Effectiveness of Alternative Export Promotion Strategies For

Branded Food Products

by

Jose R. Brenes
Graduate Research Associate
World Food Systems Research Group
Department of Agricultural Economics and Rural Sociology
The Ohio State University

Dennis R. Henderson
Professor
World Food Systems Research Group
Department of Agricultural Economics and Rural Sociology
The Ohio State University

Ian M. Sheldon
Associate Professor
World Food Systems Research Group
Department of Agricultural Economics and Rural Sociology
The Ohio State University

Abstract

This study examines the impact on export sales of various promotional strategies for branded food products in foreign markets. It is an empirical analysis using data obtained from organizations that administer the High Value Export Incentive Program (HVEIP) for branded food products, part of USDA's Targeted Export Assistance (TEA) program and its successor, the Marketing Assistance Program (MAP). To respect the proprietary nature of the data, the identity of individual firms and brand names has been deleted and products have been combined into two groups: (1) consumer ready and (2) intermediate.

Econometric analysis reveals positive and statistically significant impacts of expenditures on television advertising and advertising in consumer-orientated print media on export sales of consumer ready products, the effect of the latter being somewhat larger. No other promotional strategy reveals a consistent and statistically significant relationship to exports. Channel-orientated strategies seldom showed positive results on export levels for consumer ready products, and consumer-orientated strategies bear no detectable relationship to export levels of intermediate products.

Acknowledgements

This report is based upon research conducted as part of North Central Regional Research project NC-194, "The Organization and Performance of World Food Systems: Implications for U.S. Policies." The assistance of Kathryn A. Miller, Program Manager, Mid-America International Agri-Trade Council (MIATCO), and Jean Peate, Project Manager, Western United States Agricultural Trade Association (WUSATA), is gratefully acknowledged.

Introduction

International markets have become increasingly important to the food and farm system of the United States. In 1981, agricultural exports peaked at \$43.78 billion, accounting for 19 percent of total U.S. exports. While in the last decade the total value of agricultural exports did not reach its 1981 level, the product mix has shifted away from bulk commodities toward semiprocessed and consumer ready products (Pendlum 1990). This change in composition has focused attention on high value agricultural product (HVAP) exports. Following O'Brien et al. (1983), HVAP are divided into three groups: high-value unprocessed products, such as eggs (SITC1 code number 025), fresh fruits and nuts (051), and fresh vegetables (054); semi-processed products, such as fresh, chilled and frozen meat (011), refined sugar (612) and coffee (071); and highly processed products, such as butter (023), cheese (024), chocolate and beverages (011).

In terms of growth, HVAP export performance has clearly out-paced that of bulk commodities. Between 1976 and 1986, high value agricultural exports rose from 28 percent to 42 percent of the value of U.S. agricultural exports, as the value increased from \$6.6 billion to \$11.6 billion, a gain of more than 76 percent. On the other hand, bulk commodities sales were valued at \$16.9 billion in 1976 and \$15.7 billion in 1986 (Burr, 1987).

This change in the structure of agricultural trade has not been limited to the United States. In 1983, 74 percent of the European Community's (EC) agricultural exports, 57 percent of Brazil's,

78 percent of New Zealand's and 95 percent of Spain's were HVAP (Braaten 1985). Overall, HVAP has been the fastest growing component of international agricultural trade and this trend is expected to continue. However, while HVAP trade constituted approximately 66 percent of total world trade in 1987, the U.S. share was only 47 percent and the United States ranked third in total value of HVAP exports. In brief, the United States has not been as successful in competing for world HVAP markets, where its market share is less than 10 percent, as it has been in bulk agricultural commodities, where it accounts for a third of world trade (Agricultural Outlook 1989).

The trend in world agricultural trade toward high value agricultural products poses a special challenge to U.S. exporters: its competitive position, as denoted by its share of world HVAP markets, has worsened. The EC, on the other hand, has become the leader in HVAP exports, maintaining or increasing its market share. An understanding of the factors involved in product differentiation, one of the competitive dimensions not present in bulk agricultural trade, and how they affect promotion in HVAP markets may help define strategies to improve the competitive position of U.S. processed food exporters.

The objective of this paper is to examine how expenditures for advertising and other promotions affect export sales and thus, the international competitiveness of U.S. processed food exports. To accomplish this, the value of export sales and expenditures on export promotion and advertising by a number of U.S. companies participating in U.S. Department of Agriculture-sponsored export promotion programs for branded food products are analyzed.

1. Data and Methodology

Data Sources: Information regarding marketing strategies employed by firms is normally considered proprietary information. This creates an obstacle that must be surpassed if promotional variables in marketing strategies are to be identified as having a significant impact on export performance. The approach taken in this study consists of using primary information collected by two of the agricultural trade organizations that

administer the Targeted Export Assistance (TEA) Program for high value agricultural products. Because of the public reporting requirements, the TEA program is a nearly unique source of information on advertising activities that is not otherwise available for analysis. Specifically, data were obtained from the Mid-America International Agri-Trade Council (MIATCO) and the Western United States Agricultural Trade Association (WUSATA). Both organizations work with funds from the High Value Export Incentive Program (HVEIP) for branded products, now the Marketing Assistance Program (MAP). Participating firms may be reimbursed a portion of their actual expenditures for eligible export promotional activities in approved markets. These organizations provided information on promotion expenditures available under the condition that the data were handled in such a way that neither the firms' identities nor the products exported would be revealed.

The promotional activities eligible for reimbursement under the TEA/HVEIP program include media and direct mail advertising, trade fairs and exhibits, merchandising, and public relations. Other activities need the explicit approval of the association administering the program. Direct selling expenses are not reimbursed. Companies participating in the program must submit a marketing plan, sales figures for the periods before and during which the submitted marketing plan is executed, and invoices of incurred expenditures in order to be eligible for reimbursement.

Specification of Study Variables: The information from MIATCO and WUSATA was used to construct the study's database. Each observation consists of a product/market pair, where a product being exported to two different markets is recorded as two observations. However, sorting the data into relevant variables did present some problems. These organizations use the information for control purposes rather than for evaluation of the marketing plans; hence, even when a plan of the budgeted activities was submitted, it was not always implemented. So, in order to determine how the companies were in fact promoting their products, it was necessary to reconstruct their strategies from invoices presented by them to

the associations for reimbursement. Along with the invoices, a copy or a description of the advertisement or activity was also requested. For this analysis, expenditures were grouped into specific classes of strategic variables:

- (1) Four consumer oriented, or pull, variables were defined: television expenditures (TV); consumer oriented printed material (CSPR), which includes newspapers, magazines and flier advertising; point-of-sale displays and promotions (PSP), which include on-pack giveaways, free consumer samples, mannequin displays, etc.; and other consumer activities (OCS), grouping those activities targeting consumers not included in the previous categories.
- (2) Three channel oriented, or push, variables were defined: channel printed material (CHPR), includes brochures, advertisements in trade magazines, product "newsletters" and direct mailings; sample giveaways and trade fairs (SF), includes the shipping of samples and the expenditures incurred when taking part in trade shows; other channel activities (OCH), includes activities aimed at winning the goodwill of the distribution channel members. Giveaways, from golf balls to pens, were very common. Seminars and other promotional meetings were also frequently used.

As well as the above data, an indicator of export competitiveness was needed. Unfortunately, market share information, a commonly used variable, was not available for the country/product pairs in the sample. As an alternative, changes in export sales was used. The companies report their sales to each market to which they are exporting at the beginning and at the end of the period in which they participate in the program. Baseline sales correspond to sales at the end of federal fiscal year 1988. Final sales correspond to sales at the end of federal fiscal year 1989; promotional expenditures were those recorded during fiscal 1989.

Observations in the study sample are very heterogeneous; products ranged from highly processed and consumer oriented, such as frozen dinners, to intermediate or ingredients such as spices. In addition, markets (countries) are also very diverse. Therefore, one or more variables

were needed to account for differences influencing the effectiveness of the promotion strategies among markets. First, own-price elasticities (DE) were used, indicating how the various markets react to changes in food prices and hence reflecting their tastes and income levels. Elasticities tend to be lower for high income countries where consumers are less price sensitive than in low income countries. Price inelastic market demands enables increasing sales revenue through raising prices. The estimates used are Cournot own-price elasticities, which keep income constant, calculated by Theil and Clements (1987). Second, product characteristics affecting sales were controlled for by classifying the products into "intermediate," which undergo further processing before reaching the consumer, and "consumer ready," which do not.

Using this information, a database with 64 observations was constructed. It includes classification of the product (i.e., intermediate, consumer ready), the country to which the product is exported, sales value for the previous fiscal year (baseline sales), sales value for the fiscal year during which the promotional activities were carried out (final sales), and the dollar amount of expenditures for each of the selected advertising and promotion variables.

Statistical Procedures: Two statistical procedures were used in analyzing the data. First, an Analysis of Variance (ANOVA) was used to test for mean differences among groups according to target market, product type, origin and the emphasis of the strategy (push vs pull). Second, a linear regression analysis, calculated by Ordinary Least Squares (OLS), was performed on the pooled data to determine how each of the defined promotion and advertising variables affects sales.

2. Results and Analysis

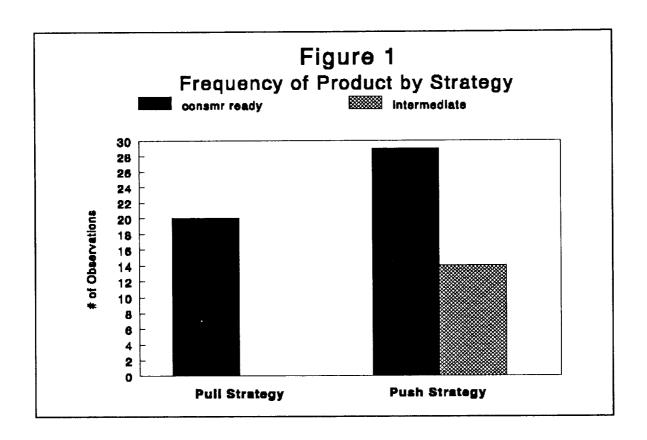
Basic Characteristics of Sample: In 1988, MIATCO and WUSATA received \$2.7 million, or 55 percent of the funds allocated to the HV/EIP program. The observations from WUSATA accounted for 56 percent of sales by all WUSATA sponsored firms, and those from MIATCO accounted for 60 percent of all MIATCO sales. Asian markets are heavily represented in the

sample, accounting for 70 percent of total sales for the group. The EC accounted for 23 percent of sales and other countries (ROW) for 7 percent. Overall, however, U.S. HVAP exports have been exported in more or less equal proportions to these three regions. Thus, the data used in this study are disproportionately weighted toward the Asian markets.

There is a wide variety of products in the sample. Canned fruits and vegetables and fruit juices make up about half of the observations, and food ingredients, such as spices and isolated proteins, are also numerous. Outside these two broad categories, products range from TV dinners to pet foods, from nutritional supplements to popcorn. Initial product sales per market ranged from \$7,300 to \$18.6 million and final sales from \$216 to \$9.6 million. Changes in sales varied between -\$9.0 million and \$3.3 million. The broad range of these figures reflects the diversity in the products, markets and firms covered.

A strategy was classified as primarily push or pull when expenditures for those type of activities comprised more than 50 percent of total promotional expenditures. Regarding the strategies observed, forty-three (68.2%) focused on pushtype activities while 20 (31.8%) focused on pulltype activities. This was unexpected since only 14 (22.2%) products in the sample were classified as intermediate or semi-processed products, which are normally associated with push strategies. Still, all intermediate products were promoted by a push strategy. Of the 49 observations classified as consumer ready products, 29 (59.2%) were promoted through a mainly push strategy (Figure 1). Even if the criterion for classifying a strategy as push or pull is narrowed by increasing the qualifying share of total expenditures in activities of the particular type to 70 percent, the percentage of consumer ready products promoted by a push strategy would still be high (24 or 49.2%).

Change in sales, defined as final minus baseline sales, for products promoted by a primarily push strategy ranged from -\$2.4 million to \$3.3 million, with average sales increasing by \$151,338 (19.4% of baseline sales). For primarily pull promoted products, change in sales ranged between -\$9.0 million to \$1.7 million. On



average, sales decreased by -\$242,867, (17.8%). The mean responses were heavily affected by one pull-strategy observation with a \$9.0 million decrease in sales.

The advertising to sales ratio (A/S) for the products promoted by a push strategy was 3.89 percent and was 6.81 percent for the group of products promoted by a pull strategy, reflecting the higher cost of a pull-oriented strategy. Figure 2 presents the change in sales by products promoted by the two strategies, where absolute change in sales is obtained by adding the change in sales for the group and dividing it by the number of firms, and relative change in sales takes into account firm size and is calculated as the average of the percentage change in sales for each firm in the group.

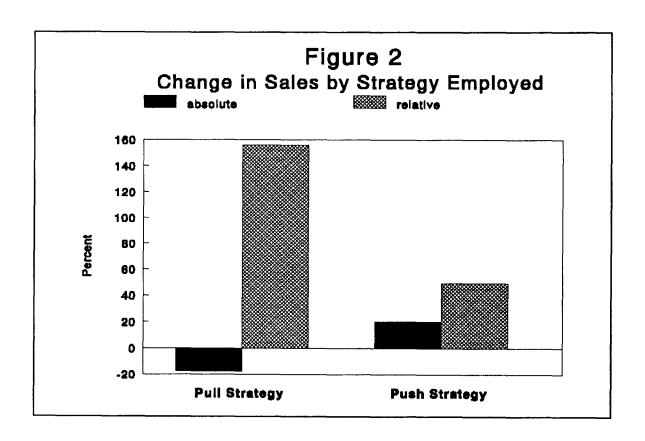
In terms of promotional expenditures by type of activity:

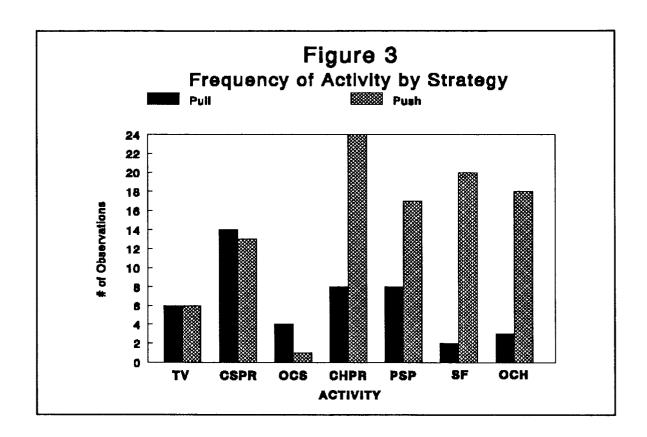
- (i) TV was used as part of twelve of these observations², 66 percent were consumer ready products. In half of the cases, TV was used primarily within a push strategy. Change in sales for the twelve observations ranged from -\$9 million to +\$3.3 million, averaging -\$313,727 (-15.4%), but sales increased for nine.
- (ii) Consumer oriented printed material, CSPR, was used in twenty-seven cases. All of the products in this group are in the consumer ready category. As with TV expenditures, half the observations used this activity primarily within a push strategy. Change in sales varied from -\$1.48 million to +\$1.69 million. Average sales for the group increased by \$129,248, (15.7%). Sales increased for twenty-two.
- (iii) Channel oriented printed material, CHPR, was present in 32 observations. Of the intermediate products, ten (71%) used this promotional medium as did 22 (44.8%) of the consumer-ready products. This activity was used mainly (66%) within a push strategy. Change in sales fluctuated from -\$786,244 to +\$3.3 million. Average sales for the group remained fairly stable, increasing only by \$13,281 (1.1%). Sales increased in 25 observations.

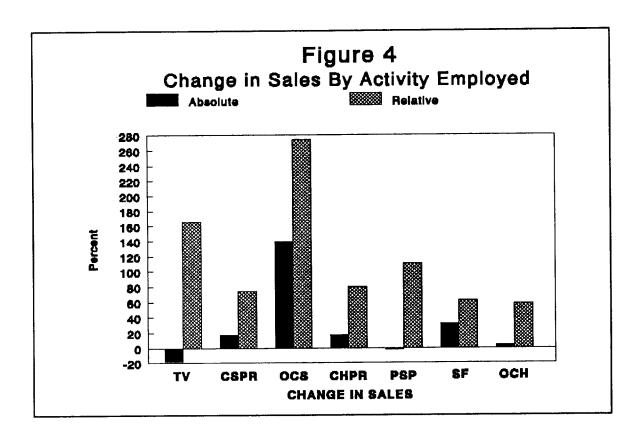
- (iv) Point-of-sale and promotions, **PSP**, were used with 25 products. All were in the consumer-ready category. In two thirds of the cases, they were part of a primarily push strategy. Change in sales ranged from -\$2.4 million to +\$1.46 million, with average sales varying only by -23,236 (-2.01%). Sales increased for 23 products.
- (v) Samples and trade fairs, SF, characteristically push activities, were used with 22 products, nine intermediate and 13 consumer ready. In all but two instances, they were used within a primarily push strategy. Change in sales varied from -\$786,244 to +\$557,172. Average sales decreased by \$363,941 (34.5%) but sales increased in 19 of the observations.
- (vi) Finally, the other channel, OCH, and other consumer, OCS, variables were used to group expenditures that did not fit into any of the previous defined activities. These included such things as give-a-ways to retailers and cooking seminars aimed at gaining product awareness. Other channel oriented expenditures were observed in 21 instances. Of these, only three were used within a mainly pull strategy. Two thirds of the products in this group were consumer-ready products. Change in sales ranged from -\$1.47 million to +\$3.3 million. On average, sales decreased by -\$79,435 (6.2%). Other consumer expenditures were reported in only five cases and were used in pull strategies with consumer ready products. Average sales increased by \$197,552 (140.4%), with sales changing from +\$19.587 to +\$233,132.

A summary of the observed activities is presented in Figure 3, and Figure 4 presents the change in sales by products using the different media, where absolute change in sales is obtained by adding the change in sales for the group and dividing it by the number of firms, and relative change in sales takes into account firm size and is calculated as the average of the percentage change in sales for each firm in the group.

Several points in the previous analysis need to be highlighted. First, 60 percent of the consumer-ready products are being promoted primarily through a push strategy. This is not consistent with the prior expectation of a positive correlation







- 1. Standard International Trade Classification codes.
- 2. An observation can be in more than one activity group.
- 3. The ANOVA criteria for hypothesis testing were not changed by the deletion of the outliers.

between consumer-ready products and pull strategies. Exporters appear to be relying on third parties, channel members in this case, to market their products to the consumers. All intermediate products, however, were promoted through a primarily push strategy, as expected.

Regarding the classification of the different activities into a push or a pull strategy, the data support the criteria followed. Even with consumer ready products being promoted heavily by push strategies, television, consumer oriented printed material and other consumer oriented expenditures were associated with a primarily pull strategy in half or more of the cases in which they were used. Channel printed material, point-ofsale expenditures and the other activities expected to be associated with a push strategy were used within a primarily push strategy in at least two thirds of the cases. PSP expenditures are a push activity even though they are aimed at consumers. What is more, almost all strategies were heavily focused on only one of the two strategic An alternative "mixed strategies" approaches. category, where total expenditures for one category of activities is less than 70 percent, would have accounted for five, or 8 percent, of the observations.

Even though the marketing plans varied according to the characteristics of product, the segment of the market to which they were targeted, and a myriad of other factors, two elements were frequently present. The first, used mainly in pull strategies, was the idea of "America" as a marketing tool. The TEA program encourages mentioning in the product labels that they are from the United States; most firms do so. Several firms carry this concept much further, including uniquely "American" life-style themes in advertising content. Others stress the quality of American food products. The other common approach, mainly used in push strategies, was to organize seminars showcasing to distributors and shop owners the uses and qualities of their products. These seminars are deemed necessary since some companies are introducing products new to the particular market and need to achieve product awareness.

ANOVA Results: Five null hypotheses were tested using the ANOVA methodology, the results being shown in Table 1. All had relative change in sales, the ratio of change in sales to baseline sales expressed as a percentage, as the dependent variable. Only two, Ho1 and Ho3, were significantly different from zero.

- Ho1 tested for differences among products being promoted by the different strategies. Export data from USDA's Schedule B by commodity class, by country, of the products in the sample were used as a benchmark against which the performance of the strategies was compared. The relative changes in sales group means obtained are: 156.8 percent for pull-promoted products (Pull), 47.12 percent for push-promoted products (Push) and 46.63 percent for all U.S. exports (US).

Both Duncan's and Tukey's tests showed statistically significant differences at the 0.05 level between (Pull) and (Push), and between (Pull) and (US). The competitive position for products using a pull strategy improved relative to that of all U.S. exports. There was no difference between the latter and those identified as being promoted through a push strategy. Companies willing to invest in the direct marketing of their product to the consumer, using a pull strategy, were more successful than those using the channel to do so.

- Ho3 tested for differences between product type/strategy groups. There were no intermediate products being promoted by a pull strategy. The group means obtained were: 156.8 percent for consumer-ready products promoted by a pull strategy (Pull-CSR), 31.56 percent for consumerready products promoted by a push strategy (Psh-CSr), and 79.33 percent for intermediate products promoted by a push strategy (Psh-IN). At the 0.05 level, Duncan's test showed significant differences between (Pll-CSR) and (Psh-CSR). The groups were also significantly different under Tukey's criteria at the 0.10 level. As hypothesized, sales of consumer-ready products increased more when promoted by predominantly pull strategies than when promoted by predominantly push The "optimal" strategies, push for strategies. intermediate and pull for consumer-ready, achieved statistically similar results. When tested

Table 1
Summary of ANOVA Results

		Relative			Danistan	Groups
TT41	X7= -2 -1.1 -	Change in	70 A	DD 1 122	Decision	Statistically
Hypothesis	variable	Sales (means)	F-ratio	F-Probability	(at p=0.05)	Different
Ho1:Promotion						
	Pull	156.8	4.07	0.0196	Rejected	Pull-Push
	Push	47.12			•	Pull-US
	U.S.	46.63				
Ho2:Produc	t Type					
	Inter.	82.68	0.01	0.09512	Not rejected	
	Cons. R.	79.33			,	
Ho3:Strateg	y					
	Pll-CSR	156.8	3.13	0.0511	Rejected	PICSR-PshCSR
	Psh-IN	79.33			•	
	Psh-CSR	31.56				
Ho4:Destination						
	Asia	79.61	0.97	0.3858	Not Rejected	
	R-O-W	122.75			•	
	W.Europe	34.61				
Ho5:Origin						
	Miatco	110	0.96	0.3308	Not Rejected	
	Wusata	64.67			3	

against all U.S. exports, only (Pll-CSR) is significantly different. Products promoted by primarily push strategies resulted in sales similar to all U.S. exports.

- Hypotheses Ho2, Ho4 and Ho5 were not rejected. Ho2 tested for differences attributable to product type. A priori, consumer-ready products have characteristics making them more susceptible to differentiation than intermediate products; a quality that was expected to affect export performance. Group means are 82.68 percent for intermediate products (Inter) and 79.33 percent for consumer ready products (CSR). Ho4 and Ho5, included to control for destination and origin, did not indicate significant differences attributable to these factors. For Ho4, group means were 79.61 percent for Asia, 34.61 percent for Western Europe, and 122.75 percent for the Rest of the World (ROW). The minimum significant difference according to Tukey's test, at the 0.05 level, was 139.6 percent. For Ho5, group means were 110 percent for MIATCO, and 64.67 percent for WUSATA. The minimum significant difference was 92.53 percent.

OLS Results: Regression analysis was used to identify specifically the promotional activities that had a statistically significant impact on sales of the products in the sample. Two models were specified with this objective. As evidenced in the descriptive analysis, it seemed that one or two observations were heavily influencing the sample. To control for the impact of these observations, an outlier test, using the DFFITS statistic, was performed where a large value indicates that the observation is very influential in the regression. Following the size-adjusted cut off criteria recommended by Belsley et al., two observations were deleted³.

- Model I, used change in sales, in dollars, as the dependent variable, the results being shown in Table 2. The independent variables were: expenditures on the different promotion activities, also in dollars; a dummy for product type, defined as zero for intermediate products and as one for consumer-ready products; and the estimates of the demand elasticities. The R² obtained was 0.27 with an adjusted R² of 0.1303, and the model's F Value of 1.932 is significant at the 90 percent

confidence level. Two of the advertising variables had positive and significant coefficients, TV and CSPR, with every dollar spent on TV resulting in an increase in sales of \$3.31 and every dollar spent on consumer oriented printed material increasing sales by \$12.07. According to this model, CSPR is four times more effective than TV in increasing sales. The coefficients for the other advertising variables were not significant. The dummy variable accounting for product characteristics was significant and had a negative sign, reflecting a detrimental impact of using the inappropriate strategy, promoting consumer-ready products through push activities. The demand elasticity parameter used to characterize the different markets was not significant.

- Model II, used relative change in sales, the ratio of change in sales to baseline sales, as the dependent variable. The independent variables were the ratios of expenditures on each type of activity to baseline sales along with the product type dummy and the elasticity of demand estimates. By taking into account the differences in sales volume among firms, this model should perform better than model I. The results, shown in Table 3, bear this out with an R² of 0.3641, an adjusted R² of 0.2423, and an F Value of 2.990, significant at the 95 percent confidence level. RTV and RCSPR were both positive and significant at this level, RTV had a coefficient of 2.3847 and RCSPR of 5.0322. These coefficients must be interpreted with caution since they are largely affected by the initial volume of sales; however, expenditures on consumer-oriented printed material showed the biggest positive impact on the competitive position of the firm.

Even though their beta estimates were not statistically significant, the coefficients of the other promotional activities merit some analysis, especially as they show signs opposite to those expected. Of the four push activities being evaluated, three had negative signs. It would seem that targeting channel members as a strategy to introduce and gain sales for new products in foreign markets is a doubtfully effective strategy. Japan, a market heavily represented in the sample, has cumbersome distribution channels, particularly in the food sector, with thirty times the number of wholesalers as there are in the United States.

Table 2

OLS Results for Activity Expenditures - Model I

<u>DF</u>	F-Value	Prob > F	R-Square
60	1.932	0.072	0.27

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	468422.08	321615.43	1.456	0.1519
TV	3.31235244**	1.14995878	2.880	0.0060
CSPR	12.07814525**	5.56065752	2.172	0.0349
CHPR	-6.17127723	6.63383774	-0.930	0.3570
PSP	-3.67051047	4.78329727	-0.767	0.4467
SF	-24.43967922	22.74776120	-1.074	0.2881
OCH	10.55392721	10.39429266	1.015	0.3151
OCS	-5.97954022	25.91630683	-0.231	0.8185
PT	-406755.81**	194730.17	-2.089	0.0422
DE	328976.78	852060.77	0.386	0.7012

^{**} Significant at the 0.05 level

Table 3

OLS Results for Activity Expenditures-Model II

DF	F-Value	Prob > F	R-Square
60	2.489	0.020	0.3182

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter = 0	Prob > T
				., .
INTERCEP	0.33449376	0.54402262	0.615	0.5416
RTV	2.38476948**	0.83901480	2.842	0.0066
RCSPR	5.03220494**	1.55777032	3.230	0.0022
RCHPR	1.32261604	1.68661044	0.784	0.4368
RPSP	-0.005631204	1.30137186	-0.004	0.9966
RSF	1.10308592	0.97627735	1.130	0.2641
ROCH	-0.45812209	4.60871623	-0.099	0.9212
ROCS	-1.47042865	1.12917076	-1.302	0.1991
PT	-0.44056120	0.35398004	-1.245	0.2193
DE	-0.97808685	1.62356246	-0.602	0.5497

^{**} Significant at the 0.05 level.

Push strategies are difficult to implement in such an environment. The estimates for PT and DE were not statistically significant, but the DE parameter has the expected negative sign.

Both sets of results exhibit several features which need to be addressed. First, both TV and **CSPR** were the dominating factors affecting sales. The effect of these activities on consumers can be observed within a few weeks of their implementation and might be better reflected in the sample. Time-series data would help to clarify this point. Second, the fact that all other activities were not significant might be due to a multicollinearity problem, i.e. some of the independent variables are a linear function of other independent variables. The correlation matrices for both models were calculated and there are several variables having high Pearson correlation coefficients. The data used do not permit one to differentiate clearly how these variables are affecting the dependent variable. Multicollinearity can be solved either by adding new observations, by introducing exact linear constraints, or performing a ridge regression. It was not possible to obtain new observations given the data limitations described earlier; there is no previous information on the independent variables to create the linear constraints; and ridge regressions do not solve the cause of the problem, they only make it manageable. With these limitations the models were used as tools to identify the most effective promotional activities and as such proved to be useful.

Summarizing, U.S. exporters in the sample predominantly promoted their products using push strategies for both consumer-ready and intermediate products. Nevertheless, pull strategies gave the best results. The results obtained from the regression analysis reinforced the ANOVA findings, showing that firms using pull strategies are successful in improving their competitive position in HVAP export markets.

3. Conclusions

The results from the study might be used to evaluate current HVAP promotion programs and policies. First, there is an important difference in the products within the HVAP category. Intermediate products can be effectively promoted by

targeting the distribution channels, a similar approach to that followed in the promotion of bulk agricultural commodity exports. Consumer-ready products, on the other hand, need to be promoted directly to the consumers. HVAP producers planning to engage in the promotion of their products in foreign markets must have the managerial skill and financial capital necessary to execute these types of promotional activities. Even when current export promotion programs recognize the importance that promotional activities have as an element for the success of the exporting effort, they fail to achieve an adequate return on resources when this difference between consumer-ready and intermediate products has not been recognized. Not all exporting firms should be encouraged to export consumer-ready products. Small and medium sized firms may have a better chance of succeeding as exporters if they focus on intermediate or semi-processed products.

A related issue deals with the effectiveness of the USDA programs used for promoting HVAP exports. At the present it is almost impossible to determine the returns on the funds spent on such programs as almost no provisions for evaluation have been made.

Finally, firms interested in getting access to foreign markets should evaluate all their alternatives and not limit their choices to targeting the channel or the consumer. Other strategic options such as joint ventures or licensing might be an option when marketing cost becomes a constraint.

In conclusion, further tests are needed of the impact of export promotion activities using data from other sources. Research that discriminates among the promotion strategies targeting channel members would help complete the analysis presented here.

References

- Agricultural Outlook. "High Value Exports Will Reach Record High." AO-152 (May 1989):22.
- Belsley, D. A., Kuh, E. and Welsh, R. E., Regression Diagnostics: Identifying Influential Data and Sources of Collinearity. New York NY: Wiley, 1980.
- Braaten, J. "Value Added Exports: Better Protection Against Economic Shocks." Foreign Agriculture. 9(1985):19-20.
- Burr, P. "High Value Exports: Bright Spot In the U.S. Picture." Foreign Agriculture. 25 (December 1987):10-12.

- O'Brien, P., J. Coyle and W. Coyle. High-Value Agricultural Exports: U.S. Opportunities in The 1980's. Foreign Agricultural Economic Report No.188. Washington D.C.: Economic Research Service, U.S.D.A.
- Pendlum, D., "Agricultural Trade: The Decade in Review." AgExporter 2 (March 1990):10-13.
- Theil, H. and K. W. Clements, Applied Demand Analysis. Cambridge MA: Ballinger Publishing Company, 1987.