



# An experiment on cash and in-kind transfers with application to food assistance programs



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## ABSTRACT

The impact of providing food assistance in kind (via food, stamps, or restricted debit cards) vs. cash has long been a subject of debate. Prior efforts to causally identify the effects of the two types of transfers have been hindered by concerns over non-random selection into assistance programs, misreporting of program benefits, and identification of inframarginal households who, theoretically, should treat cash and in-kind transfers identically. This paper reports the results of an economic experiment designed to cleanly test some conceptual issues associated with in-kind vs. cash giving in a lunchroom meal setting. Given current debates about the healthiness of food assistance recipients' diets, we also consider the impacts of placing restrictions on in-kind transfers that either prohibit soda purchases with the transfer or require the transfer be spent on fruits and vegetables. Overall, we find that, as theory predicts, in-kind transfers have the same effect on food expenditures as an unrestricted cash transfer for inframarginal consumers, and for extramarginal consumers, food expenditures are higher for in-kind than cash transfers. Participants also respond to the fruit and vegetable restriction as theory would predict. However, in contrast to the theoretical prediction, the soda restriction reduces soda expenditures for more than half the inframarginal consumers.

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## 1. Introduction

Despite the rise in popularity of gift cards, recipients tend to value them less than an equivalent amount of cash, as evidenced by the secondary discount market for gifted cards (Offenberg, 2007). More generally, Waldfoegel (1993) provocatively argued almost all gifts are likely to generate a deadweight loss relative to an equivalent gift of cash because of a mismatch between what recipients want and givers give. Despite the drawbacks of in-kind transfers relative to cash, they are a primary vehicle for domestic government transfers and international aid (though see Haushofer and Shapiro (2016) for discussion of renewed interest in cash giving in an international development context). A prominent example of domestic in-kind transfers in the United States is the food stamp program, today known as the Supplemental Nutritional Assistance Program (SNAP).

The earliest incarnations of the food stamp program in the United States began in the 1930s. Because a primary purpose of the

early program was to reduce government food surpluses accrued as a result of farm policies, the transfers to consumers were in kind, either in food directly or stamps which could be exchanged for food. As World War II was ending, concerns about declining food demand and agricultural prices emerged. Against that backdrop, Southworth (1945) considered several food policies to promote food consumption. He was perhaps the first to formally note that in-kind transfers may have the same effect as giving cash, providing the following example related to a government transfer of beans (1945, p. 47), "If a family would buy two pounds of beans anyway, giving it up to two pounds of beans as a consumption subsidy merely relieves it of the necessity of that much expenditure on its own behalf. In effect, its income is increased by the value of two pounds of beans, and it may spend some or none of this increased income on additional beans." In short, if a household already plans to buy beans, it doesn't matter whether the household is given beans or an equivalent amount of cash – the final outcome is the same.

The modern day food assistance programs in the U.S. focus more on food security than farm support and they began in the 1960s. Since that time, there have been repeated debates about the merits of in-kind vs. unrestricted cash transfers to lower

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income households. Southworth's (1945) theoretical results suggest that for inframarginal consumers, those who spend more on food than they receive in benefits, there will be no difference between giving in kind or cash because the recipient can achieve the same consumption bundle either way. As Barrett (2002, p. 2156) put it, "Because the vast majority of participants in any [food assistance program (FAP)] are inframarginal (i.e., purchase or produce food in excess of their transfer receipts), theory suggests income elasticity should be the chief determinant of FAP additionality and that the form of the transfer (cash or kind) should be immaterial." By contrast, extramarginal consumers, who receive more in benefits than they spend on food, will theoretically choose more food than they would otherwise prefer and thus achieve lower utility than had the transfer been in cash. As a result, some economists have made the case for cash transfers. For example, Thurow (1974, p. 195) concluded, "While it is not axiomatically true that cash transfers always dominate restricted transfers, the general economic case for cash transfers is strong enough that the burden of proof should always lie on those who advocate restricted transfers." Nonetheless, in-kind transfers have persisted, perhaps because providing transfers in kind rather than cash is more politically palatable for politicians or for taxpayers who may have paternalistic preferences about how transfers are spent (Currie and Gahvari, 2008).

Partially as a result of these debates, a large empirical literature has arisen that has sought to determine whether, in fact, in-kind transfers are treated the same as cash. Empirical research on the Southworth hypothesis is mixed, with some evidence in support (Hoynes and Schanzenbach, 2009; Moffitt, 1989; Whitmore, 2002) and some against (Beatty and Tuttle, 2015; Levedahl, 1995; Senauer and Young, 1986; Wilde and Ranney, 1996), with the latter studies suggesting that participants in food assistance programs spend more of the benefit on food than would be predicted by an equivalent cash transfer (see Hoynes and Schanzenbach, 2015, for a recent review).

Despite this sizable body of literature, debate about in-kind vs. cash giving remains, in part because of data limitations and inferential problems. For example, participation in government assistance programs is often under- or mis-reported on surveys, resulting in biased estimates of the effect of SNAP participation on outcome variables of interest (Kreider et al., 2012; Meyer et al., 2015). Determining which households, and individuals within a household, are inframarginal is also a challenge (Breunig and Dasgupta, 2005; Wilde et al., 2009). Additionally, SNAP participation is often endogenously determined with outcomes of interest (Gundersen et al., 2011). Even recent studies that have relied on administrative data and quasi-experimental designs utilizing abrupt changes in assistance as an identification strategy don't actually compare cash to in-kind transfers, but rather must infer the counterfactual marginal propensity to spend out of hypothetical cash transfers. There are also attendant concerns about choice of functional form and other specification choices on resulting tests (e.g., Breunig and Dasgupta, 2002; Levedahl, 1995).

This paper seeks to compare the effects of cash vs. in-kind giving in a controlled laboratory (lunchroom) environment where we are able to side-step the problems associated with mis-reporting, endogeneity, and econometric specification, and where there is clear identification of infra- and extra-marginal consumers.<sup>1</sup> A

within-subject experimental design was used where subjects made meal choices in different treatments that varied the presence and type (e.g., cash vs. in-kind) of transfers. Our experimental results support the original Southworth hypothesis. In-kind transfers increase food purchases by an amount statistically indistinguishable from cash transfers for inframarginal consumers (representing 82% of the sample), but for extramarginal consumers (representing the other 18% of the sample), in-kind transfers increase food expenditures eight times more than an equivalent sized transfer of cash.

In addition to the inquiry into in-kind vs. cash transfers, we were motivated by current proposals that seek to make in-kind transfers even more restrictive. Public health concerns have led researchers to study the healthfulness of SNAP participants' diets and various authors have suggested restrictions on SNAP funds for such purchases of unhealthy items such as sugar sweetened beverages (Andreyeva et al., 2012; Barnhill, 2011; Leung et al., 2012; Shenkin and Jacobson, 2010). In fact, the state governments of Maine and New York have sought permission from the U.S. Department of Agriculture to prevent some SNAP participants from purchasing soda with benefits. These policies seek to prohibit transfers from being spent on unhealthy items, but other proposals have sought larger transfers when benefits are spent on healthy items. For example, the Healthy Incentives Pilot (HIP) program, carried out in Hampden County, Massachusetts, explored whether a 30% incentive (i.e., an additional 30 cents is added to total benefits when \$1 is spent on fruit and vegetables) would increase purchases of fruit and vegetables among SNAP participants. Results suggest the incentive increased consumption of these products by about 20% (Klerman et al., 2014).

In public health discussions, however, the conceptual arguments related to the Southworth hypothesis have received scant attention (see Alston et al., 2009, for an exception). A soda consuming SNAP recipient who spends more money on food and drink than they receive in SNAP benefits can achieve the same consumption bundle regardless of whether SNAP dollars are prohibited from being used on soda by rearranging which items are bought with SNAP dollars and which are bought with other income. Thus, an extension of the Southworth hypothesis to this case would predict little or no effect of a soda restriction as long as the difference in total food spending and SNAP benefits does not exceed spending on sugar-sweetened beverages. To test this hypothesis, our experiment includes a treatment where in-kind transfers are prohibited from being spent on soda; another treatment also requires the in-kind transfer be spent on fruits and vegetables.

The primary objectives of this research are to construct a relatively simple economic environment to test the original Southworth hypothesis and versions of that hypothesis applied to restrictions on purchases of soda and fruits and vegetables. We do not claim that our experimental environment is perfectly analogous to the environment surrounding SNAP. SNAP participants differ from our college student participants in many ways, and various details of SNAP differ from the in-kind transfers in our laboratory environment. Nonetheless, our experiment creates a "clean" environment free of many confounds in observational data that typically makes such inquiries a challenge. Moreover, the Southworth hypothesis is a general hypothesis that should apply not just for SNAP participants but for our laboratory environment as well. As Noussair et al. (1995) put it when justifying their laboratory experiment on international trade, "The laboratory economies are very simple and are special cases of the broad class of (often complex) economies to which the general theories are supposed to be of relevance. If a general theory does not work successfully to explain behavior in the simple and special cases of the laboratory, then it is not general."

<sup>1</sup> Ours is not the first study to utilize mealtime choices as the basis of a laboratory or field experiment. Streletskaia et al. (2014) utilized mealtime choices to study effects of taxes, subsidies, and advertising. Ellison et al. (2014) studied the effect of different menu labels on diner's choices (see Sinclair et al., 2014 for a review of such studies). Muller et al. (2017) utilized an experiment to study the distributional impacts of unhealthy food taxes and healthy food subsidies, where participants made an entire day's worth of meal choices. Wansink (2006) reviewed a number of studies on effects of various cues and frames on meal choices.

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