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INFLATION, ASSET-TESTING,
AND FOOD STAMP ELIGIBILITY:
BETTER TESTS WITHOUT
INCREASED PROGRAM COST?

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Inflation, Asset-Testing, and Food Stamp Eligibility:
Better Tests without Increased Program Cost?

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Abstract

In determining eligibility for Food Stamps, income is indexed to account for inflation rates; assets, however, are not. Moreover, the assets that are taken into account when determining eligibility do not include home equity. This paper explores the effects of indexing assets to account for inflation and of counting home equity over and above $10,000 on the Food Stamp participation rate of married couples. A new model of Food Stamp participation is developed to account for the influence of asset holdings and earnings capacity, and to control for potential differences in state-level administrative practices. The investigators find that indexing a couple's assets will increase their chances of being eligible; this is especially true for young couples and for couples with few children. However, when indexing is coupled with counting home equity, a couple's chances are <u>lowered</u>. The investigators conclude that failing to index assets results in arbitrary boundaries for program eligibility and that welfare administrators should assist homeowners in applying for loans rather than Food Stamps during periods of financial distress.

Inflation, Asset-Testing, and Food Stamp Eligibility: Better Tests without Increased Program Cost?

I. INTRODUCTION

Eligibility for Food Stamp Program (FSP) payments depends critically on assets and debt and on the cash income of the applicant unit (generally a family, but sometimes including unrelated persons in the household). Analysis of participation in the FSP has focused on cash income and incentive effects created by the reduction of Food Stamp payments with increased earnings (Fraker and Moffitt 1988). Little attention has been given to the role of assets and debt in determining eligibility (Bickel and MacDonald 1981). No analysis has treated the incentive effects of assets on participation. The trade-off between the income and asset tests for eligibility has not been examined, though both income and assets create a capacity for consumption. The analysis below demonstrates a disincentive to participate associated with increasing asset levels and considers the change in trade-off between assets and income induced by inflation since the codification of the FSP in its present form through the 1977 Amendments to the Food Stamp Act.

Society, the designers of income support policy, can use several perspectives to consider the trade-off between income and assets in determining eligibility for the FSP:

- Assets may not be available to finance current consumption for several reasons. They may be encumbered with debt. They may not be readily saleable, that is, illiquid; and assets that cannot be converted into cash may be unacceptable collateral for loans. Assets may be essential to the production of income when they are part of the applicant's trade or business.

- Assets which are liquid or collateral for additional debt may be considered to substitute fully for cash income needed to purchase consumption; alternatively, fungible assets may be considered for the annuity they can finance (Weisbrod and Hansen 1968).

These perspectives demonstrate that calculating the net worth of the applicant unit is not generally the appropriate measure of asset eligibility; and assets do not necessarily trade off against income, dollar for dollar.

History of Food Stamp Eligibility Tests

The asset limits for the FSP distinguish units containing an aged or disabled person from units containing persons under sixty years of age with no disabilities. The founding statute for the FSP set asset limits at $3000 for units containing aged or disabled persons and $1500 for all other units. Legislation since 1971 has maintained the $3000 limit for units with aged or disabled persons; the limits for other units have been increased (1977 — $1750), reduced (1981 — $1500), and then increased again (1985, and currently — $2000).

The effect of inflation since 1971 (as measured by the CPI for all items) has been to greatly erode the real value of the resource limits for everyone. By 1977, the real value had fallen to $2005 for units with aged or disabled persons and $1002 for all other units, that is, by one-third of their 1971 value. Even after the 1977 limit of $1750 for nonaged/nondisabled persons became effective for 1979 and 1980, the real values of the asset threshold continued to decline. By 1981 they were only 49 and 57 percent of the 1971 limits (Bickel and MacDonald 1981, p.70). The threshold for nonaged/nondisabled units was tightened further in 1981 when Congress reduced the nominal limit to $1500. This limit remained in effect until 1985, when it was increased to the current value of $2000. In real terms asset limits in 1990 were only 30 and 47 percent of their 1971, real value. As a result, the asset test for units containing aged/disabled persons confines access to a smaller part of that population, relative to 1971, than the asset test applied to others.

This history poses a dilemma for economic analysis: if the design of the FSP in 1977 was socially optimal, it is no longer optimal. What conceptual framework can be used to choose the best

balance between income and asset conditioning of eligibility? The dilemma for optimal design is further complicated by the "counting rules" for the asset test.

The asset threshold applies to a partial counting of net wealth plus the value of some assets that are pledged against debt (see Table 1; tables and figures are on pp. 25-38). Owned homes and assets used in a trade or business are not counted in calculating eligibility under the asset test. The effect on asset eligibility of inflation after 1977 is the focus of our analysis, since a variety of administrative rules, including a Food Stamp purchase requirement, limited the ability of many eligible families to make use of the program before 1977. Asset eligibility in real terms was greater under the 1977 law than at any subsequent time for the typical FSP unit. This can be seen in panel B of Table 2.

Two policy alternatives to the present asset test are examined in the following analysis:

- Indexing the asset thresholds for Food Stamp eligibility by the Consumer Price Index.

- Including equity in the home in excess of $10,000 (1984 dollars) among the assets counted in calculating asset eligibility.[1]

We are particularly interested in home equity because it is a pervasive form of wealth-holding that is extensively used as collateral for consumption loans. Focusing simultaneously on counting part of home equity and indexing demonstrates how indexing's cost could potentially be offset by rule changes to target the program on less wealthy units.

These adjustments to the asset-eligibility rules are applied to married couples reporting income and assets in the Survey of Income and Program Participation (SIPP) in 1984.[2] Couples consisting of partners who were both between the ages of eighteen and fifty-nine were chosen for analysis. Therefore, the analysis is directed towards an important group of participants in the FSP. It is a population whose participation rate of 40.4 percent is far below that of single persons with children.

It is also a population with a greater supply of labor and presumably a greater ability to earn than the population of single parents with children which is the focus of Fraker and Moffitt (1988).

The analysis in this paper is directed towards answering the following questions:

1. How is eligibility distributed in the population under alternative asset tests?

2. How will participation be affected by adjusting asset tests?

Section 2 presents a conceptual framework for the analysis. Section 3 presents the impact of changing asset-eligibility rules on the size of the eligible population. Section 4 provides a model for the decision to participate in the FSP. Section 5 simulates the change in participation that follows the simulated changes in eligibility.

II. ELIGIBILITY AND ITS DISTRIBUTION

Three aspects of eligibility need to be incorporated into the analysis. First, and most important, the income position of the Food Stamp unit, couples and their household in our sample, is determined by income-earning activities during the reference period. Earnings move some couples from eligibility to ineligibility. Second, dissaving or "spending down" of assets can move a couple from asset-ineligibility to asset-eligibility. In both cases, behavior of the couple controls whether eligibility is satisfied. Third, participation is not automatic among eligible persons; application for benefits is necessary and subsequent reporting is required to maintain benefits. With these endogenous responses, how can one discover how eligibility rules influence use of the program?

Some insight can be obtained from Figure 1. The horizontal axis is countable assets, CW. The vertical axis is countable income, CY. For the moment, assume that CW corresponds to net worth and CY corresponds to economic income. Adjustments to these ideals will be discussed later. On the horizontal axis units have no net income; countable assets beyond some limit imply that the unit is ineligible. That is, $CW > CW_{max}$ and $CY = 0$ imply ineligibility. On the vertical axis, units

have no countable wealth; net income in excess of the break-even point implies that the unit is ineligible. That is, $CW = 0$ and $CY > CY_{max}$ imply ineligibility. Disregarding fraud, the probability that ineligible units receive Food Stamp (FS) payments is zero. We define the probability of receiving FS payments as $g(CW,CY)$. The intercepts just defined lie on the frontier where $g(CW,CY) = 0$. Because wealth generates income, the frontier must slope downwards to the right, although it need not be a straight line. The frontier shows the boundary between eligible and ineligible units. Figure 1 shows two units, A and B. A is eligible for Food Stamps and has no net income. B is ineligible and has substantial net income. The arrows emanating from A and B indicate adjustments that each unit might make. Unit A might find employment, raising its position to A'; unit A could also dissave, moving point A to the left, or save, moving point A to the right. Similarly, unit B might dissave or reduce employment to become eligible (crossing the frontier $g(CW,CY) = 0$). The magnitude of such adjustments is an empirical matter. Hagstrom (1991) gives estimates of the labor supply responses for couples; but no estimates are available for the asset adjustments. The locations of the points A' and B' reflect the positions that A and B would occupy if they were working at levels reflected in their earnings capacity, that is, expected wage rates (Garfinkel and Haveman 1977; Morgan et al. 1962). The dashed line shows that both A' and B' lie on a contour along which the probability of receiving food stamps is $g(CW,CY) = 0.1$. This low probability reflects the fact that few units with the corresponding reported assets and earnings capacity apply for benefits, even though they may be eligible. Our estimated model of participation rates (Section 4 below) gives a picture of the contours of $g(CW,CY)$.

Our simulations of asset eligibility and income eligibility for married couples proceed as if the endogenous earnings and asset levels are predetermined. That is, observed points analogous to A and B in the figure are used in our simulations in Section 3. When the asset test is relaxed, more units become eligible. How those added units respond to eligibility for Food Stamps requires forecasting

participation rates for these additional units from our model, which will be taken up in Sections 4 and 5. Simulations of responses to change in eligibility encompass heterogenous responses to stigma, wages offered, credit availability, and transaction costs of obtaining Food Stamps. None of this heterogeneity is adequately measured in the SIPP. The results of our simulations are a measure of *impact* based on a static, reduced-form model of participation that depends on earnings capacity and other exogenous variables. (Going beyond impact requires a dynamic model of behavioral responses, particularly to wealth, that are beyond the scope of this investigation.)

In principle, an exogenous measure of wealth also should be used in modeling participation. We have not succeeded in devising such a construct. Instead, we exclude from the estimation all persons who are ineligible on the basis of asset levels in the interview month following August 1984. A selection bias arises from any spending down of assets by units who desired FS benefits in August. We believe that the number of persons who spend down assets to become eligible is so small that the endogeneity of the countable assets can be ignored. Table 3 provides some evidence for our belief. The table shows FS participation rates for the married couple sample. The number of couples receiving benefits is divided by the number of couples eligible for benefits in column 1 of the table, labeled FSPR. Economic motives suggest that couples would have every incentive to accumulate assets to a level close to the threshold established by the eligibility rule; however, no heaping of units just below the threshold occurs. We tentatively conclude that spending down is not a major consideration in couple behaviors.

Column 3 of Table 3 introduces a new concept that we believe is helpful in understanding participation in the FSP. In this calculation the number of couples receiving benefits is divided by the number of couples who would be eligible for benefits if only asset tests were applied. Those couples who have sufficient assets to fail the asset-eligibility rules are excluded. We see in column 3 that nine out of ten asset-eligible couples do not take up the program. Three-quarters of the asset-

eligible couples earn enough income to fail the income-eligibility test. (Recall that the same

participants appear in the numerators of the FSPR in both columns 1 and 3. Therefore the drop in

FSPR between the two columns indicates that the denominator in column 1 is smaller by the number

of units who fail to meet the income-eligibility test.)

Legislated Versus Ideal Counting Rules

Figure 1 can also be used to understand how exclusion of some assets from the measure of

countable assets affects eligibility. The axes of Figure 1 should be interpreted to measure counted

assets and income under FSP rules. Assume that unit B has countable assets and income that is also

counted, for example, money in a savings account; all income derives from that source. Assume that

another unit, C, has a like amount of assets invested in an owned home and no other source of

income. Neither asset nor in-kind income from the home are counted. Thus unit B is ineligible for

Food Stamps; unit C is eligible.

Asset-eligibility counting rules imply two contradictions. Exclusion of some assets from those

counted in determining eligibility leads to striking disparities in eligibility among couples with

identical net wealth. Partial counting of wealth entitles some to benefits who have access to loans,

while others who have little access to credit are denied benefits. This raises questions of equity.

Second, persons investing in excluded assets save and experience no adjustment in counted assets or

asset-related income. Persons investing in countable assets reduce eligibility under both asset- and

income-eligibility rules. We demonstrate the empirical importance of these effects in Section 3.

III. ELIGIBILITY UNDER ALTERNATIVE ASSET RULES

To understand the impact of changing asset testing rules, four variants of the current test are

compared to the 1984 law:

Column	Label	Asset threshold level	Countable assets
a	*1984 $* *BASE*	1984 law ($1500)	1984 law
b	*1984 $* *ADD EQUITY*	1984 law ($1500)	All but $10,000 of equity in the home treated as a countable asset.
c	*1980 $* *BASE*	1980 asset threshold indexed to 1984 $.	1984 law
d	1980 $ *ADD EQUITY*	1980 asset threshold indexed to 1984 $.	All but $10,000 of equity in the home treated as a countable asset.
e	*1977 $* *ADD EQUITY*	1977 asset threshold indexed to 1984 $.	All but $10,000 of equity in the home treated as a countable asset.

Table 4 shows the impact of changes in the asset test and covers all couples in the sample (N = 8169). Column 1 shows the proportion of the sample in each subgroup. Column a reports the percentage of couples who are eligible, or asset-eligible, for Food Stamps under the actual 1984 law (base case). Recall from Table 3 that "asset-eligible" couples are those whose counted assets are less than the asset threshold; "eligible" couples pass both asset and income tests. (The eligibility statistic is conceptually similar to Ross 1988. See also Trippe 1989.) Column b shows the impact of counting some home equity in the test for asset eligibility. Column c shows the effect of indexing the asset thresholds enacted in 1980 for the inflation experienced to 1984. Column d combines indexing to the 1980 base and the change in counting housing equity; column e also combines both rules, but indexes the real value of the 1977 asset thresholds.

Column c shows the effect of indexing the $1500 asset threshold for inflation from 1980 to 1984. The $1500 level was imposed legislatively in 1980. Under this simulation the nominal assets permitted become $1885 in 1984. (For 1985, the nominal threshold obtained by indexing to the 1980 base becomes $1959. The $2000 legislated in 1985 is slightly more generous, but we can see that

indexing to $1500 of 1980 purchasing power is close to both the 1980 and the 1985 legislative actions

for the program. [See Table 1.]) As expected, indexing the base increases eligibility for benefits.

Indexing is relatively more beneficial for couples when the head is young and the family is small.

The effect of rule changes by family size can be inferred from rows in the panel of Table 4 that

compare how eligibility would change with the poverty threshold of different FSP units. The smallest

poverty thresholds correspond to individuals. Thresholds rise monotonically with family size. The

relationship to age is displayed above the rows labeled "Odds ratio" in Table 4. Indexing the

threshold increases asset eligibility from 49 percent (column a) to 57 percent (column c) for heads

under thirty years of age. For heads over fifty, the increase in asset thresholds associated with

indexing produces an increase in asset eligibility from 23 percent (column a) to 27 percent (column

c).

In the population of couples studied, 72.1 percent own homes; 9.2 percent have less than

$10,000 of equity in their homes; thus 63.0 percent of the population is affected by the *equity* rule in

the simulation of Table 4. Column b demonstrates the effect of including most home equity in

countable assets. Most homeowners would be categorically excluded from receiving Food Stamps

under the *equity* rule. Including equity cuts about a third of currently eligible units from the base.

Combining indexing to 1980 and inclusion of most home equity produces column d. The

combination reduces eligibility by 25 percent, compared to base law. Column e shows that indexing

the more generous asset test adopted in 1977 reduces the stringency of including equity. Eligibility is

reduced by more than 20 percent from the base case. This level is only 0.3 percentage points more

generous than indexing to the 1980 base and counting home equity. With the 1977 indexing,

inclusion of home equity again reduces eligibility disproportionately among couples where the

husband is over fifty years of age and among couples where the family contains an older or disabled

person.

Clearly it would be possible to find an indexing rule that maintains current levels of eligibility by counting a part of home equity, but using a less inclusive threshold than $10,000. The impact of any equity rule is to distribute benefits away from older persons and towards younger persons. The odds ratio shown in Table 4 is a measure of the relative importance of income and asset tests. The odds ratio is calculated as $(p/[1 - p])/(q/[1-q])$. q is the probability of being income-eligible if the unit is not asset-eligible; p is the probability of being income-eligible if the unit is asset-eligible. The ratio measures relative risk (Kotz et al. 1985, 6:407). Here the risk is being income-eligible. An odds ratio greater than 1.0 implies that the likelihood of being income-eligible is greater in the asset-eligible population than in the asset-ineligible population. Under existing law in 1984, column a of Table 4, asset-eligible couples are nearly six times as likely to be income-eligible as are the asset-ineligible couples. Applying the *equity* rule decreases the relative risk (column b) to 5.2. Indexing the 1980 threshold has almost no effect on the odds ratio, as compared to the base case (column a). But the combination of indexing and the *equity* rule reduce the relative likelihood of being income-eligible markedly, to 4.8 in column d and 4.0 in column e. This implies that absence of income is more prevalent in the asset-ineligible population than under 1984 law. That result is appropriate if home equity is fungible for the purchase of food and other consumption goods.

Table 5 summarizes simulated changes in eligibility in relation to the net worth of the couple. Of couples with wealth-holdings of more than $40,000, 2.7 percent are eligible for the program. Most are eligible because home equity is not counted. Columns b, d, and e again show how eligibility would be curtailed by counting home equity in excess of $10,000.

IV. PARTICIPATION IN THE FOOD STAMP PROGRAM

Increasing eligibility for Food Stamps by indexing the asset thresholds will expand the proportion of couples who are eligible. The cost of this expanded eligibility depends on the extent of

participation by those couples. We estimate participation from a model to predict the impact of extending eligibility to some who are currently asset-ineligible. The assumptions underlying our modeling approach are explained below.

Our reduced-form model of the participation decision differs from past work in a number of respects:

a. The sample on which participation is modeled includes only asset-eligible units.

b. The sample includes only couples where both partners are of working age, between eighteen and fifty-nine years old.

c. The choice is related to economic constraints on the household, rather than economic outcomes. Expected wages are used as a regressor and actual earnings are disregarded.

d. The model conditions on all components of net wealth.[3] This allows the household to respond to the whole of its resources. The choice to participate balances program benefits against the costs (stigma and transaction) of participation. Because wealth is a resource that can be used to compensate for temporary income drops, it seems reasonable to expect that the rate at which couples participate is reduced by the presence of wealth. Because the counted and uncounted components of wealth are treated separately in our model, we can gain some insight into the impact of program rules on behavior.

e. The response to both expected earnings (earnings capacity) and wealth is modeled using splines to capture nonlinearities.

f. Different responses to earnings capacity are permitted for husband and wife. Assuming that the worker with the higher earnings capacity is the first to participate in the labor force, we model separate effects for the earnings capacity of the higher-paid worker and the capacity of the lesser-paid worker.

g. An elaboration of the model includes state-level variables to explore whether FSP administrative activities influence participation by facilitating or obstructing access to the program. Ignoring variations in program administration could bias the estimation of participation responses to asset holdings.

Earnings Capacity

People with the same earnings capacity include some slackers and some high achievers. It is of more interest to know the response of persons with equal earnings capacities to an increase in capacity (that might be effected by training or policies affecting labor demand) than to know that achievers will work their way out of eligibility and slackers will not. Using expected wage rates to measure earnings capacity provides a way of scaling demographic characteristics by their economic importance. In a variant of the model, we add some characteristics used in modeling earnings capacity to determine whether the economic scaling is appropriate or incomplete.

Earnings capacity is represented by four variables:

a. Whichever is smaller: the wage of the higher-earning worker or the mean wage of higher earners (in Table 6 this variable is labeled "wage of higher earner, below mean");

b. The amount of the wage of the higher earner in excess of the mean wage, which will be zero for those with below-average wages ("wage of higher earner, above mean");

c. The wage of the lower-earning worker ("wage of lesser earner, all"); and

d. Whichever is smaller: the difference between the actual wage and the average wage of the lower-earning workers, or zero ("wage of the lesser earner, less 5.61").

(The pair c and d is computationally identical to the pair a and b.) For this sample there was no woman whose earnings capacity exceeded her husband's. As a result the earnings capacity of the husband is identical to the earnings capacity of the higher earner.

Our expectation is that increased earnings capacity inhibits participation. In part this is due to the increased likelihood that high-capacity earners will find the search for work relatively short. We also expect that the earnings capacity of the higher-endowed worker will be more powerful in reducing participation.

Results of the model of participation are presented in Table 6. Column 1 shows the mean value of variables over the sample of 2699 couples who were asset-eligible under 1984 law. Model A was our conceptually preferred model.

Model A

The earnings capacity of both workers inhibits participation significantly (column 2). Expected wages of the higher earner attenuate participation with a coefficient of about -0.1 per dollar of wage rate for both segments of the spline (below and above the mean). Contrary to our hypothesis, however, the earnings capacity of the lower earner is almost twice as powerful at the margin in reducing participation than is the earnings capacity of the higher earner. The participation response to earnings capacity in excess of the mean for the lesser earner must be figured from two coefficients — the coefficient for all wages (-0.01 per dollar of wage rate) and the coefficient for the difference between wage rates and the mean, when the difference is positive (-0.25 per dollar of wage rate). The first coefficient is relatively small and insignificant; the coefficient on the difference is significant. The net effect implies less impact of the lesser earner on participation than the greater earner when the lesser earner has an earnings capacity below the mean of lesser earners. However, when the lesser earner has an earnings capacity above the mean for lesser earners, the net effect is -0.25 per dollar of wages, a level that is twice the level associated with wage rates above the mean for the higher earner. The implication is that the above-average earnings capacity of the lesser earner figures importantly in participation behavior. Couples where the lesser earner can only hope

for relatively poor remuneration make little adjustment in their participation because of that low earnings capacity.

The next two variables reflect family structure. The first is the dollar value of the monthly poverty threshold. The membership in the family is thereby scaled to cost as much as is deemed appropriate by the official definitions of the poverty line. The hypothesis is that participation should increase with the threshold, as financial need will increase proportionately. The number of children under 18 is used as a second variable reflecting family structure; if the official poverty thresholds do not accurately reflect need, children under 18 will have an effect. Both family structure variables increase participation. Taken alone, the poverty threshold does not appear to be able to capture the needs of larger families containing children.

The next five variables relate to net wealth. In spite of the fact that all of these families are asset-eligible, the average wealth is over $25,000. Recall that the sample includes only asset-eligible couples.[4] No definitional identity links excluded home equity with eligibility. Income from the asset is not reported or counted; the value of home equity and debt are not considered in the asset test. Our hypothesis is that participation rates should fall as the value of home equity rises. Two factors are responsible. If the transaction costs of obtaining a second mortgage or other credit are less than those associated with applying for Food Stamps, then couples who anticipate a spell of eligibility of short duration may prefer to take out loans rather than apply for FS benefits. The second factor is stigma and its relationship to past use of Food Stamps. We suspect that the proportion of couples who have ever used Food Stamps falls as home equity increases. A reluctance to use means-tested programs is also likely to be higher among established homeowners.

The effect of equity in a business is not as clear as the effect of home equity. Income derived from the business will be counted and can result in exceeding the threshold of income eligibility. This definitional connection to program participation implies that equity in the business should have a

more attenuating effect on participation than does home equity. However, business equity does not establish the owner in middle-class living patterns, where stigma is more prevalent. On those grounds business equity might not inhibit participation as much as does home equity. The direction of a net effect cannot be predicted. Furthermore, any measured effect will be less precise than the measured effect of home equity because fewer people own businesses than own homes.

The amount of countable assets is linked to countable income, just as the amount of business equity is linked to countable income. The extent of the likely relationship is easier to predict because yields on financial assets are less variable than yields from self-employment. If the expected yield on financial assets were 12 percent per year, 1 percent of the value of countable assets would be added to countable income during the month for which Food Stamps assistance is desired. At the threshold of eligibility, $1500, $15 would be added to countable income each month.[5] In other words the definitional tie between holding countable assets and income eligibility is likely to be extremely small. For that reason we would not expect countable wealth to reduce participation significantly for definitional reasons. However, the transaction cost of applying for benefits and the anticipation of receipts that could cause assets to exceed the $1500 level could easily inhibit couples from applying. For example, assume that the couple has $1300 in countable assets. Assume also that the probability that either earner receives an automatic deposit of $400 within the next month is 0.5. The expectation is that the couple will not meet the asset-eligibility test, and that the effort spent in applying will be wasted. We hypothesize that the anticipation of additional countable assets will inhibit participation more than home equity does.

The most notable findings are that home equity up to $75,000 attenuates participation and that countable assets below the threshold attenuate participation to a much greater extent. Home-equity effects are estimated independently for the amount of equity below $75,000 and the amount above. This spline was used primarily to eliminate bias on the parameter for home equity that could be

induced by a few outliers with extremely valuable homes and high equity. No significance can be attached to the effect of home equity above $75,000. The effect of adding $10,000 of equity up to $75,000 is about as large as the effect of increasing the wage of the higher earner by $1.

A dollar of countable assets has about eighty times as powerful an effect in inhibiting program participation as a dollar of home equity below $75,000. However, the mean amount of equity subject to the lower effect is thirty-five times the mean amount of countable assets. For that reason the effect of home equity on participation is more substantial than the comparison suggests.

Other equity has an effect on participation that is only half as strong as home equity. However, the standard error on this coefficient is so large that the two coefficients cannot be regarded as statistically different. The apparent difference is in line with our expectations, however. This finding seems to indicate that a definitional link of other assets to income sources from self-employment and rents is not a major factor in reducing the participation of this group. The finding also suggests that business assets are less fungible for meeting consumption needs than home equity or that home equity is more inhibiting of participation because of stigma. Additional measures of credit availability and attitudes would be required to illuminate which of these hypotheses determine low participation rates for homeowners.

The probit regression is highly significant, although its predictive power is less than one might hope. Only 98 persons have a probability of participation greater than 0.5, while 259 persons actually participated in the program. Over 20 percent of those who have predicted probabilities greater than 0.5 did not participate in the program. Two reasons for this poor forecast should be remembered. (1) We expected motivation and unmeasured variables affecting labor force participation to cause some persons whose earnings capacity is modest to earn their way out of income-eligibility. (2) The models for earnings capacity are also imperfect, so that our estimate of expected wages may exceed or fall short of the actual value for an individual. Nonetheless, the

model predicts well, as is shown by the plot of actual against expected probabilities of participation for the sample. (See Figure 2.)

Model B

Additional characteristics were added to Model A to provide for other demographic characteristics and to test the specification of our expected earnings variables. Age, race, and education of the husband are conceptually important variables in modeling the earnings capacity of the husband and were included in the expected wage model. (See the appendix.) MSA and regional variables may capture relative demand for labor that is not reflected in wage differences across geographic areas. In addition, we speculated that the responses of self-employed persons might differ from those who work for others.

Model B captures significant effects for age and regional dummies. However, the collection of eight variables added to Model A does not significantly add to the explanatory power of the model, as indicated by the marginal chi-square value of 35.2.

In Model B, earnings capacity affects participation differently than it did in Model A. The responsiveness of below-mean wages of the higher earner doubles. The responsiveness of lesser earners with wage rates above the mean falls slightly to -0.39. The sensitivity of these effects demonstrates a need to incorporate better measures of labor demand into the model of participation, a research task for the future.

The models of participation rates can be made simpler by eliminating the splines on wealth and wages for the greater earner. The coefficients are robust to that adjustment, but there is little information in the sample that allows us to select a "best model" from the conceptually available contenders. What we have established is an unbiased estimate of the response of couples to earnings capacity and differential responses of couples to countable wealth and equity in the home. That difference reflects both the administrative rules for eligibility and the couple's thinking about "cash in

the bank" by comparison to illiquid wealth in their owned home. The rules for eligibility determined the sample from which we estimated the model. Excluded couples whose asset levels are close to the asset threshold are thereby assumed to have a zero participation rate.[6] Yet we know that those couples could spend down to eligibility and chose not to do so (since assets are counted after the period for which benefits were received).

Adding State Administrative Variables

Whether and to what extent state and local program administration influences participation has been the subject of debate since the inception of the FSP. Although local-level administrative data are not readily available, variables for states may indicate whether administrative practices are likely to affect participation decisions because the states oversee program operations at the local level. Variables aggregated to states were selected from the 1980 Census, the *1985 Statistical Abstract*, and Food and Nutrition Service administrative records (Tables of Activity Ratings for Food Stamp Administration, STAR+). Married couples in six states could not be included in the analysis as the states are not separately identified. (Census standards protecting respondent confidentiality preclude identifying sparsely settled areas.) Appendix Tables A-1, A-2, and A-3 define and describe the state-level variables and the modified set of household-level variables that were used in a simplified reduced-form probit equation.

Two variables characterize the states' welfare "environment." PGEW, the percentage of state general revenue spent on public welfare programs, is an indicator of the states' willingness to pay for administrative activities related to welfare. PNES is the percentage of the states' 1980 poverty population that is not English-speaking, a variable that measures which states have harder-to-serve or more heterogeneous populations. We hypothesize increased participation in the FSP as these variables increase.

Four variables quantify specific FS administrative activities at the state level: percentage of

FS dollars issued by mail (PMIS); the official quality-control error rate for overpayments (SPER);

and two variables for fraud investigations (INHH) and prosecutions (PRHH), per one thousand

participant households. Mail delivery of FS benefits may reduce the cost of receiving benefits to a

needy family; we hypothesize increased participation for that reason; however, mail delivery is also

more characteristic of rural areas, where stigma may be stronger than in central cities where

participation in the FSP is prevalent and acceptable. The error rate provides an indicator of the

"noise" or confusion for potential applicants that is generated with haphazard administration; we

hypothesize that increased error rates inhibit participation. The investigation variables measure

penalties for fraudulent use of the FSP as well as a "transaction cost" that units experience with some

probability as part of the "transaction cost" of participation. Both aspects of these measures are

hypothesized to inhibit participation. (The costs of investigation may be thought of as analogous to

taxpayers' costs from IRS audits.) These hypotheses about environment and administration justify a

statistical test of the importance of state variables in a model of participation.

Table A-4 provides the correlation matrix for the state variables. Table 7 contains the probit

estimates of participation rates that result from adding these state aggregate variables to a base model

C. Model C differs from Model A in Table 6 in linearizing the effects of wages and asset levels.

The region dummies in Model D have significant effects except for "WEST"; comparing the results

of Model E and Model F to Model C tests whether a state's welfare environment and administrative

activities account for the regional effects. Model E and Model F demonstrate explanatory power

relative to Model C; and this result is mainly due to PGEW's positive and significant effect.

Devoting more resources to welfare administration may facilitate participation.

Model G includes state variables, MSA, and region; it indicates that regional effects cannot be

explained by contextual and administrative variables. Model G also provides the most direct evidence

that state administration affects participation rates. Married couples in states that investigate for fraud more often are less likely to participate, which is consistent with greater expectations of "hassles" from the need to comply with these investigations.

This tentative investigation of "supply factors" in FS participation confirms the robustness of the reduced form in Model A. Variables common to Model A and Model C show little variation as the contextual and administrative variables are added. Further research on variables characterizing local labor markets and FS agency activities appears warranted to determine whether the apparent importance of context and administration may be an artifact of the absence of appropriate local-level variables.

V. INCORPORATING PARTICIPATION INTO THE SIMULATIONS

Table 8 reminds the reader of the distribution of the population by eligibility status. 3.1 million of 38.4 million are both asset- and income-eligible according to our simulated eligibility rules (Panel A). The SIPP data estimate that 1.3 million couples receive Food Stamps (Panel B). Table 8 also compares *actual participation* to the *simulated eligibility* for the 1984 base case (Panel C). Because of reporting errors and information about eligibility that is not complete, not all of the couples receiving benefits are simulated to be in the eligible population. 0.17 million are receiving benefits but were not eligible, according to our simulated tests. One-third of that number are apparently not asset-eligible and were not included in the sample from which Models A and B were estimated. The parameters estimated for the model include the remaining cases, so that errors in estimating income eligibility do not affect our model. However, these errors affect the interpretation of forecast participation from the model.

Table 9 introduces participation estimated from Model A of Table 6. Participation is forecast only for asset-eligible units. The model forecasts a 9.5 percent participation rate among

asset-eligibles, which exceeds the actual rate by 0.1 percentage points. 1.22 million are forecast as participating, but only 1.20 million asset-eligible couples actually participated. (This overestimate reflects participation by persons whom our tests would deem income-ineligible.) Participation by persons who are not asset-eligible is forecast as nil, so the overall forecast of participation falls short of the actual 1.27 million participating couples. Our forecasts for participation must be viewed in the context of imprecision induced by these errors, and will understate the actual participation by about 3 percent.

Table 9 compares the forecast participation to eligibility under alternative asset tests. An estimate of the number of participants is obtained by the population-weighted sum of the probabilities for all asset-eligibles. The simulated forecast appears in column 3. (The discrepancy between the 1.22 million forecast and those who actually participated was just noted.) Row B reflects the impact on forecast participation from counting home equity over $10,000 in the asset test. The 0.99 million participants are drawn from a substantially reduced population of asset-eligibles, so that forecast participation rates increase by a third (column 4). Column 5 gives a more useful perspective by showing the ratio of forecast participants to eligibles. The "take-up" ratio increases by 14 percent from present law to a level of 44.9 percent.

Indexing the asset threshold is the most precarious aspect of our simulation. Model A is used to forecast participation for persons outside of the sample used to estimate the model (i.e., some persons who are asset-ineligible under current law). This simulation is shown in row C. While participation rises in absolute numbers, the take-up rate falls slightly. This reflects the inhibiting effect of home equity on participation in our model.

The remaining rows combine counting equity with indexing. Row D repeats a finding of higher take-up rates among those who do not hold substantial housing equity, even when the asset

threshold is indexed. Further indexing in row E appears to have little effect on participation, despite a 20 percent increase in asset eligibility. This results from the reduced take-up rate.

The most interesting aspect of participation is revealed in the distribution of wealth among forecast participants under alternative asset tests. Table 10 shows present law and the four simulated alternatives. (Recall Table 5 shows eligibility by net wealth under each alternative.) Participants under present law are distinguished by a distribution of wealth with three modes: negative wealth, less than $5000 of positive wealth, and wealth of $10,000 to $30,000. Including housing equity in among countable assets increases concentration at the negative mode and eliminates the mode between $10,000 and $30,000. Indexing alone has relatively little effect on the wealth distribution of participants.

VI. CONCLUSIONS AND POLICY IMPLICATIONS

1. Indexing

Taken alone, indexing the asset threshold established in 1985 would modestly increase eligibility. Inflation from 1985 to 1991 was almost the same as in the period from 1980 to 1984, for which quantitative estimates of indexing are shown in column C, Table 4. Increased eligibility would have limited impact on program use. All of the added units would have high levels of countable assets that our cross-sectional analysis indicates will inhibit participation (Table 6); estimates for the period 1980 to 1984 suggest less than a 10 percent increase in participation.

The deeper issue that we have not resolved is that a failure to index the asset test economizes on FSP outlays by selectively removing income-eligibles from participation. Failure to index penalizes persons accumulating a minimal contingency reserve in "countable assets" during a period of modest inflation, such as the last decade. They are squeezed out of the program. Homeowners

are not penalized. Lack of indexing has caused arbitrary movement in the boundary of eligibility during the last decade.

2. Inclusion of Home Equity in the Asset Test

We do not understand why the availability of an owned home inhibits participation. But that finding is incontrovertible. It is equally incontrovertible that home equity can be used to guarantee loans. It seems possible that welfare administration might profitably consider assisting needy couples in finding loans or guaranteeing loans.

Counting home equity can be used to shift eligibility rules in favor of nonowners and in favor of those who hold a higher level of cash assets. The combination of indexing and counting home equity can direct existing income maintenance budgets to persons who have less net wealth (Table 5) while increasing the certainty that the program will continue to reach many needy persons in a period of inflation.

3. Issues for Further Exploration

Because cash assets are necessary to many moves out of dependency, it is worthwhile exploring the link between current asset rules and savings. We see that cash assets are a strong inhibitor of participation, yet the accumulation of those assets is more stringently limited than the accumulation of equity in the home under existing rules. This appears inequitable at the least and may be dysfunctional as well.

4. Recent Developments

During 1990 and 1991 FS caseloads reached all-time highs. Thus it would seem even more imperative to devote serious attention to the issues we have raised here.

Figure 1. Probability of participation
in the Food Stamp Program, g (CW, CY),
related to assets, CW, and income, CY

A represents an eligible household.
B represents an ineligible household.

A' and B' demonstrate potential adjustments
of income, given assets, that households A
and B might make in response to program in-
centives.

Fig. 2: Model vs. Actual probability

TABLE 1

Eligibility Rules under Food Stamp Legislation Following
the 1977 Amendments

Criterion			
	Year of Legislative Action		
Limit on Countable assets[a]	1977	1981	1985
Nonaged, nondisabled	$1750	$1500	$2000
Aged or disabled	$3000	$3000	$3000
Income Limits			
Gross income (since 1981)	Below 130 percent of poverty threshold, units w/o aged or disabled members.		
Net income (since 1977)	Below indexed federal poverty threshold.		
Deductions (since 1981)			
Housing	Cost in excess of 50 percent of gross income less other deductions.		
Medical (if aged, disabled)	Expense in excess of $35/month.[b]		
Dependent care	Expense up to $125/month.[c]		
Earnings	Exclude 18 percent.		

Source: Committee on Ways and Means, "Green Book." U.S. House of Representatives, February 1984.

[a]Countable assets include most financial assets, plus an amount for the equity value of automobiles. Since 1984, automobile equity has been defined to include the market value of all automobiles, less $4500 each.
[b]Dollar amount indexed annually for inflation since 1981.
[c]Dollar amount indexed since 1981.

TABLE 2

Price Indices and Values of Asset Thresholds: Selected Years, 1977-1990

Year	PCE Deflator	CPI	
		Total	Food
A.			
1977	100.0	100.0	100.0
1980	126.9	136.0	131.8
1984	158.5	171.5	156.8
1985	164.0	177.6	160.5
1989 (fourth quarter)	192.7	208.1	193.6
1990 (third quarter)	200.3	219.1	203.6

B. Value of asset threshold in 1977 dollars, for units with no aged/disabled persons (using asset thresholds from Table 1)

1977	$1750	$1750	$1750
1980	1182	1103	1138
1984	946	875	956
1985	1219	1126	1246
1989 (fourth quarter)	1038	961	1033
1990 (third quarter)	999	913	982

Source: *Survey of Current Business*.

PCE: Personal consumption expenditure deflator in the national income and product accounts.

CPI: Bureau of Labor Statistics Consumer Price Index.

TABLE 3

**Married Couple Food Stamp Participation Rates (FSPR) in August
1984, within Countable Asset Classes (weighted using family weights)**

Assets Countable against the Threshold($)	Eligible[a]		Asset-eligible	
	FSPR (1)	Distribution (2)	FSPR (3)	Distribution (4)
None	50.7%	50.3%	24.6%	27.5%
1-99	27.7	16.0	7.7	14.7
100-249	32.8	7.5	6.1	10.4
250-499	9.7	8.6	2.0	14.5
500-999	16.2	8.7	2.0	17.0
1000 or more[b]	7.4	8.9	1.3	16.0
(Total participation)	(35.3)	(100.0)	(9.4)	(100.0)

Source: 1984 Survey of Income and Program Participation (SIPP); Hagstrom (1991).
[a]Eligibles meet both the income and the asset test.
[b]All eligibles have less than $1500 of assets ($3000 if the family contains an aged or disabled member).

TABLE 4

Simulated Changes in Food Stamp Eligibility, August 1984, under Alternative Asset Tests, by Selected Characteristics of Couple

	Pct. of married couples (1)	Asset Tests								
		1984 $		1980 $		1977 $	1984 $	1980 $		1977 $
		Base	Add equity	Base	Add equity	Add equity	Add equity	Base	Add equity	Add equity
Characteristic		(a)	(b)	(c)	(d)	(e)	(b')	(c')	(d')	(e')
		Weighted using family weights								
All couples	100.0%									
Asset-eligible		35.5%	19.9%	39.5%	22.6%	27.4%	-43.9%	11.4%	-36.2%	-22.7%
Eligible		8.1	5.7	8.7	6.1	6.4	-29.3	7.3	-25.3	-21.0
Aged/disabled	17.0									
Asset-eligible		50.1	26.4	57.2	28.8	32.3	-47.2	14.1	-42.5	-35.5
Eligible		18.8	12.0	20.1	12.4	13.2	-36.3	6.8	-34.0	-29.9
Poverty threshold										
< 7.5 k	24.8									
Asset-eligible		25.3	17.0	30.1	19.9	26.0	-33.1	18.6	-21.5	2.6
Eligible		4.4	2.6	4.8	2.7	3.1	-41.8	10.0	-38.6	-29.8
7.5-10 k	25.0									
Asset-eligible		32.4	19.8	38.9	22.5	27.6	-39.0	20.2	-30.4	-14.7
Eligible		5.9	4.7	6.4	4.9	5.1	-21.2	8.3	-17.0	-13.8
10-12 k	29.9									
Asset-eligible		33.4	18.9	40.2	21.8	26.1	-43.4	20.4	-34.6	-22.0
Eligible		7.4	5.3	8.0	5.6	5.8	-29.0	7.8	-25.0	-21.5
12-15 k	17.6									
Asset-eligible		42.6	23.6	48.5	25.6	29.3	-44.6	13.9	-39.8	-31.2
Eligible		13.7	9.9	14.9	10.5	11.2	-28.0	8.3	-23.5	-18.7
> 15 k	2.8									
Asset-eligible		60.1	34.7	65.4	37.9	41.5	-42.3	8.8	-36.9	-31.0
Eligible		31.1	22.4	32.1	23.3	23.8	-28.2	3.0	-25.2	-23.6
Age of husband										
< 30	22.7									
Asset-eligible		49.0	38.4	57.0	44.0	53.7	-21.5	16.3	-10.1	9.7
Eligible		10.7	8.9	11.4	9.4	9.6	-17.3	6.3	-12.6	-9.9
51-59	20.4									
Asset-eligible		23.1	19.3	27.4	10.1	11.6	-16.5	18.4	-56.3	-50.0
Eligible		6.2	6.7	6.5	2.9	3.3	6.9	3.7	-53.4	-47.7
Odds ratio (weighted)		5.79	5.20	5.76	4.80	4.02				
Odds ratio (unweighted)		5.73	5.23	5.88	4.88	4.09				
		Unweighted								
Asset-eligible		33.0	19.5	39.0	22.2	26.9	-40.9	18.2	-32.7	-18.5
Eligible		8.0	5.7	8.7	6.1	6.4	-28.8	8.7	-23.8	-20.0
Aged/disabled		18.0	11.7	19.6	12.1	12.9	-35.0	8.9	-32.8	-28.3

(table continues)

TABLE 4 (continued)

| | Pct. of married couples | Asset Tests | | | | | | | | |
| | | 1984 $ | | 1980 $ | | 1977 $ | 1984 $ | 1980 $ | | 1977 $ |
Characteristic	(1)	Base (a)	Add equity (b)	Base (c)	Add equity (d)	Add equity (e)	Add equity (b')	Base (c')	Add equity (d')	Add equity (e')
Poverty threshold										
< 7.5 k		4.4	2.6	5.0	2.8	3.1	-41.4	13.7	-36.8	-28.8
7.5-10 k		6.9	4.6	6.5	4.9	5.1	-22.2	9.5	-17.0	-13.6
10-12 k		7.3	5.2	7.8	5.5	5.7	-28.7	7.9	-24.7	-21.3
12-15 k		13.2	9.5	14.4	10.1	10.8	-28.0	9.1	-23.5	-18.2
> 15 k		30.7	22.2	31.9	23.0	23.4	-27.8	3.9	-25.1	-23.8
Age of husband										
< 30										
Asset-eligible		48.1	37.6	56.3	43.3	52.7	-21.8	17.0	-10.0	9.6
Eligible		10.9	9.0	11.7	9.6	9.9	-17.4	7.3	-11.9	-9.2
51-59										
Asset-eligible		20.3	9.1	27.4	10.1	11.4	-55.2	35.0	-50.2	-43.8
Eligible		6.1	2.8	6.4	2.8	3.1	-54.1	4.9	-54.1	-49.2

Source: 1984 SIPP, authors' calculations.

Note: Please see pp. 7-9 in text for explanation of column headings. Columns a through e represent the percentage who are eligible. Columns b', c', d', and e' show percentage change from base (column a). Sample is married couples whose spouses are between eighteen and fifty-nine years old.

TABLE 5

Simulated Changes in Food Stamp Eligibility, August 1984, under Alternative Asset Rules, by Net Worth of Couple

Net wealth of couple	Pct. of married couples (1)	1984 $ Base (a)	1984 $ Add equity (b)	1980 $ Base (c)	1980 $ Add equity (d)	1977 $ Add equity (e)	1984 $ Add equity (b')	1980 $ Base (c')	1980 $ Add equity (d')	1977 $ Add equity (e')
Negative	6.1%									
Asset-eligible		55.7%	23.1%	61.1%	59.2%	69.0%	-58.5%	9.6%	6.4%	23.9%
Eligible		20.0	19.2	20.6	19.8	20.2	-4.1	3.1	-1.1	1.2
None	3.6									
Asset-eligible		33.2	33.2	37.2	37.2	45.1	0.0	12.0	12.0	36.0
Eligible		22.7	22.7	23.5	23.5	24.0	0.0	3.4	3.4	6.0
$1-$5 k	11.2									
Asset-eligible		54.2	53.8	60.4	59.9	68.8	-0.8	11.3	10.5	26.9
Eligible		21.7	21.7	22.4	22.4	22.6	0.0	3.1	3.1	4.1
$5-$10 k	6.0									
Asset-eligible		36.1	33.1	46.0	42.3	58.7	-8.1	27.7	17.4	62.9
Eligible		10.1	9.5	10.7	10.1	10.7	-5.6	6.0	0.3	6.9
$10-$30 k	16.9									
Asset-eligible		19.5	7.7	38.0	11.3	19.5	-60.6	95.2	-41.8	0.3
Eligible		7.8	2.6	8.5	3.1	4.3	-66.3	9.0	-60.1	-44.7
$30-$40 k	7.0									
Asset-eligible		27.1	1.0	33.1	1.4	2.5	-96.4	22.0	-95.0	-90.9
Eligible		4.9	1.0	6.0	1.2	1.4	-78.8	22.4	-75.5	-71.6
Over $40 k	49.2									
Asset-eligible		11.7	0.6	15.3	0.8	1.0	-94.8	30.2	-93.4	-91.3
Eligible		2.7	0.5	3.2	0.6	0.6	-83.3	19.7	-79.6	-77.7
All couples	100.0									
Asset-eligible		25.4	14.2	30.8	16.6	21.0	-44.3	21.2	-34.8	-17.3
Eligible		8.1	5.7	8.7	6.1	6.4	-28.9	7.8	-24.9	-20.6

Source: 1984 SIPP, authors' calculations.

Note: Please see pp. 7-9 in text for explanation of column headings. Columns a through e represent the percentage who are eligible. Columns b', c', d', and e' show percentage change from the base (column a). Sample is married couples whose spouses are between eighteen and fifty-nine years old.

TABLE 6
Food Stamp Participation (August 1984) Conditional on Exogenous Characteristics:
Probit Analysis (couples who are asset-eligible under 1984 law)
N = 2699

Variable	Mean	Model A		Model B	
		Coefficient	t-ratio	Coefficient	t-ratio
Received Food Stamps	0.096				
Constant		-0.25	-0.32	-1.30	-1.47
Wage of higher earner	11.17				
Below mean	10.08	-0.11	-3.32	-0.25	-5.46
Above mean	1.34	-0.13	-5.11	-0.17	-5.54
Wage of lesser earner	5.62				
All	5.14	-0.01	-0.52	-0.17	1.11
Less 5.61	-0.01	-0.25	-2.18	-0.39	-3.09
Poverty threshold/month (x1000)	871.70	0.43	2.28	0.25	1.24
No. of children < 18	1.44	0.07	2.09	0.11	2.91
Wealth (in 000s)[a]	25.16				
Excluded assets	24.70				
Home equity	17.74				
Equity < $75,000	16.50	-0.11	-3.96	-0.13	-4.47
Equity > $75,000	1.24	0.02	0.17	0.00	0.07
Other	6.96				
Equity < $75,000	4.92	-0.01	-1.13	-0.01	-1.19
Equity > $75,000	2.04	0.00	0.04	0.00	0.04
Counted assets	0.46	-8.97	-6.81	-8.22	-6.28
Disability of husband	0.16	1.17	8.39	1.36	8.76
Age of husband	37.26			0.02	4.33
MSA (Yes = 1)	0.45	--	--	0.14	1.40
Region dummies (S is reference)					
NE	0.19	--	--	0.46	3.43
NC	0.26	--	--	0.36	3.26
WEST	0.19	--	--	0.17	1.25
Education of husband	11.38	--	--	0.00	0.39
Race of husband	0.16	--	--	0.01	0.48
Husband self-employed?	0.12	--	--	0.01	0.61
Log likelihood		-579.19		-561.57	
Chi-square		548.26		35.24[b]	
Degrees of freedom		12		8[b]	
Significance level of chi-square		0.001		0.05	

Source: 1984 SIPP, authors' calculations.
[a]Coefficients for wealth variables are x 10,000.
[b]Chi-square associated with the eight additional parameters.

TABLE 7

**Food Stamp Participation (August 1984): Probit Analysis
of State-Level Variables,[a] N=2635 (t-statistics in parentheses)**

Variable	Model C	Model D	Model E	Model F	Model G
Constant	0.81**	0.87**	0.57	0.61*	1.00**
	(2.73)	(2.86)	(1.39)	(1.72)	(2.54)
Wage of lesser earner	-0.29**	-0.31**	-0.30**	-0.30**	-0.31**
(LWAG)	(-6.97)	(-6.91)	(-7.01)	(-6.96)	(-6.92)
Wage of higher earner	-0.15**	-0.18**	-0.16**	-0.17**	-0.18**
(HWAG)	(-7.06)	(-7.00)	(-7.13)	(-7.21)	(-7.03)
Poverty threshold/month	0.61**	0.59**	0.59**	0.59**	0.58**
(FPOV) x 1000	(4.11)	(3.91)	(3.88)	(3.86)	(3.81)
Age of husband	0.01**	0.02**	0.01**	0.02**	0.02**
(AGEH)	(3.30)	(3.68)	(3.35)	(3.42)	(3.70)
Disability of husband	1.19**	1.28**	1.23**	1.25**	1.29**
(DISH)	(8.65)	(8.68)	(8.75)	(8.82)	(8.68)
Counted assets	-8.41**	-8.17**	-8.27**	-8.21**	-8.11**
(LAST) x 10,000	(-6.33)	(-6.20)	(-6.23)	(-6.20)	(-6.16)
Home equity	-0.13**	-0.13**	-0.13**	-0.13**	-0.13**
(HTEQ) x 10,000	(-4.73)	(-4.70)	(-4.72)	(-4.73)	(-4.70)
Other assets	-0.06	-0.06	-0.06	-0.06	-0.06
(OWLT) x 10,000	(-1.47)	(-1.41)	(-1.33)	(-1.38)	(-1.46)
MSA? (Yes=1)	- -	-0.04	- -	- -	-0.00
		(0.39)			(-0.02)
NE region	- -	0.41**	- -	- -	0.36*
		(3.18)			(1.86)
NC region	- -	0.33**	- -	- -	0.28**
		(3.04)			(1.99)
WEST	- -	0.15	- -	- -	0.37**
		(1.19)			(2.10)
State-level variables					
Non-Eng. prop. of poor	- -	- -	-0.04	-0.02	-0.02
(PNES) x 100			(-1.18)	(-0.04)	(-0.69)
Prop. of expend. welfare	- -	- -	0.31**	0.32**	0.01
(PGEW) x 100			(2.46)	(2.52)	(0.06)
Prop. of stamps mailed	- -	- -	-0.02	-0.01	-0.01
(PMIS) x 100			(-1.26)	(-0.77)	(-1.05)
QC error rate	- -	- -	0.01	- -	- -
(SPER) x 100			(0.56)		

(table continues)

TABLE 7 (continued)

Variable	Model C	Model D	Model E	Model F	Model G
Fraud investigations (INHH) x 100	- -	- -	- -	-0.06 (-1.59)	-0.07 (-1.65)
Fraud prosecutions (PRHH) x 100	- -	- -	- -	3.35 (1.34)	3.51 (1.34)
Log-likelihood	-558.73	-551.50	-553.47	-552.08	-548.81
"Nested" chi-square[b]	- -	14.46	10.52	13.31	19.84
Degrees of freedom	- -	4	4	5	9
Significance level of chi-square	- -	0.01	0.05	0.01	0.01

Source: 1984 SIPP, authors' calculations.

*Coefficient significant at 0.10 level.

**Coefficient significant at 0.05 level.

[a]See Tables A-1 and A-2 for definitions. Chi-squared for each probit is highly significant.

[b]Chi-squared statistic for the ratio of log-likelihoods, to determine whether each alternative improves goodness of fit, relative to Model C.

TABLE 8

**Reconciliation of Food Stamp Participation
with Simulated Eligibility (August 1984)**

Asset-eligible?	Income-eligible?		Total
	No	Yes	
[Panel A]			
	Population (millions)		
No	24.21	1.32	25.54
Yes	9.77	3.10	12.86
Total	33.98	4.42	38.40
[Panel B]			
	Participation (millions)		
No	0.028	0.035	0.063
Yes	0.107	1.098	1.205
Total	0.135	1.133	1.268
[Panel C]			
	Participation (FSPR)		
No	0.1%	2.6%	0.2%
Yes	1.1%	35.5%	9.4%
Total	0.4%	25.6%	3.3%

Source: 1984 SIPP, authors' calculations.

TABLE 9

Simulated Asset Eligibility for Food Stamps under Alternative Asset Tests

Asset Test	Asset Eligibles (millions) (1)	Percentage Income- Eligible (2)	Forecast Participation		Ratio: Forecast Participants/ Eligibles (5)
			Number (millions) (3)	Percentage (4)	
1984 $					
a. Base	12.9	24.1%	1.22	9.5%	39.2%
b. Add equity	7.64	28.8%	0.988	12.9%	44.9%
1980 $					
c. Base	15.2	22.0%	1.28	8.4%	38.3%
d. Add equity	8.7	26.7%	1.04	12.0%	44.8%
1977 $					
e. Add equity	10.5	23.3%	1.07	10.2%	43.7%

Source: 1984 SIPP, authors' calculations.

Note: Please see pp. 7-9 in text for explanation of row headings.

TABLE 10

**Simulated Changes in Food Stamp Participation, August 1984, under Alternative
Asset Tests, by Net Worth of Participants**

| Net Worth ($1000s) | Asset Test | | | | |
| | 1984 $ | | 1980 $ | | 1977 $ |
	Base (a)	Add Equity (b)	Base (c)	Add Equity (d)	Add Equity (e)
Negative	20.3%	24.4%	19.8%	23.9%	23.5%
None	13.4	16.5	13.0	16.1	15.9
< 5	36.2	44.4	35.6	43.9	43.2
5-10	7.8	8.4	8.5	9.3	9.8
10-30	14.0	5.4	14.6	5.9	6.6
30-40	2.7	0.3	2.9	0.3	0.3
40 or more	5.5	0.6	5.7	0.6	0.6
Total	100.0	100.0	100.0	100.0	100.0
(Participants[a] [millions])	(1.22)	(0.988)	(1.28)	(1.04)	(1.07)

Source: 1984 SIPP, authors' calculations.

Note: See pp. 7-9 in text for explanation of column headings.

[a]Participation simulated from Model A, Table 6. See text, pp. 13-17.

Appendix

Calculation of Expected Earnings

The model for FS participation includes variables that estimate the expected wage for the husband and wife. These wages are estimated for all husbands and wives, including those who do not work. The procedure for both husbands and wives was first to estimate a probit for those persons who were employed, then to estimate the wage rate for employed persons, including the Mills ratio to control for selectivity. Instances in which either spouse was self-employed were not included in the sample for estimation. The model for wages includes the following regressors:

Race*	Education*	Northeast
Disability of husband	Age-education*	North-central
Disability of wife	Number of children	West
Age*	Other income positive (PPOTH)	Unemployment rate
Age squared*	Net wealth	Receiving AFDC-UP
	MSA	

The probit for selection differed from the wage rate regression in excluding nonlinear effects for age and education and the MSA indicator; it included presence of children under six years of age. The wage regression included participation in AFDC, which was excluded from the probit. Regressors in the wife's model are identical to the husband's. The * above indicates that the variable refers to the worker (husband, wife) whose wage is being analyzed.

TABLE A-1

Variable Definitions: State Welfare Environment and Administrative Activity for Analysis of 1984 SIPP Married Couples' Participation in the Food Stamp Program

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Dependent Variable

FSCV--Whether household reported receiving Food Stamps in August 1984 (1 = yes, otherwise 0).

Welfare Environment

PNES--Proportion of non-English-speaking persons in the state's poverty population in 1980.

PGEW--Proportion of state general revenue spent on public welfare in 1984.

Administrative Activity

PMIS--Proportion of state Food Stamp dollars, issued by mail in fiscal 1985.

SPER--State quality-control official error rate (percentage of Food Stamps issued as overpayments) in fiscal 1985.

INHH--State investigations for fraud, per 1000 participant households in fiscal 1985.

PRHH--State prosecutions of households for fraud, per 1000 participant households in fiscal 1985.

Source: PNES, from Table 199 of the 1980 Census, state volumes; PGEW, from Table 466 of *Statistical Abstract of the United States for 1985*; PMIS, INHH and PRHH, from pages 36, 44, and 52 of 1986 STAR+ (Food and Nutrition Service State Tables of Activity Rankings for fiscal 1985); SPER, from Table III.3 of 1987 USDA-FNS, Food Stamp Quality-Control System Report to the U.S. Congress.

TABLE A-2

Definitions of Household-Level SIPP Variables Used in Analysis of Married Couples' Participation in the Food Stamp Program

LWAG--Expected wage for the spouse with the lower wage.
HWAG--Expected wage for the spouse with the higher wage rate.

FPOV--Household size-specific poverty income threshold.
AGEH--Age of the husband.
DISH--Dummy variable, for households in which the husband is disabled.

LAST--Liquid asset holdings, countable for Food Stamp benefits.
HTEQ--Total equity in homes.
OWLT--Net value of all other assets, excluding business assets.

MSA--Dummy variable for residence in a Metropolitan Statistical Area.
NE--Region is Northeast.
NC--Region is North-central.
WEST--Region is West.

TABLE A-3
Descriptive Statistics: Analysis of State Variable Effects on
August 1984 Married Couples' Food Stamp Participation
(N = 2635)

Variable Name	Mean	Standard Deviation
Dependent Variable		
FSCV (Food Stamp use; 1 = household reported Food Stamps, zero otherwise)	0.095	0.294
Household Characteristics		
MSA (resides in MSA)	0.456	0.498
LWAGE (wage estimate [$], low-wage spouse)	5.35	1.18
HWAGE (wage estimate [$], high-wage spouse)	11.20	14.29
FPOV (poverty income level in $)	872.6	252.2
AGEH (husband's age)	37.3	10.7
DISH (=1 if husband disabled)	0.160	0.530
LAST (counted assets)	460.4	680.8
HTEQ (home equity, $1000s)	16.6	22.3
OWLT (other wealth, $1000s)	4.9	16.3
NE (region is Northeast)	0.189	0.392
NC (region is North-central)	0.265	0.441
WEST (region is West)	0.191	0.393
State Welfare Environment		
PNES (non-English-speaking proportion of poverty population)	0.194	0.143
PGEW (proportion of total expenditures spent on welfare)	0.123	0.036
State Administrative Activity		
PMIS (proportion of Food Stamps mailed)	0.412	0.380
SPER (quality-control error rate)	0.085	0.016
INHH (fraud investigations, per 1000)	0.165	0.149
PRHH (fraud prosecutions, per 1000)	0.024	0.019

Source: 1984 SIPP, authors' calculations.

TABLE A-4
Correlation Matrix for Analysis of the Effect of State Administrative
Variables on Married Couples' Participation in the Food Stamp Program

	FSCV	MSA	PNES	PGEW	PMIS	SPER	INHH	PRHH
FSCV	1.00							
MSA	-0.01	1.00						
PNES	0.01	0.40	1.00					
PGEW	0.02	0.29	0.10	1.00				
PMIS	0.04	-0.22	-0.34	-0.37	1.00			
SPER	0.01	0.06	0.06	-0.07	-0.07	1.00		
INHH	0.01	0.21	0.45	-0.13	0.01	-0.13	1.00	
PRHH	0.03	0.08	-0.03	-0.14	-0.11	-0.20	0.35	1.00

Source: 1984 SIPP, authors' calculations.

Endnotes

[1]The principal parameter in the asset threshold is indexed. That parameter was $1500 in 1984, unless the FS unit contained an elderly or disabled person. We do not apply indexing to the permissible value of automobiles or the housing equity rule in our simulations.

[2]Technically, the income data refer to one month, not a year. The month is August, 1984. The asset data refer to the time of interview, which ranges from about less than a month to four months after August.

[3]We admit that wealth is not actually exogenous.

[4]The model implies that participation rates are identically equal to zero for couples whose countable assets exceed the threshold. Measurement errors in wealth imply that some couples are excluded because they overreported countable assets or because we were unable to document actual values of automobiles. Other couples should be excluded from this population because they underreport assets on the survey and should be excluded from the asset-eligible population.

[5]All couples with countable assets above $1500 were generally excluded from the probit computation. An exception is that families containing an adult, other than the husband and wife, who is over fifty-nine years of age and families that contain a disabled person of any age are entitled to a $3000 asset threshold. Eligibility simulation included this exception to the general rule.

[6]In fact, some of those couples may be asset-eligible but gave incorrect estimates of their countable assets. Conversely, some of those included in our sample are actually ineligible, but understated the amount of their wealth on the survey. Because of these response errors, it is not obvious that the sample should be truncated exactly at the asset-eligibility threshold.

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