

Explaining the Food Stamp Cash-Out Puzzle

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Introduction

The Food Stamp Program (FSP) is one of the largest assistance programs in the United States. From its inception, this program has had an important role in improving the nutritional status of low-income families. An interesting puzzle brought to light by research into the FSP is that an additional dollar of food stamps leads to a larger increase in food consumption than an additional dollar of cash income. In other words, there is a higher marginal propensity to consume food with food stamps than with cash income.²

By contrast, the basic theoretical model of the effects of government food subsidy on household expenditure (Southworth, 1945) predicts such a higher marginal propensity to consume only for households that receive, as food stamps, an amount greater than their desired monthly expenditure on food. Consequently, the model predicts large overall effects of food stamps on food spending, relative to effects from money income, only if a large proportion of households is constrained, that is, they receive in food stamps an amount greater than their desired monthly expenditure on food. Empirical studies, however, have universally agreed that large effects of food stamps on food spending, compared with the effect of other income, coexist with small percentages of such constrained households.³ The large estimated marginal propensity to consume food out of food stamps at the aggregate

level, relative to that out of cash income, therefore seems to contradict conventional economic theory.

This report proposes an explanation for this so-called “cash-out puzzle.” We question the welfare stigma-based explanation that has been advanced by others. Under this explanation, it is argued that individuals incur some nonpecuniary costs from participation in welfare programs due to social stigma attached to receiving welfare payments. A lump-sum cost of participation due to such stigma has been advanced as an explanation of why many eligible households choose not to participate in welfare programs, such as Temporary Assistance for Needy Families (TANF) and the FSP.⁴ Levedahl (1995) has proposed a marginal version of this argument as a theoretical explanation of the cash-out puzzle. He assumes a marginal stigma associated with food stamps in that the marginal utility of an additional dollar of food stamp benefit is less than an additional dollar of cash income, and conjectures that such marginal stigma will explain the cash-out puzzle. Understanding the role of stigma in the food-purchasing decision is crucial since the introduction of Electronic Benefit Transfer (EBT) cards (see Beecroft et al., 1994) instead of coupons is sometimes justified by the presence of marginal and lump-sum stigma.

We address the cash-out puzzle from a completely different perspective. Standard micro-economic theory predicts that the marginal propensities to consume food out of cash and coupons will be identical for an unconstrained individual. Differences in these marginal propensities for an unconstrained household can

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²For a review of this literature, see Fraker, 1990.

³See, for example, the 17 studies reviewed in Fraker, 1990. Most studies show this group of constrained households to be on the order of 5 to 15 percent.

⁴See, for example, Moffitt (1981 and 1983), Ranney and Kushman (1987), and Gundersen and Andrews (2000). Our criticism of the stigma hypothesis in this report is directed at the marginal stigma concept. We do not dispute the significant evidence that lump-sum stigma is a major reason why many eligible households do not participate in the Food Stamp Program.

be considered puzzling only in the context of the prior assumption that a household behaves as a single individual. The existing literature on the cash-out puzzle typically models the household in this fashion. The broad hypothesis we explore is that this particular modeling strategy provides the major explanation for the cash-out puzzle. Specifically, we hypothesize that once the household is modeled in a non-unitary fashion by explicitly formulating household decisions as the outcome of the interaction between individual members with possibly different preferences and endowments, the cash-out puzzle will become compatible with the standard framework of individual decisionmaking.

To model the effect of cash-out programs on household food consumption in a non-unitary fashion, we develop a non-cooperative, game-theoretic model of intra-household resource allocation. Specifically, we propose a Cournot model of a multi-person household in which individual food consumption has the formal property of being a domestic public good. In this model, each agent takes the other agent's spending on food and availability of food from food stamps, as given, and chooses the optimal allocation of his/her own discretionary cash income between food for own consumption, food for other members' consumption, and other goods. No stigma is assumed to attach to purchases made with food stamps. The household demand functions are not generated through the maximization of a single utility function, as in the standard case, but through the Nash equilibria of the Cournot game. We assume that all goods are normal goods; further, total cash income of the household is divided between the members in such a way that any increase in such income increases both members' access to cash. We show that, in this model, if one agent chooses not to spend any cash on food under the coupon scheme, then, even if the household is unconstrained, replacement of food coupons by an equivalent increase in household cash income must reduce total household expenditure on food. This occurs because the change in the composition of household income effectively alters the intra-household distribu-

tion of cash income, providing more cash to the constrained member of the household.

A cash-out experiment conducted in San Diego County allowed us to empirically test both models—the stigma model and the intra-household bargaining model. In this cash-out experiment, a randomly selected group of food stamp recipients was given cash benefits instead of stamps. We reject the stigma-based explanation but find empirical confirmation for the intra-household bargaining model.

In addition to its theoretical and empirical interest, this puzzle has important policy implications. The standard model assumes equivalence between cash income and cash transfers from government sources such as welfare payments. Given this equivalence and the small proportion of constrained households, standard microeconomic analysis suggests that a cash-out program, i.e., a switch to a program of cash distributions instead of in-kind transfers through coupons, should not make a significant difference to food consumption at the aggregate level. The standard theory also predicts that a cash-out program would lead to welfare gains for constrained individuals. Since food stamps and cash transfers would be equivalent in terms of their effect on an unconstrained recipient's consumption, it follows that a cash-out program would achieve welfare gains. Furthermore, a cash-out program may generate savings in administrative and monitoring costs. Consequently, a strong *a priori* case exists for the replacement of the FSP by a system of cash transfers.⁵ To justify the present coupon-based system, it is therefore necessary to show that in-kind transfers influence food consumption in a way that provides substantial additional advantages. Clearly, an understanding of the cash-out puzzle is crucial to such an exercise.

⁵If, however, it is expensive to screen potential beneficiaries of welfare programs, then an adverse selection problem exists in the context of cash welfare transfers. In this case, in-kind transfers may be efficient since they function as a self-selection mechanism. See, for example, Blackorby and Donaldson (1988) and Besley and Coate (1992).