

# **The direct economic effects of a policy to provide government subsidized price discounts for the purchase of fruit and vegetable by food stamp recipients.**

Karen M. Jetter, University of California Agricultural Issues Center

## **Background**

The purpose of this study is to evaluate the direct benefits and costs to consumers and producers from changes in prices, consumption and production, of a policy to offer government price discounts on fresh fruit and vegetables to food stamp recipients. Increased consumption of fruit and vegetables has been linked to a decrease in dietary related chronic diseases such as heart disease, diabetes and some cancers. Low socioeconomic status (SES) is strongly associated with higher rates of obesity and high rates of the leading causes of illness and death. Diet may play an important mediating role in explaining socioeconomic disparities in health status. Consequently, developing cost effective policies that lead to higher consumption of fruit and vegetables may have a significant impact on the incidence of chronic disease among persistent food stamp recipients.

Targeted assistance has been shown to be more efficient at bringing about dietary changes than more general assistance programs. Therefore, a targeted food assistance program such as price discounts on fruit and vegetables may provide substantial benefits to low-income consumers. Providing a price discount of 25% also directly benefits food stamp consumers through lowering the prices that they pay for fruit and vegetables. However, a price discount may cause equilibrium market prices to rise for fruit and vegetables, benefiting growers, but making other consumers worse off.

## **Methods**

The analysis involves using a model of the U.S. fruit and vegetable industry to determine how market prices and quantities change in response to a shock to the system, such as a price discount for one group of consumers. The model lays out a series of demand and supply equations in log-differential form. The demand side of the model contains equations for four different consumer groupings: fruit and vegetable home consumption by food stamp recipients, away from home consumption by food stamp recipients, consumption by other low-income consumers who are below 130 percent of the poverty level but not on food stamps, and all other higher income consumers. Consumption by food stamp recipients is done separately for food consumed at home as it is assumed that consumers would most likely use food stamps to purchase food from grocery stores for home consumption.

The supply side of the model contains equations for net U.S. trade (U.S. imports minus U.S. exports), market quantity supplied from the agricultural marketing sector (processors and handlers), and production supplied to the marketing sector from growers in California and the rest of the U.S. The result is a model that links supply and demand in the final market to supply and demand in the marketing sector, and ultimately, to growers' production decisions. The solution to the system of equations is the percentage change in retail and grower prices, final quantity demanded by each consumer group in the study, imports and exports, and production by growers in each region. The percentage changes in prices were used to estimate the changes in economic surplus for growers in California and the Rest of the U.S (RUS), marketing sector, consumers and the tax payer cost of the program. The model was estimated for 38 commodities. The commodities included in the study were those for which a complete data set was available.

## **Findings/Discussion**

Current consumption of all fruit and vegetables is 18.1 cups for food stamp recipients, 16.2 cups for people living below 1.3 of the poverty ratio, but who are not receiving food stamps, and 18.5 cups for people living above 1.3 of the poverty ratio. While the consumption of fruit and vegetables is similar between food stamp and higher income consumers, both groups are falling below the 24.5 minimum recommended servings for adults in the 2005 Dietary Guidelines for Americans.

Table 1. Changes in consumption and estimates of benefits and costs for each group.					
Weekly Consumption in cup equivalents					
Group	Current Total	Current total for 38 items	New total for 38 items	Percentage change in consumption	Costs & Benefits (\$ millions)
Food stamp	18.1	13.7130	14.4242	5.19	653
Home consumption		8.7430	9.4559	8.15	654
Away from home consumption		4.9700	4.9683	-0.034	-0.9
Low Income	16.2	13.3525	13.3474	-0.0382	-5
HigherIncome	18.5	15.2565	15.2507	-0.0378	-49
Tax payer costs					-681
Growers - California					23
Growers - RUS					26
Marketing sector					13

Current consumption of fruits and vegetables for the 38 commodities examined in this study is 13.71 cups for food stamp consumers, 13.35 cups for other low-income consumers and 15.25 cups for higher income consumers. The price discount will cause home consumption of fruit and vegetables by food stamp recipients to increase by 8.15% to 9.46 cups, but decrease consumption of away from home consumption due to higher market prices by 0.034%. The net result is an increase in total consumption of fruits and vegetables by 5.19%. Because other low-income consumers and higher-income consumers are affected by higher market prices, their consumption falls slightly by about 0.038%. The price discount increases consumer surplus for food stamp recipients, but lowers it for the other two groups.

The 5.19% increase in fruit and vegetable consumption by food stamp recipients will increase food stamp program costs by \$681 million. Producer surplus increases for California growers by \$23 million, growers in the rest of the U.S. by \$26 million, and the suppliers of marketing inputs by \$13 million. These benefits notably exclude the benefits of increased health status, which is the subject of future research.