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International Agricultural Trade  
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EVALUATION OF EXPORT PROMOTION PROGRAMS  
ON TRADE OF HIGH-VALUED AND PROCESSED  
FOOD PRODUCTS: IMPLICATIONS FOR  
NORTH CAROLINA AGRIBUSINESS

by

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## Introduction

U.S. agriculture's export dependence<sup>1</sup> is rising. While the overall economy's export dependence is currently about 11%, agriculture's export dependency is about 25% and the U.S. Department of Agriculture (USDA) expects it to grow to 31% by 2000. Agricultural exports continue to contribute to reducing the nation's trade deficit. Agricultural exports are part of the success story for U.S. trade, generating a trade surplus of \$24.6 billion in fiscal 1995 -- the second largest surplus ever. In addition, U.S. agricultural exports have more than doubled since the 1985 Farm Act, reaching \$54.2 billion in fiscal 1995 and \$59.8 billion in fiscal 1996 (USDA, 1996).

New markets are emerging all over the world; the best prospects are in Asia. The Pacific Rim has become important in achieving the USDA's global vision for the year 2000<sup>2</sup>. The region is experiencing the world's fastest economic growth, a large and growing population, changing dietary patterns, growth in Western-style supermarkets, trade liberalization, and the competitive value of the U.S. dollar. Additionally, regional and global trade agreements are changing the landscape of world trade.

In the U.S., policy makers have sought various avenues to increase U.S. agricultural trade competitiveness by (i) attempting to reduce or eliminate distorting trade practices in assuring passage of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA), and by (ii) seeking to create a more flexible farm program that will allow farmers to make planting decisions on the basis of consumer needs rather than on the basis of farm program considerations. For example, following the longest farm bill debate in U.S. history, the Federal Agricultural Improvement and Reform (FAIR) Act of 1996 became law on April 4, 1996, aiming to significantly change U.S. agricultural policy. The 1993 Omnibus Budget Reconciliation Act had authorized reduction in Market Promotion Program (MPP) funds from the 1990 level of \$200 million annually to \$110 million annually through 1997. The 1996 FAIR Act, in addition to changing the name of the MPP to Market Access Program (MAP), has further authorized funding reduction for the program to \$90 million annually for fiscal 1996-2002. If the outcomes of all the policies are successful, they will achieve for the U.S. a system that allows American farmers and exporters to respond more closely to market signals. Strategic marketing will, therefore, become the primary competitive tool with which competitors most skillful in marketing will win greater export market shares.

Parlaying these opportunities will require that trade policy makers would need to take stock of current activities and programs aimed at enhancing the competitiveness of U.S.

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<sup>1</sup>Agricultural export dependence is equivalent to agricultural exports divided by the difference between cash receipts and government payments. Overall export dependence is the total exports divided by the GDP.

<sup>2</sup>USDA's stated goal, articulated by the Foreign Agricultural Service, is to increase U.S. agricultural exports by 50% by 2000; a net gain of over \$21 billion between 1994 and 2000.

agricultural trade. This study seeks to evaluate the availability and adequacy of export promotion and assistance programs for agribusiness which produce high-valued and processed food products in the state of North Carolina. The study is based on a survey questionnaire originally designed in 1994. It attempts to elicit responses from agribusinesses on the following issues: firms strategies, sources of export contact, export influences, export hindrances, government sponsored export promotion and assistance programs, other international activities undertaken, impacts of major trade policies, firms characteristics, and management attitudes toward exporting. This report focusses mainly on export promotion programs.

### **High-Value Agricultural Products Promotion**

Traditionally, U.S. agricultural exports have concentrated heavily on bulk commodities; mainly wheat, rice and other grains. However, recent growth in exports have come from high-value products (HVPs). HVPs are often consumer ready, or near ready, products. Unlike bulk commodities, consumers of HVP place high premium on product quality such as freshness and aesthetic appeal and the associated technical or marketing services. HVPs include food products such as intermediate/semi-processed products (e.g., wheat flour, vegetable oil); unprocessed consumer-oriented products (e.g., fresh fruit and nuts); and highly processed, consumer-oriented products. HVPs also typically provide greater benefits to the exporting nation because processing adds jobs, economic output, and government revenues.

The USDA's Foreign Agricultural Trade of the United States (1993) reports that U.S. agricultural exports totaled nearly \$42.6 billion in fiscal year 1993 (the year for which data is collected for this study), rising to the second highest level since 1981's \$43.8 billion. Since then exports have risen to \$54.2 billion in fiscal year 1995 and \$59.8 in fiscal year 1996. These were fueled by higher exports of HVP, surpassing \$24 billion in 1993, and offsetting a decline in bulk commodity exports. Since the 1985 Farm Bill, U.S. exports of high-value consumer goods have expanded by about four times faster than domestic sales.

The growth in HVP exports is attributed largely to increased demand from the industrial countries of Europe and the Pacific Rim (especially Japan) for fruits and vegetables; the result of heightened awareness in these countries of health and nutritional values of horticultural products and improvements in shipping handling technology. Furthermore, demand for HVPs is also on the rise in developing countries, especially in those economies which have recently been reformed and are reaping the benefits of increased growth. While greater nutritional concerns and rising incomes in other countries afford greater opportunities to increase U.S. exports of HVPs, supply sources for these products are not limited to the United States. Therefore, U.S. exports face strong competition in HVPs from the European Union (EU-15) and selected middle income developing countries.

The rising importance of HVPs in total U.S. agricultural exports have also called for greater attention to be devoted to promoting HVPs instead of the previous emphasis on bulk commodities. Export promotion includes marketing, and/or the facilitation of marketing overseas. Promotion efforts usually conform to the cultural, legal and linguistic differences in

the foreign target market. Therefore, U.S. firms are required to actively seek new markets abroad, and to do so requires adapting one's product (Pattison, 1990; Nelson, 1990).

The two primary market-based means of promoting exports are through price discount and non-price activities. Export promotion via price discount, uses a subsidy which allows an exporting firm to decrease its price below the lowest price at which it is willing to sell based on its cost structure and the structure of the market. Usually governments engage in non-price export promotion by assisting firms to gain access to international markets without deliberately altering the price of goods to the final consumer. But successful trade in HVP depends on the marketing practices and strategies of individual firms. Therefore, product differentiation and other non-price promotion activities may be potentially more effective in contributing to a firm's market development and competitiveness.

Non-price export promotion activities generally comprise: (i) export service programs (e.g., seminars, export counseling, how-to-export handbooks, and export financing); and (ii) market development programs (e.g., dissemination of sales leads to local firms, participation in foreign trade shows, preparation of market analysis, and export news letters). The high intensity of non-price activities associated with HVP marketing also implies that export market assistance programs tend to be information intensive with a high cost of procurement by individual firms. Furthermore, some of the information necessary for successful export marketing are of public good nature and, thus, are non-rival in consumption. For example, export assistance programs are provided by public entities and are designed to overcome or reduce the informational and transactional barriers (especially the cost of disseminating information) associated with export market exposure and entry.

"Promotion" also implies that federal, state, and associated institutions must form partnerships in seeking to induce firms to consider exporting, or expand current international activities. A number of organizations (nonprofit agricultural trade organizations, regional trade groups, and private companies) at the federal, and regional levels promote U.S. agricultural products. Agricultural trade promotion has been facilitated through the Targeted Export Assistance (TEA) program, re-named the Market Promotion Program (MPP) in the 1990 farm bill, and re-named the Market Access Program (MAP) in the 1996 farm bill. Other programs include the Export Enhancement Program (EEP) and several export credit guarantee programs which are designed to provide subsidies for U.S. exporters of bulk commodities so as to enable them to compete against subsidized prices in specific export markets. Regional trade associations, such as the Southern United States Trade Association (SUSTA) provide international marketing services for their regional exporters and foreign importers. Commercial trade data which complement market assistance/promotion are also compiled by the U.S. Department of Commerce through the National Trade Data Bank (NTDB).

Federal export promotion activities have been criticized for the generic nature of the information provided, and for reacting to competitors' actions instead of encouraging proactive marketing techniques. For example, information has been found outdated by the time it reaches the recipients. These criticisms constitute a serious drawback for U.S. producers, given the

highly competitive and dynamic nature of markets in the international arena, and may result in loss of market opportunities for domestic producers.

Furthermore, according to a report by the General Accounting Office (1990) because of the diversity of firms and their products, market promotion may be more effectively and efficiently handled by industry organizations and/or local and state governments as well as their institutions, which are more likely to be in touch with the needs of these firms, and can work closely with them. Another argument proffered is that if export promotion is viewed in a development context, then it could be better handled locally by officials who are more in touch with the strengths and weaknesses of local firms, and who are more likely to link export promotion with community development. Therefore, it may be necessary to intensify coordination of export promotion between federal and state agencies.

Moreover, the U.S. trade deficit is not simply the nation's problem, but is also a major economic concern at the state level (Kotabe and Czinkota, 1992). Therefore, export promotion is accorded urgent necessity throughout the country (Bello and Williamson, 1985). A good number of research efforts have been devoted to the subject of export promotion (Cavusgil and Czinkota, 1990; Eisinger, 1988; O'Rourke, 1985; Overman, 1992; Samiee and Walters, 1990; Seringhaus and Botschen, 1991). However, few studies have been devoted to agricultural commodities, and especially HVP promotion. Indeed, export promotion activities for HVPs by state governments are growing in importance for regional economic development as domestic economic growth has slowed.

### **Export Promotion at the State Level**

States' involvement in export promotion activities have increased since the 1980s in response to the need to broaden their economic base. An indication of this increased involvement in international activities by states is the rapid increase in the number of states which maintained trade support offices overseas. The number of state offices rose from 26 in 1984 to 158 by 1990 (Thompson, 1991). For example, the State of North Carolina maintains trade offices in Toronto, Canada; Dueseldorf, Germany; Hong Kong; Tokyo, Japan; and in Mexico. State governments may also find a niche in export promotion by countering some of the weaknesses of federal export promotion efforts previously described. According to Posner (1983) states may be effective in promoting exports because they are able to gain greater access to the management of exporting firms. State government expenditures on export promotion can potentially stimulate the economy. One billion dollars worth of exports creates, on average, 22,800 jobs (Davis, 1989).

Three export promotion goals have been identified by Posner (1983) for the state. They are increasing awareness of business opportunities, creating a "pro-export" atmosphere, and facilitating export activities. Other goals listed in the literature include reducing risk, stimulating interest among firms, serving as an external resource, consolidating export promotion programs, serving as an export advocate, and creating "export incentives" (Seringhaus, 1986; Barrett and Wilkinson, 1990; Brezzo and Perkal, 1983). State level efforts directed at export promotion

may involve providing information and advice about the exporting process and opportunities in overseas markets, and export support through state agencies and universities. These agencies and institutions may also provide assistance in gaining access to Federal programs, trade shows, trade missions, developing trade contacts and leads, and providing logistical support.

It is believed that if a state's objective is to use export promotion efforts in creating jobs, small and medium-size firms ought to be the appropriate target. Such firms are more likely to be found in local communities where they stimulate rural development, whereas larger firms would locate wherever it is most advantageous to the firm. Empirical studies seem to suggest that more job creation arise out of the establishment, retention and expansion of small and medium-size businesses (Posner, 1983; Pattison, 1990). Nevertheless, implications arising from a study of successful use of export promotion programs by larger firms could be of interest to small and medium-size businesses, given that larger firms enjoy the economies of scale and require only minimal publicly supplied resources in financing their promotion efforts. However, export promotion is criticized as being used more by larger than small and medium-size firms (GAO, 1990). Additionally, promotion of HVP exports could serve as a major engine of economic growth for rural communities which are dependent on agriculture.

Although various agencies of state government can be involved in export promotion, usually export promotion of agricultural products falls under the jurisdiction of the state department of agriculture (Tesar and Tarleton, 1983). However, large exporting firms could be given incentives to assist the state in promoting exports by counseling other firms seeking to develop markets overseas to generate greater export multipliers. The "mentor" firm may already have the necessary export experience, know-how about the given industry, and may be willing to take the time to work with another firm. Other quasi-government agencies in the state may already be involved in export promotion, such as world trade centers, international trade development centers, export trading companies and regional trade councils.

In the State of North Carolina, for instance, the International Trade Office of the North Carolina Department of Agriculture coordinates with the Department of Commerce and the World Trade Center to assist in organizing visits to North Carolina farms and processing facilities; in providing the requisite export inspections, certifications, and documentation; in organizing product promotions in international markets; and in organizing trade shows and missions abroad for exporting firms. Also, given the increasing importance of agricultural commodity exports to the State economy (since 1980 agricultural export sales have amounted to more than \$1 billion a year in North Carolina), the need to find alternative outlets for agricultural land use, employment generation in rural areas, and the potential to enhance rural incomes, the intensification of export promotion activities to encourage export competitiveness has become very important to the State of North Carolina.

At issue is how to make export promotion effective for the intended users -- exporting firms and prospective HVP exporting agribusinesses. To assist in designing appropriate market strategies there is the need for policy makers in gaining greater understanding of firms' perceptions of the existing promotion programs and what influences the use of export promotion

services by agribusiness firms involved in HVP export activities.

## **Study Objectives**

This study examines the general characteristics of randomly selected exporting and non-exporting firms which produce HVPs in North Carolina. It also examines the factors that influence as well as hinder their ability to export, and the use of Federal and state promotion programs. An empirical model of the determinants of the use of export promotion services is estimated. Subsequently, recommendations are made on how to target export promotion programs for agribusiness.

## **Scope of Study**

The State of North Carolina is selected for this study because it has a large and diverse agribusiness sector, and the state government has made export promotion a major priority. In 1993, agriculture constituted nearly 30 percent of Gross State Product and incomes totalling \$42 billion, and in some counties accounted for more than 50 percent of total employment. North Carolina is a leading exporter of food, fiber and forest products, with trading partners on every continent. Agriculture plays a major role in the state's positive trade balance; an estimated \$500 million in fiscal year 1993-94. The total value of agricultural exports have averaged more than \$1 billion each year since 1980 (it was \$1.103 billion in 1993), and forecasts are bright. The leading export commodities are tobacco and products, poultry and products, soybeans and products, wheat and products, confectionery, nursery, greenhouse, essential oils, beverages, cotton and linters, peanuts and products, live animals and meat (excluding poultry), fruits and vegetables, and dairy products. North Carolina is also the second leading producer of pork in the U.S., and also produces agricultural machinery and chemicals. However, this study focuses mainly on HVP producers and exporters.

To better understand the use of existing export promotion programs provided by Federal and state export agencies in support of HVP exports, a survey of North Carolina agribusiness (producers and food processors) of HVPs was conducted in cooperation with the Economic Research Service of the USDA. The overall survey sought to identify firms' export strategies, sources of export contact, rating of factors that influence their ability to export, constraints that hinder ability to export, and concerns about existing promotional programs that are important in influencing exporting. Nevertheless, the study does not consider the quantitative measures of the benefits relative to costs of exporting.

A list of 400 North Carolina agribusiness and processors of HVPs was compiled from the 1992-93 Directory of North Carolina Manufacturing Firms. The list conformed to the Standard Industrial Codes (SIC) two digit 20 (food and kindred products), three digit SIC 201 (meat and related products), SIC 202 (dairy products, excluding ice cream and fluid milk), SIC 203 (canned, frozen, and preserved fruits and vegetables), SIC 204 (grain mill products), SIC 205 (bakery products), SIC 206 (sugar and confectionery products), SIC 207 (fats and oils), SIC 208 (beverages), SIC 209 (miscellaneous food preparations and kindred products), SIC 287



(agricultural chemicals), and SIC 352 (farm and garden machinery and equipment) and their associated four digit codes. To identify impacts of state promotion activities on firms, multinational firms with headquarters outside of the State of North Carolina were taken out of the survey sample. Whenever those firms were accidentally included, respondents wrote back to indicate that they had no authority to respond since their headquarters were located outside the state.

### **The Survey Questionnaire**

The survey was conducted through the assistance of the Applied Social and Economic Survey Research Center, located in the Department of Agricultural Education, Economics and Rural Sociology at North Carolina Agricultural and Technical State University. The survey elicited responses from both exporters and non-exporters. Opinions on export related issues and needs were expected to be different between the two groups. Thus, the survey was separated into three sections; section A covered potential exporters of HVPs, section B covered non-exporters of HVPs, and section C dealt with exporters' and non-exporters' management attitudes toward export marketing.

Differences in export attitudes and needs are usually influenced by variations in perceptions about the contribution of exporting to the firm, export prospects, export hindrances, the role of government agencies in export promotion, and the type of assistance desired from government agencies and institutions. Therefore, Sections A and B of the survey questionnaire were grouped into eight categories: firm strategy, export contacts, export influences, export hindrances, government export promotion and assistance, perceptions on export assistance, international activities, and firm characteristics. An additional category, major trade policy impacts, was included in both sections A and B to discern potential impacts arising from the GATT and NAFTA. However, this report focuses on delineating the determinants of the use of export promotion programs by describing firms' characteristics, and factors which influence or constrain their ability to export.

### **Analytical Framework**

Firms' characteristics are expected to influence the types of market promotion desired. They include the firm's total sales, the number of employees, export sales, change in export sales over time, and years of export experience. Information on firm characteristics will be of immense help in designing promotion activities. For example, it is asserted that large firms are more likely to export than small firms (Casvugil, Bilkey and Tesar, 1979; Casvugil and Nevin, 1981; Withey, 1980; Yaprak, 1985; Casvugil and Naor, 1987). Bonaccorsi (1992) argues that small firms may grow in the domestic market and avoid undertaking a risky activity like exporting. The noted exceptions are high-technology firms, small highly specialized firms that operate in market niches with a global demand, or small firms selling expensive capital equipment items. In particular, Yaprak (1990) found the sources of motivation to initiate exports were different among small and medium-size firms, and large firms. The former was found to be more likely to initiate exporting through an unsolicited order and the latter would start

exporting in response to decreasing demand at home. Furthermore, the perception of exporting and non-exporting firms differ as to the contribution of exports to a firm's profits (Tesar and Tarleton, 1983).

The important variables that influence a firm's ability and willingness to export may include market conditions (such as the exchange rate, differentials between market prices at home and abroad, and market competition), government policies (U.S. and foreign product regulations on product standards, packaging, handling and sanitary requirements), and various information necessary to undertake exporting (financial considerations, foreign market product specifications, and information about foreign markets) (Ajami and Khambata; Nelson, 1990; AgExporter, various issues; Pattison, 1990). Ratings of their influences will be measured by using a three point Likert scale<sup>3</sup>: extremely influential, moderately influential, and not influential.

Export hindrances or at least the perception of them may be a reason for not exporting. Previous studies (Tesar and Tarleton, 1983; Ramaswami and Yang, 1990) have found differences in perceived export hindrances between exporters and non-exporters. Following those studies, the questionnaire for both exporters and non-exporters dealt with export hindrances such as "do not know how to get started in new markets," "lack information about overseas markets," or "too costly to do business overseas." Some of the factors that hinder a firm's ability to export are also related to market conditions and policies.

The types of export promotion programs provided by government sources (federal and state) are grouped into three broad categories: market information (or export service program), marketing assistance (for market development), and subsidies. Market information consists of published information, and seminars. Marketing assistance is composed of facilities for participating in trade show exhibits, technical counseling, trade leads, trade missions, government trade offices abroad, and meetings with foreign buyers. State assistance in obtaining federal funds, loans and grants, tax benefits, and foreign cooperator programs fall under the category of subsidies.

### Conceptual Model

A number of factors may influence the decision to use export promotion programs by exporters including the firm's characteristics such as its size and exporting experience, managerial perception of the firm's export prospects, the potential contribution of exporting to the firm's goals, and the firm's perception about export promotion. We derive the conceptual basis for choice of empirical methods as follows. Let us define a vector,  $x_i$ , made up of the listed factors which influence the probability of using export promotion such that:

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<sup>3</sup>The Likert scale allows surveyed populations to rank their choice of responses from a set of statements. See Emory (1985).

$$(1) \quad \begin{aligned} \text{Prob}(Y = 1) &= F(\beta_i x_i) \\ \text{Prob}(Y = 0) &= 1 - F(\beta_i x_i) \end{aligned}$$

The set of parameters  $\beta_i$  reflect the impact of changes in  $x_i$  on the probability of using export promotion. The problem at this point is to devise a suitable model for the right-hand side of the equation. One possibility is the usual linear regression,

$$(2) \quad F(x, \beta) = \beta_i x_i$$

Since  $E[y] = F(x, \beta)$ , we can construct the regression model,

$$(3) \quad \begin{aligned} y &= E[y] + (y - E[y]) \\ &= \beta_i x_i + e \end{aligned}$$

But the linear probability model has a number of shortcomings. The error term is heteroscedastic in a way that depends on  $\beta_i$ . Since  $\beta_i x_i + e$  must equal zero or one,  $e$  equals either  $-\beta_i x_i$  or  $1 - \beta_i x_i$ , with probabilities  $1 - F$  and  $F$ , respectively.

Therefore, any proper continuous probability distribution defined over the real line will be sufficient. We can either use a normal distribution which gives rise to the Probit model or a standard normal distribution which gives a logistic distribution of the form,

$$(4) \quad \text{Prob}(Y = 1) = \frac{e^{\beta_i x_i}}{1 + e^{\beta_i x_i}}$$

The inverse function of the logistic model is particularly easy to obtain (let  $\text{Prob} = P$ ) as:

$$(5) \quad \ln[P/(1 - P)] = \beta_i x_i$$

This function is called the logit of  $P$ .

Capps and Kramer (1985), and Pindyck and Rubinfeld (1981) provide good discussions of the methodology underlying the logit model. Greene (1993) also discusses the issue of which type distribution to use. In principle, the logistic distribution resembles the standard normal distribution except in the tails. Therefore, for intermediate values of  $\beta_i x_i$ , the two distributions tend to give similar probabilities. However, the logistic distribution tends to give higher probabilities to  $y = 0$  when  $\beta_i x_i$  is extremely small, and vice versa, than the normal distribution. This is practically difficult to justify since it requires *a priori* knowledge of  $\beta_i$ . However, we can expect different predictions from the two models if the sample contains (1) very few responses ( $Y$ 's equal to one) or very few nonresponses ( $Y$ 's equal to zero) and (2) very wide variation in an important independent variable, particularly if (1) is also true. Greene (1993) further states that *"there are practical reasons for favoring one or the other in some cases for mathematical convenience, but it is difficult to justify the choice of one distribution or another on theoretical*

grounds." Amemiya (1981) discusses a number of related issues, but as a general proposition, the question is unresolved, it seems not to make much difference.

The probability model is expressed as a regression of the form:

$$(6) \quad \begin{aligned} E[y] &= 0[1 - F(\beta x_i)] + 1[F(\beta x_i)] \\ &= F(\beta x_i) \end{aligned}$$

The logit model is specified using maximum likelihood procedures. Press and Wilson (1978) describe the results from logit analyses as being meaningful and appropriate whether the explanatory variables are multivariate normally distributed, independent and dichotomous (zero-one), or multivariate normal and dichotomous. Thus, the robustness of the logit model coupled with its desirable properties makes it appropriate for this analysis. All affirmative responses indicating the use of at least one export promotion service provided by government agencies at the federal, state, or local levels were classified as using export promotion program. The choice of using export promotion activities provided by public agencies is considered dichotomous. A firm chooses either to or not use programs provided by government agencies.

The logit model of the use of government export promotion programs is specified as follows:

$$(7) \quad \log [P/(1-P)] = \beta_0 + \beta_1 \text{EXPER} + \beta_2 \text{ENCEMP} + \beta_3 \text{EXSALE} + \beta_4 \text{OPPROS} + \beta_5 \text{OPGROW} + \beta_6 \text{OPXPR}$$

where:

P	= Probability of using export promotion program
1-P	= Probability of not using export promotion program
EXPER	= Exporting experience (years)
ENCEMP	= Number of employees
EXSALE	= Export sale value
OPPROS	= Opinion of firm's export prospects in the next five years
OPGROW	= Expectations of the contribution of exports to firm's growth
OPXPR	= Opinion of export promotion programs

In part because of potential synergies from greater domestic sales and resources at the disposal of larger firms, their exporting experience and knowledge about existing public resources for export promotion, it is expected that larger businesses, especially those that employ large numbers of workers will seek to use publicly provided export promotion services more than smaller firms. However, it is expected that as the firm's export sales grow, they will be less apt to use publicly provided export promotion services at the margin.

Export promotion services span the continuum of exporting experience by exporters ranging from services suitable for the beginning exporter to services appropriate to support exporting for the experienced exporter. Although it is the new exporters who would normally

require greater public assistance in penetrating export markets, in part because of lack of knowledge about existing services and lack of experience about market requirements, firms with least exporting experience (although they may have the greatest needs) are less likely than more experienced exporters to use publicly provided export assistance.

In general the decision to export arises from a firm's desire to expand its sales so as to grow. In part because the size of the domestic market may pose constraints on market expansion, a firm may attempt to find other international markets. But breaking into foreign markets is usually associated with formidable barriers relating to information needs as well as financial expenditure. It is expected that export promotion programs would enable exporters to increase their export market shares by enhancing their access to markets.

A firm's decision to use export promotion services may depend on the firm's subjective evaluation of the usefulness of the service. Whereas an array of export promotion services may be available to exporters, these services have been criticized as not being targeted to the needs of specific exporters based on their levels of experience. Some exporters may simply not use the services because of the inherent opinion that available export promotion services are either inadequate or irrelevant to their needs, while others may consider it useful.

A firm's opinion about export prospects will also likely influence the decision to use export promotion services. A firm which perceives generally favorable international business prospects due, for example, to increasing export sales and rising profitability is less likely to seek more resources, including publicly provided resources, to expand exports. On the other hand, gloomy export prospects are more likely to induce a firm to seek more public assistance to gain greater niche export markets.

The following hypotheses are tested:

H1: The larger the size of firm (given by number of employees), the greater the probability of using export promotion program.

H2: A more experienced firm is more likely to use export promotion program.

H3: The higher a firm's export sale, the less probability of using export promotion program.

H4: The greater a firm's export prospects, the more likely it will use export promotion program.

H5: The greater the expectations of export contribution to firm's growth, the greater the probability of using export promotion program.

H6: A more positive opinion about export promotion will lead to its greater use.

## **Results**

### *Survey Response*

Initially, 400 questionnaires were mailed on April 28, 1995. Three weeks later, reminder post cards were sent to all non-respondents. Given the low response rate, a renewed effort was made to contact all non-respondents, of which 110 firms indicated their willingness to complete

questionnaires. Additional questionnaires were mailed to this last group during the third week of June 1995. At the cut-off date of August 31, 1995 a combined total of 91 completed surveys had been received. Of that number, 84 were usable (a 21% response rate), comprised of 33 (39%) exporters and 51 (61%) non-exporters. By the end of the original project period of October 1, 1995, no additional responses had been received. Although an extension was granted at no additional cost through September 30, 1996 so as to attempt to increase the survey response rate, no additional responses have been received to date. Therefore, the 84 responses form the data on which the following analyses are based.

Figure 1 shows respondents by industry classification as exporters and non-exporters. For the purpose of analytical convenience, all categories of processors are grouped as food processors to separate them from animal feed, agricultural machinery and chemical firms. Horticultural crops are also classified as specialty crops. A majority of respondents are food processors; about 75% of exporters and 82% of non-exporters. For exporters, the next industry of importance is agricultural machinery which accounts for about 13% of respondents. All the agricultural machinery and agriculture chemical firms which responded to the survey are exporters. A majority of responding producers of specialty crops do not export (this constitutes about 10% of non-exporters).

Figure 2 categorizes exporters by SIC classification and percentage of respondents. They are as follows: SIC 201, 24% meat and poultry, and 3% eggs and products; SIC 203, 9% soups, 3% juices and 6% vegetables; SIC 204, 6% animal feeds; SIC 205, 3% bakery mixes; SIC 209, 21% snacks and 6% seafood; SIC 352, 13% agricultural machinery; and SIC 287, 3% agricultural chemicals. Horticultural/nursery producers accounted for 3% of respondents.

#### *Firm Characteristics*

Three measures of firm size; total sales, export sales, and number of employees, were used in the survey. In particular, total sales and number of employees indicate the existence of size differences between exporters and non-exporters. Using the number of full time employees as a measure of firm size (Figure 3), we find that exporters tend to be larger firms while non-exporters range from small to medium size firms. 45% of exporters had more than 500 employees compared to only 4% of non-exporters. The majority of non-exporting firms employed less than one hundred workers, but mainly ranging between 20 and 99 workers. It is evident from Figure 4 that large firms whose total sales exceeded \$10 million, constituted about 70% of exporters and 30% of non-exporters. However, the distribution of non-exporters by total sales is more diversified than that of exporters, with about 38% of respondents in the former category falling below a sale volume of \$500,000. Figure 5 also shows that for exporters, export sales constituted a large part of total sales. Over 40% of exporting firms reported export sales of more than \$5 million.

#### *Export Commodities and Destinations*

The key destination of exports by North Carolina agribusiness firms is presented in

Figure 6. It seems that the most important export markets for firms by country are Canada, Japan, and Mexico. However, Asia (especially Pacific Rim countries such as Thailand, Taiwan, China and Hong Kong) is the leading regional destination for North Carolina HVP exports, followed by Europe (mainly Germany, United Kingdom, Denmark, and Spain), and other Latin America (mainly to Argentina). The Middle East and Africa represent relatively small markets for North Carolina agribusiness exports. However, Russia seems to be a growing market. These results compare favorably with State Agribusiness statistics of market destinations for North Carolina agricultural exports compiled by the North Carolina Agribusiness Council. As previously discussed, a wide variety of exported products are listed, but the most frequently cited export products are poultry, snack foods and other processed foods. The demand for these products however differ for specific export markets. For example, exports to Canada and Mexico are more diversified than those heading to any other destinations. Snacks and other processed foods dominate Canadian imports whereas Mexico's imports are dominated by poultry products. When taken as a group, exports to the newly emerging markets in the Pacific Rim area are concentrated in poultry, snack foods and other processed foods. In contrast, exports to China and other low income countries in Asia are dominated by a single product -- poultry.

### *Export Influences*

Exporters were asked to rate factors they considered to have some influence on their ability to export. The factors were rated from extremely influential through moderately influential and not influential. Factors influencing ability to export include the exchange rate, financial considerations, U.S. product regulations, overseas product regulations, overseas market product specifications, market prices at home and abroad, information about overseas markets and competition in the overseas markets. Table 1 shows that issues relating to market conditions at both home and abroad were considered more influential than regulatory issues. About 79% of respondents cited financial considerations as extremely influential. Market prices and competition in overseas markets were cited by about 61% and over 52% of exporters, respectively. The exchange rate of the dollar, product regulations pertaining to standards, packaging and sanitation were rated of moderate influence. However, issues regarding information in overseas markets were perceived as not having as much influence on firms ability to export.

### *Export Hindrances*

Exporters and non-exporters seemed to differ in their perceptions of what constitutes hindrances to their ability to export (see Table 2). Non-exporters were more concerned with factors that relate to export initiation, such as not knowing how to start exporting, sufficient domestic demand, receiving no orders from abroad, the high risk involved in exporting, and the perception that there is no profitable markets for products overseas. On the other hand, exporters were more concerned about external issues affecting exporting, including the exchange rate, overseas regulatory and trade policy issues. Making contacts with prospective buyers and

general informational needs were also highlighted by exporters as hindering exporting.

By focussing on exporters and grouping them by their relative success in increasing sales, firms that had experienced growth cited marketing and regulatory problems as well as limited production capacity as having more impacts on their operations. Conversely, firms which had experienced decrease in sales were more concerned about finding export markets and exchange rate fluctuations. Non-exporters who expressed interest in exporting also noted similar concerns as exporting firms which had experienced growth. Additionally, they were concerned about limited information about overseas markets.

### *Export Promotion Programs Used and Requirements*

Exporters were asked about what types of export promotion services provided by government agencies they used in 1993. As stated previously, export promotion programs were classified into three broad areas namely, information provision, marketing assistance, and subsidies. The majority of respondents (about 60%) used some form of export promotion services provided by public agencies in 1993. While non-use of public export promotion services may be due to a number of reasons, including lack of awareness and non-eligibility, the percentage of non-users might also imply a greater need for export promotion providing agencies to intensify their coverage. Table 3 provides a distribution of the use of the various types of services provided by government agencies. Among users of promotion programs, activities classified as market assistance were cited more than subsidies. Information services, especially country specific information, were also cited more frequently than subsidies. Respondents to the survey identified trade contacts and/or leads, government overseas offices and trade shows among the most frequently used export assistance activities. Overall, activities grouped under subsidies such as loans, grants and tax benefits seem to be the least used among exporters (less than 7% of respondents indicated using subsidies in 1993). Also, the more popular activities undertaken by government agencies such as trade missions were utilized by only 6% of the respondents.

Does the type of export service used affect a firm's growth? It seems that market assistance programs (trade leads/contacts, trade shows, and government overseas offices) remain the most frequently used activities among firms that had experienced the most growth in sales. Additionally, the high growth firms used publicly provided promotion programs more frequently than all other firms.

The survey questionnaire attempted to assess the adequacy of export promotion services by public agencies (Figure 7) and the extent to which the State of North Carolina should be more or less involved in export promotion (Figure 8). Overall a majority of exporters and non-exporters had no opinion on the former, even though more than 20% of each felt publicly provided export assistance was adequate. On the other hand, a majority of all respondents (more than 40% in each category) were of the opinion that the state should be more involved in export promotion.



The firms were also asked about specific types of export promotion and assistance that they would find useful from a State of North Carolina agency (Table 4). For exporters, the findings of the survey seem to suggest that in addition to the services currently employed (see Table 3), meetings in North Carolina with foreign buyers, tax benefits, and assistance in gaining access to federal programs and funds were also potentially useful. For non-exporters, published information would be considered potentially more useful, as well as trade leads, seminars, counseling, and assistance in gaining access to federal programs. This finding of greater interest in information activities for non-exporters is consistent with the expectations regarding the internationalization process where the needs of non-exporting enterprises are initially geared to creating awareness of exporting opportunities and benefits (Casvugil, 1980). Overseas activities, including travel on trade missions and provision of overseas trade office facilities, were found to be less useful. Non-exporting firms seem to consider more useful having foreign buyers come to North Carolina for business meetings.

### **Empirical Results**

Different combinations of the basic model were analyzed. Table 5 provides the results of the logit analysis for the best fitting model. The independent variables provided a good fit of the model with a chi-square value for the goodness of fit of 14.55 (at p value of  $< 0.05$ ). Overall, 83% of the responses were correctly predicted. According to the estimated coefficients, size variables conform to expectations but they are not significant predictors of the use of export promotion programs. However, perceptions about export promotion conformed to expected hypothesis and was significant at the 5 percent level. A firm's opinion about future growth positively and significantly influence the decision to use publicly provided export promotion services at the 5 percent level of significance. Just as hypothesized, a firm's perception about future international market prospects negatively and significantly (at the 10 percent level of significance) explains their use of publicly supported export promotion services.

### **Concluding Remarks**

Various position papers have underscored the need to increase U.S. agricultural trade competitiveness. National and regional research and policy discussion groups have devoted much attention to the competitiveness issue. Indeed, USDA's strategic vision ushering into the next millennium, invariably focuses on expanding HVP trade in niche markets. Agribusiness firms continue to express concern about the inadequacy of federal and state export promotion programs. The 1996 FAIR Act has reduced funding for the MAP, which is designed to develop, maintain, and expand markets for agricultural products. However, little is known about the extent to which state export promotion activities are adequately allocated among agribusiness firms, especially producers of HVPs who may be at different stages of exporting.

This study takes the position that greater emphasis on export promotion programs is likely to yield results in getting current exporters to expand their activities. The study seems to indicate that while high export sales per se is not a good indicator for the use of export promotion programs, positive opinions about export promotion and a firm's growth are good

positive indicators for use of export promotion programs. Additionally, about 60% of the surveyed firms used export promotion programs. Most firms (perhaps because of their size) have used market information such as market leads, government overseas offices, and trade shows more often than subsidies and trade missions. Most firms also perceive exporting activities as very beneficial in enhancing their enterprise profitability and growth, and that exporting potentially could contribute to the well-being of the state economy. Additionally, most firms are committed to seeking international markets, and to make needed changes (such as collecting information and intensifying training and education) to penetrate foreign markets. The challenge is for Federal and state facilitators of market access programs to re-design strategies so as to obtain desired impacts, given current limited resources.

Perhaps, one potentially useful approach may be in promoting specific products to niche markets where demand may be relatively high. There appears to be the need for greater intensification in strategic market research, and the diversification into non-traditional markets. This study indicates that, indeed, the Pacific Rim provides attractive growth markets for the future. Yet, there are other emerging markets such as the Middle East, Central Europe, South America, and Africa which could be further developed. Perhaps, niche marketing strategies could be intensified to enhance export promotion programs.

Financial issues, market prices, and competition in overseas markets appear to be more critical factors in influencing exporters' ability to export. But responding exporters seemed not to use public sources which provide financial assistance, such as trade associations and banks, which normally receive MAP facilities to promote exports. While it may be because they do not qualify for such funds, in part because such funds have been reduced, perhaps greater attention must be paid to those firms that have lower sales, especially small- to medium-size firms, to encourage the development of markets for branded HVPs.

Finally, there appears to be the perception, at least from this North Carolina study, that state supported export promotion programs are either inadequate or they are not reaching many firms. A majority of respondents want the state of North Carolina to be more involved in export promotion activities. Exporters desire more meetings with foreign buyers, tax benefits, and assistance in gaining access to government programs. Non-exporters desire more information, trade leads, seminars, counseling, and access to government programs as well. However, most non-exporters are hindered by factors relating to how to initiate exporting, the associated risks, and how to fill orders. Therefore, it may become necessary to develop partnerships among regional agricultural trade organizations (such as the Southern U.S. Trade Association), the North Carolina Department of Agriculture's International Marketing Division, the Department of Commerce, and centers for trade development in the state universities to better coordinate the education and information dissemination activities that would ensure better facilitation of awareness about exporting opportunities and benefits to firms. Many firms provided strong recommendations for universities to become more visible in the enumerated efforts. This provides a credible challenge to the recently funded International Trade Center at North Carolina A&T State University in providing training, research and outreach services to enhance greater international marketing opportunities for agribusiness firms in the state of North Carolina.

Figure 1.

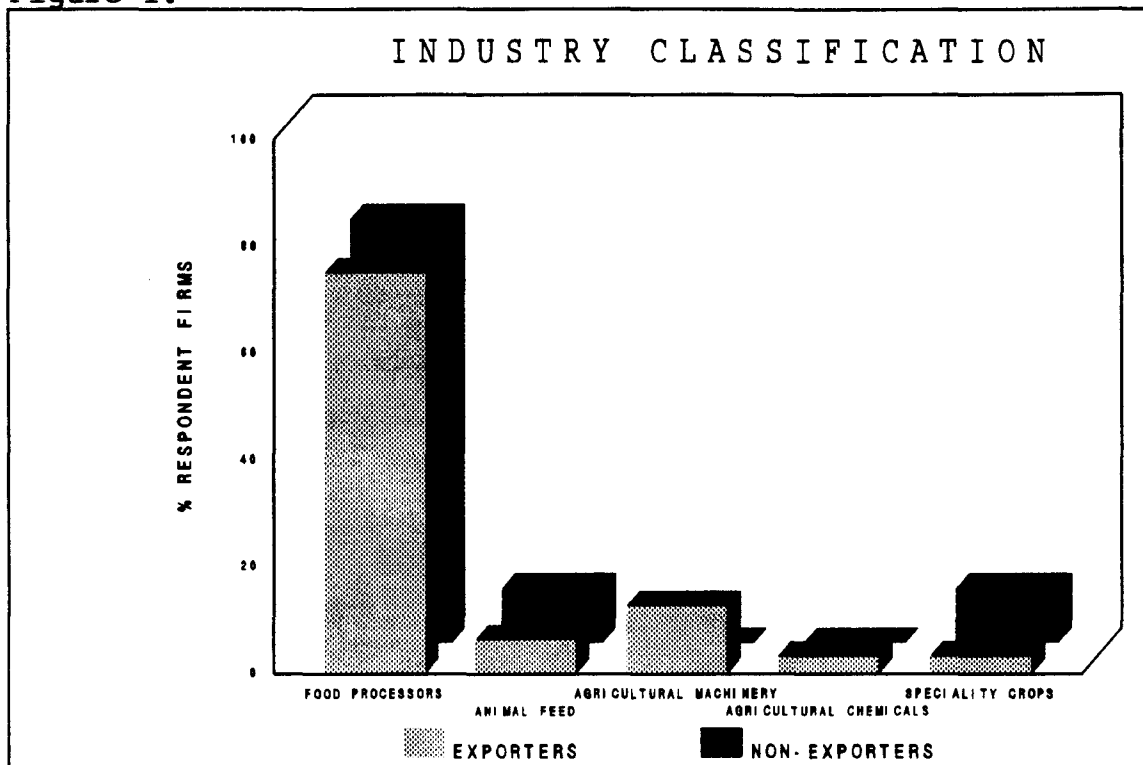


Figure 2.

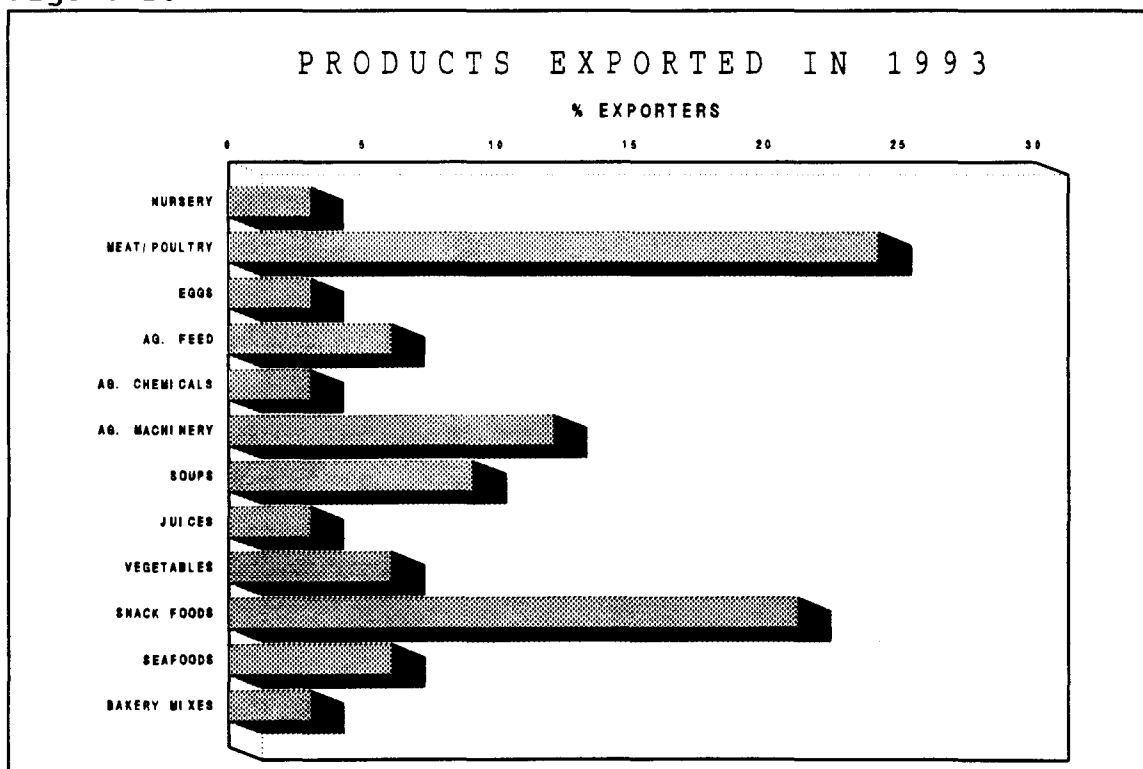


Figure 3.



Figure 4.

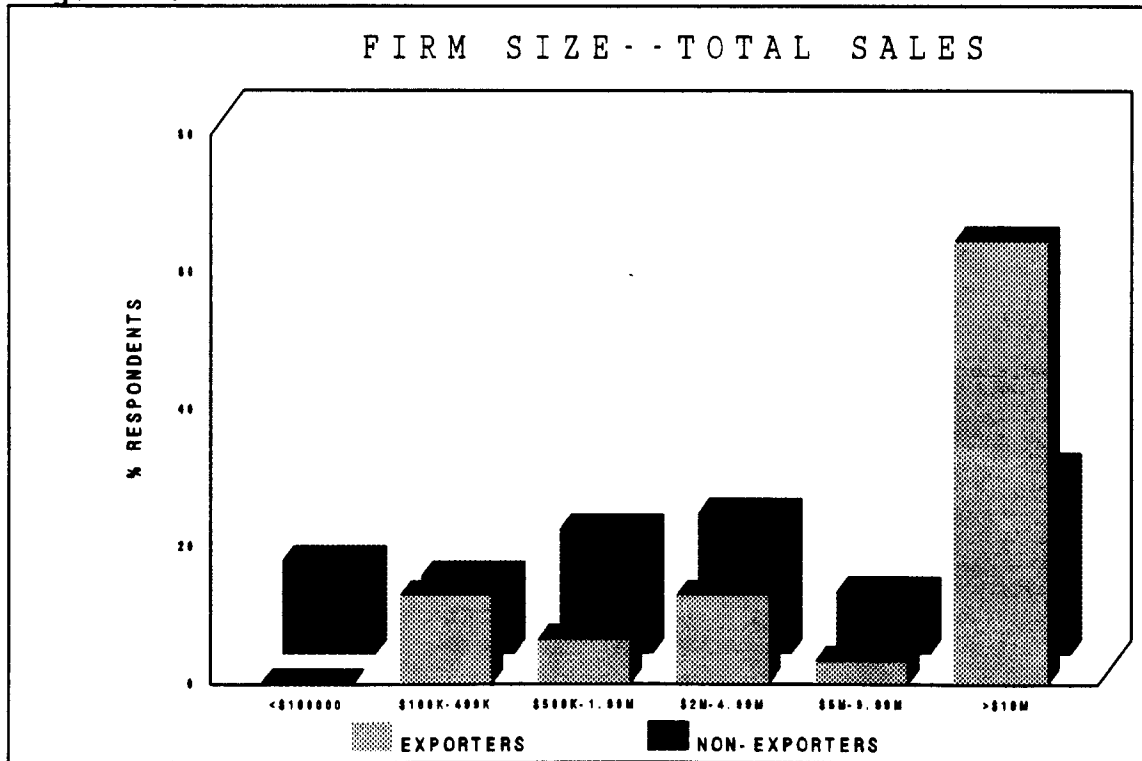


Figure 5.

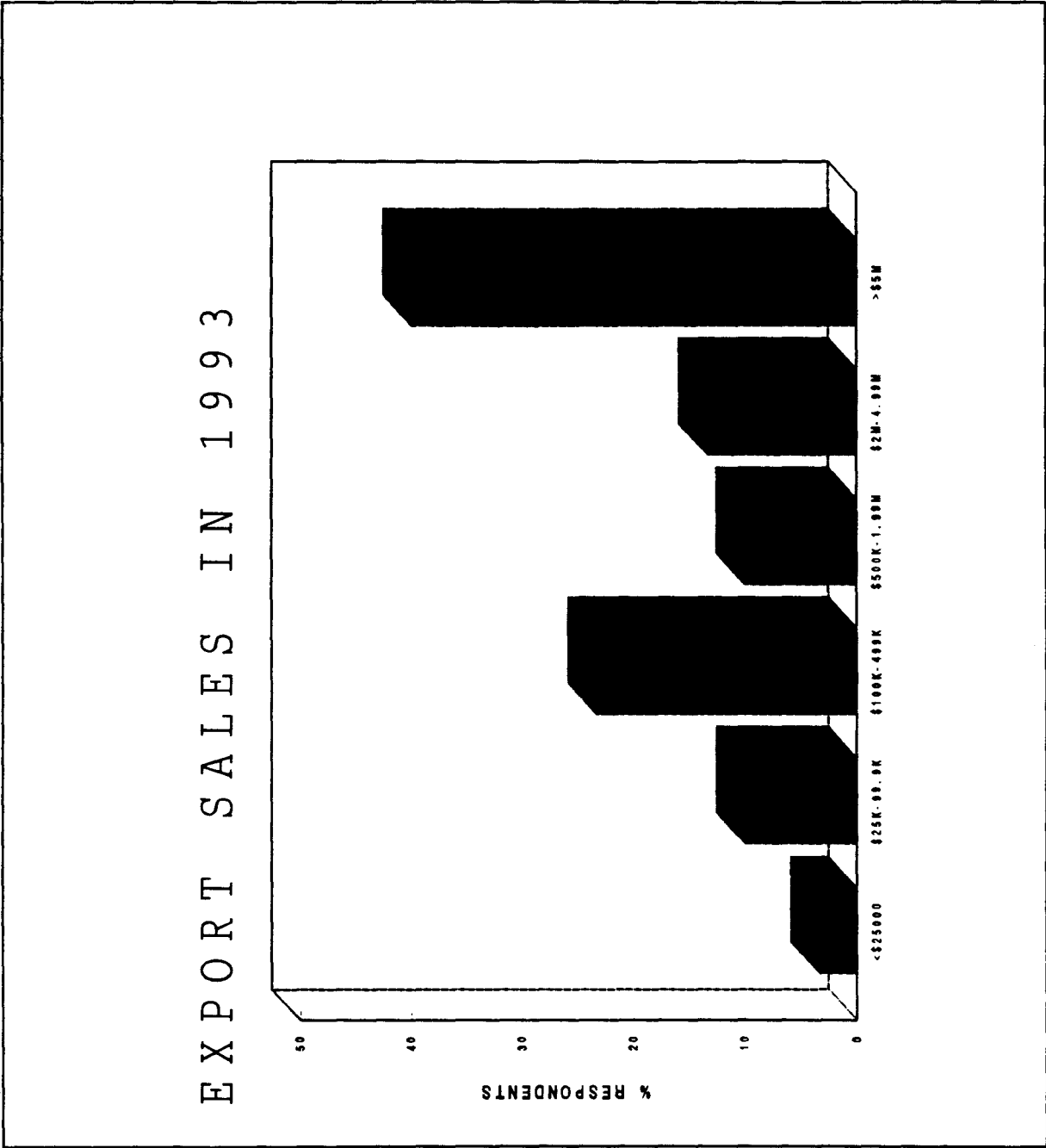


Figure 6.

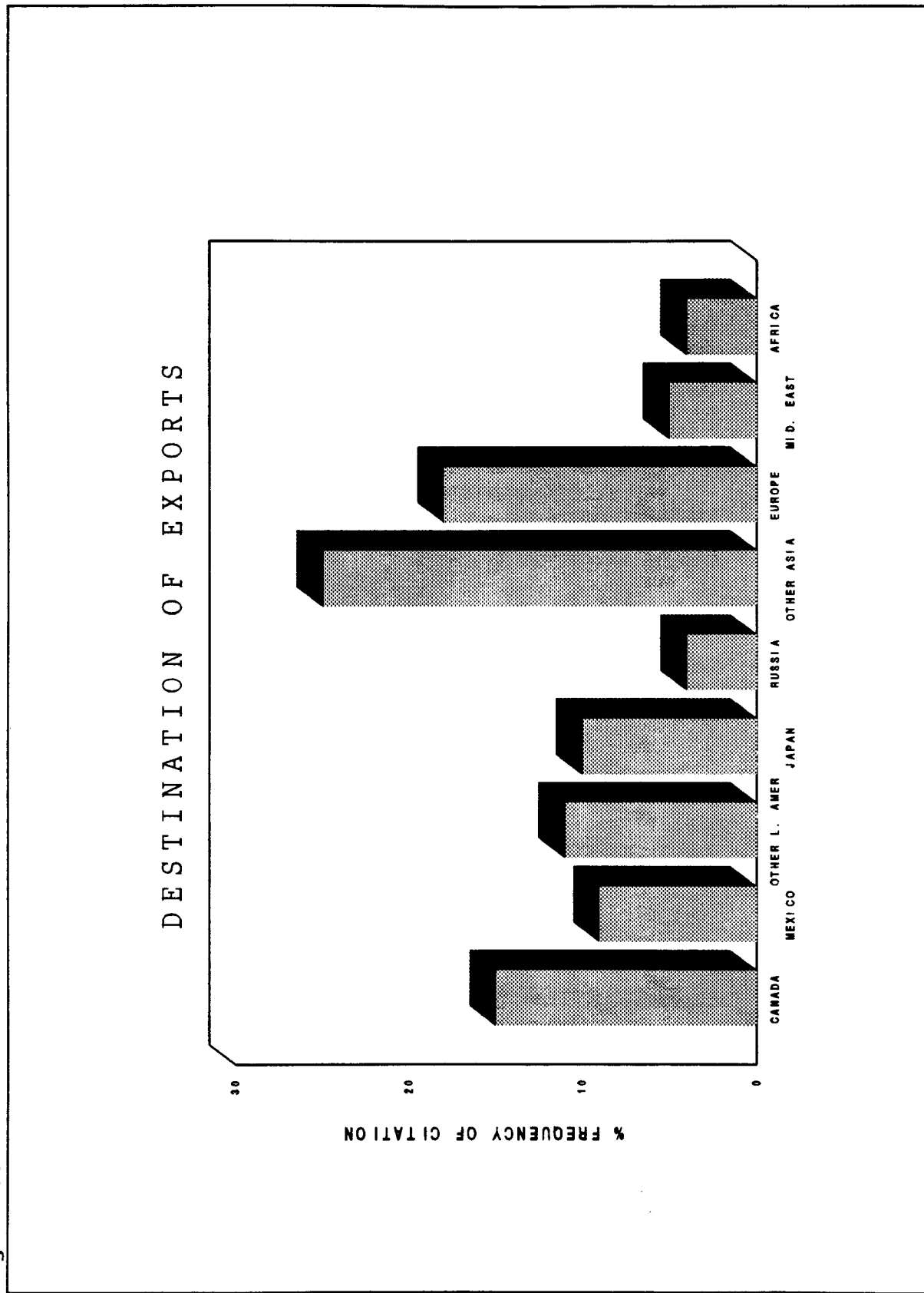


Table 1. Factors Which May Influence Exporters' Ability to Export

Influencing Factors	Frequency of Citation (%)		
	Extremely Influential	Ratings of: Moderately Influential	Not Influential
The Exchange Rate	36.4	48.5	15.2
Financial Considerations	78.8	15.2	6.1
U.S. Product Regulations	30.3	39.4	30.3
Overseas Product Regulations			
Specifications	45.4	42.4	9.1
Market Prices at Home and Abroad	60.6	27.3	12.1
Information About Overseas Markets	27.3	33.3	39.4
Competition in Overseas Markets	51.5	36.4	12.1

Table 2. Factors Hindering Firms' Ability to Export

Factors	Frequency of Citation %	
	Exports	Non-Exporters
Don't Know How to Start in New Market	15.2	31.4
Lack of Information	30.3	N/A
Domestic Demand Sufficient	24.2	54.9
No Contacts in Overseas Market	42.4	N/A
No Orders	15.2	43.1
Exchange Rate	42.4	3.9
No Profitable Overseas Markets	24.2	29.4
Risk Too High	24.2	29.4
Legal/Marketing Problem	33.3	17.6
U.S. Regulatory/Trade Policy	12.1	3.9
Overseas Regulatory/Trade Policy	36.4	11.8
Too Costly To Do Business Overseas	3.0	N/A

Note: N/A = Not Applicable

**Table 3. Export Promotion and Assistance Used By Exporters in 1993**

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<b>Type of Assistance</b>	<b>Frequency of Citation %</b>
Published General Information	9.1
Published Financial Information	12.1
Published Country/market Information	27.3
Trade Seminars: General	9.1
Trade Seminars: Specific	3.0
Trade Shows/Catalogue Fairs	24.2
One to One Counseling	6.1
Trade Contacts/Leads	33.3
Trade Missions	6.1
Government Overseas Offices	27.3
Meetings in North Carolina With Foreign Buyers	6.1
State Assistance Accessing Federal Programs and/or Funds	6.1
Loans, Loan Guarantees, Grants	3.0
Tax Benefits	6.1
Overseas Cooperator Programs	6.1
Other	39.4

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Table 4. Exporting Assistance From the State of North Carolina  
Cited As Potentially Useful

Type of Assistance	Frequency of Citation %	
	Exporters	Non-Exporters
Published General Information	12.1	41.2
Published Financial Information	21.2	29.4
Published Country Market Information	33.3	25.5
Trade Seminars: General	9.1	19.6
Trade Seminars: Specific	12.1	11.8
Trade Shows/Catalogue Fairs	24.2	5.9
One to One Counseling	18.2	19.6
Trade Contacts/Leads	48.5	35.3
Trade Missions	21.2	5.9
Government Overseas Offices	12.1	3.9
Meetings in North Carolina With Foreign Buyers	33.3	29.4
State Assistance Accessing Federal Programs and/or Funds	27.3	21.6
Loans, Loan Guarantees, Grants	12.1	17.6
Tax Benefits	27.3	19.6
Overseas Cooperator Programs	12.1	11.8
Other	18.2	7.8

Figure 7.

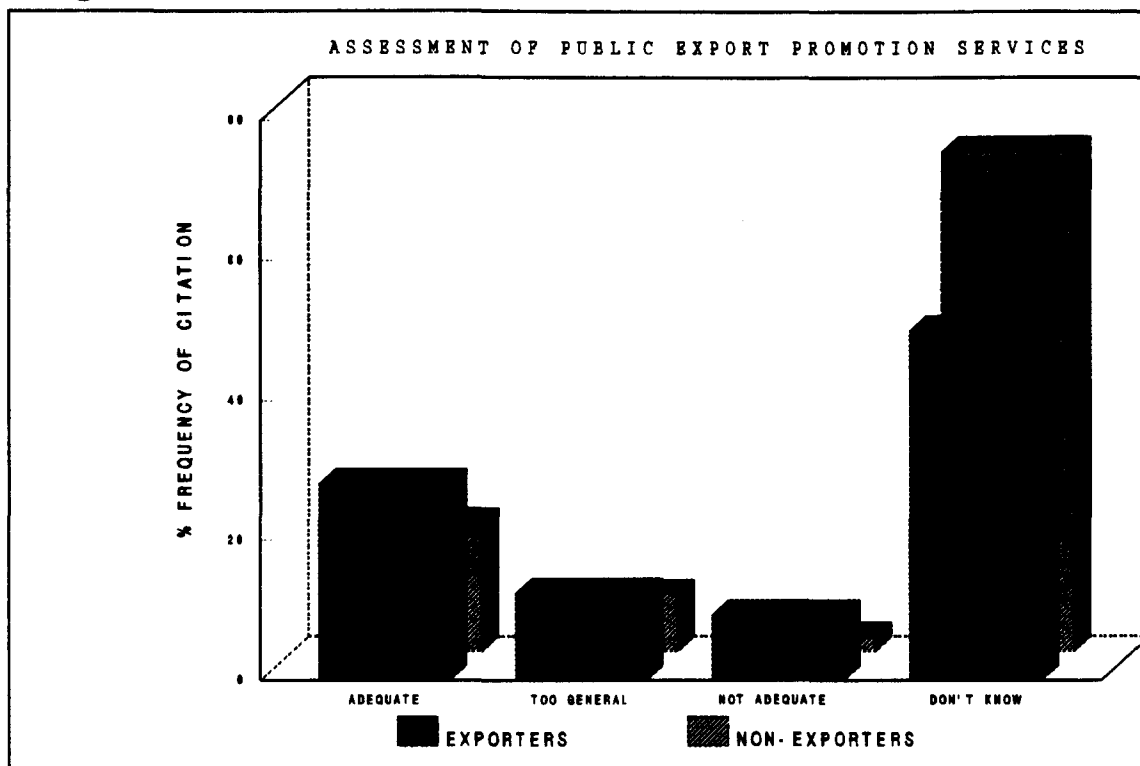


Figure 8.

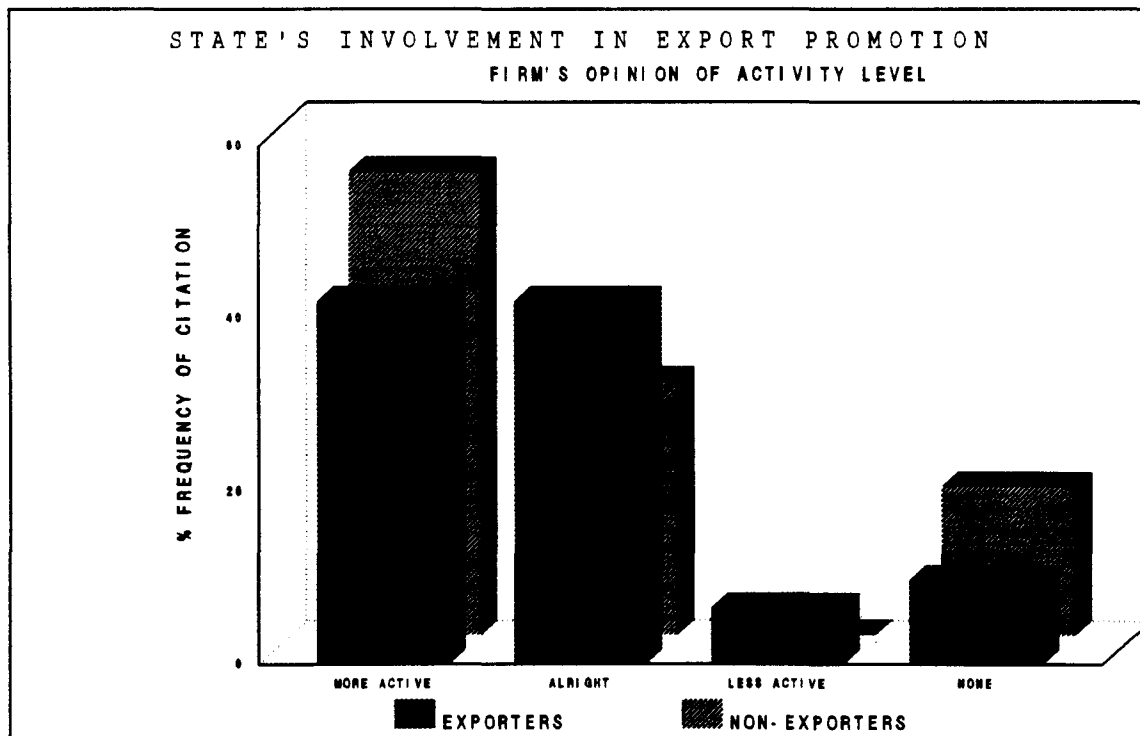


Table 5. Logit estimate of the Determinants of the Use of Export Promotion Programs

Variable	$\beta$ -coefficient	Wald*	Significance
Constant	-4.93	1.63	0.20
ENCEMP	0.82	2.34	0.13
EXSALE	-1.06	2.03	0.15
OPXPR	1.71	3.83	0.05**
OPGROW	4.45	3.66	0.05**
OPPROS	-3.51	2.99	0.08*
Log Likelihood	14.84		
Goodness of Fit	14.55		
Overall Prediction	83%		

Note: Wald Statistic is the square of the ratio of the  $\beta$ -coefficient to its standard error.  
 \*\* and \* are 5% and 10% significant levels, respectively.

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