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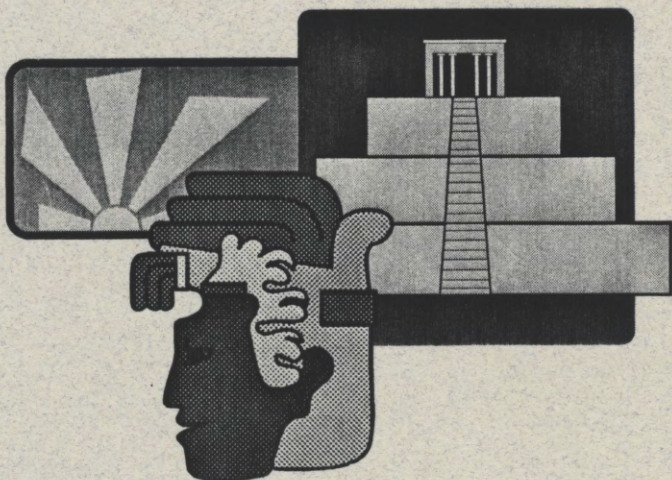
# Agricultural Commodity Promotion Policies and Programs in the Global Agri-Food System

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## Determinants of the Allocation of MPP Funds

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### Introduction

In recent years, the promotion of agricultural commodities has become an important policy issue for the United States. Due to increased competition in the domestic market, many small agribusiness firms find it necessary to rely on exporting to expand or possibly maintain existing sales and profit levels, and to diversify risk (Barringer, Wortman, Macy, 1994). This increase in competition has created a demand for product promotion designed to increase sales abroad. Because smaller firms are perhaps more susceptible to increased competition, they are likely to benefit more than large firms from product promotion.

Unfortunately, small agribusinesses often lack the resources necessary to conduct the level of export promotion necessary to expand and develop foreign markets for agricultural commodities. This lack of sufficient resources increases the demand for government assistance in the promotion of U.S. agricultural exports. The Foreign Agriculture Service of the United States Department of Agriculture (FAS/USDA) has taken an active role in assisting agricultural producers in promoting their products abroad through the Market Promotion Program (MPP). MPP funds are categorized into two general types of promotional activities: funds for generic promotions and funds for branded promotions. Generic promotions receive about two-thirds of MPP funds, while brand promotions account for about one-third. The objective of the MPP is to assist in the development, maintenance, and expansion of potential and existing commercial export markets for U.S. agricultural commodities. This is accomplished through cost-share assistance to eligible organizations and firms. Funds are given by the FAS to eligible trade organizations who in turn distribute the funds among firms.

Firms who face unfair trade practices or significant trade barriers in foreign markets are given special consideration for MPP assistance.<sup>1</sup>

### *Critical Analysis of the MPP*

In recent years the MPP has come under criticism from the Government Accounting Office (GAO, 1993). In a 1993 report, the GAO alleged that MPP funds have been distributed in a biased fashion toward large firms. The GAO suggested that small firms may have a greater need for government promotional assistance due to their more limited resources and infrastructure for foreign market development, and proposed that the MPP be targeted more toward small and medium-sized firms. The GAO also proposed that the program should focus more on new-to-export agribusinesses to achieve the greatest gains in exports from distribution of MPP funds. New-to-export firms would also likely have less well-established budgets or privately funded programs for export promotion. In subsequent years, the FAS encouraged greater distribution of funds to small and medium-sized firms and new-to-export firms in its program requirements.

Previous studies concerning TEA/MPP funds have concentrated on the allocation of funds among market development activities, commodities, and export markets (Halliburton and Henneberry 1995; Henneberry, Ackerman, Eshleman 1992). No empirical studies have been conducted concerning the allocation of MPP funds among firms according to size and export experience; and therefore, there is no empirical evidence to lend support to the GAO's claim of a greater proportion of MPP funds going to large or more experienced firms. Also, no study has

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<sup>1</sup> Changes to the MPP in the Omnibus Budget Reconciliation Act of 1993 required that eligible organizations must give priority to small-sized firms. Other changes to the criteria for FAS' allocations to eligible organizations that administer a branded promotion program are based on criteria published on February 1, 1995, in the Federal Register. A five-year limit is set on brand promotion for a product in a single market. Program participants receiving MPP funds are required to certify that MPP funds supplement, not supplant private sector funds. MPP funds are prohibited from being used to promote tobacco. Lastly, the unfair trade practices requirement for program participation was eliminated.

examined the impact of MPP funds across firm size, export experience, or other factors.

Using unique firm-level data, the objectives of this study are to ascertain the relationship, if any, between the allocation of MPP funds, firm size, and export experience. Specifically, this study will empirically examine the impacts of firm size, export experience, other firm characteristics, and other factors upon the allocation of MPP funds.<sup>2</sup>

### **Data and Method**

Data to conduct the empirical analysis are from FAS records and from MPP participants via mail questionnaire. FAS records were used to develop a mailing list of 764 U.S. firms that participated in the branded portion of the 1993-94 MPP program year. The survey was conducted following the total design method of Dillman. After the initial draft of the survey was completed, a focus group of agribusiness representatives was conducted in the spring of 1995. In the focus group, a professional moderator engaged the participants in a discussion about exporting and government assistance programs. At the end of the discussion, participants were asked to look over the survey and give comments regarding content and appearance. The survey was revised in the summer of 1995 to reflect the focus group's comments. After revising the survey, 25 firms from the population were contacted and asked if they would be willing to be part of the pre-test group. The pre-test group was asked to fill out the survey and provide

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<sup>2</sup>In general, USDA signed MPP agreements with eligible organizations who then determined which firms should receive MPP funds based on USDA regulations. The chief organizations that administered branded promotions have been the regional/state associations: the Eastern U.S. Agricultural and Food Export Council, the Mid-America International Agri-Trade Council; the National Association of State Departments of Agriculture; the Southern United States Trade Association; and the Western United States Agricultural Trade Association. Branded promotion programs also may be administered by commodity promotion organizations such as the California Wine Institute. Finally, FAS makes a very small number of Export Incentive Program agreements directly with firms that promote specific agricultural products such as Arizona and California citrus.

comments about content and appearance. The pre-test group made no changes to the survey.

In September 1995 the survey was mailed to the rest of the population. Approximately one week after the initial mailing, a reminder postcard was sent to nonrespondents. About two weeks later, a second copy of the survey was mailed to nonrespondents. In conjunction with the second mailing, nonrespondents were called with a telephone reminder. In the questionnaire, firms were questioned about the MPP application process, changes in exports during the program year, perceived export barriers and assistance needs, exporting plans and strategies, and general characteristics of the firm. Of the 764 firms that were surveyed, 230 returned usable responses.

### *Model Specification*

There are in general three important sets of variables that are hypothesized to explain the amount a firm is allocated. First, a set of variables representing firm characteristics. Second, a set of FAS preference variables that correspond to the conditions that the MPP is designed to address. Third, a set of cooperator (eligible organization) variables that represent what cooperator the firm went through to get the money. The general model is then of the form

$$\text{ALLOCATION} = F(\text{REQUEST}, \text{EMP}, \text{SQEMP}, \text{SAL1}, \text{SAL2}, \text{SAL3}, \\ \text{SAL4}, \text{SAL5}, \text{INT1}, \text{INT2}, \text{INT3}, \text{INT4}, \text{INT5}, \text{EXP}, \text{SQEXP}, \text{INTMKT}, \\ \text{SPROD}, \text{SADVERT}, \text{TBB}, \text{SHOWS}, \text{AWARE}, \text{RESTR}, \text{COOP1}, \\ \text{COOP2}, \text{COOP3}, \text{COOP4}, \text{COOP5}, \text{SUBSID}),$$

and Table 1 gives a description of all the variables.

The amount requested (REQUEST) is included since allocation amounts are likely impacted by the amount the firm asked for in their application. The general model includes number of employees (EMP) and number of employees

squared (SQEMP) to allow for a possible nonlinear relationship in number of employees. Five sales intervals (SAL1, SAL2,..., SAL5) capture the alternative sales levels of firms. Five interaction variables between number of employees and sales categories (INT1, INT2,...,INT5) allow for the response to employee numbers to differ by level of sales. This is important because a large sales number does not necessarily imply a large number of employees or vice versa. The years of export experience enters in a nonlinear fashion by including the number of years exporting (EXP) and the number of years exporting squared (SQEXP). Whether or not the firm had an international marketing division is captured by the variable INTMKT. Whether or not a firm attempted to specialize its product for the export market is captured by the variable SPROD, and whether or not a firm used specialized advertising in export markets is captured by SADVERT. The variable TBB captures whether or not a firm used trade leads provided by the FAS and the variable SHOWS captures whether or not a firm participated in foreign trade shows. Product recognition in export markets is captured by a variable for awareness (AWARE) and import restrictions captured by (RESTR). The variables COOP1,...,COOP5 represent what cooperator the firm went through in obtaining the MPP funds. Finally, whether or not a firm was considered a subsidiary is captured by the variable SUBSID. This base model assumes that parameters for large firms are no different than those for small firms according to the SBA definition. This will be the first model estimated and will provide the basis for the second model, which will test the hypothesis that there is a bias in allocation towards larger firms.

As alluded to earlier, in 1993, the GAO suggested that the FAS used the criteria set by the Small Business Administration (SBA) in their decision process concerning the allocation of funds. For food processing firms the SBA categorizes firms according to the number of full-time employees. ( By SBA regulations, for most food processors, a firm is considered small if its number of full-time employees is 500 or less.) For the second model, a dummy variable is created classifying firms as large or small according to SBA guidelines. The dummy variable (D) is defined as  $D=1$  if the number of full-time employees is 500 or less

and  $D=0$  if the number of full-time employees is greater than 500. The dummy variable divides the sample into firms that are small and firms that are not small according to SBA guidelines. By interacting this dummy variable with all variables in the base model, the coefficients of each variable are allowed to differ according to whether the firm is classified as small or large according to the SBA definition. This process is equivalent to estimating two separate models (one model for firms characterized as small and one model for firms characterized as large), but unlike the two separate model cases, this method allows a way of testing if individual model parameters differ across large and small firms. The second model is used to test the hypothesis that the marginal affects of firm characteristics on the allocation of MPP funds does not change across small and large firms as defined by the SBA.

## Results

A linear regression was specified for the general base model described above and specification diagnostics indicated the presence of heteroscedasticity. However, as is not unusual in cross sectional data, the specific form of heteroscedasticity is unknown. We therefore used White's consistent variance-covariance estimator for all hypothesis testing via Wald tests. Sequential testing indicated that SA1, SA3, INT1, INT3, INT4, COOP3, COOP4, and COOP5 were insignificant and could be deleted without degrading the base model.

The estimated base model of allocation is presented in Table 2. The estimated coefficient on REQUEST shows a significant statistical and economic relationship between the allocation of MPP funds and the amount of funds requested. The coefficient shows that for an additional dollar requested, roughly \$0.77 will be received. The number of employees appears to have both a statistical and economic significance in the model. The coefficients on the number of employees and the number of employees squared were both statistically significant. The coefficient on the number of employees was negative, while the coefficient on the squared number of employees was positive. This indicates that the number of



employees decreases the allocation up to a given point (at 1469 employees) and then increases the allocation. The groups that appear to be significantly different are the sales groups SAL4 and SAL5 (\$5 million or greater). The parameter for this group suggests that firms with sales of \$5 million or larger have a significantly greater allocation than the base group (i.e. SA1 and SA3). Firms with sales of \$250,000 to \$999,999 received less than the base group. However, the negative sign on the interaction term for SAL5 and number of employees, and SAL2 and employees, suggests that the negative influence of employee numbers is greater for firms with \$5 million or more in sales and for firms with \$250,000 to \$999,000 in sales. The influence does not become positive until the firm reaches 2,667 employees. For firms in the SAL5 category, the influence does not become positive until the number of employees reaches 2,596. For firms in the SAL2 category, the influence becomes positive at 2,254. There appears to be a significant negative relationship between a firm's export experience (EXP) and amount of funds they receive. As a firm's export experience increases by one year, the amount of funding they receive declines by \$1,867. The parameter estimate for the squared export experience variable had a positive sign, and was statistically significant. Funding becomes positive with experience of 61.4 years. Whether a firm has a specialized international marketing department seems to have no significant bearing on the amount of MPP funds the firm receives. The same thing is true of whether or not the facility is a branch location or a subsidiary.

Use of specially tailored advertising or promotion for export markets was statistically significant and increases the amount of the firm's allocation by \$28,329. However, tailoring products to the market did not significantly impact funding. One of the FAS's goals for the MPP is to provide assistance to firms who face barriers in the shape of buyer awareness and import restraints. The results from the model suggest that neither buyer awareness nor import restrictions as barriers significantly affect the allocation of funds. The results suggest that those firms who go through the Western U.S. Agricultural Trade Association (WUSATA) and the Wine Institute as cooperators receive significantly less MPP funds than those who go through other regional/state organizations or directly

through Export Incentive Programs (EIP) administered by commodity-specific cooperators. If a firm regularly uses trade shows organized by the FAS, this tends to increase their funding by \$18,168. The use of trade leads, buyer alerts, or supplier lists from the FAS does not appear to significantly affect the amount funding the firm receives.

The results for the second model are listed in Table 3. As stated, the dummy variable for firm size (D) was included in the model and interacted with all variables in the base model in order to determine if the parameters of the model are different depending on the size of the firm. A Wald test was conducted to see if size variable (D) and the variables created by interacting (D) with the base model variables significantly changed the model parameters. The results of this Wald test revealed that there is a change in the parameter estimates according to firm size, as defined by the SBA, for the budget allocation model (chi-square = 156.8).

A closer observation of the parameter estimates associated with the interaction terms and their respective t-statistics provides more information concerning parameter changes. The size dummy (D), INTMKT\*D, SADVERT\*D, and COOP2\*D all have parameter estimates which positively shift the allocation for small-sized firms (i.e., firms with 500 or less employees). The coefficient for the size dummy (D) suggests that the intercept for small firms is shifted up from -488,990 (the large firm intercept) to \$24,490. For a large firm (a firm with more than 500 employees) having sales of \$50,000,000 or more, this tends to decrease their allocation by \$198,350, however for a small firm having sales of \$50,000,000 or more in sales, this tends to increase their allocation by \$135,190. For large firms, having specialized international marketing personnel decreases their allocation by \$223,840. The allocation for a small firm which has specialized international personnel only decreases by \$4,360. Conducting advertising tailored to export markets reduced large firms' allocations by \$101,350, while small firms that tailor advertising to export markets receive \$25,269 more in MPP allocation than small firms which do not tailor their advertising. Large firms applying for funds through the WUSATA received about \$193,790 less than firms applying

through other regional cooperatives and EIP's while small firms applying through WUSATA only received \$21,140 less.

The parameter estimates for the amount REQUEST\*D, EMP\*D, SPROD\*D, TBB\*D, SHOWS\*D, AWARE\*D, RESTR\*D, and COOP1\*D all negatively shift the allocation for small firms. For large firms, an additional dollar requested resulted in an increase of \$1.12 of funding while this increase was only \$.75 for small firms. For large firms, an additional employee added about \$202 to their allocation while for small firms an additional employee reduced their allocation by approximately \$267. However for large firms, the allocation did begin to decline when the employee number reached 2,558, and for small firms, the effect became positive when the employee number reached 267. Tailoring products for export markets increased large firm allocations by \$319,690, but it decreased small firm allocations by \$5,670. Large firms that used other FAS services, such as trade leads, buyer alerts, and supplier lists received \$107,830 more funds than other large firms which did not, while small firms which used these services received \$2,500 less than small firms which did not take advantage of such services. Large firms using trade shows as a method of export promotion increased their allocation \$184,010, while the allocation for small firms using this method of promotion only increased by \$19,660. The allocation for large firms facing product awareness barriers in export markets increased by \$135,290 but for small firms facing the same barriers, the allocation actually declined by \$12,670. The same is true for import barriers faced by large and small firms. For large firms facing import barriers, the allocation increased by \$190,250; however for small firms the allocation decreased by \$13,820. Small firms applying for funds through the Wine Institute received \$28,620 less than small firms applying through other regional cooperators and EIPs, while large firms applying through the Wine Institute received \$384,890 than large firms applying elsewhere. The parameters associated with SQEMP\*D, SAL2\*D, INT5\*D, EXP\*D, SQEXP\*D, and SUBSID\*D did not significantly differ from zero, suggesting that the coefficients for these variables are no different for small firms than for large firms.

## Conclusions

The results from this study provide mixed support for the hypothesis that larger allocations went to larger firms. For those firms classified as large, according to SBA guidelines, the effect of the number of employees on MPP allocation was positive up to 2,558 employees, and then it became negative. For small firms the effect of the number of employees was negative but became positive at 267 employees. The results imply that for firms that are either very large or very small, the number of employees has a negative influence on the amount of allocation the firm receives. Results also suggest that having specialized international marketing personnel has a negative effect on the allocation amount; however this negative effect is less for small firms. For small firms, tailoring of advertising increased their allocation, but tailoring their products did not increase the allocation. Some evidence exists in the literature that tailoring products for export markets is helpful for long-term export growth (Cavusgil and Kirplani; Sriram and Sapienza). Although two goals of the MPP program are to increase buyer awareness and overcome undue import restrictions, for small firms the perception that buyer awareness and undue import restrictions were barriers did not positively influence their allocation.

Table 1. Variable Names and Definitions: Allocation Model

Variable Name	Definition	Units of Measure
ALLOC	Value of 1993-1994 Program Year MPP allocation from FAS	dollars
REQUEST	Value of request for funds from the 1993-1994 MPP	dollars
<b>Firm Characteristics:</b>		
EMP	Number of full-time employees	employees
SQEMP	Number of full-time employees squared	employees squared
SAL1	Sales of \$249,999 or less	1,0
SAL2	Sales of \$250,000 to \$999,999	1,0
SAL3	Sales of \$1,000,000 to \$4,999,999	1,0
SAL4	Sales of \$5,000,000 to \$49,999,999	1,0
SAL5	Sales greater than \$50,000,000	1,0
EXP	Years export experience prior to 1994	years
SQEXP	Years export experience squared	years squared
INTMKT	Specialized export marketing department	1 if, 0 otherwise
SUBSID	Branch location or subsidiary	1 if, 0 otherwise

Table 1 (Continued).

Variable Name	Definition	Units of Measure
<b>Export Barriers:</b>		
AWARE	Consumer awareness as an export barrier	1 if awareness considered a major barrier, 0 otherwise
RESTR	Import restrictions as an export barrier	1 if import restrictions considered a major barrier, 0 otherwise
<b>Cooperator :</b>		
COOP1	Wine Institute	1 if applied through Wine Institute, 0 if otherwise
COOP2	WUSATA	1 if applied through WUSATA, 0 otherwise
COOP3	EUSAFEC	1 if applied through EUSAFEC, 0 otherwise
COOP4	MIATCO	1 if applied through MIATCO, 0 otherwise
COOP5	SUSTA	1 if applied through SUSTA, 0 otherwise
COOP6	other	1 if applied through, 0 if otherwise
<b>Use of Other FAS Services:</b>		
SHOWS	Trade shows organized by FAS	1 if have used, 0 otherwise
TBB	Trade leads, buyer alerts, or buyer and supplier lists	1 if have used, 0 otherwise

Table 1 (Continued).

Variable Name	Definition	Units of Measure
<b>Export Strategies:</b>		
SPROD	Use specially tailored products for export markets	1 if yes, 0 otherwise
SADVERT	Use specially tailored advertising or promotion for export markets	1 if yes, 0 otherwise
D	Meets SBA employee size guidelines	1,0

Table 2. Estimated Coefficients for Base Model

Variable	Parameter Estimate
INTERCEPT	25307 (1.5847)
REQUEST	.7712* (5.725)
EMP	-59.451* (-3.067)
SQEMP	.0202* (3.343)
SAL2	-15617 (-1.130)
SAL4	23968* (2.688)
SAL5	79008* (4.102)
INT2	-31.767* (-2.285)

Table 2 (Continued).

Variable	Parameter Estimate
INT5	-45.569* (-2.825)
EXP	-1867.5* (-3.245)
SQEXP	15.204* (2.422)
INTMKT	-12464 (-1.756)
SADVERT	28329* (3.260)
SPROD	-4216.2 (-.410)
TBB	-3109.4 (-.362)
SHOWS	18168* (2.643)
AWARE	-12098 (-1.610)
RESTR	-12827 (-1.719)
COOP1	-33016* (-3.846)
COOP2	-27738* (-2.183)
SUBSID	-9497.9 (-1.287)
$R^2 = .7314$	

Values in parentheses are t-statistics; \* indicates significance at a .05 level.



Table 3. Estimated Coefficients for Model with Dummy Shifter

Variable	Parameter Estimate
INTERCEPT	-488990* (-3.8326)
D	513480* (3.990)
REQUEST	1.1238* (11.756)
REQUEST*D	-.372 (-2.268)
EMP	202.09* (3.026)
EMP*D	-468.77 (-2.753)
SQEMP	-.03951* (-2.6028)
SEMP*D	.537 * (1.639)
SAL2	239780 (-.584)
SAL2*D	-255270 (-.629)
SAL4	29054* (2.5848)
SAL5	-198350* (-3.2272)
SAL5*D	333540* (4.190)
INT2	-83.289 (-1.032)
INT5	-21.0122 (-.211)

Table 3 (Continued).

Variable	Parameter Estimate
INT5*D	-249.86 (-1.728)
EXP	2658.1 (.705)
EXP*D	-4142.7 (-1.08)
SQEXP	-31.523 (-.810)
SQEXP*D	42.008 (1.045)
INTMKT	-223840* (-4.634)
INTMKT*D	219480* (4.491)
ADVERT	-101350 (-1.735)
ADVERT*D	126619* (2.134)
PROD	319690* (3.766)
PROD*D	-325360* (-3.802)
TBB	107830* (2.65)
TBB*D	-110330* (-2.650)
SHOWS	184010* (4.754)
SHOWS*D	-164350* (-4.195)

Table 3 (Continued).

Variable	Parameter Estimate
AWARE	135290* (6.635)
AWARE*D	-147960* (-6.734)
RESTR	190250* (.909)
RESTR*D	-204070* (-2.887)
COOP1	384890* (3.455)
COOP1*D	-413510* (-3.701)
COOP2	-193790* (-7.933)
COOP2*D	172650* (6.359)
SUBSID	-55714* (-1.978)
SUBSID*D	53734 (1.783)
R <sup>2</sup> = .7699	

Values in parentheses are t-statistics; \* indicates significance at a .05 level.

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