

Contract No. FNS 53-3198-5-20

MPR Project No. 7635-406

Author: Sharon K. Long

FINAL REPORT, SUBTASK 406

PROGRAM INTERACTIONS: COST PROJECTIONS
FOR THE FOOD STAMP PROGRAM

March 14, 1986

Prepared for:

U.S. Department of Agriculture
Food and Nutrition Service
10th Floor
3101 Park Center Drive
Alexandria, Virginia 22302

Prepared by:

Mathematica Policy Research, Inc.
600 Maryland Avenue, S.W.
Suite 550
Washington, D.C. 20024

ACKNOWLEDGEMENTS

The author would like to thank Harold Beebout, Steven Carlson, and Irene Lubitz for comments on preliminary drafts of this report; Lars Holmdahl and Linda Wray for research assistance; and Lucia Wesley and the secretarial staff for typing the manuscript.

PROGRAM INTERACTIONS: COST PROJECTIONS FOR
THE FOOD STAMP PROGRAM

The present system of welfare programs includes a wide variety of transfer programs which are designed to meet the needs of particular population groups. The goals of these programs include providing cash assistance, food, shelter, and medical care to the needy and providing a system of social insurance. Under this complex social welfare system, individuals and households in need typically qualify for, and often participate in, multiple assistance programs. With the benefits available from some programs dependent upon the level of benefits received from other programs, multiple program participation by households can lead to complicated interactions in the budgets of the various assistance programs. In the case of the Food Stamp Program (FSP), which counts cash payments from other programs as income, reductions (increases) in the benefit levels of interacting programs result in increases (decreases) in food stamp benefits and, consequently, higher (lower) program costs. In calculating the effect on the FSP budget of changes in interacting programs, the Food and Nutrition Service (FNS) currently uses a rough formula or "rule of thumb" to obtain cost projections. In this report, we develop a more formal rule of thumb approach for estimating budgetary impacts on the FSP and examine the sensitivity of the cost projections under alternative specifications of this formula.

Program interactions are examined and cost projections obtained for the impact on the FSP of hypothesized changes in four major assistance programs — Aid to Families with Dependent Children (AFDC), Social

Security, Supplemental Security Income (SSI), and Unemployment Insurance (UI).¹ Section A of this report presents the analytic framework for the rule of the thumb calculations. Section B discusses the data sources which are used in obtaining the information needed to make these calculations. Section C presents the calculation of the rule of thumb and Section D uses the rule of thumb to obtain cost projections for the FSP budget given some hypothetical changes in interacting programs. The final section contains the summary and conclusions.

A. ANALYTIC FRAMEWORK

In developing rules of thumb to be used in estimating the impact of changes in other programs on the FSP budget, it is necessary to consider the components of the interaction between the FSP and the other assistance programs. First, changes in other assistance programs can have a direct impact on the FSP through the FSP rules and regulations. Changes in the benefits issued under another program may directly affect gross and net income as defined under the FSP or may indirectly affect net income through the FSP combined dependent care/excess shelter expenses deduction. Second, changes in other assistance programs may have interactions with other non-FSP programs which offset (partially or completely) the direct impact of the program change on the FSP. That is, a reduction in the benefits issued under one program may lead to higher benefits under an interacting program

¹Although subsidized housing assistance had originally been included in the the set of programs to be considered under this subtask, the scope of the program change that is required for a change in housing assistance to have an impact on the FSP (an approximate doubling of household rent) and the complexity of the FSP/subsidized housing inter-relationship makes the rule of thumb approach unrealistic for examining the program's impact on the FSP budget.

which offset the changes in household income under the FSP due to the initial program change.¹ For example if the program with the initial change is Social Security, then, for those FSP households which also participate in SSI, the Social Security benefit change would be offset by the impact of the resultant change in SSI benefits. Finally, changes in other assistance programs may lead to possible indirect effects on the FSP budget through changes in individual or household behavior (e.g., changes in work effort, program participation, or living arrangements). Table 1 summarizes direct and offsetting impacts on the FSP as a result of changes in the four major assistance programs considered in this study. Indirect effects on the FSP caused by changes in household behavior will not be considered in this report since attempting to include such factors would unduly complicate the rule of thumb approach.

The estimation of the net impact on the FSP budget of a change in a particular assistance program requires the following information:

- (A) The size of the change in benefits issued under the interacting assistance program (e.g., a reduction in benefits issued under Social Security).
- (B) The proportion of benefits from the interacting assistance program which go to FSP households.
- (C) The average effective benefit reduction rate (BRR) for the FSP households which participate in the interacting assistance program.

¹It is possible that there may be further rounds of interactions in the benefits issued under offsetting programs. In this report, we assume that such extended effects are quite small and can therefore be ignored in the rule of thumb calculations.

TABLE 1

SUMMARY OF DIRECT AND OFFSETTING IMPACTS ON THE FOOD STAMP PROGRAM
AS A RESULT OF A BENEFIT REDUCTION UNDER AN INTERACTING ASSISTANCE PROGRAM

Program with Change	Direct Impact on the Food Stamp Program	Aid to Families with Dependent Children	Social Security	Supplemental Security Income	Unemployment Insurance
Aid to Families with Dependent Children	Reduction in household's net income	-----	No impact	No impact	No impact
Social Security	Reduction in household's net income	Reduction in OASDI offset by increase in AFDC (tax rate = 100%)	-----	Reduction in OASDI offset by increase in SSI (tax rate = 100%)	No impact
Supplemental Security Income	Reduction in household's net income	No impact	No impact	-----	No impact
Unemployment Insurance(UI)	Reduction in household's net income	Reduction in UI offset by increase in AFDC (tax rate = 100%)	No impact	Reduction in UI offset by increase in SSI (tax rate = 100%)	-----

- (D) The proportion of benefits from the interacting assistance program which go to FSP households which participate in other programs that have offsetting impacts.
- (E) The average effective BRR under the offsetting program.
- (F) The average effective BRR for the FSP households participating in the interacting assistance program and the offsetting assistance program (i.e., the households in (D)).

The net impact on FSP budget is then calculated as:

$$\text{Interacting Program Change} \times \left[\begin{array}{ccccc} \text{Benefits to FSP households} & \times & \text{FSP BRR} & - & \text{Benefits to FSP/Offsetting Program Households} & \times & \text{Offsetting Program BRR} & \times & \text{FSP BRR} \end{array} \right]$$

or (A) x [(B) x (C) - (D) x (E) x (F)], where the term in brackets is the adjustment factor which reflects the proportionate change in FSP benefits for each dollar change in the benefits issued under the interacting program.

This formula for calculating the net impact on the FSP of a change in an interacting program differs from the current rule of thumb used by FNS in two important ways. First, offsetting impacts due to interactions among the non-FSP assistance programs are explicitly considered. FNS implicitly assumes that these offsetting impacts are zero. Second, by using the proportion of program benefits actually going to FSP households ((B) and (D) above) differences in the benefit levels of the households which participate in multiple assistance programs are considered. Under the FNS approach, in which the proportion of participants in the interacting program who participate in the FSP is substituted for (B), all of the program participants affected by the interacting program are assumed to be receiving the average

level of program benefits. Section D of this report will explore the sensitivity of the rule of thumb cost projections to these (and other) assumptions.

B. DATA SOURCES

Two types of data are needed in the budget calculations outlined in the previous section. They are: information on the distribution of program benefits across households ((B) and (D) above) and estimates of the effective BRRs for those households affected by the program changes ((C) and (F) above).¹ As there is no data source which contains both the information on multiple program participation needed for calculating benefit distributions and the administrative information needed to calculate effective BRRs, two different data files are used. The program participation information has been obtained from an August 1983 extract of Wave I of the Survey of Income and Program Participation (SIPP). The estimates of the effective BRRs are obtained from the August 1983 Intergrated Quality Control Sample (IQCS) file.

1. Program Participation Estimates from SIPP

SIPP provides the most complete information currently available on multiple program participation by individuals and households. The extract which is used in this report includes all households in the 1983 Wave I file for which August 1983 data were collected. Because of the staggered interviewing schedule for the four rotation groups in Wave I, only three

¹The effective BRR under the offsetting programs ((E) above) will be 1.00 for all of the programs being considered in this study, as reported in Table 1.

rotation groups had data for August. Although this results in a smaller sample (14,868 households rather than the approximately 19,800 households in the full wave), the data are still nationally representative since each rotation group is itself a nationally representative sample.

While SIPP does provide more detailed information on multiple program participation than was previously available, it is important to recognize that SIPP is self-reported information obtained through household surveys. Information on program participation and benefit receipt may not be accurate due to misreporting and nonreporting. One indication of the quality of the data is the extent to which reported participation and benefit levels correspond to administrative data on program participation. Table 2 summarizes the participation and benefit levels under Food Stamps and the four interacting programs as reported in the August 1983 SIPP file and in alternative administrative sources. While the participation measures based on SIPP and the alternative sources are not always comparable (e.g., participation under Social Security is measured for households using SIPP data and for recipients using administrative data), the overall comparability of the survey data and administrative data are fairly high. This would suggest that the nonreporting of program participation and program benefits are less severe problems in SIPP than in other sources of survey data (e.g., CPS).¹ Nevertheless, with apparent underreporting of benefits ranging from 12 to 29 percent across the five programs, the information on the distribution of program benefits obtained

¹In order to address the more complex issue of whether or not those program participants who report participation and benefits differ significantly from those who do not report their participation, more detailed comparisons would be needed.

TABLE 2

COMPARISON OF AUGUST 1983 SIPP ESTIMATES WITH ALTERNATIVE ADMINISTRATIVE ESTIMATES OF PROGRAM SIZE
(Thousands)

Program	August 1983 SIPP Estimates		Alternative Estimates		SIPP Estimate as Percent of Alternative Estimate	
	Total Household Participation	Total Benefits Issued (\$)	Total Household Participation	Total Benefits Issued (\$)	Total Household Participation	Total Benefits Issued
Food Stamps	6,386	766,913	7,694	892,022	83.0	86.0
Aid to Families with Dependent Children	2,742	881,027	3,651 ^b	1,113,917 ^a	75.1	79.1
Social Security	23,022	12,303,558	36,053 ^c	13,919,000 ^a	63.9	88.4
Supplemental Security Income	2,839	683,768	3,509 ^b	783,667 ^a	80.9	87.3
Unemployment Insurance	2,967	1,310,535	3,353 ^d	1,837,500 ^a	88.5	71.3

SOURCE: August 1983 Extract of Wave 1 SIPP file for SIPP estimates. Alternative program estimates are from: FSP Statistical Summary of Operations (8/83)--Food Stamps; Committee on Ways and Means, U.S. House of Representatives (1985)--AFDC, Social Security, SSI, and UI.

^aAverage monthly benefit amount for FY 1983.

^bAverage monthly participation level for FY 1983.

^bAverage number of recipients in FY 1983.

^cAverage weekly number of recipients in FY 1983.

from SIPP only roughly approximates the true benefit distributions.

2. Estimates of Effective BRRs

The information on the effective BRRs for the household groups affected by changes in the interacting assistance programs ((C) and (F) above) is needed since the impact of a change in household income on the household's food stamp issuance will vary across different types of households. This variation arises because of the structure of the deductions under the FSP. Under the FSP, net income is calculated as:

$$\begin{aligned} \text{Net Income} &= \text{Gross Income} \\ &\quad - \text{Standard Deduction} \\ &\quad - .18 \times (\text{Earned Income}) \\ &\quad - \text{Medical Expenses (if eligible)} \\ &\quad - \text{Dependent Care Expenses} \quad \left\{ \begin{array}{l} \text{Subject to a} \\ \text{combined maximum} \\ \text{for non-elderly households} \end{array} \right. \\ &\quad - \text{Excess Shelter Expenses} \end{aligned}$$

This calculation can be written more succinctly as

$$\text{NI} = \text{GI} - \text{NSD} - \text{XSD}$$

where NI is net income, GI is gross income, NSD is all non-shelter deductions (i.e., the standard deduction, earned income deduction, medical expenses deduction, and dependent care expenses deduction), and XSD is the excess shelter expenses deduction. In determining the household's food stamp issuance, benefits are reduced 30 cents for every additional dollar of net income to give the defined BRR of .30. However, the effective BRR on unearned income will vary across households as a result of the combined

dependent care/excess shelter expenses deduction. Excess shelter expenses are calculated as:

$$XSD = \text{Actual Shelter Expenses} - .5 \times (GI - NSD).$$

Substituting this formula into the net income calculation, we have

$$NI = GI - NSD - [\text{Actual Shelter Expenses} - .5 \times (GI - NSD)]$$

or

$$NI = 1.5 (GI - NSD) - \text{Actual Shelter Expenses}.$$

With the defined BRR of .30 on net income, the effective BRR on unearned income (and gross income) for non-elderly households with excess shelter expenses less than the maximum (or cap) and for elderly households with positive excess shelter expenses is $.30 \times 1.50 = .45$. These two households groups comprise approximately 29 percent and 5 percent of the FSP caseload, respectively.

For those households which have a combined dependent care/excess shelter deduction equal to zero (20 percent of the caseload) or are at the maximum (or cap) for the combined deduction (23 percent of the caseload) the effective BRR will be $.30 \times 1.00 = .30$, as illustrated below.

$$NI = GI - NSD - \begin{cases} \text{Maximum for the combined deduction for} \\ \text{households at the cap} \\ \$0 \text{ for households at zero} \end{cases}$$

In addition to the variation in effective BRRs due to the combined dependent care/excess shelter deduction, there are two other situations which result in effective BRRs which differ from the defined BRR of 30 percent. The effective BRR for a household with zero net income or for a

one- or two-person household receiving the minimum benefit will be zero. The latter occurs since FSP regulations require that for one- and two-person households with calculated allotments of less than \$10, the allotment be rounded up the minimum benefit of \$10. Households with zero net income and minimum benefits represent 17 and 6 percent of the FSP caseload, respectively.

The effective BRRs were calculated using the administrative data available from the IQCS file. The file included program data for 6,399 food stamp households for the month of August 1983. Appendix A presents a summary of the method used in calculating the effective BRRs and compares that method to the current FNS approach.

C. RULE OF THUMB CALCULATION

Using the rule of thumb formula outlined in Section A and the SIPP and IQCS data, the value of the adjustment factor used in calculating the impact on the FSP budget of changes in the four assistance programs--AFDC, Social Security, SSI and UI--can be obtained. Table 3 summarizes the information used in calculating the rule of thumb adjustment factors. Table 4 presents the values for the adjustment factor using the formula presented in Section A and the traditional FNS formula.

As expected, the rule of thumb adjustment factor varies greatly across the four assistance programs. Under AFDC, the FSP budget increases 29 cents for each \$1.00 reduction in AFDC benefits, while the FSP budget increase for a comparable \$1.00 reduction in Social Security benefits is less than 1 cent. Although differences in the effective BRRs and in the impacts of offsetting programs are responsible for some of this variation, the primary factor influencing the extent to which the costs of the FSP

TABLE 3

SUMMARY OF INFORMATION NEEDED IN CALCULATING THE RULE OF THUMB ADJUSTMENT FACTOR

	(B)	(B')	(C)		(D)	(E)	(F)
Program With Change	Proportion of Program Benefits to FSP Households ^a	Proportion of Program Participants also FSP Households ^b	Average Effective BRR for FSP Households-- MPR Method ^c	Offsetting Program(s) to be Considered	Proportion of Benefits to FSP/ Offsetting Program Households ^a	Average Effective BRR Under Offsetting Program	Average Effective BRR for FSP Households ^c
Aid to Families with Dependent Children	.868	.835	.328				
Social Security	.048	.071	.270	(a) AFDC (b) SSI	.007 .015	1.00 1.00	.328 .261
Supplemental Security Income	.431	.454	.293				
Unemployment Insurance	.073	.082	.319	(a) AFDC (b) SSI	.018 ^d .004 ^d	1.00 1.00	.343 .319 ^e

SOURCE: August 1983 Extract from Wave 1 SIPP file and August 1983 IQCS file.

^aThese figures are taken from Appendix Table B.1.

^bThese figures are taken from Appendix Table B.2.

^cSee Appendix A for the derivation of the effective BRRs.

^dThis figure is based upon fewer than 7 (unweighted) sample households.

^eDue to the small number of FSP households in both UI and SSI in the IQCS sample, there is not a separate estimate for UI/SSI households. This figure is for all UI/FSP households.

TABLE 4

RULE OF THUMB ADJUSTMENT FACTOR FOR CALCULATING
THE NET IMPACT ON THE FOOD STAMP PROGRAM OF
CHANGES IN INTERACTING ASSISTANCE PROGRAMS
(Percent)

Program with Change	Adjustment Factor ^a	Adjustment Factor Using Traditional FNS Formula ^b
Aid to Families with Dependent Children	28.5	27.4
Social Security	0.7	1.9
Supplemental Security Income	12.6	13.3
Unemployment Insurance	1.6	2.6

SOURCE: August 1983 Extract from Wave I SIPP file and August 1983 IQCS file.

^aCalculated as $(B) \times (C) - (D) \times (E) \times (F)$ from Table 3.

^bCalculated as $(B') \times (C)$ from Table 3.

rise with a reduction in the benefits of an interacting program is the proportion of program benefits which go to FSP households, as shown in column (B) of Table 3. With 87 percent of AFDC benefits going to FSP households, compared to 5 percent of Social Security benefits, there is a much larger potential for impact on the FSP budget of an AFDC program change.

D. COST PROJECTIONS

In order to illustrate the use of the rule of thumb approach and to explore the sensitivity of the rule of thumb formula to the underlying assumptions, hypothetical program changes are considered for the four assistance programs.¹ There are two general types of changes in interacting programs to be considered: an across-the-board reduction in program benefits and a tightening of eligibility requirements. The general benefit reduction will affect all households equally and is hypothesized to be a 10 percent cutback in benefits issued under AFDC, Social Security, SSI, and UI, as shown in Table 5. The benefit reductions are calculated as 10 percent of the total level of benefits reported to have been received by households in the extract from the SIPP file.²

A hypothesized tightening of eligibility requirements is examined under AFDC. The hypothesized change is a reduction in the gross income

¹Note that the program changes examined here are purely hypothetical and do not necessarily correspond to any program changes currently being considered.

²Note that the benefit reduction amounts reflect both the Federal and State share of the program benefits. If information were only available on the Federal share of the benefit reduction the rule of thumb approach would need to be modified.

TABLE 5

DOLLAR AMOUNT OF BENEFIT REDUCTIONS DUE TO A TEN PERCENT CUTBACK
IN PROGRAM BENEFITS UNDER VARIOUS ASSISTANCE PROGRAMS
(Weighted)

Program with Change	Total Dollar Amount of Benefit Reduction	Federal Share of Program Benefits ^a (Percent)
Aid to Families with Dependent Children	88,102,743	53.6
Social Security	1,230,355,752	100.0
Supplemental Security Income	68,376,809	100.0 ^b
Unemployment Insurance	131,053,450	18.0 ^c

SOURCE: August 1983 Extract from Wave I SIPP file.

^aEstimates of the Federal share of program benefits in FY 1984 were obtained from Committee on Ways and Means, U.S. House of Representatives, 1985.

^bState supplements to SSI are not considered here.

^cThe Federal share varies considerably across years and will be higher in periods of greater unemployment, all else equal.

limit from 150 to 140 percent of the state need standard. Table 6 presents the dollar amount of the benefit reductions which would occur as the result of this change. This benefit reduction was obtained by simulating the impact of the program change on the households in the SIPP file and summing the level of benefits currently received by those households which would not be eligible for AFDC under the changed rules.¹

Although the proportion of program benefits going to FSP households is the primary determinant of the variation in FSP cost projections across the four assistance programs, as discussed in Section C, the impact estimates for each program can be quite sensitive to the assumptions that are made in the rule of thumb approach. For those interacting programs which have both direct and offsetting impacts on the FSP, ignoring the offsetting programs in calculating cost projections (column (3) of Table 7) can lead to substantially greater net impact estimates. In the case of Social Security, ignoring the offsetting impacts of AFDC and SSI leads to an impact estimate for the benefit reduction which is almost double that of the full rule of thumb estimate (\$15,945,000 versus \$8,304,000).

A second assumption which can have a substantial affect on the impact estimates is the average benefit assumption underlying the current

¹In simulating this change in the gross income limit, we used the state need standards for 1983 reported in Characteristics of State Plans for Aid to Families with Dependent Children (Social Security Administration, 1984). Household eligibility was simulated under the existing 1983 gross income limit of 150 percent of the need standard and under the hypothesized lower limit of 140 percent. The AFDC benefits lost by those households which were eligible under the 150 percent gross income limit but would not be eligible under the 140 percent limit represent the amount of the benefit reduction due to the hypothesized program change. Program eligibility was simulated for both the current and reduced income limits in order to control for the impacts of misreporting of household income.

TABLE 7

ESTIMATES OF THE NET IMPACT ON THE FOOD STAMP PROGRAM OF CHANGES IN INTERACTING ASSISTANCE PROGRAMS
(Thousands of Dollars)

Program With Change	(1) Size of Program Change	(2) Net Impact ^a		(3) Net Impact Ignoring Offsetting Programs ^b		(4) Net Impact Using Traditional FNS Formula ^c		(5) Net Impact Using Distribution of Benefit Reduction Due to Change in Eligibility ^d		(6) Net Impact Using Traditional FNS Formula and FNS Benefit Reduction Rates ^e	
		Amount	Adjustment Factor	Amount	Adjustment Factor	Amount	Adjustment Factor	Amount	Adjustment Factor	Amount	Adjustment Factor
Aid to Families with Dependent Children											
(1) Benefit Reduction	88,103	25,083	28.5	25,083	28.5	24,130	27.4			26,167	29.7
(2) Change in Income Limit	18,283	5,205	28.5	5,205	28.5	5,007	27.4	5,997	32.8	5,430	29.7
Social Security	1,230,356	8,304	0.7	15,945	1.3	23,586	1.9			31,989	2.6
Supplemental Security Income	68,377	8,635	12.6	8,635	12.6	9,096	13.3			11,419	16.7
Unemployment Insurance	131,053	2,075	1.6	3,052	2.3	3,428	2.6			3,801	2.9

^aThe net impact estimate is calculated as (A) x [(B) x (C) - (D) x (E) x (F)] from Table 8.

^bThe net impact estimate ignoring the offsetting programs is calculated as (A) x (B) x (C) from Table 8.

^cThe net impact estimate using the traditional FNS formula substitutes the proportion of households participating in the various programs ((B') from Table 8) for the proportion of program benefits received by various household groups ((B) of Table 8) and ignores any offsetting programs. In other words, the net impact is calculated as (A) x (B') x (C) from Table 8.

^dThe net impact estimate using the distribution of the benefit reduction due to the change in program eligibility substitutes the relevant entries of Table 9 for (B) and (D) in (A) x [(B) x (C) - (D) x (E) x (F)] from Table 8.

^eThe net impact estimate using the FNS formula and the FNS rates is calculated as (A) x (B) x (C) from Table 8.

TABLE 6

DOLLAR AMOUNT OF BENEFIT REDUCTION DUE TO CHANGE IN PROGRAM RULES UNDER
 AID TO FAMILIES WITH DEPENDENT CHILDREN
 (Weighted)

Nature of Program Change	Total Dollar Amount of Benefit Reduction
Reduction in gross income limit from 150% to 140% of state's need standard	18,283,091

SOURCE: August 1983 Extract from Wave I SIPP file.

rule of thumb approach used by FNS. FNS has traditionally assumed that the FSP households affected by the interacting program are receiving the average amount of benefits issued under the interacting program.¹ Consequently, FNS uses the proportion of program participants who are food stamp recipients (column (B') in Table 8) in place of the proportion of program benefits received by FSP households. For those programs where the FSP households affected by the change in the interacting program receive more or less than their proportionate share of program benefits, the FNS rule of thumb can lead to very different cost projections, as shown in column (4) of Table 7. Under Social Security, 7 percent of the households participate in the FSP and receive 5 percent of the Social Security benefits. While this is a relatively small difference, the cost projections based on the two measures vary by \$7,640,000.²

An additional assumption which can affect the FSP cost projections is the implicit assumption underlying the estimates outlined above that all of the program changes considered will affect all of the FSP households participating in the interacting program equally. While this is true for the across-the-board benefit reductions, the hypothesized change in eligibility under AFDC is targeted to specific household groups. When the households actually affected by the program change are considered, the distribution of the benefit reduction across household groups is quite different than the general distribution of program benefits, as seen in

¹Prior to SIPP, this assumption was necessary since there were no sources of information on benefit levels for multiple program participants.

²Note that the impact of offsetting programs is ignored in both of these cost projections.

TABLE 8

SUMMARY OF INFORMATION NEEDED IN CALCULATING NET IMPACT ON THE FOOD STAMP PROGRAM OF CHANGES IN INTERACTING ASSISTANCE PROGRAMS

Program With Change	(A) Size of Program Change (\$)	(B) Proportion of Program Benefits to FSP Households ^a	(B') Proportion of Program Participants also FSP Households ^b	(C) Average Effective BRR for FSP Households-- MPR Method ^c	(C') Average Effective BRR for FSP Households-- FNS Method ^c	Offsetting Program(s) to be Considered	(D) Proportion of Benefits to FSP/ Offsetting Program Households ^a	(E) Average Effective BRR Under Offsetting Program	(F) Average Effective BRR for FSP Households ^c
Aid to Families with Dependent Children									
(1) Benefit Reduction	88,102,743	.868	.835	.328	.356				
(2) Change in Income Limit	18,283,091	.868	.835	.328	.356				
Social Security	1,230,355,752	.048	.071	.270	.361	(a) AFDC (b) SSI	.007 1.00	1.00 .261	.328
Supplemental Security Income	68,376,809	.431	.454	.293	.367				
Unemployment Insurance	131,053,450	.073	.082	.319	.351	(a) AFDC (b) SSI	.018 ^d 1.00	1.00 .319 ^b	.343

SOURCE: August 1983 Extract from Wave 1 SIPP file and August 1983 IQCS file.

^aThese figures are taken from Appendix Table B.1.

^bThese figures are taken from Appendix Table B.2.

^cSee Appendix A for the derivation of the effective BRRs.

^dThis figure is based upon fewer than 7 (unweighted) sample households.

^eDue to the small number of FSP households in both UI and SSI in the IQCS sample, there is not a separate estimate for UI/SSI households. This figure is for all UI/FSP households.

Table 9. Using the actual proportion of program benefits going to FSP households affected by the program changes yields FSP cost projections of \$5,997,000 for the AFDC change (column (5) of Table 7). When compared to the net impact estimate based on the general distribution of program benefits (column (2)), the projected impact of the AFDC change is 15 percent higher. By failing to consider the characteristics of the households actually affected by the program change, the general rule of thumb can produce very different estimates.

Finally, the method used in calculating the effective BRRs can have a substantial impact on the estimates of the impact of program changes on the FSP budget. The net impact estimates using the current FNS rule of thumb and effective BRRs based on the method proposed by FNS¹ are much larger than those obtained using any of the other rule of thumb formulations. This is particularly true for changes in Social Security and SSI, where the MPR and FNS calculations of the effective BRRs differ significantly. As we believe the effective BRRs based on MPR's modification of the method proposed by FNS are more appropriate, we would view the cost projections based on the larger FNS effective BRRs as overstating the impact on the FSP of the interacting program changes.

D. SUMMARY AND CONCLUSIONS

Since the program changes considered in this report do not correspond to actual or proposed changes, it is not possible to assess whether the rule of thumb approach provides a close approximation to the

¹See Appendix A for a discussion of the derivation of the effective BRRs.

TABLE 9

DISTRIBUTION OF BENEFIT REDUCTIONS ACROSS
HOUSEHOLD GROUPS FOR CHANGE IN ELIGIBILITY RULES UNDER
AID TO FAMILIES WITH DEPENDENT CHILDREN

Household Group	Distribution of Benefit Reduction	Distribution of All Benefits
All Households	1.000	1.000
Food Stamp Households	1.000	.868
Households which Participate in Food Stamps and:		
Aid to Families with Dependent Children	--	--
Social Security	.103	.057
Supplemental Security Income	.042	.072
Unemployment Insurance	.024*	.011*
Subsidized Housing Assistance	.161	.120

SOURCE: August 1983 Extract from Wave I SIPP file.

*This figure is based on less than 30 households in the unweighted sample of 14,868 households. See Appendix Table B.3 for the unweighted number of households in each multiple program category.

true impact on the FSP of a change in one of the interacting programs. However, it is possible to make an assessment of the sensitivity of the rule of thumb approach to the various assumptions which can be made. First, for those assistance programs where significant proportions of the affected FSP households also participate in programs with offsetting impacts, failing to consider the offsetting impacts can substantially affect the cost projections. Thus, in estimating the costs to the FSP of changes in programs like Social Security, where relatively high proportions of the affected FSP households also participate in programs with offsetting impacts, ignoring offsetting impacts is likely to lead to very inaccurate estimates. Second, the rule of thumb estimates are also quite sensitive to the assumptions made concerning the distribution of program benefits. Assuming that all the FSP households affected by the change in the interacting program receive the average program benefit (as is done currently by FNS) or ignoring any targeting of the change in the interacting program (as occurs with changes in eligibility) can lead to cost projections that are quite different from those obtained when the information on the actual distribution of program benefits is used. Given the sensitivity of the rule of thumb estimates to the assumptions on offsetting impacts and benefit distributions and the lack of empirical evidence to support a particular rule of thumb formula, intuition would suggest that the "best" approach would be the one which uses all of the available information. That is, the "best" cost projections would be based on the rule of thumb formula which incorporates both offsetting program impacts and the actual distribution of program benefits.

The rule of thumb approach presented here relies on estimates of the degree of multiple program participation and the levels of program benefits. To the extent that both program participation and program benefits are likely to change over time, it will be important to periodically update the rule of thumb formula using more recent data as they become available from SIPP and IQCS.

REFERENCES

- Committee on Ways and Means, U.S. House of Representatives. Background Material and Data on Programs within the Jurisdiction of the Committee on Ways and Means. Washington, D.C.: U.S. Government Printing Office, 1985.
- Food and Nutrition Service, U.S. Department of Agriculture. FSP-- Statistical Summary of Operations. Washington, D.C.: Food and Nutrition Service, August 1983.
- Social Security Administration, U.S. Department of Health and Human Services. Characteristics of State Plans for Aid to Families with Dependent Children. Washington, D.C.: Social Security Administration, 1984.

APPENDIX A

CALCULATION OF EFFECTIVE BENEFIT REDUCTION RATES UNDER THE FOOD STAMP PROGRAM

The effective benefit reduction rate (BRR) or tax rate for a particular group of households will be an average of the effective BRRs of the individual group members. Since certain types of households will have the same effective BRR (e.g., households with zero net income have effective BRRs equal to zero), the effective BRR for the group can be calculated as a weighted average of the effective BRRs for specific household subgroups. Under the approach used by FNS for calculating effective BRRs for groups of households, five household subgroups are considered. Four subgroups are based on the value of the household's combined dependent care/excess shelter expenses deduction. Those subgroups are households with their combined deduction:

1. Equal to zero
2. Less than the cap on the deduction
3. Equal to the cap on the deduction
4. Greater than the cap on the deduction.

The final subgroup is defined as households with zero net income.

The effective BRRs used by FNS for each of these household subgroups are shown in Appendix Table A.1. The values of the effective BRR are straightforward for all of the household subgroups except the "Equal to the Cap" category. The effective BRR of .375 for this subgroup is based on the assumption that when households change combined deduction categories as the result of a change in income, one-half will move into the "Less than the Cap" category (BRR = .450) and one-half will remain in the "Equal to the Cap" category (BRR = .300). This assumption is rather arbitrary since

most households in the "Equal to the Cap" category (98 percent) have excess shelter expenses which exceed the amount of the cap on the deduction (63 percent of the households exceed the cap by \$50 or more).¹ Given these excess shelter expenses, a change in household income would have to be fairly substantial to cause one-half of the households to fall back into the category "Less than the Cap." Thus, we use an effective BRR equal to .300 for the "Equal to the Cap" category, as shown in Appendix Table A.2.²

In addition, we consider separately one- and two-person households which receive the minimum food stamp benefit. For these households, which comprise approximately 6 percent of the total FSP caseload, the effective BRR will be zero (as shown in Section B).

As would be expected given the use of the minimum benefit category and the lower effective BRR for the "Equal to the Cap" category, the calculations based upon the MPR method are lower than those derived from the FNS method for each household group considered. This difference is particularly large for elderly households and SSI households, where the proportion of the households receiving the minimum food stamp benefit is quite large (22 to 23 percent).

¹In examining the relationship between excess shelter expenses and the cap on the combined dependent care/excess shelter deduction, we have not considered the impact of the cap on dependent care deductions since only 1.6 percent of the sample of FSP households claimed dependent care expenses.

²Both the approach used by FNS and the approach presented here simplify the world by assuming that there is no movement between categories as the result of changes in factors other than income.

In addition to the household subgroups presented in the tables, effective BRRs were calculated for SSI/UI households and Social Security/UI households. However, very small sample sizes (less than 10 (unweighted) sample households) make such estimates questionable.

APPENDIX TABLE A.1

Effective Benefit Reduction Rate for Selected Multiple Program Categories -- FNS Method

Household Characteristic	Tax Rate	All Households			AFDC Households		
		Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Zero Net Income	0.000	1,305,897	0.171	0.000	237,312	0.069	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	1,841,536	0.241	0.072	802,815	0.232	0.070
Less Than Cap	0.450	2,354,350	0.309	0.139	1,065,669	0.308	0.139
Equal to Cap	0.375	1,766,413	0.231	0.087	1,282,485	0.371	0.139
Greater Than Cap	0.450	363,225	0.048	0.022	68,000	0.020	0.009
Unknown		59,372			38,632		
TOTAL		7,631,421	1.000	0.320	3,456,281	1.000	0.356
Unweighted Total		6,399			2,645		

Appendix Table A.1 (continued)

Household Characteristic	Tax Rate	SSI Households			OASDI Households		
		Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Zero Net Income	0.000	68,964	0.055	0.000	91,420	0.066	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	489,265	0.390	0.117	513,289	0.370	0.111
Less Than Cap	0.450	480,760	0.383	0.172	514,943	0.371	0.167
Equal to Cap	0.375	651	0.001	0.000	70,640	0.051	0.019
Greater Than Cap	0.450	216,011	0.172	0.077	197,876	0.143	0.064
Unknown		7,829			14,505		
TOTAL		1,255,851	1.001	0.367	1,388,176	1.001	0.361
Unweighted Total		1,072			1,259		

Appendix Table A.1 (continued)

Household Characteristic	Tax Rate	UC Households			AFDC/SSI Households		
		Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Zero Net Income	0.000	21,025	0.065	0.000	4,173	0.019	0.000
Value of Combined Dependent Care/ Excess Shelter Deduction:							
None	0.300	99,886	0.308	0.092	128,259	0.575	0.173
Less Than Cap	0.450	101,774	0.314	0.141	51,100	0.229	0.103
Equal to Cap	0.375	99,655	0.308	0.116	39,531	0.177	0.066
Greater Than Cap	0.450	1,697	0.005	0.002	0	0.000	0.000
Unknown		603			0		
TOTAL		324,037	1.000	0.351	223,063	1.000	0.342
Unweighted Total		284			163		

Appendix Table A.1 (continued)

Household Characteristic	Tax Rate	AFDC/DASDI Households			AFDC/UC Households		
		Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Zero Net Income	0.000	4,458	0.030	0.000	0	0.000	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	73,855	0.495	0.149	25,056	0.439	0.132
Less Than Cap	0.450	24,436	0.164	0.074	16,221	0.284	0.126
Equal to Cap	0.375	32,767	0.220	0.083	15,853	0.277	0.104
Greater Than Cap	0.450	13,542	0.091	0.041	0	0.000	0.000
Unknown		3,338			0		
TOTAL		149,058	1.000	0.346	57,130	1.000	0.363
Unweighted Total		127			45		

Appendix Table A.1 (continued)

Household Characteristic	Tax Rate	Number of Households	SSI/OASDI Households	
			Percent of Households	Weighted Tax Rate
Zero Net Income	0.000	34,783	0.054	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:				
None	0.300	267,356	0.418	0.125
Less Than Cap	0.450	240,571	0.377	0.170
Equal to Cap	0.375	0	0.000	0.000
Greater Than Cap	0.450	96,198	0.151	0.068
Unknown		6,001		
TOTAL		638,908	1.000	0.363
Unweighted Total		569		

SOURCE: August 1983 IQCS File

APPENDIX TABLE A.2

Effective Benefit Reduction Rate for Selected Multiple Program Categories -- MPR Method

Household Characteristic	All Households				AFDC Households		
	Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Minimum Benefit	0.000	487,950	0.064	0.000	5,322	0.002	0.000
Zero Net Income	0.000	1,304,898	0.171	0.000	237,312	0.069	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	1,524,320	0.200	0.060	800,831	0.232	0.070
Less Than Cap	0.450	2,200,962	0.288	0.130	1,062,331	0.307	0.138
Equal to Cap	0.300	1,760,765	0.231	0.069	1,282,485	0.371	0.111
Greater Than Cap	0.450	355,559	0.047	0.021	68,000	0.020	0.009
Unknown		56,339			38,632		
TOTAL		7,634,454	1.001	0.280	3,456,281	1.001	0.328
Unweighted Total		6,399			2,645		

Appendix Table A.2 (Continued)

Household Characteristic	SSI Households				OASDI Households		
	Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Minimum Benefit	0.000	270,124	0.215	0.000	349,074	0.251	0.000
Zero Net Income	0.000	68,964	0.055	0.000	91,420	0.066	0.000
Value of Combined Dependent Care/ Excess Shelter Deduction:							
None	0.300	301,209	0.239	0.072	278,489	0.201	0.060
Less Than Cap	0.450	403,064	0.320	0.144	408,450	0.294	0.132
Equal to Cap	0.300	651	0.001	0.000	70,648	0.051	0.015
Greater Than Cap	0.450	214,269	0.170	0.077	190,697	0.137	0.062
Unknown		5,399			13,903		
TOTAL		1,258,281	1.000	0.293	1,388,778	1.000	0.270
Unweighted Total		1,072			1,259		

Appendix Table A.2 (continued)

Household Characteristic	Tax Rate	Number of Households	UC Households		AFDC/SSI Households		
			Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Minimum Benefit	0.000	9,664	0.030	0.000	603	0.003	0.000
Zero Net Income	0.000	21,025	0.065	0.000	4,173	0.019	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	96,644	0.298	0.089	127,656	0.572	0.172
Less Than Cap	0.450	100,779	0.310	0.140	51,100	0.229	0.103
Equal to Cap	0.300	95,318	0.294	0.088	39,531	0.177	0.053
Greater Than Cap	0.450	1,210	0.004	0.002	0	0.000	0.000
Unknown		0			0		
TOTAL		324,640	1.001	0.319	223,063	1.000	0.328
Unweighted Total		284			163		

Appendix Table A.2 (continued)

Household Characteristic	Tax Rate	AFDC/OASDI Households			AFDC/UC Households		
		Number of Households	Percent of Households	Weighted Tax Rate	Number of Households	Percent of Households	Weighted Tax Rate
Minimum Benefit	0.000	743	0.005	0.000	0	0.000	0.000
Zero Net Income	0.000	4,458	0.030	0.000	0	0.000	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:							
None	0.300	73,112	0.490	0.147	25,056	0.439	0.132
Less Than Cap	0.450	24,436	0.164	0.074	16,221	0.284	0.128
Equal to Cap	0.300	32,767	0.220	0.066	15,853	0.277	0.083
Greater Than Cap	0.450	13,542	0.091	0.041	0	0.000	0.000
Unknown		3,338			0		
TOTAL		149,058	1.000	0.328	57,130	1.000	0.343
Unweighted Total		127			45		

Appendix Table A.2 (continued)

Household Characteristic	Tax Rate	Number of Households	SSI/OASDI Households	
			Percent of Households	Weighted Tax Rate
Minimum Benefit	0.000	188,773	0.295	0.000
Zero Net Income	0.000	34,783	0.054	0.000
Value of Combined Dependent Care/ Excess Shelter Deductions:				
None	0.300	132,567	0.207	0.062
Less Than Cap	0.450	189,131	0.296	0.133
Equal to Cap	0.300	0	0.000	0.000
Greater Than Cap	0.450	94,256	0.147	0.066
Unknown		5,399		
TOTAL		639,510	0.999	0.261
Unweighted Total		569		

SOURCE: August 1983 IOCS File

APPENDIX TABLE B.1

PATTERNS OF PROGRAM PARTICIPATION ACROSS HOUSEHOLD GROUPS FOR VARIOUS ASSISTANCE PROGRAMS
(Weighted)

Household Group	Aid to Families with Dependent Children		Social Security		Supplemental Security Income		Unemployment Insurance	
	Number	Proportion	Number	Proportion	Number	Proportion	Number	Proportion
All Households	2,742,069	1.000	23,022,320	1.000	2,838,837	1.000	2,967,025	1.000
Food Stamp Households	2,290,631	.835	1,626,216	.071	1,287,916	.454	241,906	.082
Households which Participate in Food Stamps and:								
Aid to Families with Dependent Children	--	--	217,381	.009	223,577	.079	43,945*	.015
Social Security	217,381	.079	--	--	664,415	.234	9,643*	.003
Supplemental Security Income	223,577	.082	664,415	.029	--	--	10,313*	.004
Unemployment Insurance	43,945*	.016	9,643*	.000	10,313*	.004	--	--
Subsidized Housing Assistance	321,640	.117	72,916*	.003	145,583*	.051	5,967*	.002

SOURCE: August 1983 Extract from Wave 1 SIPP file.

*This figure represents less than 30 households in the unweighted sample of 14,868 households. See Appendix Table B.3 for the unweighted program participation numbers.

APPENDIX TABLE B.2

DISTRIBUTION OF PROGRAM BENEFITS ACROSS HOUSEHOLD GROUPS FOR VARIOUS ASSISTANCE PROGRAMS
(Weighted Proportions)

Household Group	Aid to Families with Dependent Children	Social Security	Supplemental Security Income	Unemployment Insurance	Food Stamp Program
All Households	1.000	1.000	1.000	1.000	1.000
Food Stamp Households	.868	.048	.431	.073	--
Households which Participate in Food Stamps and:					
Aid to Families with Dependent Children	--	.007	.097	.018*	.472
Social Security	.057	--	.125	.003*	.153
Supplemental Security Income	.072	.015	--	.004*	.113
Unemployment Insurance	.011*	.002*	.004*	--	.038
Subsidized Housing Assistance	.120	.002*	.064*	.002*	.102

SOURCE: August 1983 Extract from Wave 1 SIPP file.

*This figure is based on less than 30 households in the unweighted sample of 14,868 households. See Appendix Table B.3 for the unweighted program participation numbers.

APPENDIX TABLE B.3

NUMBER OF HOUSEHOLDS PARTICIPATING IN
VARIOUS ASSISTANCE PROGRAMS
(Unweighted)

Household Group	Aid to Families with Dependent Children	Social Security	Supplemental Security Income	Unemployment Insurance
All Households	485	4,068	493	518
Food Stamp Households	407	292	229	39
Households which Participate in Food Stamps and:				
Aid to Families with Dependent Children	—	39	37	7
Social Security	39	—	121	2
Supplemental Security Income	37	121	—	2
Unemployment Insurance	7	2	2	—

SOURCE: August 1983 Extract from Wave I SIPP file.