The Location and Timing of SNAP Purchases

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The Supplemental Nutrition Assistance Program (SNAP) is the largest food assistance program in the U.S. In 2012, approximately 47 million people received SNAP, with benefits totaling $74 billion (USDA 2013). Benefit levels are directly proportional to family size and inversely proportional to income with a 2012 maximum of $668 for a family of four. Due to its total size and the importance to individual households, SNAP has become a central component of the social safety net and, as such, it is expected to improve the well-being of recipients. An extensive literature has demonstrated that, in comparison to eligible non-participants, SNAP participants have higher nutrient intakes; are less likely to be food insecure or poor; and have better birth outcomes, lower mortality rates, and better general health (Basiotis et al. 1987; Hoynes and Schanzenbach 2009; Almond et al. 2011; Kreider et al. 2012).

A growing literature has found that food geography affects consumption choices (Rose and Richards 2004; USDA 2009). In this paper, we explore how SNAP interacts with a household’s food retail options in determining where and when households purchase food. Some authors argue that low-income Americans, including SNAP recipients, are more likely to purchase food from outlets with higher prices and more limited selection of healthy foods (Chung and Meyers 1999). These purchases may be due, in part, to living in so-called “food deserts”. If SNAP recipients are spending their SNAP benefits in these types of retail food outlets, this may limit the efficacy of SNAP. Other studies (Broda, Leibtag and Weinstein 2009) show that low-income households shop more in supercenters and pay less for the same food than higher-income households. However, previous literature lacks detailed quality and price information for specific items and usually uses the average price of broad food categories within the store (Chung and Meyers 1999). They do not account for comprehensive store and local food environment attributes such as distance to food stores, vehicle ownership and services of stores (Broda, Leibtag and Weinstein 2009). All of these factors can lead to biased conclusions when comparing prices of a basket of food facing different consumers.

Second, SNAP recipients have been found to spend SNAP benefits soon after receipt of those benefits, resulting in decreasing food security throughout the month (Wilde and Ranney 2000; Shapiro 2005; Hastings and Washington 2010). Conversely, households may be strategically purchasing items in bulk at low prices, resulting in increased food security. Households may travel to supercenters or large supermarkets further away from home for cheaper prices once a month to save transportation cost (Damon, King and Leibtag 2013). This debate has led to proposals to distribute benefits over the course of the month rather than in the current structure where all benefits are distributed once a month. While SNAP benefits are more likely to be spent upon receipt, it is less clear whether this purchase pattern differs for other sources of income. For example, it may be the case that non-SNAP recipients tend to make large food purchases after receiving a paycheck as evidenced for paycheck recipients in UK (Stephens 2006). We posit that the timing of purchases may be affected both by SNAP and by the distance to food stores. We explore both the timing of purchases and the type of purchases to determine

¹ The data are not finalized for release. The methods and results will be updated once the final data have been approved.
(a) how is the timing of purchase associated with food geography and (b) whether the timing relates to the choice of foods purchased and the type of stores visited over the rest of the month.

To date, these two issues have received a great deal of policy attention but analyses have suffered from the lack of joint detailed food acquisition and food geography information. Existing food geography literature mostly relies on regional or county level analysis. These data help increase the generalizability of analysis by providing a nationally representative sample. We use a novel and extant data set, the USDA’s National Household Food Acquisition and Purchase Survey (FoodAPS). FoodAPS is a nationally representative survey of 4,826 American households that collects comprehensive data about household food purchases and acquisitions during a one-week time period. The survey includes SNAP households and low-income households not participating in SNAP—both of whom are oversampled in the survey, as well as higher income households. FoodAPS survey data are linked with geographic data detailing the location and prices at both the stores frequented and other stores nearby.

With these data, we first study where food purchases are made by SNAP recipients in comparison to eligible and ineligible non-SNAP recipients. The geographic data allow us to depict the household’s local food environment and relate it to their food purchase and acquisition. We use a hedonic pricing model based on Lancaster’s characteristics theory (1966) to address the following questions. The price consumers pay for a good is the sum of values consumers assign to the attributes including not only product attributes but also store attributes often used in literature. We compare the attribute trade-offs by SNAP recipients to non-SNAP recipients (further broken down by all non-recipients and by eligible non-recipients):

1. Do SNAP recipients use retail food outlets which generally have lower prices?
2. How far do SNAP recipients travel to purchase food?
3. Are there differences in the types of foods purchased at different outlets?

We next compare the timing of shopping decisions. Because FoodAPS recorded information on households in different weeks over about a year, we can explore how households’ food purchase varies due to the timing of the SNAP benefits. We estimate demand as a function of standard household demographics, prices, store attributes and the periods since receipt of benefits. We also account for food geography such as access to different types of food stores and other store to interact with timing to affect demand. We address the following questions when SNAP recipients are compared to non-SNAP recipients (further broken down by all non-recipients and by eligible non-recipients):

4. Do SNAP recipients make a higher percentage of their food purchases at one time close to the receipt of SNAP benefits? If so, are these purchases at lower-priced retail outlets?
5. How is local food geography related with the timing of purchases by SNAP recipients?
6. Are there differences in the types of foods purchased by SNAP recipients due to the timing of SNAP benefits?

With these results, we can answer whether food geography is reducing the effectiveness of SNAP benefits by limiting the options facing SNAP recipients and changing their purchase behavior.

References


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