., 2000; Schroeder and Kovanda, 2003; and Yelich, 1997). Yelich identified four types of strategic alliances in the beef industry: (a) breed-associated, (b) commercial beef carcass, (c) natural/implant-free, and (d) vertically integrated cooperatives. We would add a fifth alliance type: calf marketing alliances. These five alliance types are described below (where the first four are developed from Yelich).

- First, breed-associated alliances are generally “endorsed by specific breed associations,” typically specify breed, handle source-verified products, provide carcass feedback to producers, and “market high-quality beef products” (Yelich, p. 45).
- Second, commercial beef carcass alliances “promote relationships among industry segments.” They provide performance feedback from the feedlot to the producer, “carcass information from the packing plant back to the cow-calf producer” (Yelich, p. 46), and prices that more accurately reflect the value of cattle.
- Third, natural/implant-free alliances produce and “market antibiotic and growth promotant-free products” (Yelich, p. 46). The method used to raise the animal is generally of greatest importance to these alliances. Most provide feedlot and carcass data to producers.
- Fourth, vertically integrated alliances are generally region-based, and often involve producer-owned cooperatives that are integrated forward from cattle producers to downstream firms. “Their primary goal is full control of the product they produce, while returning profits back to the members” (Yelich, p. 46).
- Finally, calf marketing alliances, our suggested fifth classification, generally involve cow-calf producers commingling their animals, thus increasing market volumes and prices. These alliances vary in calf production requirements.

¹ To illustrate the diversity of beef strategic alliances in the industry, the reader is referred to the “Alliance Yellow Pages,” found on the *Beef* magazine website, <http://beef-mag.com/mag/2004-alliance/>.

The overall objective of this study is to compare and contrast six strategic alliances in the beef industry. Specifically, we consider strategic alliances whose structures could be especially useful to Southeastern U.S. cow-calf producers, identify differences in the organizations, and compare and contrast them with respect to risk, transaction costs, capital acquisition, information flow, and type of coordination among firms. This study expands the literature on beef strategic alliances by providing relatively detailed information on six models of strategic alliances, illustrating the theoretical and empirical motivations for their structures and the diversity of structures that currently exist in the industry.

The Economic Environment Currently Faced by the Beef Industry

Since the late 1970s, the beef industry has lost substantial market share to poultry. In 1985, per capita consumption of beef, pork, and chicken (retail boneless, trimmed weight) was 74.6, 47.7, and 36.1 pounds, respectively; by 2003, the corresponding figures were 62, 48.5, and 57.5 pounds (USDA/National Agricultural Statistics Service, 2004). The reduction in beef consumption relative to poultry is generally attributed to health concerns that arose with respect to beef in the 1970s, continued reductions in poultry prices, and poultry's increased responsiveness to consumer tastes and preferences through new, differentiated products. Lower poultry prices have evolved due to increased production efficiency and reduced marketing costs via vertical integration.

Given industry differences, the poultry and similarly evolving pork industry models are unlikely to fit the beef industry, though increased coordination could contribute to a more efficient industry (Gillespie et al., 2000). The beef industry, on the other hand, might evolve into a structure which increases marketing, production, and pricing efficiency while recognizing that this forage-based species will continue to be raised in less-controlled environments (outdoors), under highly varied environmental (climatic) conditions, and likely with lower investment in product-specific fixed assets relative to its competitor meat industries. Ward (2004) provides further discussion of the challenges faced by the beef industry in achieving increased coordination.

Strategic alliances may help the beef industry to become more competitive. To provide products that consistently meet consumer tastes and preferences, packers need to obtain uniform quality live inputs. To ensure procurement of these animals, they must improve communication with feedlots and pay prices based on desired specifications. With premium prices being paid for quality fed animals, feedlots could pay premium prices for top quality calves, thereby benefiting the producer (Gillespie and Schupp, 2000).

Benefits of strategic alliances to cow-calf producers may include linkages with the processing segment, new calf market outlets, higher calf prices, and greater access to information that would help them make profit-maximizing decisions. Some

existing alliances require specific management practices, including health programs, feeding programs, use of particular feedlots and/or packers, quality assurance programs, growth implant programs, and antibiotic use restrictions (Ward and Estrada, 2000).

Other considerations that may be associated with vertical or horizontal coordination generally include the following. First, risk reduction (in the sense of price or production risk) may result from certain forms of coordination. Reimund, Martin, and Moore (1981) discuss the evolution of contracting as resulting from increased risk. Martin (1997) shows that contracts in the hog industry result in risk shifting to the contractor.

Second, transaction cost reduction may result from coordination, as argued by Williamson (1979). Transaction costs are incurred in establishing the rules and carrying out a market transaction. In his seminal 1937 work, "The Nature of the Firm," Coase introduced original insights into the existence of transaction costs and their effects. Williamson (1979) addressed transaction characteristics influencing governance structure. If transaction frequency were either occasional or nonrecurrent, and little specific investment were required for the transaction, then market governance would be expected. Alternatively, if recurrent transactions and a mixed investment (both nonspecific and idiosyncratic) existed, then bilateral governance relational contracts would result. In the cow-calf segment, it can be argued that both exist. Less typical, however, are frequent transactions with an idiosyncratic investment, which would result in unified governance, or vertical integration. Hobbs (1997) identifies information, negotiation, and monitoring costs as important transaction costs in the beef industry that may be reduced via alternative marketing strategies. Gillespie et al. (2000) provide an extensive discussion of transaction costs and their impact on livestock and, specifically, beef industry structure.

A third result of coordination may be reduced capital requirements or increased access to capital for enterprise expansion. Barry, Sonka, and Lajili (1992) discuss this notion with respect to contracting. Fourth, reduced autonomy, or reduced control over firm decisions, may be a consequence of coordination. Gillespie and Eidman (1998) examine the impact of autonomy on the selection of business arrangements in the pork industry. The level of autonomy retained by alliance cow-calf producers varies by alliance, from almost complete control of management decisions to greater control by another segment. These four characteristics, as well as others discussed earlier, form the basis for comparing and contrasting strategic alliances in this article.

Methods

Case study analyses of six selected strategic alliances were conducted. Case studies are particularly useful when there are relatively few entities to be examined, disallowing statistical inference. A number of publications in the agricultural economics and agribusiness literature over the past 15 years have provided guidelines for case study design and have discussed the value of case studies (e.g., Lyford,

Beierlein, and Harling, 2000; Kennedy and Luzar, 1999; Sterns, Schweikhardt, and Peterson, 1998; Howard and MacMillan, 1991). For the present study, a multiple case study design using both descriptive and exploratory techniques was adopted (Yin, 1994). Personal interviews were used to collect data on each strategic alliance. Questions addressed in the interviews focused on the alliance's production, economic, performance, and marketing characteristics. Following recommendations by Yin (1994), a case study database was developed to ensure data reliability.

The strategic alliances interviewed for this study were chosen based on their location in the Southeastern United States or Southern Plains and their acceptance of Brahman genetics. The six alliances consist of two commercial beef carcass alliances, denoted *Carcass A* and *Carcass B*; a natural/implant-free alliance, designated by *Natural*; and three calf marketing alliances, identified as *Calf A*, *Calf B*, and *Calf C*—all located in the Southeastern United States.

A questionnaire was designed to address specific aspects of each alliance, including but not limited to the following: transaction costs, price variability, access to capital, information transfer, and availability of alternative markets for animals of specific characteristics. As suggested by Yin (1994), research questions were generally open-ended, thereby ensuring respondents provided interviewers with the detailed information needed for the study. Personal interviews took place with administrators of each strategic alliance during Fall 2003. Interviews were conducted at each strategic alliance headquarters by administering the questionnaire, tape recording the interviews, and taking notes. A consent form, signed by each administrator, explained the purpose of the survey, the possibility of publication of results of the interview, and the lack of confidentiality associated with the study.

After conducting each interview, information was compiled and written as a transcript. Post-interview communication with the strategic alliance administrators was established to clarify any questions. Administrators then read their respective transcripts in Winter 2004, and informed the authors if misinterpretations had occurred in translation from interview to transcript. The resulting case study database, as noted by Yin (1994), is thus ensured to have a high level of credibility. The narrative below provides details of the information collected from the interviews.

Descriptions of Strategic Alliances

Structures of each of the six alliances are shown in figure 1, which provides flow charts illustrating the market relationships among segments and cow-calf producers in each alliance. These charts identify linkages among entities as vertical integration, vertical coordination, horizontal integration, horizontal coordination, and spot market. Information on selected comparison criteria is given in table 1. (Greater detail may be found in Bu, 2004.)

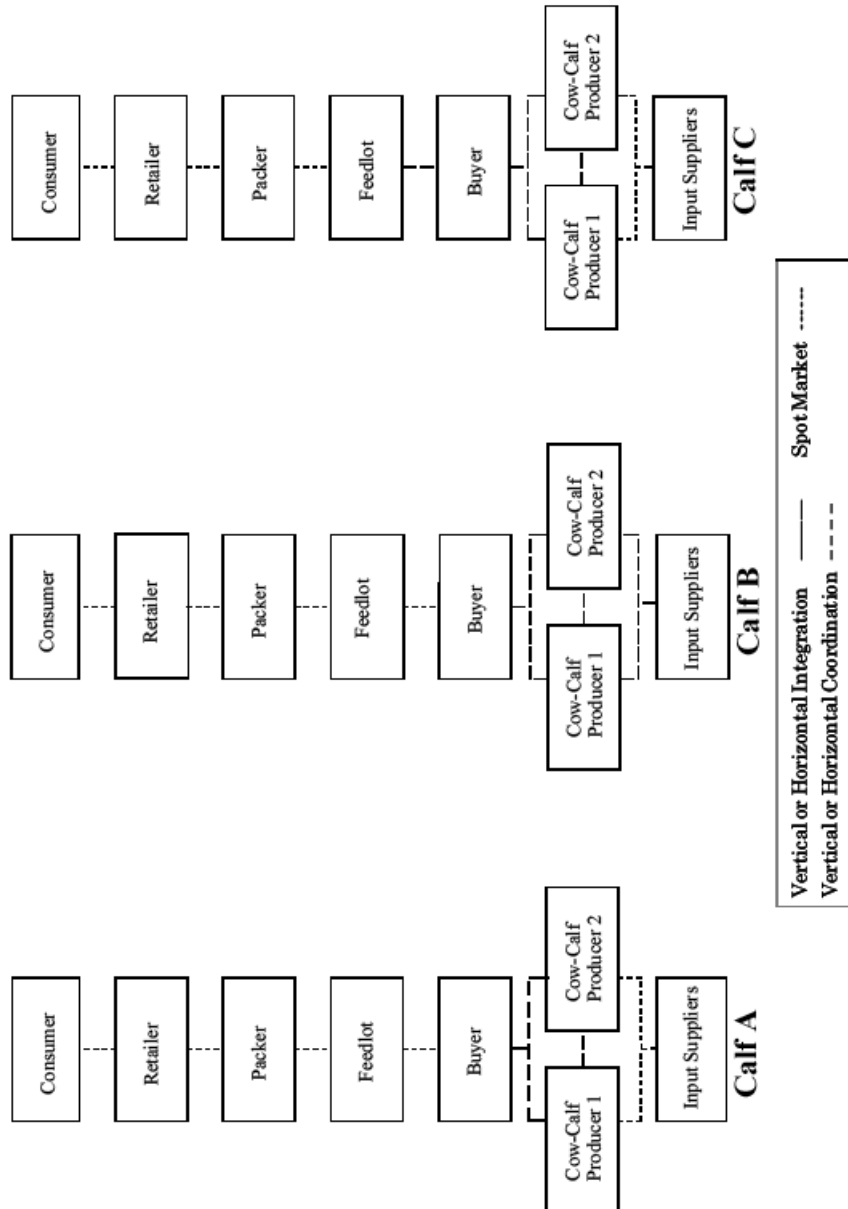


Figure 1. Organizational charts of beef strategic alliances

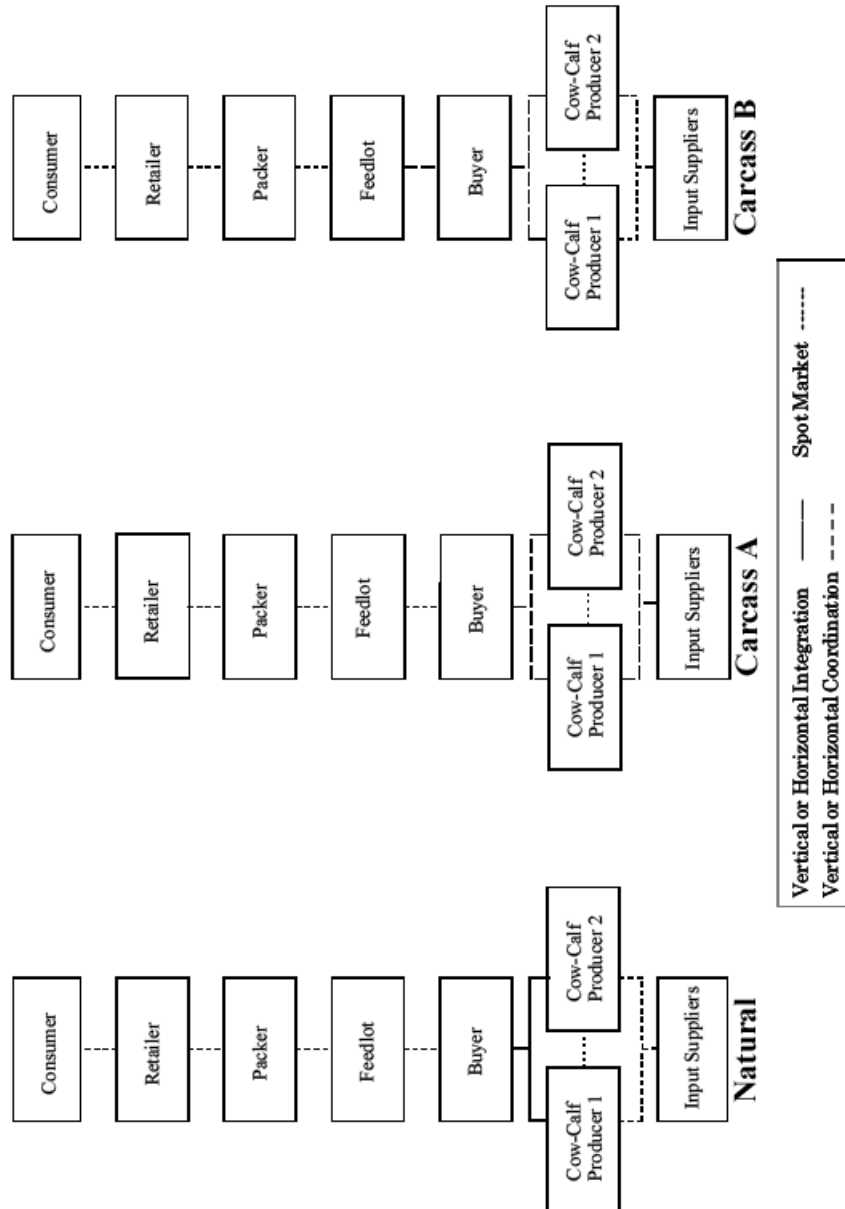


Figure 1. Continued

Table 1. Principal Criteria for Comparison of Six Strategic Alliances

Criteria	ALLIANCE		
	<i>Calf A</i>	<i>Calf B</i>	<i>Calf C</i>
Sales commission to auction	Reduced or eliminated	Incurred	Eliminated
Monitoring of calf production practices	Among members	Record keeping, BQA	Among members, BQA
Transportation costs of calves to feedlot borne by whom?	Buyer	Cow-calf producer, reduced	Buyer
Bulk input purchase?	Yes	Yes	Yes
Primary information flow	Among cow-calf producers	Coop to cow-calf producer	Among cow-calf producers
Factors affecting price risk	Private treaty, video auction sales	None	Private treaty sales
Management requirements affecting production risk?	Yes	Yes	Yes
Capital availability to cow-calf producers affected?	Bulk purchasing inputs	Preferred loan program	Bulk purchasing inputs
Genetics	Angus highest %	Success with Angus, Charolais, Red crosses	Encourage Angus
Approximate number of cow-calf producers	23	350	21
Head of cattle sold via alliance	2,500 over 5 years	13,000 over 2¼ years	1,975 in previous year

(extended . . . →)

Calf Marketing Alliance #1 (Calf A)

The *Calf A* alliance was formed in 1999, with 23 cow-calf producers. It enables producers to pool calves with those of other producers, thus horizontally coordinating (as illustrated in figure 1) in order to sell in truckload lots to buyers. Cattle are reportedly sold at higher prices and transaction costs are reduced relative to marketing individually via conventional auction. The *Calf A* alliance has utilized both video auction and private-treaty sales.

Producers use Angus bulls that are purchased together to increase calf uniformity. A coordinator decides which bulls are to be purchased, though all members purchasing bulls are present and, if one objects to a certain bull, it is deleted from the order list. Bull numbers are then randomly drawn by all members, with each producer paying the actual price of the drawn bull. Using this method, producers purchase

Table 1. Extended

Criteria	ALLIANCE		
	<i>Natural</i>	<i>Carcass A</i>	<i>Carcass B</i>
Sales commission to auction	Eliminated	Eliminated	Eliminated
Monitoring of calf production practices	Record keeping	None	BQA
Transportation costs of calves to feedlot borne by whom?	Cow-calf producer, reduced	Cow-calf producer, reduced	The alliance
Bulk input purchase?	No	No	No
Primary information flow	Packer to cow-calf producer	Packer to cow-calf producer	Packer to cow-calf producer
Factors affecting price risk	Grid pricing, retained ownership	Grid pricing	Grid pricing
Management requirements affecting production risk?	Yes	No	Yes
Capital availability to cow-calf producers affected?	No	No	No
Genetics	Angus premiums	Market-specific breeds / crosses	Must meet specific breed parameters
Approximate number of cow-calf producers	150	1,300 to 1,400	225
Head of cattle sold via alliance	Not available	100,000 in previous year	60,000 annually

uniform bulls that have been approved by all members. The alliance generally advertises calves as $\frac{1}{2}$ Angus and $\frac{1}{4}$ Brahman.

Over 700 cows are dedicated to the *Calf A* alliance. As of Fall 2003, approximately 2,500 head had been sold over the previous five years. Producers raise calves to 400–750 lbs., to be shipped in August. The alliance has five contracts for different weights, so any calf fits into a load. The June calf weight determines the load in which it will fit when shipped in August.

A required three-month breeding season (March 15–June 15) has allowed the alliance to improve marketing, due to market indicators on specific selling months and synchronization. Production practices required of all alliance members include specifications for vaccination, castration, implants, worming, and dehorning. Workshops are held by the alliance, where producers learn how to “work” calves. Enforcement of practices is by internal, informal policing rather than assigning one individual to serve as a “policeman.” Within subgroups of seven to eight, all

producers take responsibility, since all are present for working subgroup calves. The alliance has adopted a tagging system for improving calf handling and record keeping. The alliance takes advantage of beef extension education programs offered by a land grant university in the state where the alliance is located.

Given reduced dependence on conventional auctions, producers have lowered the following transaction costs at time of sale: commission, shrinkage, transportation costs, insurance costs, and other auction-specific expenses. Transportation cost is paid by the buyer.

Using both video auction and private-treaty marketing, producers solicit offers from buyers. The sale is via contract. Alliance members have purchased inputs in bulk, including veterinary supplies, ryegrass seed, baler twine, and others, allowing members to secure inputs at lower prices. Members are not required, however, to purchase inputs through the alliance.

The *Calf A* alliance consists of a chairman, treasurer, and purchasing agent, all members. Because there are no alliance employees, no salary expense is incurred. Members meet bimonthly, and major decisions are made in a democratic manner (majority rule). Information is passed among alliance members via working together and through planned educational programs. For a producer to join the alliance, at least 10 cows must be designated. An initial membership fee of \$50 helps to cover operational expenses. The program has successfully led to increased use of desired management practices, resulting in higher quality animals that reportedly command higher prices.

Calf Marketing Alliance #2 (Calf B)

The *Calf B* alliance was formed by a statewide retail farm input supply cooperative and the livestock division of the state's chapter of the Farm Bureau. The farm supply cooperative coordinates many of the activities of the alliance. Other alliance members include four animal health input firms and a private creditor. The alliance also uses resources from the state's Department of Agriculture, its chapter of the Cattlemen's Association, and one of its land grant universities.

Through the alliance, cow-calf producers precondition calves over a 45-day, post-weaning period, and sell through the *Calf B* program. Cow-calf producers horizontally coordinate by agreeing to production parameters, and vertically coordinate with the input supply cooperative and buyers via conventional auction (see figure 1).

The *Calf B* alliance was formed in 2001, using existing cooperative employees. The marketing coordinator, an employee of the cooperative, has the greatest responsibility for operations. There are 120 cooperative retail stores across the state that purchase inputs in bulk. At each store, there are at least two employees from whom producers may obtain alliance information.

A benefit to the approximately 350 producers selling through the program is the ability to group truckloads of preconditioned calves for sale. Pooling quality calves reportedly yields higher prices than would be received by selling individually. On a typical sale day, 40 to 50 producers transport alliance cattle to a conventional

auction. Stockyard personnel group them into uniform weights to yield as many 48,000- to 50,000-pound loads as can be presented for sale. The alliance is funded with resources from the involved agencies, firms, and organizations. Funds also come from a per head marketing fee, paid by each producer.

Primary production requirements are divided into strict animal health and feeding programs. The health program involves specific vaccinations, retention of calves on the farm at least 45 days after weaning, use of Beef Quality Assurance (BQA) procedures, and certification of producers or administering veterinarians, as well as other requirements involving but not limited to procedures such as deworming, dehorning, and those specific to heifers and bull calves. For the feeding program, animals must be “bunk broken” and fed specified cooperative feeds for at least 45 days. Producers must choose one of four specified health programs for the 45-day program. Animal health records are required of producers, on which products applied, expiration dates, and method of administration must be recorded. These records accompany the cattle when marketed.

Handling any animal produced within its guidelines, the *Calf B* alliance has reportedly built a reputation among feedlots for better performing cattle, thereby increasing market opportunities. Field staff members help producers by answering questions or recommending strategies. Annual numbers of animals handled through the alliance since formation are as follows: year 1 = eight sales of over 1,500 total head; year 2 = 12 sales of nearly 7,700 total head; and year 3 (1st quarter) = 11 sales of 3,900 total head. The alliance encourages no more than a 60- to 90-day calving season. Alliance sales are focused in the Fall, but there are also sales in February. Special sales are scheduled at markets for *Calf B* alliance cattle, though some private-treaty sales may also be made.

Marketing agencies with whom the alliance works charge standard commission fees to producers (the fees at the conventional auctions through which the animals are sold); thus, commission costs are not reduced. Alliance membership is charged at \$1 per head sold. According to the marketing coordinator, prices received by alliance members are generally higher than the average state market price (i.e., one sale reportedly resulted in a price per head of \$68 over the state average market price for steers). Membership permits producers to qualify for a preferred financing plan, allowing the purchase of inputs needed during the preconditioning period for 60 days with no interest or payments.

Calf Marketing Alliance #3 (Calf C)

The *Calf C* alliance was formed in 1994, with 21 cow-calf producers. The alliance is involved in calf production, followed by 45-day preconditioning. It was formed to help producers raise quality animals that would command higher prices. The alliance receives marketing assistance from the owner of a local stockyard, henceforth called “auctioneer,” who is in charge of truck loading and transportation, and serves as a guarantor of checks written by buyers for alliance cattle. As shown in figure 1, producers horizontally coordinate to pool cattle. During 2003, the alliance

implemented voluntary use of electronic ear tags through a state-sponsored program, facilitating carcass information being obtained from slaughter plants for a \$2 flat fee per head.

Most producers have switched to Angus bulls, so almost every lot sold by the alliance in 2003 was at least 80% black. The alliance allows cattle that are less than 1/8 Brahman. An alliance coordinator handles day-to-day alliance decision making and is in contact with all stakeholders.

The *Calf C* alliance is self-funded by a marketing fee of \$1.25/head. Using funds raised from marketing fees, the alliance has purchased office supplies and a set of portable scales for producers. Extension personnel with one of the state's land grant universities provide extension educational support. For an individual to join the alliance, he or she must follow the health program; produce quality, uniform calves; have at least 20 head; be BQA certified; and meet committee approval.

In August 1994, the alliance held its first Thursday night sale, where 21 producers sold 1,200 calves. The calves reportedly averaged higher prices than the average conventional auction price. Since then, the marketing method has been used annually. It entails a conference call with multiple private lines, with the auctioneer describing the health program and terms. Within 30 minutes, generally about 2,000 calves are sold. The internet is used for exposure with relatively low advertising costs. Sales are made one lot (truckload) at a time, with each producer constituting a lot. One month prior to sale, sale positions are randomly drawn. Buyers purchase directly from producers.

At time of sale, trucks are weighed on certified scales, cattle are loaded, and trucks are reweighed. A 2% pencil shrink (expected percentage weight loss from measured animal weight at time of sale, due to en-route shrinkage) is then deducted from the gross weight. Average weight per head is compared to a previously agreed-upon sale weight. If cattle are on a slide (an agreed-upon method for adjusting price per hundredweight if cattle weigh more at delivery than agreed upon at sale), price is adjusted accordingly. Payment is made to the auctioneer. A commission of 1.5% is subtracted, yielding net receipts to producers. A per head marketing fee of \$1.25 is assessed. The buyer pays the transportation cost.

Except for some primary cattle health requirements, producers make their own production decisions. Some specific production requirements include the following. Calves must be treated by the recommendations on any product following BQA requirements. A set breeding season is required for calves to be eligible for sale in August. All medical and deworming treatments must be recorded. Calves must be weaned 45 days prior to sale. The producer must be BQA-certified, and must have completed the state's Master Cattleman program (a formal training program on sustainable cattle production, management, marketing, stewardship, and health, generally offered through state extension services).

Alliance members reportedly benefit primarily due to the low shrink incurred, generally receiving higher prices than non-alliance producers for similar quality animals due to buyer confidence in quality and consistency. Members hold meetings on an as-needed basis and communicate by letters, e-mail, and telephone. Alliance

members travel together to purchase bulls, with the objective of purchasing similar genetics. The alliance has requested bids from pharmaceutical companies to obtain lower prices, due to purchasing in bulk.

Natural/Implant-Free Alliance (Natural)

The *Natural* alliance was formed with a packing plant, two feedlots, and 150 cow-calf producers. The ranches that supply calves to *Natural* are located in 17 states. All animals are fed in one of the two feedlots, both within 70 miles of the packing plant. The alliance was formed out of a family ranch, as there was a perceived need to improve ranch production practices to increase beef quality consistency.

The packing plant was built in 1986, its association with feedlots began in the early 1990s, and cow-calf producers began retaining ownership of cattle in 1996. The main benefit of the alliance to cow-calf producers is that cattle are priced on a grid (a method of applying premiums and discounts on carcasses based upon carcass traits), allowing them higher prices for greater quality. Grid data for each animal help farmers in making management decisions. Figure 1 shows the vertical integration of the cow-calf producer through the feedlot phase via retained ownership (where the cow-calf producer continues to own calves through the feedlot stage until slaughter), and the vertical integration of the feedlot with the packer. Because the *Natural* alliance produces a branded, natural beef product, it directly reacts to primary consumer demand.

Producers transport their own animals to the feedlot and to the slaughter plant, as most are able to fill truckloads of cattle. However, the association has worked with producers to arrange transportation so they could ship cattle together. As a retained ownership program, producers incur all costs until slaughter.

Certain production requirements must be met by producers. Cattle must never have been implanted, never have been exposed to antibiotics, and go through a VAC 45 program (i.e., Value-Added Calf and weaned for at least 45 days). Since natural beef is sold, all vaccines and medicine applied must be recorded and the records provided. Records also account for management practices, genetics, and weaning weights. The alliance encourages members to utilize optimal nutrition, and advocates no more than a 60-day calving season.

The *Natural* alliance has worked with producers in educational programs, providing carcass information and advice on genetics. Cow-calf producer members meet at least once per year. In 2003, the alliance conducted regional meetings with members. Alliance producers are encouraged to visit the plant when their cattle are slaughtered, and to check and discuss the data. Four to five newsletters are sent to members each year, along with extensive verbal advising. Information on individual animals, with animals ranked from top to bottom, is also sent electronically to members. The *Natural* alliance does not charge members for data, nor is there any fee applied to producers for placing animals in the program.

Commercial Beef Carcass Alliance #1 (Carcass A)

The *Carcass A* alliance was established in 1998 as an agreement with a packer. The alliance involves 140 feedlots in 10 states, approximately 1,300 to 1,400 commercial cow-calf producers from 25 states, and three packing plants. The alliance links cattle feeding, stocker production, cow-calf production, and beef packing (as shown in figure 1). The administrator's main objective is to obtain the best quality cattle to fill packer demands, and to negotiate higher prices for alliance cattle. A total of 100,000 head of fat cattle were handled by the alliance in 2002.

An exclusive grid is used for *Carcass A* alliance animals, designed for high-quality cattle. The grid is considered capable of transferring incentives to producers to produce high-quality cattle, as the locked formula sends signals on how cattle perform on specific traits. The grid was established as part of a contract between the administrator and packer, to furnish a previously agreed upon number of head of quality cattle a year. The alliance was able to establish its own grid since it guaranteed high-quality cattle in large volumes to the plants.

Some alliance cow-calf producers retain ownership of animals to slaughter and obtain all carcass data free of charge. Alternatively, feedlots purchase calves, carry them until slaughter, and may provide the data to the cow-calf producers for a per head fee of \$3 to \$9, depending upon slaughter plant and completeness of data requested. The alliance also obtains cattle through order buyers via video or conventional auctions. The main objective is to guarantee higher quality animals to the packer; if these animals can be procured through conventional markets, then some will be purchased in this manner. Alliance members benefit from grid access and the receipt of carcass data. The feedlots attract the major packer buyers, so they are able to negotiate and receive higher prices.

The alliance administrator sends out three letters per year to producers explaining program performance and addressing other alliance issues. The administrator and an office employee who handles all carcass data are the only employees. Members pay alliance fees of \$3 per slaughter animal.

Producers have reportedly received higher prices (in the range of \$30 to \$50 per animal) for animals since joining the alliance, as the grid has helped them to improve management practices and animal quality. Opportunities to market specific breeds through *Carcass A* began with the Angus breed because of greater assurance of higher marbling. Brangus and Charolais breeds are also marketed. Production and management practices are handled individually by producers. No inputs are procured by the alliance, nor is any labor force formally shared among members.

Producers must complete a form for each animal to be sold, including information on vaccinations, implants, and any other medicine administered to the animal. Feedlots provide information on cost and weight gains of animals. The alliance collects as much information as possible on the cattle.

Commission fees at conventional auctions or to order buyers are avoided. Trucking costs are incurred by producers, though the alliance coordinates trucking among producers so they can ship together, lowering transportation costs.

Commercial Beef Carcass Alliance #2 (Carcass B)

The *Carcass B* alliance is a division of a multinational agricultural business firm, formed with feedlots and cow-calf producers. It allows cattle producers to participate in the beef value creation process without retaining ownership. The *Carcass B* alliance operates four feedlots, feeding a total of about 60,000 head annually, and coordinates with cow-calf producers. Cattle are purchased from about 225 producers in 16 states. Its 2000 formation was for the purpose of improving the quality of cattle in its feedlots and product quality at the processing plant.

The *Carcass B* alliance began by improving personnel skills needed by buyers for procuring cattle, and realized it needed to go the next step by providing feedback to cow-calf producers. A program was structured to keep detailed information on carcass quality, and to transfer feeding and packing plant performance data to cow-calf producers. The system encourages alliance members to improve the cattle they send to the feedlot. The alliance employs about 20 people, including buyers (fieldmen) and administrators. The buyers, located throughout the United States, deal directly with cow-calf producers. Others involved in the alliance include a meat scientist and cattle feeding specialists. The vertical integration of cattle buyers, feedlots, and packer is illustrated in figure 1, as well as the vertical coordination with cow-calf producers.

A primary benefit to cow-calf producers is the receipt of data on their cattle. At purchase, *Carcass B* enters an agreement with the producer that establishes how the cattle will be evaluated. The main mode of communication between the alliance and its members is through the buyers. The alliance publishes newsletters and meets with groups of producers annually. Producers are encouraged to visit the feedlots, allowing them to compare their cattle with others. Packing plant trips are arranged for producers to observe their cattle being graded. For every cattle closeout at the feedlots, there is a one-hour conference call between the buyer, producer, and the coordinator. They interpret the data, informing producers of the strengths and weaknesses of the cattle, and provide benchmark comparisons to the rest of the cattle.

Most management decision making is left to producers, though the alliance advises and recommends management practices and provides guidelines on breeding. The number of cattle sold must fit the established pen size: 120, requiring a minimum cow herd size of approximately 300 head to supply two pens of one-sex uniform calves. Thus, most alliance members ship over 300 calves annually, while the remainder ship as commingled groups from multiple smaller producers. All weaned calves follow a VAC 45 program or an alternative preconditioning (VAC 34) program. Cattle may be within the following parameters: $\geq 50\%$ British, $\leq 50\%$ Continental, and $\leq 3/16$ Brahman. Producers must follow BQA guidelines. Detailed records must be kept, and feedlots must know what has been applied to cattle upon purchase. The *Carcass B* alliance dedicates considerable effort to communication with producers to establish clear verification of management practices.

The alliance pays on the actual value that has been created; producers who create more value receive higher prices. First, cattle are purchased at live market prices.

Then, premiums are paid on the top-performing one-third of cattle upon slaughter. Since these cattle have created more value than average based on feeding and harvest performance, a percentage of the additional revenues is allocated back to the producer. The total added value associated with better performance is shared at 40%, 30%, and 20% with producers for the top 10%, 20%, and 33% of cattle, respectively.

The *Carcass B* alliance participates in branding programs, but is not focused on one brand. There are different product lines for cattle, depending upon their characteristics, targeted to mainstream High Select/Low Choice retail programs or Premium Choice programs.

With group data, members receive feeding and harvest worksheets showing actual performance relative to an estimate made when the cattle were bought. Characteristics measured in the plant relate to quality grade, cutability, and fallouts. There is no charge to producers for group data, though there is a charge of \$2.50 per head sold for individual data. Transportation to the feedlot is furnished by *Carcass B*. Producers pay no commission or membership fees.

Comparing and Contrasting Strategic Alliance Structures

The six strategic alliances are compared and contrasted below according to the following criteria: transaction costs, information flow, risk, capital availability, availability of alternative market outlets, and organizational structure.

Transaction Costs

For each alliance, some transaction costs were reduced relative to the independent, conventional auction model. The word “some” is used here because all possible transaction costs associated with cattle marketing have not been considered, nor have they been quantified. Some of the transaction costs dealing specifically with information are discussed in the “Information Flow Among and Within Segments” section to follow.

Commission fees were reduced or eliminated in all alliances except for *Calf B*. For the other four through which calves were sold, either or both of a flat per animal fee or a reduced commission was charged, the total being less than the commission fees typically charged by conventional auctions. Shrinkage, insurance, feed, and other transaction costs associated with conventional auctions would normally also be reduced by using these alternative markets (Gillespie, Basarir, and Schupp, 2004).

Monitoring has traditionally been a relatively minor (small) transaction cost in the cattle industry. As processors increase their demands for animals of specific types, increased monitoring will continue to emerge to ensure quality and consistency. With the commercial beef carcass alliances, monitoring is conducted primarily via record keeping and communication, and grid pricing offers incentives for producers to provide animals with the desired attributes. With *Calf A*, extensive monitoring is conducted by the members themselves who communicate and work together.

Members enforce management practices to achieve standards, preventing free-riding. With *Calf B*, field staff and local stores verify through record keeping that requirements are met. Beef Quality Assurance certification is one method used to assure compliance by *Carcass B*, *Calf B*, and *Calf C*. The *Calf C* administrator knows each producer personally and regularly visits their operations. Thus, he is able to identify and address questions or concerns that may arise. Insufficient data exist to analyze differences in monitoring costs via alliances. In fact, these costs may be greater for alliance producers who are producing more uniform, differentiated products than for producers who are marketing a commodity. However, the most appropriate comparison of these costs would be between independent producers marketing a differentiated calf versus the alliance producer marketing the same calf.

Transportation costs are transaction costs if they are specific to a market. Most of the alliances surveyed reported lower producer transportation costs for their producers. While *Natural*, *Calf B*, and *Carcass A* producers pay some transportation costs after the calf is weaned, these alliances have worked with producers to arrange transportation so they could ship together, and thus reduce costs. *Calf A* and *Calf C* buyers incur transportation costs. *Carcass B* pays for calf transportation. Hence, transportation costs incurred by producers were eliminated or had the potential to be reduced in all alliances.

All three of the calf marketing alliances purchase some inputs in bulk, allowing members to secure them at discounted prices. Though the associated reduction in input price is not a reduction in a transaction cost per se, the lower cost is the result of alliances among firms.

Information Flow Among and Within Segments

Collection of product and price data that inform the producer about relative prices to be expected for particular animal types requires significant time investment. The commercial beef carcass and natural/implant-free alliances provide information to members primarily via grid data. Specific grid data fees (the fees for obtaining carcass data from the packers) are not charged to *Carcass B* or *Natural* members. For *Carcass A*, data are provided at lower cost compared to non-alliance producers. Each of these alliances meets with producers to discuss data and advise management. Each also publishes a newsletter. The *Natural* alliance arranges for producer visits to the processing plant. Information flow in these alliances tends to be more vertical (among up- and downstream segments) in nature, primarily from packer to cow-calf producer. *Calf C* members also have access to carcass data for a fee.

Some vertical communication also occurs in the calf marketing alliances. For *Calf B*, a publication is issued by the supply cooperative transferring information on alliance performance, information regarding alliance members, and cattle industry news. Additionally, there is personal communication with field staff personnel at the retail stores. *Calf B* has considerable information flow due to the many institutions participating in the alliance.

Calf A uses primarily communication channels among members. This alliance appears to have the highest level of horizontal (within-segment) communication. *Calf C* members also meet regularly and communicate by letters, e-mail, and telephone. Alliance meetings are held with animal health institutions and university faculty to address management issues.

For calf marketing relative to the commercial beef carcass alliances, the information flow is generally more horizontal—among cow-calf producers. There is typically less (or in some cases, no) feedback on how cattle perform after they leave these alliance programs. Learning about consumer tastes and preferences occurs, instead, through relationships among producers and formal educational programs that inform on innovations, standards, and industry issues.

Risk

A number of studies have addressed risk concerns with livestock grid pricing (e.g., Feuz, Fausti, and Wagner, 1995; Anderson and Zeuli, 2001). Schroeder and Kovanda (2003) examined the role of risk in strategic alliances. The present study, however, provides little evidence of price variability being significantly reduced through beef strategic alliances. While producers reportedly received higher calf prices, no pricing formulae were designed specifically for the purpose of reducing price variability. Likewise, there were no specific mechanisms to reduce production variability.

Despite this study's limitation in detecting changes in price or production variability, several risk factors need to be addressed. First, Anderson and Zeuli's (2001) findings suggest that grid pricing increases price variability relative to average pricing, which would imply greater price risk among the alliances pricing via grid: *Natural* and *Carcass A* and *B*. Second, some markets used by alliances, such as video auction and private-treaty sales, may reduce price variability, as discussed by Lesser (1993), and Gillespie, Basarir, and Schupp (2004). These markets are, however, open to all producers of considerable size whether or not they are involved in alliances.

Third, retained ownership, which is utilized by the *Natural* alliance, shifts production risk, such as the risk of death loss or poor performance in the feedlot, to the cow-calf producer. Fourth, many of the production practices required or encouraged by the alliances generally reduce production variability. Vaccinations, for instance, may be viewed as insurance. As shown by Avent, Ward, and Lalman (2004), it is unclear whether preconditioning increases profit, as it generally increases both revenue and cost; the price premium can be viewed, however, as a risk premium paid by feeders to insure against death loss. Thus, while risk was not formally and specifically addressed by the alliances, risk faced by cow-calf producers would likely be impacted through alternative marketing and the required use of risk-reducing management practices.

Capital Availability to Producers

Calf B provides short-term no-interest loans to producers via a preferred loan program. Though the other alliances do not have specific mechanisms to improve capital access, some may lead to input cost reduction. *Calf A* and *Calf C* purchase inputs in bulk, effectively reducing average variable cost. Commercial beef carcass alliances did not appear to increase capital access among members.

Availability of Alternative Market Outlets for Animals of Specific Traits

An advantage of strategic alliances cited by alliance administrators is that members receive premium prices for animals of specific traits. While this study has not compared actual pricing among the alliances, each alliance has requirements it claims have led to greater returns. Each is concerned with breeding. The Angus breed and its crosses are the most desired among the interviewed alliances. For *Natural*, premiums are paid for Angus-bred animals, and opportunities to market specific breeds with *Carcass A* began with the Angus breed. *Carcass B* accepts cattle falling within specific breed parameters. *Calf A* advertises black breeds as the highest percentage. *Calf B* has been more successful in selling Angus, Charolais, and Red crosses, as these have commanded higher prices. Based on market indicators, *Calf C* members are encouraged to use Angus animals. Limited Brahman influence is allowed in most of the alliances.

In addition to genetic traits, specific production practices are required for cattle in most of the alliances. Specific vaccination and preconditioning programs are utilized by most of the alliances. Beef Quality Assurance guidelines are followed by at least three of the alliances. Some of the alliances purchase bulls together in order to increase calf consistency.

Alliances have utilized different markets for animals. *Calf A* and *Calf C* have depended primarily on private-treaty sales, with the latter also utilizing the internet. *Calf B* depends primarily upon conventional auction sales, but attracts major buyers due to volume and animal quality. The two commercial beef carcass alliances employ private-treaty purchasing. *Natural* is a retained ownership program. These results provide evidence that successful strategic alliances can be formed around a number of different marketing/procurement strategies.

Organizational Structure

For each of the alliances, involvement in the cow-calf phase began within the past 12 years. Thus, the types of strategic alliances covered in this study are relatively new to the industry. No employees are hired specifically to manage most of the alliances. The two commercial beef carcass alliances are the only alliances that pay salaries.

Of the six alliances, *Carcass A* manages the largest quantity of cattle, accounting for 100,000 head a year by contract and working with 1,300 to 1,400 commercial cow-calf producers. The alliance is involved in cow-calf production, stocker production, feeding, and packing. In contrast, *Carcass B* operates with 60,000 head and approximately 225 producers. *Calf B* has managed approximately 13,000 calves in 2¼ years of operation, while *Calf C* managed 1,975 head in 2003. This number is relatively small compared to the commercial beef carcass alliances. The smallest alliance, *Calf A*, has managed approximately 2,500 head in its five years of operation. Thus, there is a wide range of size among alliances. Size impacts the scope of an alliance, both in phases of production and geographic influence. The larger alliances obtain cattle from multiple regions of the United States, while smaller alliances are focused on pooling cattle over smaller regions to market truckloads of calves.

A comparison of flow charts for each of the alliances (figure 1) reveals major differences in coordination. The calf marketing alliances are focused on cow-calf production with smaller quantities of cattle, partially due to their location in the cow-calf producing Southeastern United States. They emphasize horizontal coordination in producing large volumes of consistent quality calves for sale at premium prices. These alliances differ considerably from their commercial beef carcass counterparts, which have greater involvement with downstream segments. The natural/implant-free alliance is, perhaps, the most extensively coordinated, with a differentiated, branded product being produced.

Conclusions and Discussion

Based on the findings of this study, strategic alliances have served to reduce some transaction costs involved in the production and marketing of beef products. Specific transaction costs that may be reduced include information, negotiation, and transportation costs. This cost reduction, in combination with the main impetus of establishment of alliances—i.e., to obtain higher prices for cattle—should lead to greater profit for the cow-calf producer relative to the non-alliance producer producing a similar calf. Though no data were collected on prices received by alliance members, administrators commented that prices received by alliance producers were higher than for most non-alliance producers. These higher prices resulted primarily from the ability to assemble larger truckloads of consistent and higher quality cattle of specific traits. Obtaining carcass information was also advantageous for producers in some of the alliances, providing feedback allowing them to reconsider management practices to increase returns, and perhaps even be able to obtain quality premiums.

The selected governance structures appear to be consistent with those that would be expected according to criteria set forth by Williamson (1979). None of the structures are vertically integrated to the cow-calf producer, but are governed either by the market or by rather “loose” bilateral governance relational contracts. Among

relatively small cow-calf producers, transactions are generally infrequent, and great idiosyncratic investments are not made, leading to market governance (*Calf A*, *Calf B*, and *Calf C*). Relational contracts are with producers with more idiosyncratic investments due to greater scale, more frequent transactions, or specific management requirements, such as with *Natural*. Few contracts with cow-calf producers in this industry, however, are likely to be of the nature of those in the hog and poultry industries, as discussed by Gillespie et al. (2000).

Strong evidence did not emerge to conclude that price variability to cow-calf producers is reduced via beef strategic alliances, though it is expected that grid pricing would impact price risk. While some of the markets used by alliances, such as video auction and private-treaty sales, may reduce price variability, these markets are open to all larger producers, regardless of their involvement in alliances. Access to these markets would be an advantage of alliances for smaller producers. Likewise, beef strategic alliances are not generally set up to provide cow-calf producers with greater access to capital. Except for one alliance, none of the interviewed alliance representatives specifically addressed access to capital. Decisions of the alliances to not extensively address capital access and risk could be due partially to the relatively lower initial capital investment in buildings and equipment for cow-calf production, as opposed to its competitor industries. As noted by Gillespie et al. (2000), asset specificity is not as great in cow-calf production as in broiler or hog production. There may be less demand among cow-calf producers than with other livestock enterprises for alliances that provide capital acquisition mechanisms and risk reduction.

Findings allow for the conclusion that additional advantages of alliances to cattle producers are: (a) the increased flow of information along the supply chain via a variety of different mechanisms, each of which is designed to reduce the transaction costs associated with obtaining information, and (b) alternative market outlets for animals of specific traits, or the reduction of transaction costs associated with searching for markets that accept animals with specific traits. Thus, alliance producers have greater access to data helpful to them in making profit-maximizing decisions, and they can access the markets through which their animals command the highest prices.

Each of the interviewed alliances is relatively new to the cow-calf segment; none were involved in this segment 12 years ago. Discussions with administrators suggest that, in cases where a strategic alliance is run primarily by its members, formation and operation often involve trial and error until members are comfortable with a strategy. Such alliances are likely to evolve as new strategies become available. Strategic alliance administrators reported their organizations had evolved significantly early in their establishment. Alliances must be sufficiently flexible and open to change as needed.

Administrators indicate the success achieved by their strategic alliances has been due in large part to the production of quality animals based on sets of established, detailed requirements. All but one of the alliances specified a set of management practices to be used by cow-calf producers. All provided producers with incentives to produce quality cattle.

Producers who would not want to join an alliance include those who (a) are in the cattle business primarily as a hobby and are uninterested in devoting significant management to improving their operations, (b) strongly value their autonomy and would resent other producers or members of other segments of the production chain enforcing alliance production standards, (c) are unwilling to abide by group marketing decisions, or (d) are concerned only with reducing risk or accessing capital for their operations. For those who are interested in forming a strategic alliance, the six alliances considered here provide a diversity of examples of models that could be used in constructing an alliance designed to meet the needs of a particular group of producers.

Some discussion was presented at the beginning of the paper dealing with mechanisms through which the beef industry is changing to meet consumer tastes and preferences. It is our opinion that the alliances which link more downstream segments with the cow-calf segment (i.e., *Natural*, *Carcass A*, and *Carcass B*) are those with the greatest potential for effectively responding to changing consumer tastes and preferences. Their vertical structures are specifically set up to transfer consumer preferences throughout the system to the cow-calf producer, mainly via grid pricing. This is not meant to suggest calf marketing alliances are not achieving or cannot achieve the same end. All three of the calf marketing alliances are striving to produce calves that command the highest prices by larger buyers—presumably the buyers whose interest extends beyond simply filling a truck to capacity. It is important, however, for the industry to create mechanisms whereby the correct signals can be sent through the entire system to ensure the calves that command the highest prices lead to the meat cuts most demanded by consumers. Otherwise, the success of alliances in improving the final consumer product will be limited.

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