



# The Relationship Between Patronizing Direct-to-Consumer Outlets and a Household's Demand for Fruits and Vegetables

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## What Is the Issue?

USDA seeks to develop, improve, and expand direct-to-consumer (DTC) marketing channels such as farmers markets and roadside stands. The Farmers Market Promotion Program (FMPP), for one, awards grants to agricultural groups and others who use these funds for a variety of activities that support the sale of agricultural products directly to consumers. Several other efforts help participants in USDA food and nutrition assistance programs to acquire foods through DTC outlets.

Farmers markets, roadside stands, and other DTC outlets can be important to small farmers. Many further hope that consumers who patronize these outlets will buy and consume a greater quantity and variety of fruits and vegetables. However, it is not clear how patronizing DTC outlets affects a typical consumer's behavior, if at all. This study investigates whether patronizing a DTC outlet increases a household's demand for fruits and vegetables as measured by its expenditures on these foods, including purchases at both DTC and nondirect retailers.

## What Did the Study Find?

USDA's National Household Food Acquisition and Purchase Survey (FoodAPS) offers unique insights into the food shopping behavior of U.S. households. Among 4,826 FoodAPS households that reported their food acquisitions over a 1-week period, 231 bought food from a farmers market or other DTC outlet. Fruits and vegetables were the most frequently purchased type of food at such places. Among the 231 households that bought food at a DTC outlet, 170 bought fruits and vegetables.

Households that bought fruits and vegetables directly from farmers spent more money on these two food groups across all outlet types, including both DTC and nondirect retailers:

- Among 170 FoodAPS households that bought fruits and vegetables at DTC outlets, weekly total fruit and vegetable spending averaged \$28.36.
- Among 3,388 FoodAPS households that also bought fruits and vegetables but did not patronize DTC outlets, weekly total fruit and vegetable spending averaged \$16.53.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

- Average fruit and vegetable spending across all 4,826 FoodAPS households was \$12.60, including those who made zero purchases.

Analysis of the data, including the estimation of an econometric model, revealed factors like education and interest in health and nutrition that are closely associated with buying fruits and vegetables at DTC outlets. However, Americans tend to do so infrequently:

- The probability to buy fruits and vegetables at DTC outlets in a given week averaged 3.5 percent across all FoodAPS households. In other words, the average household buys these foods directly from farmers during roughly 3.5 out of every 100 weeks, or between 1 and 2 weeks each year.

Encouraging households to shop at DTC outlets more frequently could increase Americans' fruit and vegetable expenditures. Model results further show that:

- Increasing a household's probability to patronize DTC outlets in any given week by 2 percentage points from 3.5 to 5.5 percent (which is roughly equivalent to buying at a DTC outlet one more time per year) could raise the household's weekly-average fruit and vegetable spending by 60 cents.
- For a household that already spends \$12.60 per week on fruits and vegetables (the mean level of spending across all surveyed households), spending 60 cents more per week would represent a 5-percent increase in expenditures.

Higher levels of fruit and vegetable spending associated with patronizing DTC outlets may reflect a variety of behaviors. Some households may be willing to pay higher prices when buying directly from farmers. This could represent additional revenue to small farmers, helping them to maintain operations, which is a goal of USDA programs like the FMPP. Households that patronize DTC outlets may also purchase a greater quantity and/or a different variety of fruits and vegetables. Additional research is needed to better understand these changes in demand and their health implications. For example, a household may choose grapes instead of bananas, or leafy lettuce instead of iceberg. Such changes in the mix of products bought by households could, in turn, affect their diet quality for better or worse.

## **How Was the Study Conducted?**

Using data from FoodAPS, researchers compared households that bought fruits and vegetables at DTC outlets and households that also bought fruits and vegetables but patronized only supermarkets and other nondirect retailers. The main empirical analysis involved modeling a household's level of fruit and vegetable spending as a function of its income and demographic characteristics, attitudes and behaviors toward food and nutrition, and tendency to patronize DTC outlets, among other potential demand determinants. Statistical techniques (including the method of instrumental variables) were used to measure the effect that patronizing DTC outlets has on a household's fruit and vegetable spending.