An Economic Evaluation of California Avocado Industry Marketing Programs, 1961-1995

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This study determines the effect of California avocado industry advertising and promotion expenditures on the demand and price for California avocados and estimates the ratio of benefits to costs for marketing programs conducted by the California Avocado Commission. Separate models for annual and monthly avocado demand were specified and estimated. Monthly results were in line with expectations and were a definite improvement over the annual model. Estimated coefficients for each of the variables had the expected sign, most were statistically significant, and the magnitude of the estimates was reasonable. Advertising and promotion expenditures had a statistically significant positive effect on the price of (and demand for) California avocados. The monthly and annual price flexibilities of demand with respect to advertising and promotion were almost identical (0.137 for the monthly analysis vs. 0.130 for the annual analysis). Advertising and promotion also had estimated lagged impacts on California avocado prices and demand that extended five months after the month the expenditures were paid. The estimated price flexibility of demand of -1.54 is larger than the annual estimate of -1.33, but the monthly quantity variable includes both California and Florida sales. The demand for California avocados at average prices and quantities is inelastic at both the farm and f.o.b. levels, whether measured on an annual or monthly basis. This means that total industry revenues will be less for a large crop than for a small crop.

Benefits accruing to the California avocado industry from advertising and promotion were measured in the short run (assuming fixed supply) and in the long run (after adjustment of acreage to price changes). The fixed supply (short-run) benefits were estimated both annually and monthly. The annual fixed supply industry returns from CAC advertising and promotion expenditures ranged from a weighted average of $5.33 to $6.01 per dollar spent, depending on the time period examined and the discount rate used. (Note that all returns are total returns before the deduction of advertising expenditures.) A simple average of the annual fixed supply benefit-cost ratios is equal to 5.25. Short term returns for the most recent nine years (1986-87 through 1994-95 marketing years), based on the monthly analysis and discounted at 3 percent, yields a weighted average return of $6.35 per dollar spent on advertising and promotion. For the nine-year period of analysis, the monthly marginal and average benefit-cost ratios are equal to 8.92. The marginal benefit-cost ratios were greater than one for all but two months of the period, indicating that the CAC could have profitably increased advertising and promotion during all but two months of the nine-year period.

These returns are eroded over time, however, when the acreage response to higher returns is factored into the analysis. The annual simulation model was run with actual and zero advertising and promotion expenditures and the annual difference in total industry revenues was compared to advertising and promotion expenditures. CAC marketing program expenditures increased estimated net total industry revenues by $102.8 million over the period of analysis. When real costs and returns were discounted at 0 and 3 percent, the overall long-run discounted real returns from advertising and promotion were $1.78 and $1.71 per dollar spent, if producers paid the total costs of the program. After accounting for costs shifted to buyers, California avocado producers enjoyed an estimated annual average benefit-cost ratio of 2.84 for the 34-years of the analysis. The long-run weighted average benefit-cost ratios with costs and returns discounted at 0 and 3 percent, are 2.48 and 2.26, respectively.