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## | Executive Summaries

### **Using Case Studies as an Approach for Conducting Agribusiness Research**

BY JAMES A. STERNS, DAVID B. SCHWEIKHARDT, AND  
H. CHRISTOPHER PETERSON

As agricultural economists extend their research agenda into the realm of agribusiness management, they are finding that traditional research strategies that focus primarily on surveys and analysis of archival data are, at times, limited in their applicability and scope. For example, as market concentration in the agricultural sector increases, opportunities to take random samples from large target populations within many agricultural sub-sectors decrease simply because large target populations no longer exist. Further, many agribusiness research questions are directly concerned with the managerial decision making of firms, i.e., how things function “inside the black box.” Documenting the motivations and strategies underlying decisions that are, in practice, far more complex than a simple decision rule like “maximize profits” or “minimize costs” requires alternative research approaches. This article examines how case study research, as a general research strategy for collecting data and building and testing theory, can provide agribusiness researchers some relief to this dilemma.

Case study, as an approach to conducting research, can be used selectively to address three research objectives: (1) to conduct applied, problem-solving research, (2) to develop new theory, and (3) to test existing theory. Within the context of these objectives, this article reviews how case study research is based on a pluralistic epistemology and eclectic methodology that draws from a wide range of philosophical perspectives, including positivistic, normative, pragmatic and phenomenological bodies of thought. Given these philosophical fundamentals, the article presents parameters for interpreting case study results and characterizes the degree to which conclusions drawn from case studies can be generalized.

Having substantiated the epistemological “legitimacy” of case study research, the article then outlines specific methods for implementing a research

project using case studies. Particular attention is given to the importance of clearly specifying the unit of analysis, and how the intended unit of analysis (or units) and the intended output of the research influence the research design of a case study. A specific example of how case studies were used to research the international marketing decisions of smaller agribusiness firms is provided in order to more fully demonstrate how the approach can be implemented.

The article concludes that case study research is capable of generating a robust, comprehensive array of "knowledge" about complex, highly inter-dependent and dynamic economic and social phenomena. Consequently, in the specific context of agribusiness research, case studies are a viable alternative research strategy for agricultural economists seeking to address an array of topics for which their more traditional approaches to research (e.g., surveys, analysis of archival data) are inadequate.

## **Information Technology in Agri-food Supply Chains**

BY VICTORIA SALIN

High-tech information systems can be a source of competitive advantage to agri-food firms when they support a supply chain strategy that suits the demand for the product. Understanding the difference between supply chains for functional versus innovative products is an important first step. Functional products, with their stable demand and commodity nature, would use automated systems that reduce the costs of production and handling. Innovative products have much higher value added, which justifies expenditures on a responsive supply chain to prevent over-supply and out-of-stocks. Systems to understand and predict consumer demand are critical to an innovative product supply chain. Managers of agri-food supply chains face complications from the fact that their products are not always clearly distinguishable as functional or innovative. Food safety and quality concerns may dictate supply chain approaches.

Information systems in agri-food can be a source of competitive advantages to the entire supply chain, to the extent that information is shared. Economic concentration and mistrust in agri-food industries inhibits the information sharing that is needed for a responsive supply chain based on information technology. The major systems in food chains today are implemented at retail, giving retailers the opportunity for chain leadership through their information advantages. Food retailers can use their advantage to pressure suppliers or instead they can work toward improving performance of the entire farm-to-retail chain.

## **The Alliance Formation Process**

BY JUDITH M. WHIPPLE AND ROBERT FRANKEL

### ***The Research Question***

While interest in developing strategic alliances within the food system continues to increase, there remains considerable risk when firms adopt a cooperative strategy. The risk is due in part to the lack of concrete guidelines that illustrate the steps involved in developing an alliance, and that discuss the strategic and operational decisions that are required at each stage of formation. The existence of such guidelines would facilitate alliance formation and enable managers and researchers to better understand alliance practice.

### ***Study Description***

This paper provides an alliance formation model that describes each step of alliance development. This model examines the *process* that an alliance proceeds through from the initial conceptualization of the cooperative relationship through implementation and administration of the alliance. The model also examines the *strategic* and *operational* decisions required at each step in the development process. In addition, the paper contains agribusiness and food system examples to demonstrate how the model can be used by managers involved in developing alliances.

### ***Findings/Results***

The paper details the alliance formation model including a discussion of how to measure strategic and operational effectiveness. The measures of effectiveness are used to evaluate the success of an alliance. This evaluation can provide insight into areas for improvement or can suggest the alliance be dissolved. Further, these measures provide a comprehensive treatment and analysis of trust. Trust has historically been shown to have a vital role in the success of an alliance, and yet, managers and researchers alike report a difficulty in defining and conceptualizing trust. This paper discusses a multi-dimensional measure of trust.

### ***Managerial Implications***

The alliance formation model was designed for two purposes. First, the model can be used to guide a manager through the entire alliance development process. Second, the model serves as a foundation for managers and researchers to measure an alliance's development and long term success. The model's main strength is its dynamic focus which provides a framework for evaluating an alliance over its entire life span. This evaluation serves as a decision point to routinely determine whether the alliance should be sustained, modified or

terminated. The model can also be used by managers with various levels of experience in alliances: managers forming alliances for the first time; managers with current alliances that are not meeting original expectations; and managers with successful alliances that are looking for some additional areas for improvement.

## **Managing Exposure of Direct Foreign Investment to Political Risk: The Case of Food Businesses in China**

BY YAN LIU AND BRUCE BJORNSON

1. Direct foreign investment (DFI) allows a multinational corporation (MNC) to generate and appropriate extra-normal profits from its unique assets in a foreign market. This paper investigates how DFI exposure to political risk can be managed by MNCs with specific applications to the case U.S. brand-name food companies investing in China. We take the case of China because it is a major emerging market in which many MNCs seek growth opportunities. Export markets fail for many such opportunities so that DFI is the viable alternative.
2. The study examines the general importance of DFI to MNCs and foreign host countries, and on this basis then examines the MNC's overall problem of political risk. The study then looks at which of these risks can be managed for committed DFI, and how the MNC can reduce these risks. We apply transaction cost principles related to specialized investments and tacit knowledge, and exemplify the rationale with cases of U.S. food company investing in China.
3. We find that MNCs can reduce exposure to political risk by integrating DFI operations with MNC-specific assets so that the value of the DFI depends on the MNC's continuing ownership and presence. We find that this often characterizes the cases of U.S. food company DFI in China that we examine.
4. MNCs can reduce exposure to certain political risks by relying heavily on MNC-specific assets, often in the form of tacit knowledge or capabilities that are difficult for host entities to appropriate. MNCs can form joint ventures with host partners, creating local stakeholders with an incentive to shield the DFI from political risks. Joint ventures should be structured so that host partners contribute more of the host-location-specific assets, further reducing the MNC's exposure. However, host partners must be carefully evaluated for capabilities and potentially divergent objectives.

## **Economics of Soybean Biotechnology in the Livestock Industry**

BY CHANJIN CHUNG AND JAMES E. PETTIGREW

### ***The Research Question***

Recent advances in agricultural biotechnology greatly increase the possibility of developing high-quality soybeans for various uses. Numerous studies have reported that soybeans can be genetically tailored to meet market needs and that these specialty soybeans have great potential for increasing the value of soybean products, particularly in the livestock industry. For example, higher protein soybeans or those with higher combinations of particular essential amino acids (e.g., lysine, methionine, and tryptophan) are expected to greatly reduce the feed costs of targeted livestock groups. Although these modified soybeans are increasingly demanded by both domestic and foreign livestock producers, few studies have analyzed the potential effects of commercializing new biotech soybean varieties on the livestock industry. This study addresses the following questions:

1. How much could the new soybean varieties save on livestock producers' feed cost?
2. How would it change the ingredient composition of livestock diets?
3. How robust are these results under alternative price and availability conditions in the feed ingredient market?

### ***Study Description***

Of the potentially possible soybean modifications, we focus on three alternative modifications designed to increase protein and/or amino acid contents for animal feed. The impact of these modified soybeans is expected primarily on poultry and swine producers. To estimate the economic potential of these soybeans, least-cost diet formulations are made for each poultry and swine growth stage with specific nutrient constraints, allowing only a few ingredients including corn, soybean meal, and crystalline amino acids. Then, each alternative soybean meal is introduced into each diet, and the diet formulations are solved again. The formulation results with and without new high quality soybean meal are compared to determine the relative economic value of alternative soybean meals and the change in feed formulations.

### ***Findings/Results***

Major findings of this study include: (1) development of new alternative soybeans would benefit poultry meat producers more than egg and pig meat producers; (2) new soybean meals would save more feed costs in starter diets than in either grower or finisher diets; and (3) economic advantages of new soybean meals were highly sensitive to the availability of alternative protein sources but less sensitive to changes in ingredient prices.

### ***Management Implications***

The results indicate that livestock producers would reduce their feed costs by 0 to 5% by using new soybean meals. However, the economic advantages of altered soybean meals were highly sensitive to the growth period of each livestock production and the availability of alternative protein sources. Therefore, the findings suggest that the economic evaluation of soybean biotechnology in the livestock industry should be carefully conducted in feed formulations of each livestock growth period with consideration of various conditions of feed ingredient availability.

## **Russian Food System in Transition**

BY A. YAKUNINA, D. MENKHAUS, C. BASTIAN, AND V. ESIPOV

### ***The Research Question***

There has been interest in the Russian food market among U.S. agribusiness firms, particularly in exporting meat products. The future viability and stability of this market, and other transition economy markets, for U.S. agricultural commodities and products, however remains in question.

### ***Study Description***

The purpose of this paper is to: (1) briefly review the economic conditions that exist in the Russian general economy and agriculture; and (2) summarize the vertical coordination systems and pricing mechanisms in the food industry, as the Russian economy has evolved from a former planned economy. This provides the foundation for understanding the transition that has occurred in the Russian food system, its future, and potential as a viable export market for U.S. agribusiness firms.

### ***Findings/Results***

Transition in the Russian food system has resulted in the evolution of different forms of vertical coordination. During the command economy period, the activities in the stages in the food vertical chain were coordinated administratively similar to an integrated firm. As the Russian economy has started to move toward a more market oriented system, coordination in the food chain has evolved from mostly vertical expansion through quasi integration to mostly vertical mergers. Although open organized markets have been established in many regions, they have not become a significant marketing alternative for Russian food products.

There remains a tendency toward vertical coordination in the Russian food system in part due to market imperfections. Until such time that stable and reliable institutions capable of enforcing the rules of business relationships and

transactions are formed, the general business climate for firms in the Russian food system will be difficult. Public investment in the Russian food system also will play a critical role in its development. Investments in rural infrastructure, inspection and information services, agricultural research, education and technology transfer are necessary to reduce costs, increase economic efficiency, and revitalize the Russian food system. If this does not occur, the food system in Russia will not be effective in meeting the increasingly diverse demands of Russian consumers.

### ***Management Implications***

Recent interest has been directed toward identifying and providing value-added type products and the development of technologies to provide such products in foreign markets. There is, however, a more basic requirement that must be taken into account—that of the unique characteristics of the exchange system and the structural nature of agriculture in the potential importing country. If the structure of the foreign agricultural system is set up to respond quickly and efficiently to changing demands of consumers, then the potential to provide products to those countries by U.S. agribusinesses may be reduced. On the other hand, if the agricultural system is such that the signals from consumers are not transmitted in an effective manner, and/or if the production system cannot respond effectively and efficiently, potential might exist for U.S. firms to enter these markets, given the ability to pay by consumers, absence of trade barriers, and reasonably stable or predictable political and economic climates.

## **Effects of the Canada-U.S. Trade Agreement on U.S. Agricultural Exports**

BY RAVICHANDRAN MUNIRATHINAM, MICHAEL R. REED, AND  
MARY A. MARCHANT

### ***Research Question***

What has been the effect of the Canada-U.S. Trade Agreement (CUSTA) on U.S. exports of agricultural products? Are the impacts minor, as most studies before the CUSTA estimated, or are the effects more encompassing? The answer to these questions are vitally important because there is much talk about free trade areas with respect to many countries. It is the premise of this research that the best way to analyze the effects of future free trade areas is to analyze the effects of the first free trade agreement signed by the U.S.—CUSTA. If we do not understand our history, how can we expect to predict our future?



### ***Study Description***

The objectives of the research are to 1) document international trade and investment flows in the food industry between the U.S. and Canada, and 2) to develop and quantitatively estimate models which statistically determine changes in U.S. agricultural exports to Canada.

Econometric analysis found that CUSTA has had a large impact on many U.S. agricultural export categories. All of the consumer-oriented products (except wine and beer), five of the intermediate products, and four of the bulk products had significant CUSTA effects. It is clear that the CUSTA effects have been larger for consumer-oriented food products. There is also evidence that U.S. affiliate sales in Canada have stimulated U.S. exports of consumer-oriented products and intermediate products.

### ***Findings/Results***

The study found that CUSTA has had a large impact on many agricultural export categories. Total U.S. agricultural exports to Canada increased by \$2.86 billion due to CUSTA. Most of that increase (91%) in exports came from consumer-oriented products. All of the consumer-oriented products (except wine and beer), five of the intermediate products, and four of the bulk products had positive coefficients on the CUSTA dummy in *model 1*.

There is some evidence that U.S. affiliate sales in Canada have stimulated U.S. exports of consumer-oriented products and intermediate products, but there is little evidence that it has influenced U.S. bulk product exports. The existence of broad product lines by U.S. food processors and the fact that these U.S. multinationals own processing facilities in Canada allows the firms to sell products manufactured in the U.S. through their Canadian affiliates.

### ***Management Implications***

Agribusiness firms must use free trade agreements to their advantage. These agreements bring about many opportunities that can be exploited by agribusiness managers in order to compete in this ever-changing world. Obviously, many U.S. agribusinesses have taken full advantage of the increased trade opportunities brought about by the CUSTA. Future integration with other countries with more diverse economic resources will surely increase U.S. agricultural exports even more.

## **Spatial and Varietal Price Analysis of Dry Edible Bean Markets**

BY C. LIAN, D. FEUZ, AND R.G. TAYLOR

### ***The Research Question***

The U.S. dry edible bean industry is characterized by geographically separated production regions where numerous growers sell beans to a few processors. A

large portion of dry edible beans are exported into countries that are politically and economically unstable which creates considerable price risk for bean dealers/processors and ultimately bean growers. However, there is no futures market nor nationally reported price but the USDA does report regional prices. Bean growers and dealers face considerable price uncertainty when making planting, storage, and marketing decisions. This research is a study of how regional, varietal, and grower and dealer bean prices relate to one another. If there are predictable relationships between these different segments of the bean market then growers and dealers should be able to improve their marketing decisions.

### ***Study Description***

Four hypotheses are tested: 1) edible bean prices for the same variety will be cointegrated across the different production regions, 2) dealers' prices and growers' prices for Pinto or Great Northern beans move in the same direction over time, regardless the size of the marketing margins, 3) Pinto and Great Northern prices will be cointegrated in the same production region, and 4) the dominant production region for each variety will be the price leader for that variety. Cointegration analysis is used to test the first three hypotheses and to determine the long run price relationships. Granger causality tests are applied to the data to test the fourth hypothesis.

### ***Findings/Results***

Grower prices as well as dealer prices were cointegrated for each variety in each market. This result implies that prices tend to move in the same direction for each variety in different regions. Grower prices for both Pinto and Great Northern were cointegrated with dealer prices in four major markets. The fact that grower and dealer prices are cointegrated implies a long-run stable marketing margin. Pinto and Great Northern prices are not cointegrated in production regions where both varieties are grown. Producers may treat Pinto and Great Northern varieties as production substitutes, but lack of market substitutability was manifested by lack of cointegration between the two varieties. The dominant production region for each variety did not exhibit any price leadership.

### ***Management Implications***

The results of the cointegration analysis and the causality tests imply that there is one national market for each dry bean variety. Production occurs in regionally isolated markets, but price is primarily determined in a national supply and international demand framework. Growers and dealers should be able to compare prices across regions for the same variety and in the absence of a grower or dealer reported price should be able to assume a stable margin to estimate the missing price. However, it would be incorrect to assume that prices for Pinto and Great Northern beans will always move in the same direction. It is also incorrect to

assume that prices in the dominant production region for a variety will lead prices for that variety in other regions.

### **Supply Chain Management: A Case Study of Issues for BioAg**

BY FRANK J. DOOLEY AND JAY T. AKRIDGE

Supply chain management (SCM) has emerged as a critical issue for agribusiness and food company managers in the late 1990s. Efficient Consumer Response (ECR), a food industry supply chain initiative, is focused on lowering supply chain costs by increasing collaboration among food processors, distributors, and grocers. It entails the use of advanced information technology to optimize logistics of moving food products that more closely meet buyer wants. More recently a similar effort (RAPID) has been launched for agricultural input supply firms.

A case study approach is used to introduce the reader to supply chain management by following the planning efforts among an interdisciplinary team of managers at BioAg. A hypothetical small Midwestern agricultural chemical firm, BioAg, has been asked to enter a SCM relationship with Farmco, its largest reseller. The case explores some of the issues and dilemmas associated with supply chain management efforts. It could work well either as part of a capstone course, in a special topics course, or in an executive education course.

The analysis of the case addresses three issues. First, a general question asks what are the risks and benefits of pursuing a supply chain relationship. A graphic accompanying the case illustrates the shift in procurement relationships with SCM. The second question addresses which factors are critical to achieving a successful supply chain relationship. Information in the case allows for the discussion of information technology, logistics, and organizational behavior. The final question asks that the student move beyond the particular supply chain relationship to consider the impact of SCM upon other customers.

Besides its timeliness, the BioAg case is important to agribusiness managers and students because it focuses on cross-functional collaboration within the firm. Aiming to provide a wide perspective of supply chain management issues, the case includes several recommended readings and web pages.