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State Fiscal Substitution between the Federal Food Stamp program and AFDC, Medicaid, and SSI

Howard Chernick*
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*Department of Economics, Hunter College and the Graduate Center, City University of New York. Address: Econ. Dept., Hunter College, 695 Park Ave., NY, NY 10021. e-mail: howard.chernick@hunter.cuny.edu

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Introduction.

This paper addresses the fiscal behavior of states in response to the Federal Food Stamp program (FSP). The effectiveness of the Food Stamp Program in increasing the economic well-being of recipients is dependent, in part, on the fiscal behavior of states. Because most Food Stamp recipients are also eligible for other transfer programs, and Food Stamps is a nationally funded program, states have an incentive to substitute federal Food Stamp dollars for their own contributions to cash assistance. If states use Food Stamps primarily to reduce their own contributions to programs such as Aid to Families with Dependent Children (AFDC), Temporary Assistance to Needy Families (TANF), and Supplemental Security Income (SSI), which are jointly funded by the federal government and the states, then the main effect of Food Stamps is to provide fiscal relief to states. In this case, the Food Stamp program functions as a kind of categorical revenue sharing program. If states mainly add Food Stamps benefits to other cash and in-kind programs, then the program is expanding assistance to the needy from a national revenue base.

The incentive for states to use Food Stamps to displace their own effort is increased by the fact that Food Stamps taxes cash assistance at a rate of 30 cents per additional dollar of benefits. In this paper, I exploit both the variation over time in the lump-sum component of Food Stamps and the cross-state variation in the Food Stamp price created by the interaction between the implicit tax and the Food Stamp disregard for excess shelter costs. I use this variation to estimate an econometric model of Food Stamp displacement. The results suggest that both the lump-sum and the price effects of Food Stamps are significant, and that the Federal government could induce an increase in state contributions by reducing the implicit tax on cash benefits. I also find that the cross-price elasticity between Food Stamps and Medicaid is significant, with Food-Stamp induced reductions in AFDC spending also associated with increases in Medicaid spending for AFDC recipients.

The paper is organized as follows: Section 1 reviews the literature, Section 2 presents a general description of the Food Stamp program, Section 3 presents the model of fiscal substitution and describes the estimation strategy, Section 4 presents the results, and Section 5 concludes.

I. Review of the Literature on Food Stamp Displacement

In a detailed review of the literature on AFDC benefit determination, I found a substantial range both in the estimates of Food Stamp substitution and displacement, and the estimates of the effect of federal matching grants on AFDC benefit levels (Chernick, 1998). While some studies find a dollar-for-dollar offset of AFDC benefits for Food Stamps (Orr, 1979; Moffitt, 1990), other studies find that Food Stamps are mainly additive to welfare benefits (Gramlich, 1982). In my review, I argue that the studies tend to find an increasing degree of substitution of Food Stamps for cash assistance over time. However, studies that find substantial substitution, but also consider other categories of state spending, find that Food Stamp dollars are not simply used for general fiscal relief to state budgets. Instead, of the savings in cash benefits which states realize by substituting Food Stamps, a disproportionate share appears to remain within the broader welfare category in state budgets. One avenue for increased spending is an increase in the number of transfer recipients, particularly for Medicaid. Craig (1993) finds that at least some of the savings are used to leverage federal dollars through an increase in state matching dollars for Medicaid.

The difficulty in determining the Food Stamp displacement effects is that Food Stamps is a uniform national program, with little variation across states. Previous studies have attempted to exploit variations in Food Stamp coverage across states to determine the Food Stamp offset (Orr, 1979; Plotnick, 1986). When the Food Stamp program was first introduced in the early 1970's, coverage varied between counties. Researchers such as Orr (1979) and Plotnick (1986) used these differences in coverage to estimate Food Stamp displacement models. In a similar approach, Craig (1993) obtains variation in the Food Stamp price based on differences across states in the percentage of AFDC recipients receiving Food Stamps. Given the increase in Food Stamp coverage in the 1980's, these approaches no longer provide sufficient variation to identify the Food Stamp effect. Throughout most of the 1980's, about 82 percent of AFDC recipients received Food Stamps, with the percentage increasing to 88 percent during the 1990's (Committee on Ways and Means, 1996).

An alternative approach to studying the substitution of Food Stamps for AFDC benefits was developed by Robert Moffitt (1990). Moffitt estimates a model of AFDC benefit levels for 1960, before the establishment of the Food Stamp and Medicaid programs, and uses the 1960 coefficients to obtain a predicted level of AFDC benefits in 1984, given 1984 values of the independent variables. Predicted benefits are then compared with the maximum benefits for AFDC plus Food Stamp in 1984, as well as with AFDC, Food Stamps, and average Medicaid benefits for AFDC recipients. He finds that predicted benefits are very close to actual benefits, when the latter include both Food Stamps and Medicaid. From this result Moffitt concludes that both Food Stamps and Medicaid are treated by voters as perfect substitutes for cash benefits, with a one dollar increase in either inducing close to a dollar decrease in AFDC.

As a preliminary exercise in studying Food Stamp displacement, I have replicated the Moffitt approach through 1993. I do this by comparing the predicted levels of AFDC, Food Stamps, and Medicaid for 1993, based on the coefficients from Moffitt=s 1960 model, to actual benefits in 1993. I find that while the model overpredicts the sum of AFDC and Food Stamp benefits, it now underpredicts combined benefits from AFDC, Food Stamps, and Medicaid by about 20 percent. This suggests that the rate of substitution of Food Stamps and Medicaid for AFDC was less than one for one in the period from 1984 to 1993.

II. General Description and Relation with Other Transfer Programs

Food Stamps is a federal program of assistance to provide needy families vouchers for the purchase of food. Benefits vary by household size, but are uniform within the continental United States. In FY 1996 there were 10,552,000 participating households and thee average Food Stamp benefit per household was $174 (Mathematica Policy Research, 1998). As is typical in transfer programs, there is a maximum benefit if the household has no other income. The maximum benefit in 1996 was $313 for a household of size three ($397 for a household of size four). Benefits are reduced by thirty cents for each additional dollar of countable or net income. Net income equals gross income minus a set of deductions. Each Food Stamp household is eligible for a standard deduction equal to $134/month in FY 1996. In addition, there are deductions for expenses of earned income, dependent care, excess

shelter costs, medical, and child support.

Because the cost of the marginal dollar of Food Stamp assistance is zero for states, as compared to about forty cents for Medicaid and a full dollar for TANF and SSI, states have an incentive to substitute Food Stamps for these other programs. Because many of the participants in the other programs are automatically eligible for Food Stamps, the incentive to engage in this type of fiscal substitution increases.[1]

Before discussing the approach used in this analysis, I examine aggregate trends in the various social welfare programs. Figure 1 compares AFDC maximum benefits to Food Stamp maximum benefits and the Food Stamp disregard. The Food Stamp maximum fluctuates slightly over the sample period, falling to its minimum level in 1986, and attaining a maximum of $423 in 1991. The disregard also fluctuates over the period, with a range from $285 in 1983 to $308 in 1995. By contrast, AFDC benefits are approximately constant from 1983 to 1986, then fall monotonically from 1986 to 1995. Neither series appears to be highly correlated with the AFDC benefit level. At this level of aggregation, therefore, growth in Food Stamps does not seem to be a proximate cause for the decline in AFDC benefits.

Figure 2 compares trends in annual AFDC and Medicaid spending per capita with the (monthly) Food Stamp maximum. Medicaid spending is divided into spending on AFDC recipients, and all other spending. AFDC is approximately constant over the period, while AFDC Medicaid related expenditures grow slightly, and non-AFDC Medicaid outlays grow sharply. As in Figure 1 for maximum benefit levels, the data do not suggest strong relationships between the aggregate spending on AFDC and Medicaid and the Food Stamp maximum.

III. A Model of Food Stamp Displacement

To determine eligibility and grant amounts, a means-tested transfer program must set several parameters: the maximum benefit level, the definition of countable income, and the rate at which countable income is taxed. In the Food Stamp program both the maximum benefit and the tax rate (30 percent) are uniform for the nation. Thus, the real value of any given Food Stamp award varies according to regional differentials in the cost of both food and other goods and services. A major source of difference in regional cost-of-living indices comes from differences in the cost of housing.[2] The Food Stamp program provides an adjustment for regional differentials in the cost of housing through the excess shelter cost deduction. The maximum excess shelter deduction amounted to $231 per month in 1995. Food Stamp households with elderly or disabled members are not subject to the shelter cap.

Allowing for differences in regional cost of living allows for a better targeting of Food Stamps according to need. However, it also comes with a cost, in that it increases the implicit Food Stamp tax on income. The implicit tax is higher with the shelter deduction because any increase in income, in addition to being taxed directly, also reduces the excess shelter deduction.

For a majority of Food Stamp recipients, the major source of cash income is public assistance—through AFDC-TANF, SSI, or General Assistance. State governments provide some or all of the financing for these programs. In the AFDC program, which was financed by an open-ended

matching grant, about 40 percent of program financing came from states. Under TANF, states receive a lump-sum block grant, with a maintenance of effort provision, and must pay 100 percent of any additional benefits. In the SSI program, states provide about 18 percent of financing through the state supplement, while General Assistance is completely financed by the states. Hence, a substantial portion of the Food Stamp ›tax= is borne by sub-national governments. This tax raises the ›price= that states face in trying to increase the incomes of public assistance recipients, and states may respond to the price increase by reducing their own contributions.

To understand the Food Stamp-cash assistance interaction, it is useful to first present a graphical representation of the relationships. Figure 3 shows the state budget constraint under the open-ended matching program for AFDC. The federal match rotates the state budget line from AF to AE. If States view Food Stamps as equivalent to cash, then the Food Stamp offer changes the state budget constraint from AE to ABCDGE. The flat segment of the budget line AB represents the maximum Food Stamp benefit. In 1996 this value was $396 per month for a family of four. AB is flat because Food Stamp benefits are entirely a federal responsibility.[3] Although Food Stamps bypass the state and go directly to individuals, the graphical representation analytically treats the grant as the equivalent of a lump-sum grant of magnitude AB going directly to the state. Whether states actually behave this way, treating grants to individuals as fiscally equivalent to grants to governments, is the empirical question investigated in this research.

The second segment of the budget constraint BC has the same slope as AE, the budget line in the absence of Food Stamps. This segment represents the standard deduction, which equaled $134 per Food Stamp household in 1996. Along this segment, states can increase cash assistance without sacrificing Food Stamp benefits. For this range, the cost to the states of an additional dollar of benefits equals twenty to fifty cents per dollar of benefits, depending on the federal matching rate.

The budget segment CD represents the excess shelter deduction. As discussed in some detail below, the average value of this deduction varies across states, and is endogenous to the benefit level decision. At benefit levels greater than D, Food Stamps taxes AFDC income at a rate of 30 percent, so a dollar increase in benefits leads to a 30 cent reduction in Food Stamps. However, depending on the value of additional deductions, the implicit tax may be greater than 30 percent.

Because Food Stamp benefits depend on the level of public assistance payments through the Food Stamp tax on income, the actual level of Food Stamp payments in a state is endogenous to state benefit levels. Over 61 percent of Food Stamp recipients in 1996 also received income from AFDC, SSI, or General Assistance, which are all programs where recipient income is determined by the state. Hence, the potential endogeneity problem is substantial.

In 1996, of 10.552 million FS households, 6.456 million (61.2%) received income from AFDC, Supplemental Security Income, or General Assistance. In determining net income, the two most important deductions are the standard deduction, taken by all FS households, and the excess shelter deduction. 65% of FS households took an excess shelter deduction. Among AFDC households with an excess shelter deduction, the average monthly amount of the shelter deduction was $167. Hence, the monthly value of the deduction in terms of increased Food Stamps was .3x$167 = $50. In 1995, nearly 10 percent of FS households were affected by the cap on excess shelter expense deduction. Among those taking the excess shelter cost deduction, 15.4 percent were subject to the shelter cap.

The Food Stamp disregard makes the cost of a marginal increase in the number of recipients lower than the cost of an increase in benefit levels. Holding benefits constant, and representing price as the cost to the state of an increase in the number of recipients, the budget constraint need not have kinks at points C and D. In principle, a state could set benefits low enough to be below the Food Stamp disregard, with an additional recipient still receiving the maximum amount of Food Stamps.

Food stamps, Medicaid, and cash assistance

Food Stamps pushes out the welfare budget constraint, allowing states to provide more cash and Medical assistance for the same amount of resources. With the elimination of AFDC, and its replacement by the TANF block grant, the relative cost of Medicaid has fallen. With the 30 percent FS tax on cash assistance, the price of cash assistance relative to Medicaid is now 1.43/(1-*m*). At the mean matching rate of .6, states must give up 3.6 dollars of Medicaid spending to get a dollar of cash assistance.

Suppose that Food Stamps displaces cash assistance, but the released resources are used for Medicaid. With *m* equal to .6, each dollar of savings buys 2.5 dollars of Medicaid spending. The federal share of this additional Medicaid spending equals .6*(2.50) = $1.50. Hence, each dollar of Food Stamps costs the Federal Government one dollar plus $1.50 in additional Medicaid outlays.

The food stamp price effect and the excess shelter deduction

$$FSBEN = FS_{MAX} - .3(Y_{count})$$

Define Food Stamp Benefits as
where Fs_{max} is the maximum benefit, and Y_{count} is countable income. Countable income equals

$$Y_{count} = Y_{gross} - StDed - ShelDed$$

whereY_{gross} is gross income, StDed is the standard deduction, and ShelDed is the excess shelter deduction.[4] FS households are allowed to deduct shelter expenses that exceed 50 percent of adjusted income, up to a maximum known as the shelter cap. The excess shelter deduction is defined as

$$
\begin{aligned}
&= 0 \qquad \text{if } R\text{-}.5\,y_{adj} < 0 \\
ShelDed \;&= R\text{-}.5\,Y_{adj} \quad \text{if } 0 < R\text{-}.5\,Y_{adj} < ShelCap \\
&= ShelCap \quad otherwise
\end{aligned}
$$

where

$$Y_{adj} = Y_{Gross} - STDED$$

The effect of Food Stamps on cash assistance can be decomposed into a lump-sum displacement effect, and a price effect. To identify the price effect, I make use of a hitherto unappreciated source of variation in the Food Stamp price term, stemming from the excess shelter cost deduction. To examine the price effect of the Food Stamp tax, assume that the only source of cash income is public assistance—AFDC-TANF, SSI, or General Assistance. Hence, $Y_{gross} = Ben_{PA}$, and the Food Stamp benefit equals

$$FS = FS_{MAX} - .3(BEN_{PA} - STDED - ShelDed)$$

The FS tax on public assistance can be determined by writing income as

$$Income = Ben + FS(Ben)$$

The cost to the state of increasing the income of a public assistance recipient is

$$\frac{d(Income)}{d(ben)} = 1 + \frac{d(FS)}{d(ben)}$$

From (5) we have

$$\frac{d(FS)}{d(ben)} = -.3\left[1 - \frac{d(ShelDed)}{d(ben)}\right]$$

From (3) and (4) we can write

$$\frac{d(ShelDed)}{d(ben)} = -.5 \quad (0 < (R - .5\,Y_{adj}) < ShelCap)$$
$$= \quad 0 \quad otherwise$$

$$\frac{d(Income)}{d(ben)} = .55 \; if \quad [0 < (R - .5\,Y_{adj}) < ShelCap]$$
$$= \; .7 \quad otherwise$$

Inserting (9) into (7) gives

Thus, to increase income by $1.00, the benefits must be increased 1/.55, or $1.82 if the recipient has an excess shelter deduction which is positive but below the cap. If the excess shelter deduction is zero or greater than the cap, the Food Stamp price is 1/.7, or 1.43. Thus
the price of cash benefits is

$$FSprice = (1 - m)\_[1.43(SHR_{reg}1 + SHR_{reg}3) + 1.82(SHR_{reg}2)]$$

The price and income effects of the excess shelter deduction are shown in Figure 4. Depending

on the level of excess shelter deduction, the state faces three different budget constraints. For Food Stamp households with no excess shelter deduction, the state faces the constraint ABCFJ, with a Food Stamp tax on cash benefits greater than C equal to 30 percent. For households with a positive excess shelter deduction which is less than the cap, the budget constraint is ABCDGJ. Recipients get an additional lump-sum benefit CD, but face an implicit tax of 45 percent on cash benefits in the region DG. Finally, for households receiving the maximum excess shelter deduction, equal to CE in Figure 4, the state faces the budget constraint ABCDEHJ, with benefits greater than point E taxed at 30 percent. The state budget constraint is a weighted average of the three separate budget constraints, where the weights are equal to the proportion of Food Stamp households in each of the three regions.

Because Food Stamp households with elderly or disabled family members are not subject to the shelter expense cap, for SSI households receiving Food Stamps the price effect will be

$$FSprice_{SSI} = (1-m)*1.43*[(SHRreg1)+1.82*(SHRreg2+SHRreg3)]$$

Among SSI households receiving Food Stamps, the proportion getting an excess shelter deduction was similar to the proportion for all FS households. However, the proportion of SSI recipient households receiving Food Stamps is probably somewhat lower than the proportion among AFDC recipients. In 1997, 2.5 million FS households received income from SSI (Mathematica Policy Research, 1998) while there were 6.5 million SSI recipients (1995). Slightly more than half of all SSI recipients live in households which receive Food Stamps. Thus, the Food Stamp price for SSI recipients in Figure 12 overstates the price effect for these households.

Recall that, because Food Stamp benefits are endogenous to the level of cash assistance, we cannot include actual Food Stamp benefits in the estimating equations. Instead, we characterize the Food Stamp offer in terms of its lump-sum and price parameters. Therefore, I estimate models of the following form:

$$AFDC_{ben} = a_0 + a_1 FS_{lump} + a_2 FS_{price} + a_3 SS + a_4 INCOME + a_5 Z$$

Equation (13) is for AFDC benefits per recipient, while equation (14) explains total AFDC spending per capita. Equation (15), the Medicaid spending equation, includes both the direct effect of Food Stamps on Medicaid spending and an indirect effect through AFDC spending. Because AFDC spending is itself posited to be a function of the Food Stamp parameters, this equation is estimated using instrumental variables represented by the *Z* term in equation (13). In the specifications presented below, Medicaid spending is also broken down into two subcategories; AFDC related Medicaid spending and non-AFDC Medicaid spending. Equation (16) explains state supplemental benefits for SSI.

FS_{LUMP} is broken into two terms. The first is FSmax, the maximum Food Stamp benefit for a

$$AFDC_{\exp} = b_0 + b_1 FS_{lump} + b_2 FS_{price} + b_3 SS + b_4 INCOME + b_5 \ Z$$

$$MED_{\exp} = c_0 + c_1 FS_{lump} + c_2 FS_{price} + c_3 SS + c_4 INCOME + c_5 \ AFDC_{\exp} + c_6 \ Z_{med}$$

family of four. The second term is FSdis, equal to the sum of the standard deduction and the excess shelter deduction. *Fsmax* varies by year, but is uniform across states. The excess shelter deduction is measured in two ways: Fsdis1 is defined as the standard deduction plus the maximum excess shelter deduction. Hence, *Fsdis1* is uniform across states, but varies over time. FSdis is the standard deduction plus the state=s average excess shelter deduction over the sample period of 1983 to 1995. It should be recognized that there is a potential problem of bias in the estimated coefficient on the disregard, since the excess shelter deduction is a function of the level of benefits. However, the bias is mitigated by using the average value of the shelter disregard over the entire time period.

The two components of the Food Stamp lump-sum effect are expected to have offsetting effects on benefit levels. If Food Stamps are viewed by states as a substitute for cash benefits, then *Fsmax* will have a negative effect on benefits. By contrast, the Food Stamp disregard allows states to provide some level of cash benefits without incurring a loss in Food Stamp benefits. Hence, *Fsdis* is expected to have a positive effect on benefits levels.

The Food Stamp price, as described in equations (11) and (12), is measured as the weighted average of tax rates on cash benefits for different values of the excess shelter deduction. The weights are equal to the proportion of FS households in each of the three price regions. *Fsprice1*, defined in (12) above, is equal to the state share (one minus the federal share) of AFDC payments, times the Food Stamp tax rate. *FSprice* is the Food Stamp tax rate alone, ignoring the state share. *FSprice2* is the Food Stamp price for SSI benefits. As shown in (12), it differs from *Fsprice* in that the shelter cap does not apply to these households. Hence for a person receiving both SSI and Food Stamps, and taking a deduction for excess shelter costs, the marginal price of a dollar of state supplementation is

assumed to be 1.82.

Estimation issues

Because the Food Stamp price depends on shelter costs relative to benefit levels, price is potentially endogenous. However, the relationship between benefit levels and price is not linear. For given rent levels, at very low benefit levels the Food Stamp recipient will be in the region of the shelter cap, with a marginal price of 1.43. As benefits increase, the excess shelter deduction declines, and the recipient enters region 2, where there is a phase-out of the shelter deduction, and the Food Stamp tax is 1.82. At very high benefit levels, the excess shelter deduction is eliminated, and the price reverts to 1.43. The problem is complicated still further by the fact that the rents actually paid by FS recipients may themselves be a function of the levels of public assistance received.

As a first cut at estimating the price effect, I use both OLS and an instrumental variables approach. As an instrument for the Food Stamp price, I use the average rent level for low-income housing in a state, as measured by HUD fair market rent for the largest SMSA (or SMSA:s) in a state. Because the Food Stamp price is a non-linear function of the excess shelter deduction, I use rent and rent squared as instruments. The mean value of the rent variable was $611, considerably higher than the average monthly shelter expense of Food Stamp households.

A potential problem with rent as an instrument for the FS price is the possibility of some residual correlation with the error term in the AFDC benefit equation. In a regression of AFDC benefits on rent levels, the coefficient is positive and highly significant. This result suggests that benefit levels are at least in part based on the cost of living in a state, and that states consider shelter costs to be an important component of the cost of living.[5] However, I have not been able to devise an alternative instrument that is completely uncorrelated with the error term in the benefit equation. Therefore, I proceed with rent as the instrument, while treating the results with caution.

Data

Data are for the 48 continental states and the District of Columbia for the years 1983 to 1995. The data are described in Table 1. All variables are in 1995 prices, using the CPI-U as the deflator. In 1996, 65 percent of FS households had an excess shelter cost deduction, with a range from 47 percent in Kentucky to 82 percent in New York. 15.7% of households were at the shelter cap. State-by-state data on the excess shelter cost deduction come from the annual Food Stamp Quality Control sample.[6] These percentages imply that the mean value of the Food Stamp price is 1.6. Thus, it costs the typical state one dollar and sixty cents to raise cash benefits by a single dollar. Unfortunately, from an econometric point of view, the standard deviation of the price variable is quite small, equaling less than two percent of the mean. Thus, even as one takes account of the shelter deduction, there is relatively little price variation in the Food Stamp Tax.

Data on the excess shelter deduction are for all FS households. If different categories of FS households had very different likelihoods of getting the excess shelter deduction, then there would be a misspecification in using the FS shelter deduction as a price term in the AFDC equation. Nationally, the

percent with an excess shelter deduction among AFDC households was 69.6 percent, while 65 percent of all FS households had an excess shelter deduction. The percentage at the shelter cap was 24.2% overall, versus 32.4% among AFDC households. Since those at the shelter cap face the same price as those with no shelter deduction, the overall price misspecification is insubstantial.

IV. Results

The statistical estimations are reported in Tables 2-6. Tables 2 and 3 examine the effects of Food Stamps on AFDC spending. In Table 2, the Food Stamp disregard is defined as the standard deduction plus the shelter cap, while in Table 3 the disregard is defined as the standard deduction plus the average shelter deduction for each state. The dependent variables are the maximum monthly AFDC benefit for a family of four, monthly AFDC spending per recipient, and annual AFDC spending per capita. Overall, the results suggest that Food Stamps have had a substantial displacement effect on AFDC. The net displacement effect results from AFDC reductions in response to both the lump-sum component of the Food Stamp offer and the price effect of the Food Stamp tax on cash benefits.

The negative and significant coefficient on *Fsmax* suggests that an increase in the Food Stamp maximum benefit leads states to decrease their cash benefits. The offset to maximum benefits ranges from $1.50 to $2.72 per dollar of Food Stamp increase. Figure 1 above suggests that the estimated offset is not simply the result of a spurious correlation between two series, one of which is increasing, and the other decreasing over time.

The FSmax estimates imply that the increase in the Food Stamp benefit level from the sample minimum of $383 per month in 1987 to the maximum of $423 in 1992, would have led to an offsetting decline in AFDC benefits ranging from $60 to $108. When the FS disregard is defined as the sum of the standard deduction and the shelter cap, as in Table 2, it has a negative effect on AFDC benefits. This result, contrary to expectations, most likely reflects the fact that only about 10 percent of Food Stamp households were actually at the shelter cap. Because it applies to such a small percentage of the caseload, the relevance of the shelter cap in the choice of benefit level is reduced. The significant negative effect reflects the high correlation between the maximum benefit and the disregard.

When we redefine the disregard as the standard deduction plus the average shelter deduction, as in Table 3, the effect on AFDC benefits becomes positive. This result is consistent with our model of the Food Stamp effect on the state budget constraint, under which an increase in the disregard pushes out the state=s budget constraint. However, it is possible that the positive effect of the disregard on benefit levels is simply a reflection of the fact that both AFDC benefits levels and the Food Stamp excess shelter deduction are a function of average rents in a state. To test for this possibility, I reverse the direction of causality and regress the average shelter deduction (FSAVSD) on both rent levels (AVMHUD) and the AFDC maximum benefit. This regression yields

$$\underset{}{FSAVSD} = \underset{}{97.5} + \underset{(.01)^{*}}{.08\,(AVMHUD)} + \underset{(.01)^{*}}{.04(AFDCBEN)} - \underset{(.20)^{*}}{.71(PCTPOV)} \qquad (17)$$

with an R^2 equal to .42. From the formula in (2) for the excess shelter deduction, higher AFDC payments should lower the shelter deduction. If the excess shelter deduction=s effect on benefit levels were primarily a function of collinearity with rent levels, then including rents in the regression would lead to a negative or insignificant effect of benefits on the shelter deduction. The fact that the effect is positive and significant, even with rents included, increases our confidence that the positive coefficient on the Food Stamp disregard indicates that the disregard decreases the magnitude of the Food Stamp offset of cash assistance.

To be able to directly compare the magnitude of the lump-sum and disregard effects, Col. (4) of Table 3 estimates average benefit per recipient in log form. Demographic control variables are included. The results show an elasticity of benefits with respect to the Food Stamp maximum of -2.4, and a positive disregard elasticity of .91. Subtracting the disregard effect from the lump-sum effect, these results imply that a one percent increase in Food Stamp benefits, combined with a one percent increase in the FS disregard, would lead to an approximately one percent decrease in AFDC benefits.

As shown in columns (1) - (3) of Table 2, when price is defined as state share times the Food Stamp price (FSprice1), the effect on AFDC benefits is positive. The effect is significant when demographic variables are excluded—Cols. (1) and (2)—but is not significant when demographic controls are included. By contrast, when I use the price variable FSprice, which excludes the matching share component, (cols. 4-8 of Table 2 and cols.1-5 of Table 3), the price effect is always negative and significant.

As shown in Chernick (1998), the AFDC price effect is biased towards zero because a state=s matching share under the AFDC program is correlated with state income.[7] As it is difficult econometrically to separate the price and the income effects, a positive income effect can offset a negative price effect. In a review of a number of studies of the effect of federal matching subsidies on state spending on AFDC, and in my own reestimates of previous models (Chernick, 1998, 1999) I have found that the magnitude of the estimated matching rate effect diminishes over time. This reduction could be due to an increase in the income effect, a decline in the pure matching rate effect, or an increase in the correlation between income and the state matching share. The data rule out an increase in the correlation as a cause of the degenerate price effect, and other studies suggest that, if anything, the income elasticity of demand for cash benefits has declined over time (Ribar and Wilhelm, 1999).

The strong Food Stamp offset identified in the regressions suggests that the explanation for this apparent decline in the effectiveness of federal matching in inducing higher spending on the needy may be rooted in the state response to the Food Stamp offer. Because all states face the same Food Stamp maximum, if all states respond similarly to an increase in Food Stamps, a given dollar reduction in state benefits would imply a greater percentage decrease in benefits in states which began with lower benefits. To test for the possibility of differential price and lump-sum responses across states, I estimated including interaction terms between the Food Stamp lump sum and price effects and state income. The results, not shown here, fail to reject the hypothesis that the price and lump sum effects are equal across states.

A second factor contributing to the decline in the estimated matching effect for AFDC is that the

Food Stamp price is positively correlated with the federal matching rate. This correlation raises the net price of AFDC benefits proportionally higher for states with low state shares, thus offsetting the matching incentive. The reason for this positive correlation is that many low-income states, particularly in the South, have relatively few FS households at the shelter cap. Hence, a higher proportion of FS households in these states face the highest marginal price benefits—1.82.

The estimated price effect of the Food Stamp tax on AFDC benefits (Fsprice2) is negative and significant. The magnitude of the price effect is very high, with the elasticity of benefits with respect to the price as high as 6.37 (Table 3, col 3). Such large estimates are obviously too high to be plausible. However, it should be recalled that there is relatively little variance in the price term. Two standard deviations in the FS price term are equal to .054, as compared to a mean price of 1.60. Multiplying this value by the estimated price coefficient in column 2 of Table 3 implies a range in average benefits per recipient of $38. At the mean value of benefits of $144, this means that the observed variation in the price is associated with a 26 percent change in benefit levels.

Why are the estimated price effects so large? One explanation is that price effects are endogenous. If higher AFDC benefits affect the magnitude of the excess shelter deduction, then the net effect (given the three price regions) could be that higher benefits lead to a lower price, thus biasing upward the estimated effects.

Columns 6-9 of table 3 present IV estimates of the Food Stamp price effect. The identifying instrument for price is the average rent level. Contrary to expectations, the IV approach yields even larger estimates of the price effect, with elasticities more than seven times as high as for the uninstrumented price. The reason for these results is related to the independent effect of rent on benefit levels. By using predicted price, which is negatively related to rent levels, the IV estimate is loading both the direct effect of rents on benefit levels and the indirect effect of the Food Stamp tax onto the instrumented variable.[8]

Despite these reservations, it is still interesting to use the estimated price and disregard effects to simulate the net effect of the excess shelter deduction on AFDC benefits, and indirectly on total Food Stamp costs. The net effect of the shelter deduction can be approximated by

$$\Delta AFDC_{ben} = \hat{b}_{dis} (\Delta DIS) - \hat{b}_{price} (\Delta FSprice)$$

The average shelter deduction equalled $157 per month. The decrease in the Food Stamp price that would result from eliminating the excess shelter deduction equals 1.60 - 1.43, or 0.17. Taking the disregard and price effect estimates from Table 3, Col. 3, and inserting them into equation (18), we get $DAFDC_{ben}$ = .7(157) - .17(653) = 110 - 111 = -$1. This result says that the net effect of eliminating the excess shelter deduction would be to leave AFDC benefits per recipient approximately unchanged. Thus, the net effect of the excess shelter deduction on Food Stamp benefits is equal to the static effect obtained by multiplying the average shelter deduction by the Food Stamp tax rate. The excess shelter deduction increases Food Stamp benefits for AFDC households by approximately .3 x 157, or $47 per

month.

The price estimates alone are sufficiently high that if we simulate price changes outside the observed range, we get implausibly strong results. For example, consider a reduction in the Food Stamp tax on countable income from 30 percent to 25 percent. How would this change affect benefit levels and Food Stamp outlays? Assuming that the percentage of Food Stamp households in each price region remains unchanged, the average FS price would go down from 1.60 to 1.45.[9] The price estimate of -418.0 from Table 3, Col 5 implies that this reduction would increase annual AFDC expenditures per capita by (.15) x (418) = $63, a growth of 44 percent .

The change in Food Stamp outlays can be approximated by DFS = -B(p)dt -t(dB/dp)(dp/dt)dt, where B equals annual Food Stamp outlays for AFDC recipients, divided by total population. The first term is the static cost increase from decreasing the Food Stamp tax rate, and equals .05B. In 1995, per capita FS benefits going to AFDC recipients equaled approximately $32. Therefore, .05B equals $1.60. The second term, representing the offsetting decline in Food Stamp outlays as AFDC benefits increase in response to the price increase, equals -.25(63) or -$15.75. Hence, 1995 Food Stamp outlays would have fallen by $14.15 per capita, or about $3.7 billion. There is an extremely wide confidence interval surrounding these estimates: the simulation exercise is well beyond the observed range of price variation. Thus, the very tentative implication is that the Food Stamp tax appears to exert a significant effect in reducing cash benefits.

Tables 4 and 5 present estimates of the effects of Food Stamps on Medicaid outlays. Food Stamps could have a positive effect on Medicaid spending if state funds released by a reduction in AFDC funding stay within the welfare budget and are used for Medicaid. The specifications in Table 4 and 5 test for both the cross-price effect between cash assistance and Medicaid, and for the lump-sum effect of Food Stamps on Medicaid. Hence, the equations include the Food Stamp parameters—Fsmax, Fsdis, and Fsprice—as well as the Medicaid matching share. Since changes in AFDC which are unrelated to the Food Stamp effect may also affect Medicaid outlays, I include AFDC maximum benefits or AFDC expenditures as separate variables. Because AFDC is potentially endogenous to Medicaid spending, I instrument for the AFDC variables using a set of demographic variables. Because the relationships between Food Stamps, Medicaid, and AFDC are likely to be different for Medicaid expenditures on AFDC recipients, I divide Medicaid expenditures into AFDC related outlays, and non-AFDC related outlays.

Table 4 explains AFDC-related Medicaid expenditures, while Table 5 explains non-AFDC outlays. Columns (1) and (2) are OLS estimations, while Columns (3)-(6) use instrumental variables for the Food Stamp price. Columns (4) and (5) include predicted AFDC spending or benefits, while Column (6) directly reports the set of demographic controls used as instruments for AFDC spending.

The results from Table 4 provide some evidence to support the hypothesis that Food Stamp-induced savings in AFDC are channeled into spending on Medicaid. The Food Stamp maximum has a positive effect on Medicaid spending, with a dollar increase in Food Stamps associated with Medicaid spending between $1.08 and $1.75. The cross-price effect is positive, and sometimes significant, implying that a Food Stamp induced increase in the price of cash assistance leads to an increase in Medicaid spending. However, the magnitude of the cross-price effect is sensitive to specification, ranging for a low of 65.5 (insignificant) to a high of 952.4. In general, the cross-price elasticities are

quite high. Moreover, contrary to our expectation under the displacement model, the Food Stamp disregard has a positive effect on Medicaid spending.

As shown in Column (4) of Table 5, higher AFDC maximum benefits lead to lower Medicaid spending. Since higher benefits increase the number of participants, this suggests that states with higher AFDC benefits substitute cash for Medicaid benefits in the package of assistance to an AFDC family. However, AFDC spending per capita—col (5) of Table 5—has a positive effect on Medicaid spending. This latter result reflects a participation effect outweighing the benefit package effect. Higher rates of AFDC participation are correlated with higher rates of Medicaid participation, leading to higher Medicaid outlays per capita.

The state-matching share has a significant negative effect on both types of Medicaid spending. In the specification in column (6) of Tables 4 and 5, which includes a set of demographic controls, the price elasticity evaluated at the mean ranges from -.59 to -.66. This estimate is within the range of earlier estimates of the matching rate effect on Medicaid spending (Granneman and Pauly, 1983). This result contrasts with the AFDC model, where state-matching share had a positive effect on price. The difference in the effect of matching between the two programs is consistent with the argument that Food Stamps displacement has led to an erosion of the price effect in AFDC, because Food Stamps are more directly linked with cash benefits than they are with Medicaid spending.

The results from Table 5 suggest a much weaker price effect of Food Stamps on non-AFDC Medicaid spending. However, the effect of the Food Stamp disregard is much larger for this category of Medicaid spending. This latter effect is probably picking up on the fact that a period of very sharp annual increases in Medicaid spending on the elderly and the disabled from 1989 until 1995 coincided with a steady increase in the disregard, rather than any causal effect. In general, the evidence does not provide strong support for a model in which Medicaid spending on non-AFDC recipients substitutes for AFDC spending, with Food Stamps as the catalyzing variable.

Table 6 shows the effect of Food Stamps on state supplements for SSI. States are not matched in their spending on the state supplement. Because there is no cap on excess shelter deductions, the lump-sum Food Stamp offer is greater than in the case of AFDC. However, this also means that the marginal price of state supplements is higher, with a mean value of 1.69, as opposed to 1.60. Under OLS estimation, (Table 6, Col. 1) the Food Stamp price is negative but insignificant in its effect on the maximum state supplement. However, because 26 states had no state supplement, the dependent variable is zero in half of the observations. Hence, we also estimate a Tobit regression. As shown in column (2), the price effect is now statistically significant. In general, the results suggest that Food Stamps play some role in explaining the decline in state SSI supplements over time.

V.Conclusion.

This paper investigates the extent to which Food Stamps substitute or complement other programs of public assistance. Due to limited variation in the parameters of the Food Stamp program, and the simultaneous nature of the Food Stamp-cash decision by states, it has been very difficult to obtain robust econometric estimates of the fiscal displacement effects of the Food Stamp program on other welfare programs.

I examine the effect of the excess shelter deduction for Food Stamps on the price of cash assistance. The interaction between the 30 percent Food Stamp tax on cash assistance and the phaseout of the excess shelter deduction creates a high price for cash assistance. On average, states must pay $1.60 to raise cash benefits by one dollar. Under TANF, the full amount must come from the states. For SSI recipients, the net price is even higher, equal to 1.69. These prices are potentially strong deterrents to states considering whether to raise their benefit levels.

I use this price variation to estimate a model of fiscal displacement in which the Food Stamp offer has both a price and a lump-sum effect on cash assistance programs—AFDC and SSI—and on Medicaid. I find a significant price effect of the Food Stamp tax on cash assistance. However, the magnitude of the estimated price effect is implausibly large. The very high estimates suggest that problems of limited variation in the price variable, and endogeneity with the cash benefit decision, are substantial.

In the determination of benefit levels in the AFDC program I find that the price effect is approximately offset by the lump-sum disregard effect. Netting out the negative coefficient on the FS maximum benefit and the positive coefficient on the FS disregard, a simultaneous increase by one percent in both parameters would reduce AFDC benefits per recipient by slightly more than one percent. However, when we look at AFDC expenditures per capita, the estimations indicate an increase of .57 percent. Hence, while the Food Stamps offset to AFDC benefit levels is substantial, overall AFDC spending does not appear to be as adversely affected. This suggests that Food Stamps may have an indirect but positive effect on AFDC participation rates.

Taken at face value, the estimated price effects are large enough to imply that a decrease in the Food Stamp implicit tax on AFDC benefits would have led to an increase in benefits. Given the econometric problems in estimating the price effect, we have little confidence in this result at this stage of the research. A possible alternative instrument, to be employed in the next stage, could be formed from predicted AFDC benefits estimated in a year prior to the Food Stamp program. If the strong price effects hold up, we would have more confidence in our conclusion that the adjustment in Food Stamp benefits for regional variation in shelter costs comes at a significant cost in terms of a higher implicit price for cash assistance.

The Food Stamp results also suggest an explanation for the apparent decline in the AFDC matching rate effect. A greater percentage offset of AFDC benefits in high federal matching states, as well as a higher implicit Food Stamp tax, may have led states to cut (or not increase) their AFDC benefits even more than lower matching rate states. In support of this hypothesis, I find that in the Medicaid program, which is not subject to the same direct Food Stamp offset, the matching rate effect remains substantial, with an estimated price elasticity of about -.6.

Food Stamps have a positive effect on Medicaid spending for AFDC recipients, with significant and positive cross price elasticity. Hence, at least some of the state resources displaced by Federal Food Stamps appear to remain within the welfare budget. In future research, I will quantify the Medicaid effect more precisely.

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Table 2
Food Stamps and AFDC Benefit Levels
(Standard errors in parentheses)

Dep. Variable	(1) MaxBen	(2) AvgBen	(3) AvgBen	(4) MaxBen	(5) AvgBen	(6) AvgBen	(7) Ben per capita
FS max	-1.50 (0.56)*	-0.47 (0.15)*	-0.84 (0.13)*	-2.36 (0.53)*	-0.69 (0.14)*	-0.97 (0.12)*	-.50 (0.13)*
FSdis1	-2.94 (0.49)*	-0.43 (0.13)*	-1.10 (0.11)*	-2.14 (0.43)*	-0.59 (0.11)*	-0.87 (0.11)*	-.19 (0.12)
FS price1	352.0 (86.7)*	85.3 (22.4)*	15.1 (21.2)				
FS price				-2317.6 (235.1)*	-626.6 (60.3)*	-397.7 (53.4)*	-254.7 (59.2)*
Income	0.02 (0.02)*	0.005 (0.0009)*	0.004 (0.001)*	.027 (0.002)*	0.008 (0.0004)*	0.005 (0.001)*	.004 (.0007)*
Inter-cept	1574.2 (253.7)*	457.0 (65.7)	418.6 (57.4)*	5374.5 (402.4)*	1472.0 (103.2)*	1039.2 (95.0)*	297.0
Demo - gra-phic con-trols[2]	No	No	Yes	No	No	Yes	Yes
Adj R^2	.36	.39	.63	0.43	.47	.66	.66

Sample is 637 observations, forty eight continental states and the District of Columbia, from 1983-1995. Definition of Variables: MaxBen: Maximum monthly AFDC benefits, family of four; AvgBen: average monthly AFDC benefits per recipient; Fsmax: maximum monthly Food Stamp benefits, family of four. FSdis1: Food Stamp disregard: standard deduction plus shelter deduction cap. FSprice1[1]: (state share)x[1.43(shrreg1+shrreg3) + 1.82(shrreg2)]. FSprice:[1] 1.43(shrreg1+shrreg3) + 1.82(shrreg2); Income: State personal income per capita.

Notes. * indicates significance at the 1% level of confidence. 1. shrreg1: proportion of FS households with no excess shelter deduction;. shrreg2: proportion of FS households with excess shelter deduction less than the cap; shrreg3: proportion of FS households with excess shelter deduction at the cap. 2. Demographic Controls include: state unemployment rate, percent over 65, percent white, percent living in large cities (over 100,000 of population), percent with college degree, percent with high school degree, percent in poverty, percent female headed households, percent of the work force in

manufacturing.

Table 3
Food Stamps and AFDC Benefit Levels
(Standard errors in parentheses)

Dep. Variable	(1) Max Ben	(2) Avg Ben	(3) Avg Ben	(4) Log Avg Ben	(5) Exp per cap-ita	(6) Max Ben	(7) Avg Ben	(8) Exp per cap-ita	(9) Ben per cap.
FSmax	-2.72 (0.47)*	-0.81 (0.12)*	-.88 (.11)*	-2.40[3] (0.34)*	-0.25 (.12)*	-1.59 (.52)*	-0.47 (.13)*	0.20 (.13)	-0.05 (0.12)
FSdis	2.91 (0.25)*	0.70 (0.07)*	.70 (.05)*	0.91[3] (0.10)*	0.58 (.06)*	1.95 (.23)*	0.43 (.06)*	0.36 (.06)*	0.40 (.06)*
Fsprice	-2544 (202)*	-698.8 (52.7)*	-653 (51)*	-6.37[3] (0.59)*	-418.0 (53.8)*				
Predicted Fsprice						-10106 (1079)*	-3025.7 (278.6)*	-1948.0 (273.4)*	-1633 (267)*
Income	.015 (0.002)*	.005 (.0004)*	.002 (.001)*	0.35[3] (0.11)*	0.002 (.85)*	.003 (.002)*	0.0009 (.0006)	.002 (.0006)*	-.0002 (.001)
Intercept	4530 (386.6)*	1283.9 (100.7)*	1171.5 (51)*	12.5 (2.22)*	389.2 (97.4)*	16,855 (1079)*	5068 (451)*	2990 (442.8)*	2328 (428)*
Demographic controls[2]	No	No	Yes	Yes	Yes	No	No	No	Yes
Adj R^2	.52	.53	.67	.70	.55	.45	.48	.38	.54

Sample has 637 observations from forty eight continental states and the District of Columbia, 1983-1995.

Definition of Variables.

FSprice-IV: predicted FSprice2, with HUD fair market rent and rent squared as instrments.

Notes.

* indicates significance at the 1% level of confidence.

1. shrreg1: proportion of FS households with no excess shelter deduction.
   shrreg2: proportion of FS households with excess shelter deduction less than the cap.
   shrreg3: proportion of FS households with excess shelter deduction at the cap.

2. Demographic Controls include: state unemployment rate, percent over 65, percent white, percent living in large cities (over 100,000 of population), percent with college degree, percent with high school degree, percent in poverty, percent female headed households, percent of the work force in manufacturing. 3. Variable defined as log(Variable).

Table 4

Food Stamps and Medicaid Expenditures for AFDC recipients

	Dependent Variable: AFDC related Medicaid Expenditures per capita					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
FSmax	**1.75 (.13)***	**1.40 (.13)***	**1.36 (.13)***	**1.08 (.13)***	**1.37 (.12)***	**1.14 (0.12)***
FSdis	**-0.02 (.06)**	**0.11 (.06)**	**0.15 (.06)***	**0.24 (.06)***	**0.12 (.05)***	**0.19 (.05)***
FSprice	**193.6 (57.5)***	**65.5 (54.0)**				
Predicted FSprice			**522.4 (267.4)***	**242.0 (258.2)**	**952.4 (257)***	**822.7 (249.9)***
State Share		**-307.4 (28.3)***	**-303.1 (28.2)***	**-224.1 (28.9)***	**-316.1 (26.7)***	**-129.7 (30.6)***
Predicted AFDC Maximum Benefits				**-0.11 (.01)***		
Predicted AFDC Spending Per Capita					**0.56 (.06)***	
Income	**.003* (.0004)**	**.009 (.001)***	**.009 (.001)***	**0.01 (.001)***	**0.007 (.001)***	**0.007 (.001)***
Intercept	**-1003 (105)***	**-685.8 (100)***	**-1426 (435)***	**-873 (422.3)***	**-2097.9 (418)***	**-2107 (401)***
Demo-graphic controls	**No**	**No**	**No**	**No**	**No**	**Yes**
Adj R^2	**.31**	**.42**	**.42**	**.47**	**.49**	**.65**

Notes:
Predicted AFDC Maximum Benefits, Predicted AFDC expenditures per capita; Instruments are state unemployment rate, percent over 65, percent white, percent living in large cities (over 100,000 of population), percent with college degree, percent with high school degree, percent in poverty, percent female headed households, percent of the work force in manufacturing.

Table 5
Food Stamps and Other Medicaid Expenditures

Dep. Variable	Dependent Variable: Non-AFDC related Medicaid Expenditures per capita					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	(6)
FSmax	**3.11 (.39)***	**1.99 (.36)***	**1.95 (.37)***	**1.79 (.38)***	**1.98 (.35)***	1.89 (.36)*
FSdis	**.89 (.18)***	**1.32 (.16)***	**1.24 (.16)***	**1.29 (.17)***	**1.16 (.16)***	1.03 (.15)*
FSprice	**-114.3 (166)**	**-514.3 (153)***				
Predicted FSprice			**673.9 (767)**	**514.2 (774.0)**	**1921.6 (736)***	-54.9 (734)
State Share		**-975 (80.4)***	**-903.6 (81)***	**-858.5 (87.0)***	**-941 (76)***	-340.2 (89.9)*
Predicted AFDC Maximum Benefits				**-0.06 (.04)**		
Predicted AFDC Spending Per Capita					**1.6 (.18)***	
Income	**.014 (.001)***	**.03 (.002)***	**0.03 (.002)***	**.03 (.002)***	**0.02 (.002)***	0.02 (.003)*
Intercept	**-1358 (302)***	**-362.5 (284)**	**-2264 (1248)**	**-1949 (1266)**	**-4212 (1197)***	-1894 (1180)
Adj R^2	**.34**	**.46**	**.45**	**.46**	**.51**	.62

Table 6
Food Stamps and the state supplement for SSI

Dep. Vble	(1) Max State SSI Supp (OLS)	(2) Max State SSI Supp (Tobit estimate; p value of ChiSquare in paren.)	(3) Avg State SSI Supp per capita	(4) Avg State SSI Supp per capita
FSmax	**-1.28 (0.44)***	**-1.46 (.09)**	**-0.08 (.042)****	**-0.06 (.028)***
FSdis	**0.84 (0.38)***	**3.39 (.0001)**	**0.12 (.04)***	**0.145 (.024)***
FSprice2[1]	**-252.3 (280.5)**	**-996.5 (.06)**	**-25.7 (26.8)**	**-55.6 (17.9)***
Income	**0.01 (0.001)***	**.019 (.0001)**	**0.001 (.0001)***	**0.001 (.00009)***
SSI Recipient ratio	**2381.5 (573.8)***	**207.1 (.86)**	**378.7 (54.9)***	**270.3 (36.6)***
California and Wisconsin[2]				**-37.3 (28.5)***
Intercept	**488.5 (449.5)**	**969.5 (.26)**	**18.6**	**60.5 (28.8)***
Demo-graphic Controls				

Adj R*	**.16**		**.23**	**.66**

Variables:
Max State SSI suppl: monthly maximum state SSI supplement
Avg. State supplement per capita: average monthly state SSI supplement, per capita
Notes.
1. FSprice2 defined as 1.43(Shrreg1) + 1.82(Shrreg2 + Shrreg3). The excess shelter deduction cap does not apply for most SSI recipients.
2. The state of California, and the state of Wisconsin until 1995, converted Food Stamp benefits to cash, and included them in the state supplementary benefits.

Notes

1. States are required to pay 50 percent of the administrative costs of Food Stamps, so the cost to the states is actually slightly greater than zero.

2. The U.S. Department of Housing and Urban Development=s fair market rent measure ranges from a maximum of $950 per month to a minimum of $401.

3. States are required to pay 50 percent of the administrative costs of Food Stamps, so the cost to the states is actually slightly greater than zero.

4. In this treatment, I ignore other Food Stamp deductions, because they are quantitatively unimportant.

5. States set their maximum AFDC benefits as a percentage (typically well below one) of their need standard, where the latter reflects a state=s assessment of the cost of a very modest standard of living. In my sample the correlation between the need standard and the average AFDC benefit per recipient was .34.

6. I am indebted to Carole Trippe of Mathematica Policy Research for a special computer run from the Food Stamp quality control sample to extract the shelter deduction percentages by state.

7. In a regression of the log of state share on the log of state income and a constant, the estimated elasticity is 1.2, with an R^2 of .70.

8. In a separate regression, I find that the elasticity of benefits with respect to rent levels is not significantly different from one.

9. The new Food Stamp price would be computed as $1.33*(SHR_{reg\ 1\ +\ reg\ 3}) + 1.6*(SHR_{reg\ 2})$.