Perceptions of Regulations and Trade Barriers: How Policy Affects Agricultural Firms and Food Processors in the Decision to Export

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This study identifies and evaluates the impact of perceived regulatory barriers to exports on Kentucky agricultural firms and food processors. Two binary logistic regressions are used to analyze the impact of trade barriers, regulations, costs and risk on the decision to export and on a firm's interest in international marketing. Perceived cost constraints are found to inhibit a firm's decision to export products. A firm's interest in international marketing is negatively affected by perceived riskiness of international sales and perceived regulations during the initial consideration to enter foreign markets.

Today's food and fiber industry is becoming increasingly globalized as technology continues to improve access to information about markets. Firms now have more opportunity to market their products worldwide. Advances in communication and transportation have reduced transaction costs for firms, increasing the ease of market access. Despite these technological advances the U.S. still suffers a large trade balance deficit in total. Historically, the U.S. agricultural industry has experienced a surplus in agricultural trade; however, in recent years this surplus has been declining simultaneously with an increase in agricultural imports (Jerardo 2004). This simultaneous export-import phenomenon, known as intra-industry trade, has shifted attention toward export promotion programs to ensure that the U.S. agricultural industry remains in trade surplus. It is important to identify state-level marketing constraints and opportunities in order for export promotion programs to be effective. This research identifies and evaluates the impact of perceived policy barriers to export such as trade barriers, record keeping, and regulations on Kentucky agribusiness and on food processors' decisions to export.

Kentucky's state exports consist primarily of manufactured products, with a total value of $19 billion. Agriculture accounts for two percent of the state's exports, $296 million (Kentucky World Trade Center 2009). However, based on NAICS codes, some of the commonwealth's leading value-added food and agriculture products (i.e., distilled spirits) are included in the manufactured products statistics. With the economic downturn, firms of all sizes are looking to increase profit margins, which can be accomplished by increasing sales through expanded markets, including foreign markets. Identifying the factors that prevent firms from pursuing international sales opportunities will benefit policymakers in designing export promotion and assistance programs as well as firms interested in pursuing or expanding exports. The research will also have implications for internationalization in general, not only in Kentucky but also in other regions of the world.

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Background

Few export research studies exist in the agribusiness and food processing industries prior to the mid-1990s. A Michigan study (Sterns 1997) was among the first to investigate export decisions among smaller agribusinesses and food industry firms; earlier studies investigated manufactured product exports. Sterns investigated perceived demand, competitive advantages in product transformation costs, and competitive advantages in transaction costs as the key contributing factors to the export decision. Geographic breadth of the U.S. market for a firm, firm size, and familiarity with exporting were all found to be positively correlated with the decision to export (Sterns 1997). Furthermore, perceived problems with national export policy and procedural difficulty correlate with firms' export experience (Katsikeas and Morgan 1993). Katiskeas and Morgan consolidated perceived regulatory issues, currency rates, costs of exporting, and government support programs into "external problems" affecting the firm in the decision to export.

Several studies have addressed the reduction of export inhibitions through information search or U.S. export promotion programs, both in international business and agribusiness literature (Byford and Henneberry 1996; Smith and Bellew 2005; Amponsah, Adu-Nyako, and Pick 1996; Diamantopoulus, Schlegelmilch, and Katy Tse 1992; Saxowsky, Krause and Gustafon 1998; Barringer, Wortman, and Macy 1994). The Export Enhancement Act of 1992 formed the Trade Promotion Coordinating Committee and thus the *National Export Strategy*, published annually since September 1993. The overall purpose of the strategy is to identify those companies that need assistance in export promotion, recognize those needs, and direct companies toward agencies to meet those needs (Morillo 1994). Identifying the factors that determine a firm's decision to export is important in order to target export promotion to appropriate firms and overcome the information barriers serving as export constraints (U.S. Trade Promotion Coordination Committee 2008).

Barringer, Wortman, and Macy (1994) and Saxowsky, Krause, and Gustafon (1998) both addressed the reduction of export inhibitions through planning and information search. The former identified three causes of export inhibitions as managerial perceptions and attitudes, export risk, and export complexity. The authors suggested the first step to overcoming export constraints is to address managerial attitudes toward exporting. The study also suggested a lack of information and interest is correlated with increased perceived riskiness. Barringer, Wortman, and Macy (1994) conclude that planning and information seeking will reduce those inhibitions found among small agribusiness firms. Saxowsky, Krause, and Gustafon (1998) observed trade barriers and tariffs to be the most important perceived export barriers among small and medium agricultural and rural firms. Export planning was correlated with the firms' exporting experience; non-exporters did not actively seek to export and therefore neither planned nor searched for information about international marketing. Saxowsky, Krause and Gustafon (1998) suggested overcoming the information barriers about export documentation and foreign markets through use of the export assistance and enhancement programs.

Data

Primary data from a survey administered via email are used in this study. A selection of agribusinesses and food processors in Kentucky was compiled using online sources including the Kentucky Department of Agriculture "Kentucky Proud Store" (2009), Kentucky MarketMaker (2009), and the Kentucky Cabinet for Economic Development "Kentucky Business and Industry Information System" (2009). The firms, which ranged in size, were first contacted by telephone to request participation in the study. In several instances the telephone conversation also served as a condensed interview or case study revealing additional information regarding decision makers' perceptions about international marketing. Following the business' consent to participate in the study, the questionnaire was sent via email, with the exception of a few specially requested postal-mail inclusions.

The survey consisted of 60 questions addressing general details about the firm, interest in exporting, international experience, access to information, market conditions for the product being sold, and perceptions of international markets. Thirty-nine responses were received out of 114 sent, a 34 percent response rate. Seven questions were selected to be included as independent variables in this study. These questions address perceptions held by firm decision makers regarding regulations, trade barriers, risk, international finance, and record keeping as inhibitions to product exports. Table 1 identifies the relevant questions pertaining to this study.

Descriptive Statistics

Of the thirty-nine observations, 20.5 percent, or eight firms, currently export their products; among those non-exporting respondents, 42 percent (14 firms) are interested in exporting. The mean age of firms responding is 12.76 years. In this study, firm size is measured by number of employees and annual gross sales. The average number of employees among the companies is 22 and the observed mean annual gross sales are $7,348,000. High costs of exporting and trade barriers and tariffs were most commonly identified as additional barriers to exporting,

Table 1. Independent Variables from Questionnaire.

Survey question	Possible responses	Variable name
Please select the statement which best describes how market regulations affect your company.	a) Regulations and/or government policies hinder our competitiveness	reghinder
	b) Regulations and/or government policies enhance our competitiveness	regenhance
	c) Regulations prevent us from entering some markets	reprevent[1]
	d) A and C	
	e) B and C	
The markets in which we compete are heavily regulated	Respond on a scale of 1 to 5 1 = very much; 5 = not at all	heavilyreg[1]
Country-specific regulations, tariffs, and/or fees factor into our decision to enter a foreign market	Respond on a scale of 1 to 5 1 = very much; 5 = not at all	regdecide[1]
Contract laws in some foreign markets are not strict enough for us to pursue those sales	Respond on a scale of 1 to 5 1 = very much; 5 = not at all	contractlaw
International sales carry a higher risk than domestic marketing	1 = strongly agree 2 = somewhat agree 3 = unsure 4 = somewhat agree 5 = strongly disagree	risk[1]
Our company views the costs of international marketing and sales as constraints to entering the global market	1 = strongly agree 2 = somewhat agree 3 = unsure 4 = somewhat agree 5 = strongly disagree	costconstraints[1]
Select the following which your firms would consider to be barriers to international markets	High costs of exporting	costs
	International financing	intlfin
	Currency rates	rates
	Paperwork (export records)	records
	Trade barriers and tariffs	barriers[1]

[1] Variables used in the empirical models for this study.

means of 59 percent and 50 percent, respectively. Sixty-nine percent of firms believe regulations prevent them from entering foreign markets. Table 2 identifies the mean value for the dependent and independent variables used in this analysis.

Empirical Modeling

Two binary logistic regression models were estimated to determine the impact of perceived regulatory barriers on a firm's decision to export and on a non-exporting-firm's interest in pursuing foreign markets. The independent variables (described in Table 1) in the model addressed firms' perceptions of regulations, risk in international markets, cost constraints to exporting, and trade barriers/tariffs. Perceptions of regulations were determined by the extent to which firm decision makers believed regulations prevent them from entering foreign markets, the markets in which they currently operate are heavily regulated, and the degree of impact regulations have overall on the firm's decision to enter a foreign market. Each of the regressors in the models is based on firm decision makers' perceptions since

Table 2. Mean Values of Dependent and Independent Variables.

Dependent variables	
Export	20%
Interest	42%
Independent variables	
Age of firm	12.76
Number of employees	21.7
Sales ($1000)	7348.65
Customers export products	23%
Online sales of product offered	41%
Regulations hinder firm competitiveness	69%
Regulations enhance firm competitiveness	17%
Regulations prevent firm from entering foreign markets	69%
Firm's current markets are heavily regulated (1 = very much; 5 = not at all)	2.50
Regulations, tariffs, and/or fees factor into the decision to enter a foreign market (1 = very much; 5 = not at all)	2.94
Contract laws in some foreign markets are not strict enough (1 = very much; 5 = not at all)	3.42
International sales carry a higher risk than domestic sales (1 = strongly agree; 5 = strongly disagree)	1.79
Costs of international marketing are constraints to entering the global market (1 = strongly agree; 5 = strongly disagree)	2.43
High costs of exporting as a barrier	59%
International financing as a barrier	26%
Currency rates as a barrier	41%
Export records and documentation as a barrier	43%
Trade barriers and tariffs as a constraint	50%

the survey questions provoked self-reported beliefs about barriers to exporting. Identical sets of regressors were used in both models.

Model 1 measures the likelihood that a firm will export its products, explained by the selected independent variables (see Table 1). The sample size for the export model is N = 39. It was hypothesized that a higher impact of regulations in the decision to export would be negatively correlated with the likelihood that a firm would export its products. Also, perceived risk and cost constraints were expected to explain the likelihood of a firm's export decision.

To further gauge the impact of these factors on the observed firms' views on international marketing, Model 2 measures the impact of the independent variables on the likelihood that a firm is interested in exporting its products. The sample size for the interest model is N = 33, as those firms who currently export their products were not asked to indicate their interest in exporting on the questionnaire. Similar significance levels and marginal effects were expected for Model 2. If perceived regulations, risk, and costs are negatively correlated with the decision to export, one would assume the same would follow for a firm's interest in exporting.

Results

Table 3 presents the results of the two logit regressions in the form of odds ratios. The likelihood ratio index (LRI), also known as McFadden's R^2, measures the explanatory power for each model and is 0.26 for Model 1 and 0.30 for Model 2. The level of significance is also indicated in Table 3 according to the p-value; neither model had any variables significant at the one percent level, perhaps due to relatively low sample sizes. Furthermore, regulation had no statistically significant impact on the decision to export; only the variable measuring the impact of international marketing costs was significant at the ten percent level. Again, the lack of statistical significance is perhaps related to the sample size since only eight of the thirty-nine participating firms currently export their products. Alternatively, these results could coincide with the idea that with experience firms overcome perceived regulatory barriers.

Although perceived cost constraints is the only statistically significant variable in the export model, the correlation among dependent and independent variables is still worthy of discussion. Most of the variables follow intuition in terms of direct and in-

Table 3. Logit Odds Ratios of Perceived Barriers for the Decision to Export and Interest in Exporting.

Independent variable	Export	Interest
Regulations prevent firm from entering foreign markets	0.621	0.068*
Firm's current markets are heavily regulated (1 = very much; 5 = not at all)	0.964	0.783
Regulations, tariffs, and/or fees factor into the decision to enter a foreign market (1 = very much; 5 = not at all)	0.368	0.322**
International sales carry a higher risk than domestic sales (1 = strongly agree; 5 = strongly disagree)	1.237	2.905*
Costs of international marketing are constraints to entering the global market (1 = strongly agree; 5 = strongly disagree)	2.477*	1.511
Trade barriers and tariffs as a constraint	0.255	1.078

*denotes statistical significance at the ten percent level.
**denotes statistical significance at the five percent level.
***denotes statistical significance at the one percent level.

direct relationship; firms who view regulations as an inhibition to entering foreign markets (*regprevent*), who consider trade barriers/tariffs to be constraints (*barriers*) and who consider their current markets to be heavily regulated (*heavilyreg)* are all less likely to export their products. Exporting activity is more likely among participants who disagree more than agree with the idea that international markets are riskier than domestic markets (*risk*).

Counterintuitively, firms are less likely to export if regulations, tariffs, etc., factor less into the decision to export: Likert scale level increased, regulations became less important in the decision to enter a foreign market (*regdecide*). This relationship could be discounted by the lack of statistical significance. The *costconstraints* variable, statistically significant in the export model at the ten percent level, indicates that firms who disagree more than agree that costs act as constraints to global markets are nearly 2.5 times more likely to export their products. Further research can clarify whether the perception of cost constraints to foreign market is linked to firm size and capacity.

Perceived regulations and risk were both found to have a statistically significant impact on a firm's interest in exporting. The degree to which regulations, tariffs, and fees entered into the decision to enter foreign markets (*regdecide*) was statistically significant at the five percent level. Significant at the ten percent level was the perception that regulations prevent firms from entering foreign markets; firms holding this perception were seven percent less likely to have an interest in exports. Also significant at the ten percent level is the perception of risk. If a firm disagrees more than agrees (on the five-point Likert scale) that international sales are riskier than domestic sales, the firm is nearly three times more likely to express an interest in pursuing foreign markets. This relationship coincides with the relationship between actively exporting and risk perception; exporting firms did not perceive international sales to be riskier than domestic.

Conclusions

Regulatory barriers play an important role in Kentucky agribusiness and food processors' decision to export their products, and even more on a firm's interest in exporting their product. Firms who place less consideration on regulations, tariffs, and fees when choosing to participate in a foreign market are less likely both to export and to have an interest in exporting. Perceived cost constraints and riskiness of international sales and marketing act as barriers to export and also inhibit firms' interest in international marketing. Export promotion programs are designed to overcome firms' information barriers; education about trade barriers, other trade regulations, and financial assistance will decrease perceived regulatory barriers to export. Education and export promotion program awareness are essential to increase export activity among small- to medium-sized agribusinesses and food processors.

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