Food Stamp Program Costs and Error Rates, 1989-200

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Abstract

Evidence is strong that, beginning in 1995, an increase in reported certification-related costs per Food Stamp Program (FSP) household contributed to reduced error rates. This report presents the results of a study of trends in FSP administrative costs and errors from 1989 to 2001. It describes the trends and composition of FSP administrative costs. It also presents a multivariate regression analysis of the relationship of reported certification costs to FSP error rates (including overpayments, underpayments, and incorrect eligibility decisions). The report presents alternative models that relate a composite case error rate to certification effort per FSP household, caseload characteristics, the implementation of welfare reform, and short certification periods. The results imply that, in the period after the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, States on average had to spend more effort on certification-related activities than in previous years to achieve a given level of accuracy. The models predict that, if a State's FSP certification budget is fixed and the number of FSP households increases, the effort per FSP household will fall and error rates will rise, all other things equal.

This study was conducted by Abt Associations Inc., and the University of Georgia under a cooperative research contract with USDA's Economic Research Service (ERS) Food and Nutrition Assistance Research Program (FANRP): contract number 43-3AEM-2-80099 (ERS project representative: Ken Hanson). The views expressed are those of the authors and not necessarily those of ERS or USDA.

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Executive Summary

The Food Stamp Program (FSP) provides assistance to low-income Americans for the purchase of food at authorized stores, farmers' markets, and other locations. The Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA) administers the program in partnership with the 50 States and the District of Columbia. FNS establishes FSP policy, oversees State FSP administration, and directly manages the participation of retailers and financial institutions. State agencies establish procedures, operate data processing systems, and contract for services provided by other government agencies or private organizations. Local food stamp offices (usually operated by State, county, or municipal agencies) process applications and provide other program-related services to food stamp applicants and recipients.

The administration of the FSP is a major expense to FNS and the States. In Federal Fiscal Year (FFY) 2001, the cost of State and local FSP administration was $4.44 billion (according to estimates computed for this study). The Federal share of this cost was $2.23 billion, or about 50 percent. FNS spent more on FSP administration than on the School Breakfast Program or the Child and Adult Care Feeding Program, including meal costs. During FFY2001, about 7.4 million households participated in the FSP in the average month, so the annual administrative cost was $597 per household. The total cost of FSP benefits was $15.55 billion, so the total cost of the FSP was $19.99 billion, of which administrative costs represented 28 percent. (In this report, the term "cost" refers to expenditures of Federal, State and local funds for the FSP. The cost figures do not include FNS expenditures for federal-level FSP administration.)

Preventing and detecting benefit issuance errors is a major concern of FNS and the States. During the period from 1993 to 2001, the proportion of FSP benefits representing overpayments fell from 8.27 percent to 6.49 percent, and the annual cost of overpayments fell from $1.82 billion to $1.01 billion. Although some studies have examined the policies and other factors that contributed to this trend, none has considered the role of administrative spending. This report addresses this gap in the research.

Over the history of the FSP, there has been a series of cycles of growth and reduction in the numbers of participating individuals and households. The number of FSP participants increased dramatically from 1989 to 1994, and then declined just as dramatically from 1994 to 2000, before beginning another trend of increase in 2001.

Study Objectives

This report presents the results of a study of trends in Food Stamp Program administrative costs and errors from 1989 to 2001. The period was chosen because of the trends in FSP participation, the implementation of welfare reform, and the availability of data.

The study addressed the following research questions:

- What was the total cost of FSP administration during this period, and how did it change with trends in FSP participation, error rates, and other contextual factors?

- What was the contribution of certification and other major functions to the total FSP administrative costs and the trends in costs over the period?
- What were the trends during this period in FSP error rates and the variables that might influence them, including caseload characteristics and patterns of administrative actions?
- What was the relationship of FSP certification costs to error rates?

Data Sources and Methods

These questions were addressed through three major study components:

- Descriptive analysis of FSP administrative costs, using national and State-level data for 1989-2001
- Descriptive analysis of the patterns and trends of FSP error rates, case characteristics, and case actions over this period
- Modeling of the relationship of reported certification costs to FSP error rates while controlling for caseload characteristics, policies, and economic factors, using State-level time-series data.

The descriptive analysis of FSP administrative costs had two purposes: to provide descriptive information that has not been widely available, and as a starting point for the analysis of certification-related costs and errors. The administrative costs for the study period (1989-2001) were provided by FNS from the agency's National Data Bank. FNS compiled these data from State cost reports, which include both State and local administrative costs.

The data on FSP error rates, case characteristics, and case actions were drawn from the FNS Quality Control (QC) public-use microdata files for 1989 through 2001. Each file provides a random, nationally representative sample of approximately 50,000 active FSP cases selected for QC reviews by State FSP agencies. The QC files include detailed data on the demographics and economic circumstances of FSP participants, benefit levels, and administrative actions. The QC data also include indicators of errors in determining eligibility and benefits. For each year, the analysis variables were computed at the State and national levels through weighted tabulations of the microdata, using the sampling weights in the microdata. These data were supplemented by published summary reports of negative action QC samples and estimated error rates, unemployment data from the Bureau of Labor Statistics, and public welfare pay rates from the Census of Local Governments.

National Summary of FSP Administrative Costs

The total annual cost of FSP administration for the U.S. rose from $2.96 billion in 1989 to $4.44 billion in 2001, an increase of 50 percent. (All cost estimates in this report are in 2001 dollars, so inflation was not a factor in this increase.) The average annual U.S. grand total was $3.68 billion, of which $2.17 billion was for certification. Among costs reported from 1989 to 2001, the largest percentage increases were in the areas of fraud control (123 percent) and automated data processing (ADP) operations (73 percent), while the smallest increases were in issuance (31 percent) and the Food Stamp Employment and Training Program (E&T) (40 percent). The total cost reported as "unspecified other" fell by 24 percent. The U.S. total certification cost increased 54 percent.

Figure ES-1 shows the percentage distribution of the national total FSP administrative cost for the period (summed over all 13 years) among the analysis categories. Certification was by far the largest category, representing three-fifths (59 percent) of the total. The next largest categories were "unspecified other" (10 percent), issuance (7 percent), E&T (7 percent), and ADP operations (6 percent). The smallest categories used in this study were fraud control, FSNE, ADP development, and miscellaneous other costs (a combination of the smallest reporting categories).

Figure ES-1

Percent of Total FSP Administrative Cost by Component for U.S. (in 2001 Dollars), 1989-2001

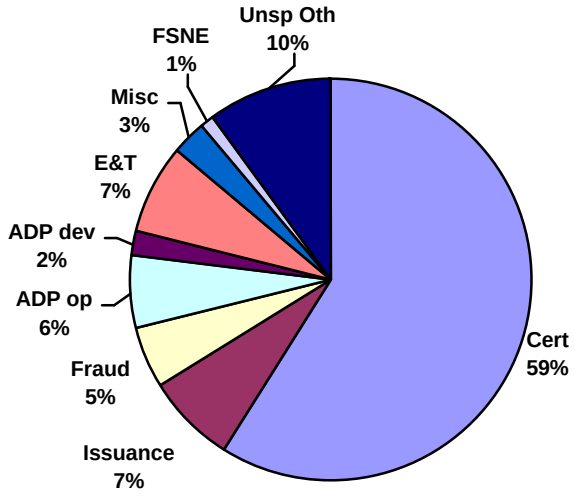


Figure ES-2 compares the national trends in total administrative cost per FSP household, certification cost per FSP household, and participating FSP households. The number of FSP households rose from 7.2 million in 1989 to 11.0 million in 1994, then declined to 7.3 million in 2000 before rising slightly to 7.4 million in 2001. [1] The total administrative cost per FSP household declined from $411 per FSP household in 1989 to $316 per FSP household in 1993, then increased from 1994 to a peak of $596 per FSP household in 2001. A nearly identical trend occurred in the national certification cost per FSP household.

As shown in table ES-1, half of the States had an average annual total cost between $338 and $468 per FSP household (the range between the 25th and 75th percentiles). (This table is based on the weighted average for each State, i.e., the total cost for the period in 2001 dollars divided by the sum of the average number of participating households over the study period.) There was a wide range among the States in the average annual total cost per FSP household, from a minimum of $149 to a maximum of $1165. The range of average annual certification cost per FSP household was from $86 to $643, while half of the States had average annual certification costs between $165 and $279 per FSP household. The other cost categories had similarly skewed distributions.

[1] Beyond the study period, the number of participating FSP households increased to 8.2 million in FY2002 and 9.2 million in FY2003.

Figure ES-2

Average Annual Total FSP Administrative and Certification Costs per Household (in 2001 Dollars) and FSP Caseload of Participating Households for U.S., 1989-2001

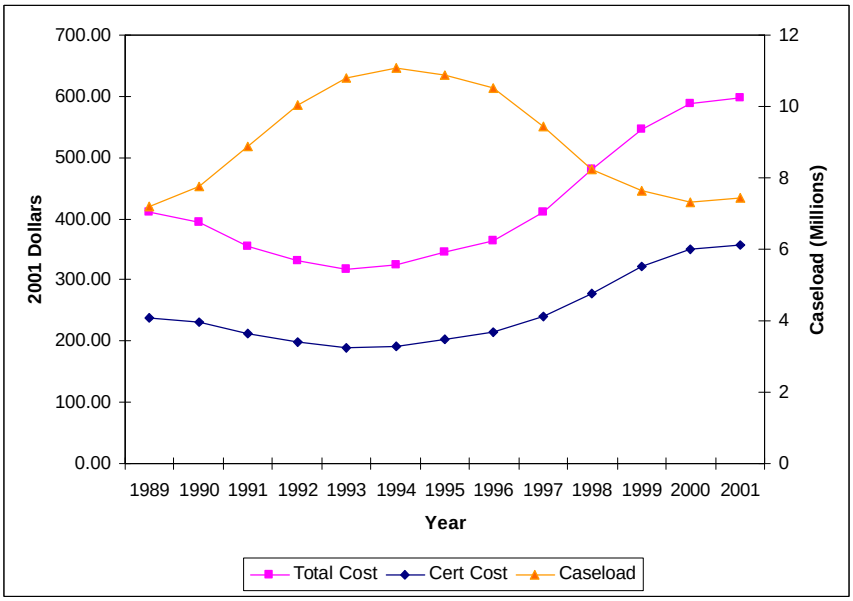


Table ES-1

Summary Statistics of State-level Average Annual Cost per FSP Household in 2001 Dollars for Total and Components, 1989-2001

State	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc.	FSNE	Unsp. Oth.
U.S. Average (wtd.)	408	240	31	21	24	6	28	11	6	41
Unweighted statistics:										
Minimum	149	86	11	3	6	0	3	3	0	0
25th Percentile	338	165	24	9	15	1	11	9	3	1
Median	398	240	31	15	25	6	18	14	6	19
75th Percentile	468	279	38	20	44	9	37	19	11	61
Maximum	1165	643	201	100	184	43	160	39	41	155

Trends in FSP Caseload and Administrative Actions

During the period from 1989 to 2001, there were a number of notable trends in the characteristics of FSP households that were expected to affect error rates.

- The percentage of FSP households receiving AFDC or TANF fell slightly from 41.9 percent in 1989 to 38.3 percent in 1995, and then more rapidly to 23.0 percent in 2001.

Thus, the trend was already under way when TANF was adopted in 1996, but it accelerated thereafter.

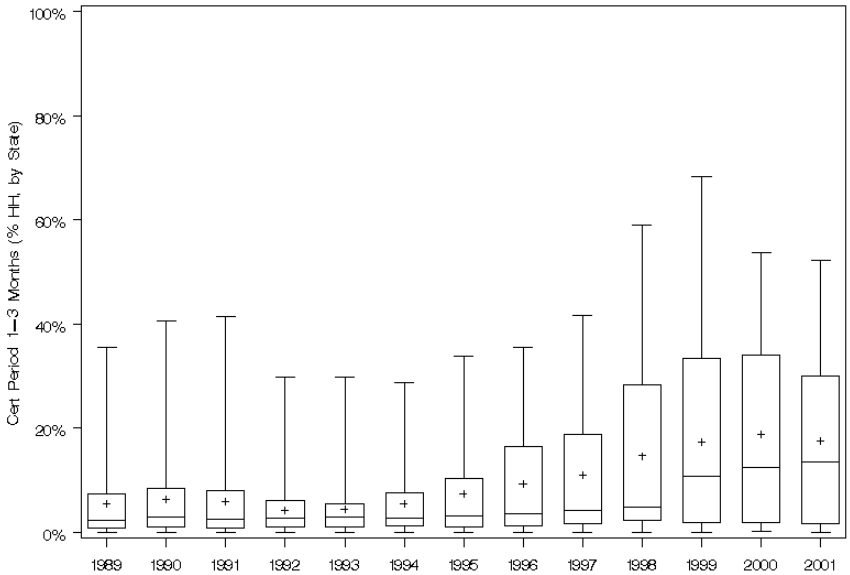
- The percentage of FSP households with earnings rose from 19.0 percent in 1990 to 27.2 percent in 2000, with the sharpest increase between 1995 and 1998. This trend coincided with both the economic boom of 1992-2000 and the implementation of welfare reform.
- There was a clear upward trend in the national percentage of FSP households with Social Security income after 1992, rising from 27.5 percent to 45.0 percent in 2001. Thus, Social Security took the place of AFDC/TANF as the most common source of income for FSP households.

Another key trend in the FSP was that the national proportion of all FSP households with very short (1- to 3-month) recertification periods increased steadily from about 5 percent to about 19 percent in the late 1990s. The percentage of households with 4- to 6-month recertification periods declined, as did the percentage with 7- to 11-month recertification periods, while the percentage with longer periods did not noticeably change.

The percentage of FSP households with 1- to 3-month recertification periods also varied considerably across States during these years, with more variation as the national average increased. (See Figure ES-3.) In 1999, for example, the range between the 25th percentile and the 75th percentile (represented by the vertical box) extended from under 5 percent to over 30 percent. This large cross-State variation suggested that this variable was particularly important to consider in modeling certification effort and errors.

Figure ES-3

Variation in State-Level Percentage of FSP Households with Certification Period of 1-3 Months



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Trends in Error Rates

FSP rules and performance measures identify four types of errors in the determination of household eligibility and the calculation of benefits:

- Payments to ineligible households
- Overpayments to eligible households
- Underpayments to eligible households
- Negative action errors, i.e. the improper denial or termination of benefits to applicants or participating households.

Errors may occur in determining any of the aspects of certification: household composition, income, deductions from income, countable assets, work and citizenship requirements, other eligibility requirements, and benefit calculation.

For this study, case error rates—i.e., the ratios of cases with specific types of errors to all active cases—were computed for overpayments, underpayments, and ineligible cases, using FNS data from QC reviews. The ratio of negative action errors to FSP cases was computed. The positive case error rate combined the rates of overpayments and ineligible cases; these errors are "positive" from the perspective of the participants. The negative case error rate combined the rates of underpayments and negative action errors. All case error rates used the sum of active cases and negative action cases as the denominator.

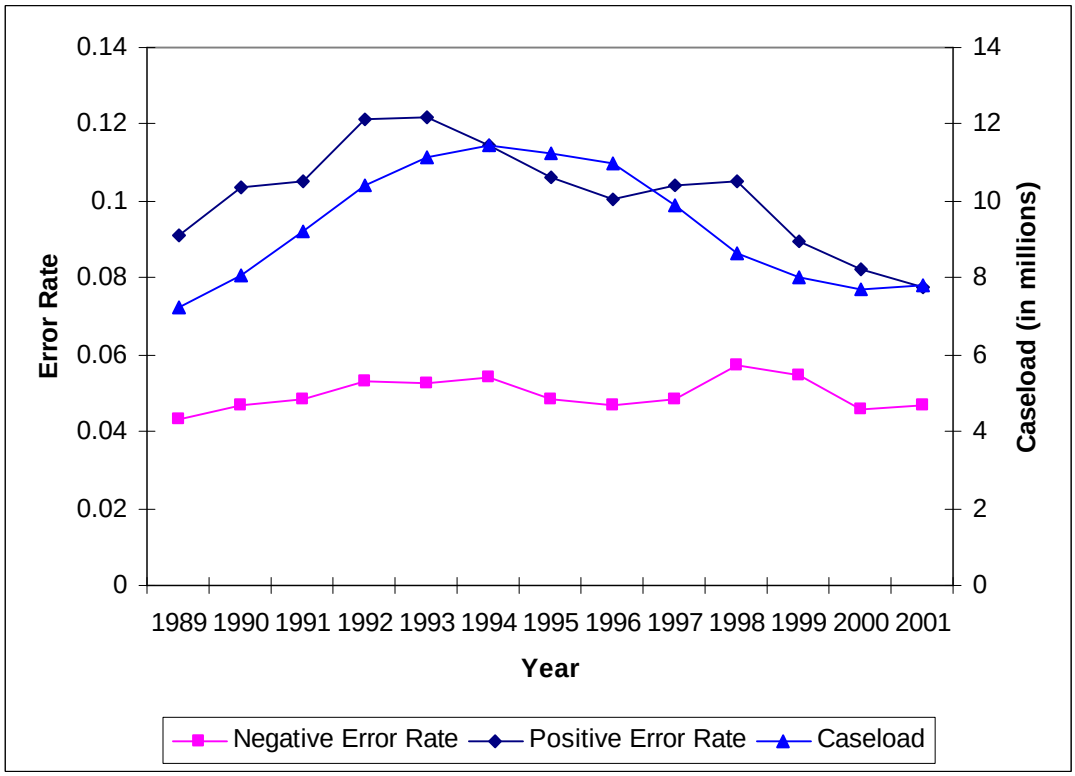
Figure ES-4 compares the national trends in positive and negative error rates with the trends in the number of FSP households from 1989 to 2001. Error rates tended to be higher when the caseload was high and lower when the caseload was low. The national average positive error rate increased from 1989 to 1993 and generally declined thereafter. It is notable, however, that this rate increased from 1996 to 1998, during the first two years after the enactment of PRWORA, before resuming its downward trend. The national average negative error rate decreased from 1989 to 1996, increased from 1996 to 1998, dropped from 1998 to 2001, and rose slightly in 2001.

States are liable for sanctions (i.e., financial penalties) if they have excessive payment error rates. There were important changes in FNS policy regarding QC sanctions during the study period.

- Starting with FY1998, sanctions were determined after the error rates were adjusted for States with above-average percentages of FSP households with earnings or immigrants, and for States with above-average increases in one or both of these percentages.
- For FY1998-1999, errors between $5 and $25 were identified in QC reviews (as they had been previously) but ignored in computing the adjusted error rates for the purpose of establishing sanctions.
- Starting in FY2000, errors under $25 were ignored in QC reviews.
- States established agreements with FNS to reinvest the amount of their QC sanctions in program improvement rather than pay the funds to FNS.

Figure ES-4

FSP Households and Error Rates, 1989-2001



Notes: Caseload includes active cases and cases subject to negative action. Negative error rate is percent of caseload with underpayments or negative action errors. Positive error rate is percent of caseload with overpayments or ineligible for benefits. Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

- FNS began placing some liabilities "at risk" in these agreements, instead of waiving them, so that States would have to pay the at-risk portion if they did not meet specified targets for error reduction.

Researchers have paid much attention to the sources of the decline in FSP participation during the 1990's, but there has been relatively little attention to the trends in error rates. A recent study (Kabbani and Wilde, 2003) found that the proportion of FSP households with short certification periods was more strongly associated with the overpayment rate (as a percent of benefits issued) than was any other variable. The study also found characteristics of the FSP caseload and of the States that appeared to influence error rates during the period.

Approach to Modeling the Relationship of Certification Effort to Error

We hypothesized that the level of effort devoted to certification and related activities (normalized for the number of FSP households) is an important variable that has been overlooked and can provide a cumulative measure of a State's relative commitment to accurate certification and error reduction.

Therefore, we constructed multivariate regression models to estimate the impact of reported FSP certification effort on error rates, while controlling for other variables that affect the likelihood of error (and, therefore, the amount of effort needed to achieve a given level of accuracy). The collection of data on costs, pay rates, caseload characteristics, and error rates provided the opportunity to undertake this analysis.

We modeled the combined level of positive and negative error (the "error index") as a function of three types of factors: reported effort (the quantity of administrative resources expended on certification-related activities, relative to the number of FSP households), State characteristics, and policies. We computed the measure of reported effort by State and year by dividing the average public welfare worker wage into the certification-related cost per FSP household (including certification, fraud control, unspecified other, and miscellaneous costs expected to be related to certification or error prevention).

The computation of the effort measure excluded automated data processing (ADP) costs, because it was clearly inappropriate to treat the ratio of ADP costs to wages as an estimate of data processing units. Reasoning that factor prices for data processing are largely set in a national (or even international) market, we preferred to treat the ADP cost per FSP household as a separate independent variable. The models ultimately did not include this variable, however, due to difficulties encountered in the analysis.

The dependent variable used in this analysis was a index of error computed as a weighted sum of annual positive error rates and negative error rates (using the adjusted case error rates described above). Through a grid search procedure, we estimated that the same amount of resources required to reduce the positive error rate by 1 percentage point could reduce the negative error rate by 0.69 percentage points, after controlling for other State characteristics. Thus, the error index was the sum of the positive error rate and 1.45 times the negative error rate. The variables in the models, including factors other than effort that were expected to affect the error index, are defined in table ES-2, which gives their means and standard deviations.

We began with a simple model that included the explanatory variables, a variable for each State denoting a fixed effect, and a State-specific time trend. Next, we estimated a fixed effects model that addressed potential problems in the simple model (first-order autocorrelation and heteroscedasticity). Reasoning that the error index in one period could affect the effort and other variables in the next, we also estimated a simple partial adjustment model and a dynamic model using an Arellano-Bond estimator.

Results of Multivariate Analysis

The estimation results show that, as expected, the food stamp error index was lower when States reported expending more certification effort, after controlling for other State characteristics. This result had a high degree of confidence in all models. On the other hand, the results also imply a smaller impact of reported worker effort on error in the post-PRWORA environment.

Table ES-2

Means and Standard Deviations of Analysis Variables

Variable	Definition	Mean (S.D.)
ERROR	Weighted total error rate	0.157 (0.048)
EFFORT	Certification-related cost per FSP household, normalized by the state wage for a full-time public welfare worker	0.010 (0.004)
PRWORA	Indicator for post-PRWORA period (1997-2001)	0.389 (0.488)
PEFFORT	Interaction between EFFORT and PRWORA	0.005 (0.006)
TANF	Percent of food stamp households receiving AFDC or TANF	0.325 (0.126)
PTANF	Interaction between TANF and PRWORA	0.097 (0.141)
EARNINC	Percent of food stamp households with earned income in case record	0.247 (0.080)
SSINC	Percent of food stamp households with OASDI or SSI benefits	0.370 (0.104)
SINGLEPAR	Percent of food stamp households with children headed by a single adult	0.722 (0.087)
PCTEBT	Percent of food stamp households that receive electronic benefits	0.236 (0.395)
FYUN0	Unemployment rate	0.053 (0.015)
CM13	Percent of food stamp households with 1-3 month certification periods	0.100 (0.129)
n		654[a]

[a] Negative action error data were unavailable for 9 observations.

To quantify the relationship of effort to error before and after PRWORA, we used the model parameters to estimate the elasticity of the error index with respect to reported effort. For the pre-PRWORA period, holding the negative error rate constant, a 10 percent increase in effort reduced the positive error rate by 2.76 to 3.77 percent. Alternatively, with the positive error rate held constant, a 10 percent increase in effort reduced the negative error rate by 1.90 to 2.60 percent (reflecting the weighting in the error index). For the post-PRWORA period, a 10 percent increase in effort reduced the positive error rate by 1.32 to 3.42 percent (holding constant the negative error rate). Depending on the model, the estimated effect of effort on error in the post-PRWORA period was 9.3 percent to 56.7 percent smaller than in the pre-PRWORA period.

While we do not have clear evidence of the reasons for the reduced effect of reported effort on error after PRWORA, we suggest two alternative explanations. One explanation is that more effort was in fact expended to achieve a given level of accuracy, perhaps due to the challenges of implementing PRWORA, lags in the adjustment of staffing to declining FSP caseloads, or both. The alternative

explanation is that more of the actual effort was charged to the FSP in the post-PRWORA period, so that the reported level of effort for a given level of error was greater. Changes in cost allocation rules resulted in more shared costs for FSP/TANF cases being allocated to the FSP, and so States had to spend more FSP dollars per household (in real terms) to produce the same output. The authors view this explanation as more convincing.

In addition to the effect on the elasticity of error with respect to effort, the models capture two other effects on error associated with PRWORA.

- In the post-PRWORA period, States with higher percentages of FSP households receiving TANF had higher error rates (all else equal).
- The net effect of PRWORA on the error index (computed by combining the effects of all variables related to PRWORA) was smaller than the changes in the effects of effort and percent receiving TANF alone would predict.

The effects associated with PRWORA may have resulted from three types of changes in the FSP and in the operations of public welfare agencies during this period:

- The transition from AFDC to TANF, which entailed changes in both the rules for cash assistance and the environment in which public welfare workers operated
- FNS and State initiatives to reduce FSP errors, through changes in rules and program operations
- The changes in cost allocation rules and practices that resulted in varying increases in the FSP's share of common certification costs for FSP cash assistance households.

The available data were insufficient to determine the relative influence of these three types of changes, each of which had multiple dimensions. The authors believe that the downward influence on the error index was at least in part attributable to FSP error-reduction policies other than the shortening of certification periods (which is discussed below).

We found the following significant results for the effects of other important characteristics of FSP households on error rates.

- The percent of FSP households reporting earned income (EARNINC) had a positive and highly significant effect on the error index. Thus, the decline in the error index in the late 1990's was achieved despite the fact that increasing work force participation among FSP recipients exerted upward pressure on the error index.
- The percent of FSP households with Social Security or SSI income (SSINC) had a negative effect on the error index. This proportion grew during the late 1990's, so this was another factor underlying the decline in the error index.

Among the other independent variables in the model, only the percentage of FSP households with one to three-month certification periods (CM13) had a significant effect on the error index. Neither the percentage of FSP households using EBT nor the State unemployment rate had a significant effect on the error index, even after adjusting for the effect of the lagged error index.

Conclusions

This analysis provides strong evidence that the increase in reported certification-related costs per FSP household, which began in 1995, contributed to the reduction in the error index, i.e., in the weighted sum of positive and negative case error rates. This contribution was not recognized by the previous literature on factors affecting payment error rates. Our results confirm the conclusion of previous research and the widespread view in the FSP policy community that increase in use of short certification periods also contributed to the downward trend in error rates.

Other changes in the FSP associated substantively or temporally with PRWORA had different effects on States. For the average State, these changes had the effect of increasing the error index, as a result of the reduction in the effect of reported effort on the error index and the introduction of an increase in error rates with the proportion of FSP households receiving TANF. The effect was larger where the percentage receiving TANF was above average and smaller (or even negative) where this percentage was below average. Given the many changes in the FSP and TANF policies and operations of State FSP agencies after the enactment of PRWORA and the lack of State and year-specific data on these changes, we cannot determine whether these effects resulted from PRWORA implementation, FSP error-reduction initiatives, cost allocation changes, or a combination of these factors.

These results imply that, in the post-PRWORA period, States had to spend more effort on certification-related activities than in previous years to achieve a given level of accuracy (relative to the expected level absent a change in effort). If this is true, it provides a retrospective justification for the dramatic increase in the reported certification-related cost per FSP household between 1994 and 2001.

The results also raise the question of whether States approached a point of diminishing returns in the expenditure of effort to reduce error rates. While the study did not provide clear evidence of this (i.e., a non-linear model did not explain the data better than the linear model), and error rates actually continued to fall after 2001, the results suggest a need for attention to this possibility.

The established relationship between effort and error rates suggests an explanation for why error rates tend to rise when the number of FSP households rises. If a State's total budget is fixed and the number of FSP households increases, the effort per FSP household falls. The models estimated in this study predict that this change will lead to a rise in the error index, all other things equal.

Limitations of the Study

Perhaps the most important limitation of the study is that reported FSP administrative costs, and thus the measure of effort, are subject to variation in definition and measurement, both over time and among States. Thus, there is some uncertainty about how much of the increase in reported certification-related costs per FSP household during the study period represented an actual increase in resources, both in general and specifically with respect to efforts to prevent and detect errors.

It is possible that a portion of the effect attributed to certification effort is in fact due to increased automation. If so, then the estimated effect of effort on error would overstate the actual reduction in

error that a State would achieve by increasing certification effort alone without also increasing the level of automation.

A number of uncertainties about the factors affecting error rates—particularly the roles of PRWORA and FSP quality control policies—could be addressed through extension of this research to additional years after 2001. Another, complementary approach to extending this research would be a series of case studies examining the spending, policies, operational challenges, and results of specific States. This approach would provide insights into the relationship of PRWORA implementation, FSP error reduction, process automation, and cost allocation practices.

Chapter 1: Introduction

The Food Stamp Program (FSP) provides assistance to low-income Americans for the purchase of food at authorized stores, farmers' markets, and other locations. The Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA) administers the program in partnership with the 50 States and the District of Columbia. FNS establishes FSP policy, oversees State FSP administration, and directly manages the participation of retailers and financial institutions. State agencies establish procedures, operate data processing systems, and contract for services provided by other government agencies or private organizations. Local food stamp offices (usually operated by State, county, or municipal agencies) process applications and provide other program-related services to food stamp applicants and recipients.

The administration of the FSP is a major expense to FNS and the States. In Federal Fiscal Year (FFY) 2001, the cost of State and local FSP administration was $4.44 billion (according to estimates computed for this study). The Federal share of this cost was $2.23 billion, or about 50 percent[1]. FNS spent more on FSP administration than on the School Breakfast Program or the Child and Adult Care Feeding Program, including meal costs (FNS, 2005b). During FFY2001, about 7.4 million households participated in the FSP in the average month, so the annual administrative cost was $597 per household. The total cost of FSP benefits was $15.55 billion, so the total cost of the FSP was $19.99 billion, of which administrative costs represented 28 percent. (The cost figures do not include FNS expenditures for federal-level FSP administration.)

Preventing and detecting benefit issuance errors is a major concern of FNS and the States. During the period from 1993 to 2001, the proportion of FSP benefits representing overpayments fell from 8.27 percent to 6.49 percent, and the annual cost of overpayments fell from $1.82 billion to $1.01 billion. Although some studies have examined the policies and other factors that contributed to this trend, as discussed in Chapter Four, no prior study has considered the role of administrative spending. This report addresses this gap in the research.

Purpose of Study and Report

This report presents the results of a study of trends in Food Stamp Program administrative costs and errors from 1989 to 2001.[2] The period was chosen because of the trends in FSP participation, the implementation of welfare reform, and the availability of data.

The study addressed the following research questions:

- What was the total cost of FSP administration during this period, and how did it change with trends in FSP participation, error rates, and other contextual factors?
- What was the contribution of certification and other major functions to the total FSP administrative costs and the trends in costs over the period?

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[1] FNS' official estimate of the federal share of FSP administrative costs for FFY2001 is $2.24 billion, including reimbursements and grants to States, and other FNS expenses. (FNS, 2005a) This estimate is not directly comparable to the estimate for the study, due to differences in methods and sources.

[2] Abt Associates Inc. conducted this study under ERS cooperative agreement #43-3AEM-2-80099.

- What were the trends during this period in FSP error rates and the variables that might influence them, including caseload characteristics and patterns of administrative actions?
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These questions were addressed through three major study components:

- Descriptive analysis of FSP administrative costs, using national and State-level data for 1989-2001
- Descriptive analysis of the patterns and trends of FSP error rates, case characteristics, and case actions over this period
- Modeling of the relationship of reported certification costs to FSP error rates while controlling for caseload characteristics, policies, and economic factors, using State-level time-series data.

This chapter provides background information to place the analyses in context. First, the chapter describes the administrative activities that State and local FSP offices perform. Next, the changes in the FSP during the study period are summarized. The chapter then explains the organization of the rest of the report.

FSP Administrative Activities

The major administrative activities of State and local FSP offices are:

- Certification
- Issuance of benefits
- Automated data processing system development and operations
- Fraud control and fair hearings
- Employment and training
- Nutrition education.

In addition, there are a number of minor administrative activities, some of which are mandatory and others voluntary.

Certification

Certification activities include the processing of initial applications for Food Stamp benefits, periodic recertification of Food Stamp households, and other actions to obtain, verify, and apply information on households' FSP eligibility and entitlement to benefits. These activities are generally performed in local FSP offices by State or local government employees. Local FSP offices usually perform certification tasks for State-administered cash assistance programs (such as Temporary Assistance for Needy Families or TANF and general assistance) and often for medical assistance, low income energy assistance, and other means-tested programs for low-income citizens.

Issuance of Benefits

During the study period, States generally used one of two systems to issue FSP benefits. At the outset of the period, all States issued paper food stamp coupons to recipients, with varying methods and

administrative structures (including State, local and contractor operations). In 1993, Maryland was the first State that entirely replaced the coupon issuance system with an electronic benefit transfer (EBT) system, which are similar to debit card systems. By FY2001, 80 percent of FSP households received benefits via EBT. The nationwide implementation of EBT was completed in 2004. Most States contract with private firms to operate their EBT systems. During the study periods, about one to two percent of FSP households received benefits in cash as a supplement to Social Security Income (SSI) or State aid to elderly or disabled persons.

Automated Data Processing System Development and Operations

Each State operates a computer system to support FSP operations, normally as part of an integrated eligibility system serving the Temporary Assistance to Needy Families (TANF) and other related programs (such as State general assistance, Medicaid, or the Low Income Home Energy Assistance Program). Costs include development of new or upgraded systems, operation of computer centers, data communications networks, and local office equipment.

Fraud Control and Fair Hearings

State and local FSP agencies investigate evidence of fraud by recipients through review of case records, interviews with recipients, and third-party sources of information. Fraud investigations most often involve misrepresentation of eligibility or dual participation, but other types of investigations deal with false reports of lost benefits and trafficking in benefits. When the FSP agency finds evidence of fraud, it may initiate recovery of funds, termination of benefits, or prosecution. FSP agencies conduct fair hearings upon request by applicants or recipients who are subjected to adverse action (benefit reduction or termination).

Employment and Training

Each State provides FSP employment and training (FSET) services for FSP recipients who are subject to job search and work requirements. FSET services are provided through local FSP offices and other agencies. Allowable FSET components include supervised job search, job search training, work experience or workfare, vocational training, work-related education, and self-employment training.

Nutrition Education

States have the option of providing nutrition education to persons who are eligible for Food stamp benefits, with the goal of promoting healthy food and lifestyle choices. Most States have agreements with the State Cooperative Extension Service, State universities, or other agencies to provide food stamp nutrition education (FSNE). FSNE grew from 7 States in FFY 1992 to 49 States in FFY 2001.

Other State and Local Program Administration

State and local FSP agencies carry out a number of other administrative functions, including quality control, management evaluation, outreach, demonstration projects, and oversight of program operations. Under the mandatory quality control (QC) system, each State must review a sample of active FSP cases and a sample of closed or denied cases to determine whether the determination of eligibility and benefits is correct. Each State must also conduct management evaluation reviews of local office operations.

Changes in the FSP, 1989-2001

The FSP changed in a number of important ways during the period from 1989 to 2001. Below we provide a brief overview of relevant welfare reforms, changes in household reporting requirements, developments in FSP automation, and trends in the numbers of participating individuals and households. This discussion is by no means a complete accounting of program changes, but it provides contextual highlights that are particularly relevant to analysis of FSP costs and errors. Additional changes in cost-sharing and State accountability for errors are discussed in later chapters.

Welfare Reform

Although numerous States used federal waivers to change their policies for Aid to Families with Dependent Children (AFDC) in the early 1990's, the most dramatic changes in welfare programs came with the enactment of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). From the perspective of the FSP, the key changes in PRWORA were:

- Replacement of AFDC with the Temporary Assistance for Needy Families (TANF) block grant program
- Requirements for able-bodied adults without dependents (ABAWDs) to work or engage in work-related activity in order to receive more than three months of benefits in a 36 month period
- Denial of eligibility for a large proportion of legal resident aliens
- New requirements and other policies to increase child support establishment and collections.

The TANF provisions were intended to encourage work among welfare recipients and reduce the time that they receive assistance. Assistance became time-limited, with a mandatory lifetime cap of five years and State options to establish shorter time limits. States were also allowed to establish family caps, denying TANF benefits to additional children born to families already receiving TANF. New standards were set for the proportion of TANF recipients to be engaged in employment or related activities. States were authorized to establish work-first requirements and one-time benefit options to divert potential TANF cash applicants, and to adopt more stringent sanctions for non-compliance with work requirements. At the same time, States were also authorized to disregard more of TANF recipient earnings in computing benefits, in order to provide more positive incentives for work.

These policies were critically important to the FSP because of the intertwining between the FSP and AFDC/TANF. In 1989, AFDC was the most common source of income for FSP households, with almost 42 percent having AFDC income. States typically had a single application process administered by a shared workforce for AFDC, FSP, and Medicaid, with AFDC as the primary source of funding. Thus, the implementation of TANF had important implications both for the income sources of FSP recipients and the operation of FSP offices. FSP/TANF recipients faced new requirements to receive cash benefits and a combination of incentives and sanctions intended to encourage them to replace their cash benefits with earnings. The process of implementing TANF directly affected FSP/TANF eligibility workers and more generally brought a renewed emphasis on moving recipients into employment.

State and local FSP agencies also implemented the PRWORA restrictions on food stamp benefits for ABAWDs and legal resident aliens. For ABAWDs, FSP agencies implemented new work requirements and time limits on assistance. Although only about 4 percent of the FSP recipient population was directly affected (Stavrianos and Nixon, 1998), the implementation was challenging because of the complexity of the related rules (Czajka et al., 2001). For legal resident aliens, the PRWORA changes made most ineligible for food stamp benefits, but some States chose to provide State-funded food assistance instead, and subsequent legislation in 1998 and 2002 restored benefits to many of these aliens (FRAC, 2001; Capps et al., 2004).

PRWORA made a number of important changes in child support enforcement (CSE), including mandates for statewide child support collection systems, new sanctions for non-payment of child support, and the establishment of national systems for reporting new hires and locating absent parents.[3] These changes did not directly apply to the FSP, but they had indirect effects because of the overlap between CSE and the FSP, both in the populations served and in the agencies operating the programs. In particular, the new sources of information became available to the FSP for income verification.

Two specific provisions of PRWORA were intended to increase payment of child support by non-custodial parents participating in the FSP. One provision allowed States to require FSP recipients to cooperate with child support agencies. (Both AFDC and TANF had this requirement, but previously the cooperation of non-public-assistance FSP recipients was voluntary.) The other provision allowed States to disqualify FSP recipients with child support payment arrears. As of 2003, five States had adopted one or both of these options (FNS, 2003).

Household Reporting Requirements

During the period from 1989 to 2001, there was ongoing evolution in Federal and State policies regarding recertification periods and interim reporting of income by FSP households. A particularly important development was the increasing use of short recertification periods, requiring households to reapply within one to three months of initial approval. Only 4 to 5 percent of FSP households were subject to short recertification periods between 1989 and 1994; starting in 1995, the use of this practice rose steadily to 17 percent of FSP households in 2001.[4] Several analyses suggested that this practice reduced FSP participation, as discussed below. Beginning in FY2000, States could obtain waivers to adopt quarterly reporting of income instead of monthly reporting, to ease requirements for households required to report changes in circumstances ("simplified reporting"), and to reduce the requirement for in-person reapplication to every 12 months (Rosenbaum, 2000). This initiative was intended to reduce compliance burdens on FSP recipients, to reduce workloads for FSP offices, and to reduce the rate of errors in FSP cases.[5]

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[3] FSP workers have access to intrastate new hires data but not the interstate data bank.

[4] Tabulations for these estimates from FSP Quality Control data are discussed in Chapter Four.

[5] After the study period, the Farm Security and Rural Investment Act of 2002 authorized States to adopt "simplified" reporting rules with reporting intervals of up to six months. Under "simplified" reporting, recipients must report changes in income only at specified intervals or when their countable income exceeds the gross income limit for FSP eligibility. By 2003, there were 35 States with simplified reporting and 4 States with quarterly reporting; only 6 States used monthly reporting (FNS, 2003).

Automated Data Processing Systems

Computer technology evolved rapidly during the study period, and States adopted new technology to improve the accuracy and efficiency of FSP operations. The first computer systems for the FSP (implemented in the 1970's and 1980's) were strictly batch processing systems. Eligibility workers completed paper forms to process applications and updates, and clerks entered the data to be processed on a daily basis. During the late 1980's and more widely during the 1990's, States implemented interactive eligibility systems for FSP, AFDC, and other programs. These systems guided eligibility workers through the application process, prompting for on-line entry of information based on case information and program rules. As of 1995, 21 States were developing or had implemented such systems (Slocum et al., 1995a). Improvements in the speed and cost-efficiency of data communications allowed States to increase their use of computer matching with other agencies' systems as a means for detecting errors and fraud: the average number of systems per State used for matching rose from 7.5 in 1991 to 14.1 in 2000 (Borden and Ruben-Urm, 2002). These improvements were not universal, nor did they occur at the same pace in all States. The last comprehensive assessment of FSP computer systems, published in 1995, found that those systems varied widely in age, capabilities, and level of integration with other programs (Slocum et al., 1995b).

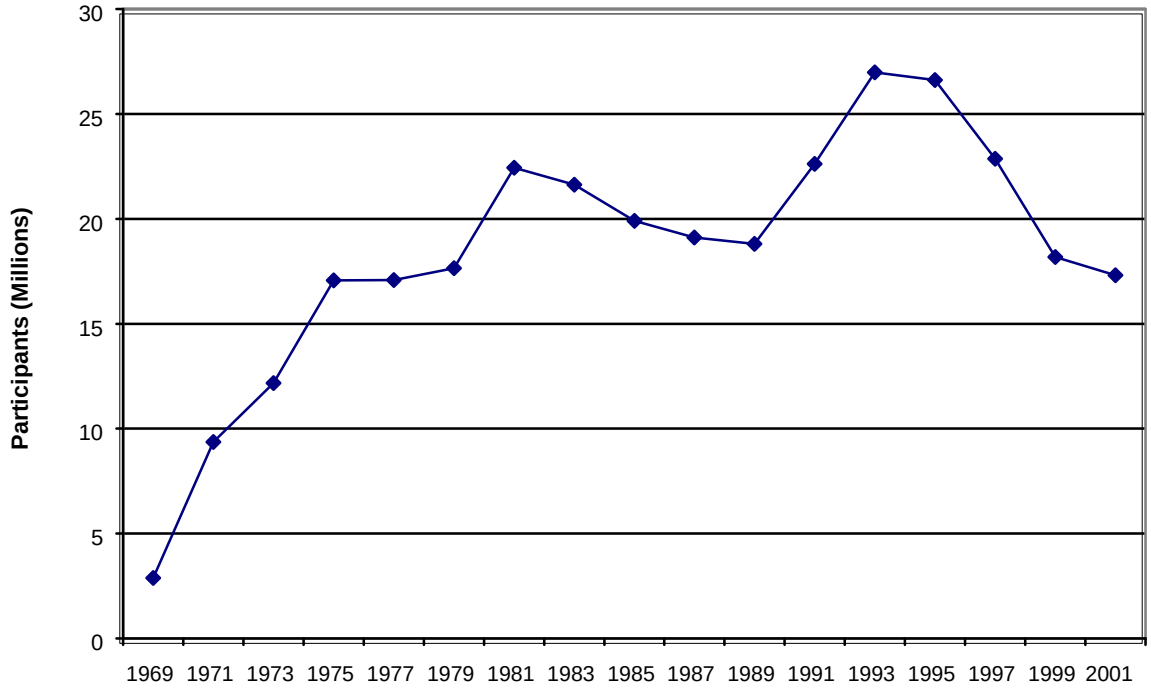
As previously discussed, EBT systems largely replaced paper coupon systems as the primary mode of FSP benefit issuance between 1993 and 2001. This change had the potential to have two different types of impacts on FSP participation. On the one hand, recipients who had difficulty getting and using EBT cards might be more likely to stop participating, and community knowledge of these problems might discourage other eligible households from participating. There were particular concerns about the adaptation of elderly and disabled recipients to the new technology (e.g., issues remembering personal identification numbers needed to use EBT cards). Research conducted for ERS found some evidence of greater initial problems among these groups when they did not receive hands-on training, but no difference in client satisfaction with the EBT system (Kirlin and Logan, 2002). On the other hand, there was hope that using a more mainstream and modern payment technology would reduce the stigma experienced by some FSP recipients when purchasing food. Two studies found evidence suggesting that EBT implementation was in fact associated with increased participation levels (Kornfeld, 2002; Kabbani and Wilde, 2003).

Participation Trends

Over the history of the FSP, there has been a series of cycles of growth and reduction in the numbers of participating individuals and households. Figure 1 shows the long-term history of the number of participants from 1969 to 2001. (Each year's figure is the average monthly number of participants.) The chart shows several periods of growth in FSP participation: 1969 to 1976, 1978 to 1981, and 1988 to 1994. FSP participation declined from 1976 to 1978, again from 1981 to 1988, and most dramatically from 1994 to 2000. Thus, the study period included seven years of rising FSP participation (1989 to 1994, plus 2001) and six years of declining FSP participation.

Figure 1

Average Monthly FSP Participants, 1969-2001



Source: FNS (2002a).

Organization of the Report

Chapter Two describes FSP administrative costs at the national and State levels, including the distribution of costs among the major functions, trends in the costs of certification and other major functions over the study period, and differences in FSP administrative costs among the States. Chapter Three summarizes the changes in the characteristics of the FSP caseload over the study period and the patterns of certification actions, focusing on changes in characteristics that were considered to have potential impacts on certification errors. In Chapter Four, the types and measures of FSP certification error are explained, and the trends and cross-state variation in error rates are summarized. Chapter Five brings together the data on costs, errors, caseload characteristics, and certification actions in a multivariate analysis of the factors affecting error rates. Chapter Six discusses the study's conclusions and limitations.

References and appendices are provided to support the presentation in the report. Appendix A describes the sources and methods for the analysis of FSP administrative costs. Appendix B describes the variation in State FSP administrative costs per FSP household and discusses the potential and challenges of modeling these costs. Appendix C explains technical aspects of the multivariate analysis of factors affecting error rates.

Chapter 2: FSP Administrative Costs

This chapter provides background information on FSP administrative costs. These data were analyzed for two purposes: to provide descriptive information that has not been widely available, and as a starting point for the analysis of certification-related costs and errors.

The chapter begins with a description of FSP administrative costs from the national perspective, including the average costs of certification and other major functions, and the trends in the costs of the major functions over time. Next, the chapter presents State-level averages, followed by a discussion of differences in FSP administrative costs by FNS region. The regional analysis allows States' administrative costs to be compared with those of their peers in the same region.

The analysis uses data for the study period (1989-2001) provided by FNS from the agency's National Data Bank. FNS compiled these data from State cost reports, which include both State and local administrative costs. The sources of the FSP administrative cost data, the cost reporting categories, and the methods used to analyze them are described in Appendix A. Supplementary information on the variation of administrative costs per FSP household across States and over time is provided in Appendix B, which also discusses the issues involved in modeling this variation. The costs represented in this report do not include expenditures for FNS' own operations and contracts for FSP administration.

National Summary of FSP Administrative Costs

In this section, we present a national summary of the trends and composition of FSP administrative costs. The estimates in this section were computed by adding up State totals. States with large numbers of participants make up a greater proportion of the national cost totals than smaller States. Therefore, the larger States have more influence on the national data. In the subsequent sections, the presentation of average FSP administrative costs at the State and Regional level gives all States equal weight.

Total FSP Administrative Costs

As shown in table 1, the grand total annual cost of FSP administration for the U.S. rose from $2.96 billion in 1989 to $4.44 billion in 2001, an increase of 50%. (All cost estimates in this report are in 2001 dollars, so inflation was not a factor in this increase.) The average annual U.S. grand total between 1989 and 2001 was $3.68 billion, of which $2.17 billion was for certification.

At the national level, the grand total FSP administrative cost increased steadily over the period (even after adjusting for inflation). Of the individual cost categories shown in the table, all but one (the "unspecified other" total) increased between 1989 and 2001. The cost categories correspond to the FSP administrative activities described in Chapter One. Further information on the cost categories is provided in Appendix A.

Different trends were observed in the total costs of several categories. Total benefit issuance costs rose steadily until their peak of $0.32 billion in 1996, then declined over the next five years, the period when most States replaced coupon issuance with electronic benefit transfer (EBT). Total fraud control costs increased steadily until 1997, when these costs essentially reached a plateau. Total automated data processing (ADP) development costs fluctuated over the period, peaking in 1995, which was the first full fiscal year after the federal share was reduced to 50 percent.

Table 1

Average Annual Total FSP Administrative Cost in Billions of 2001 Dollars, Total and Components for U.S., 1989-2001

Fiscal Year	Total Cost	Certif-ication	Issuance	Fraud	ADP opera-tions	ADP devel-opment	E&T	Miscel-laneous	FSNE	Unsp. Other
1989	2.96	1.72	0.21	0.11	0.16	0.04	0.22	0.09	.	0.42
1990	3.05	1.79	0.21	0.12	0.16	0.03	0.26	0.09	.	0.39
1991	3.16	1.88	0.23	0.12	0.16	0.05	0.25	0.09	.	0.38
1992	3.32	1.99	0.26	0.13	0.19	0.04	0.23	0.09	.	0.39
1993	3.41	2.03	0.28	0.15	0.19	0.04	0.23	0.09	.	0.41
1994	3.59	2.11	0.31	0.20	0.19	0.06	0.22	0.09	0.01	0.40
1995	3.76	2.20	0.31	0.21	0.21	0.08	0.27	0.10	0.02	0.36
1996	3.84	2.26	0.32	0.22	0.22	0.07	0.24	0.10	0.05	0.37
1997	3.88	2.26	0.30	0.24	0.22	0.06	0.25	0.10	0.07	0.37
1998	3.95	2.30	0.30	0.24	0.26	0.07	0.25	0.12	0.10	0.33
1999	4.18	2.46	0.29	0.24	0.28	0.07	0.27	0.12	0.12	0.32
2000	4.30	2.57	0.28	0.23	0.29	0.06	0.28	0.13	0.15	0.32
2001	4.44	2.65	0.27	0.24	0.28	0.06	0.30	0.14	0.17	0.32
Mean	3.68	2.17	0.27	0.19	0.22	0.06	0.25	0.10	0.05 [a]	0.37
Dollar Change ('89 v. '01)	1.48	0.93	0.06	0.13	0.12	0.02	0.08	0.05	0.16[a]	-0.1
Percentage Change ('89 v. '01)	49.6	54.3	31.2	122.9	72.9	65.6	40.2	50.8	1600.0[a]	-24.4

[a] Mean for FSNE is for all years. Mean FSNE cost for 1994-2001 was $0.09 billion. Dollar and percentage change are from 1994 to 2001.

Total ADP operations costs rose intermittently until they peaked in 2000 before slightly declining in 2001. Total employment and training (E&T) costs fluctuated up and down but showed an overall increasing trend. The total costs for the group of activities in the "miscellaneous" category began rising in 1994 and increased more from 1997 to 2001.[1] Food Stamp Nutrition Education (FSNE) costs were not reported before 1994, but they showed the most dramatic percentage rate of increase: 1600% over eight years.[2] The dollar increase in FSNE was much less dramatic, due to the small size of this program component. Among costs reported for all thirteen years (from 1989 to 2001), the percentage largest increases were in fraud control (123%) and ADP operations (73%), while the smallest increases were in issuance (31%) and E&T (40%). Only the unspecified other total declined over the period (by 24% from 1989 to 2001).[3]

Figure 2 shows the percentage distribution of the national total FSP administrative cost for the period

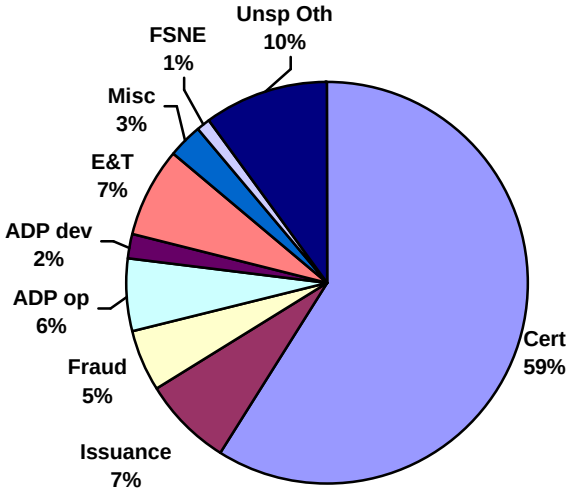
[1] The "miscellaneous" costs include quality control, fair hearings, System for Alien Verification of Eligibility (SAVE), outreach, management evaluation, and demonstration/evaluation projects.

[2] FY1992 was the first year when States operated approved plans for FSNE. Prior to FY1994, FSNE costs were included in the "unspecified other" category. The Federal share of the FY1992 FSNE cost was $661,000 (in 1992 dollars); only 7 States had approved FSNE plans for that year. (Source: http://www.nal.usda.gov/foodstamp/pdf/FNSFactSheet03.pdf.)

[3] Possible explanations for the decline in total unspecified other costs include more careful allocation of direct or indirect costs that should be reported elsewhere; actual reduction in spending; or a combination of these factors.

Figure 2

Percent of Total FSP Administrative Cost by Component for U.S. (in 2001 Dollars), 1989-2001



(summed over all 13 years) among the analysis categories. Certification was by far the largest category, representing three-fifths (59%) of the total. The next largest categories were unspecified other (10%), issuance (7%), E&T (7%), and ADP operations (6%). The smallest categories were miscellaneous, fraud control, FSNE, and ADP development. The small share for FSNE for the period as a whole (1%) was in part due to this category being added in 1994. In 2001, FSNE costs were 4% of the national total FSP administrative cost, while certification costs were 60% and unspecified other costs were 7% of the national total.

Administrative Costs per FSP Household: Averages and Trends

As shown in table 2, the average total annual administrative cost per FSP household for the U.S. from 1989 to 2001 was $407.95.[4] The average annual certification cost was $240.49 per FSP household. The average unspecified other cost was $40.70 per FSP household; the average issuance cost was $30.50 per FSP household. For FSNE, the overall average for 1989-2001 was $5.83 per FSP household; the average for the years with non-zero totals (1994-2001) was $9.42. The averages for other components ranged from $6.22 per FSP household (for ADP development) to $27.81 per FSP household (for E&T).

[4] The averages for the entire period in this table were computed by totaling the costs over all years and dividing by the sum of annual counts of FSP households. Thus, years with higher participation have more impact on the averages. The FSP household counts are averages of monthly data, not counts of the number of households participating at some time during the year, so the annual cost per FSP household is more precisely the ratio of the annual cost to the annual average number of participating households. The unweighted arithmetic average of the annual total cost per FSP household was $420.31, or 3 percent more than the amount reported in table 3. The differences between the averages in table 3 and unweighted averages for the cost components are 1 to 4 percent, except for FSNE (which had much more dramatic differences over time in the annual cost per FSP household).

Table 2

Average Annual FSP Administrative Cost per Household in 2001 Dollars, Total and Components for U.S., 1989-2001

Fiscal Year	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc	FSNE	Unsp Oth
1989	411.19	238.66	29.01	15.13	22.53	5.11	29.90	12.49	.	58.34
1990	393.34	230.87	27.31	15.49	20.62	3.79	33.37	11.33	.	50.57
1991	355.77	212.38	25.39	13.70	18.59	5.70	27.75	9.87	.	42.38
1992	330.69	197.53	26.13	13.12	19.21	4.09	22.95	8.49	.	39.17
1993	316.35	188.19	25.71	13.93	17.74	3.60	21.05	8.34	.	37.79
1994	323.84	190.49	27.83	17.84	17.20	5.09	20.04	8.44	0.94	35.98
1995	345.92	202.29	28.98	19.39	19.45	7.14	24.52	9.40	2.00	32.73
1996	364.68	214.46	30.82	20.87	21.11	6.62	22.57	9.12	4.31	34.81
1997	411.31	240.14	32.13	25.46	23.23	6.50	26.65	10.25	7.26	39.69
1998	479.99	278.77	35.97	29.07	30.98	8.95	30.46	14.28	11.57	39.95
1999	546.33	321.20	38.16	31.89	36.27	9.66	35.43	15.92	16.10	41.68
2000	588.11	350.72	37.61	31.93	39.59	7.94	38.16	17.57	20.93	43.67
2001	596.54	356.98	36.89	32.70	37.77	8.21	40.66	18.27	22.32	42.73
Average[a]	407.95	240.49	30.50	21.00	24.04	6.22	27.81	11.37	5.83[b]	40.70
Coefficient of Variation	0.24	0.24	0.15	0.35	0.33	0.31	0.23	0.30	0.79	0.16

[a] Average is sum of annual totals divided by sum of annual counts of participating households.

[b] FSNE annual average for 1994-2001 was $9.42 per household.

Table 2 provides the coefficient of variation (CV) as an indicator of the variability of the annual U.S. average cost per FSP household over time. The CV of 0.24 for the total annual administrative cost per FSP household means that the standard deviation of this variable was 24 percent of the mean.[5] Among the components of the total FSP administrative cost per household, the U.S. average FSNE cost per FSP household was the most variable from year to year, and the issuance cost was the least variable (using the CV as the measure of variability).

Figure 3 compares the national trends in total administrative cost per FSP household, certification cost per FSP household, and participating FSP households. The number of FSP households rose from 7.2 million in 1989 to 11.0 million in 1994, then declined to 7.3 million in 2000 before rising slightly to 7.4 million in 2001.[6] As the number of FSP households rose, the total administrative cost per FSP household declined—from $411 per FSP household in 1989 to $316 per FSP household in 1993. Conversely, as the number of FSP households fell from 1994 to 2000, the total cost per FSP household increased. A nearly identical trend occurred in the national certification cost per FSP household.

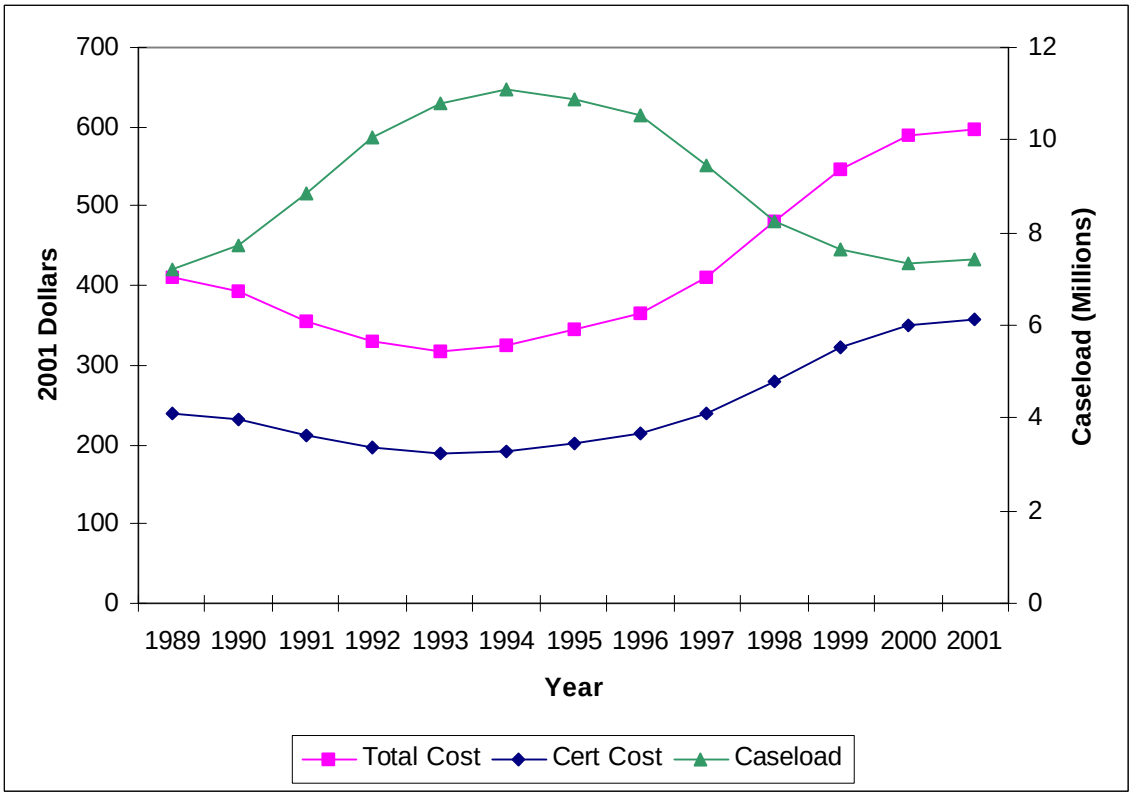
However, the trends in total and certification costs after 1993 did not simply reverse the previous trends. The upward trend in the cost measure began in 1994, as FSP participation was peaking. The cost per FSP household in 1989 was matched in 1997, when there were 2.2 million more participating households.

[5] We report the CV rather than the standard deviation to provide clearer comparisons among variables with large differences in averages. The standard deviation gives equal weight to all years, so the unweighted average of annual values was used in computing the CV. As noted above, the difference between the weighted and unweighted averages was small for all categories except FSNE.

[6] Beyond the study period, the number of participating FSP households increased to 8.2 million in FY2002 and 9.2 million in FY2003.

Figure 3

Average Annual Total FSP Administrative and Certification Costs per Household (in 2001 Dollars) and FSP Caseload of Participating Households for U.S., 1989-2001



Thus, the chart can be interpreted as reflecting a combination of two trends: a cyclical pattern and a non-cyclical long-term trend. Under the cyclical pattern, the costs per FSP household tended to increase as FSP participation decreased, and vice versa. In addition, there was a general trend of increasing costs per FSP household, at least starting in 1994, independent of the number of the number of households.

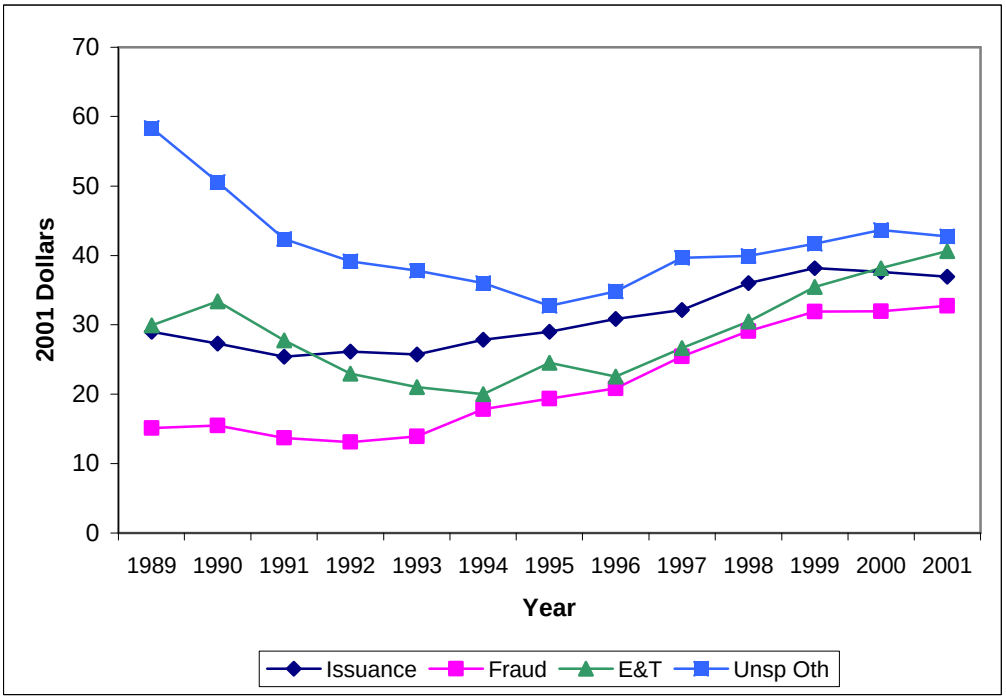
Figure 4 compares the national trends in the FSP administrative cost categories of issuance, fraud control, E&T, and unspecified other. The unspecified other cost per FSP household declined almost 50 percent from 1989 to 1995, then increased more gradually in 1996 through 2001. This was the only category of cost that ended the period at a lower cost per FSP household than at the beginning. The unspecified other cost may have declined (at least in part) because of changes in cost reporting procedures, such that costs that were previously reported as "unspecified other" were instead reported in other categories.[7] Issuance and fraud control costs per FSP household declined slightly between 1989 and 1993, then rose steadily until 1999 and remained nearly flat thereafter. The E&T cost per FSP household largely followed the same long-term trend as the total cost per FSP household, dropping to the lowest point in 1994, but with up-ticks relative to the long-term trend in 1990 and 1995.

Figure 5 shows the national trends in the cost per FSP household for ADP operations, ADP development, FSNE, and the minor reporting categories pooled in the "miscellaneous" analysis category. The cost per

[7] This interpretation is based on discussions with FNS financial management officials.

Figure 4

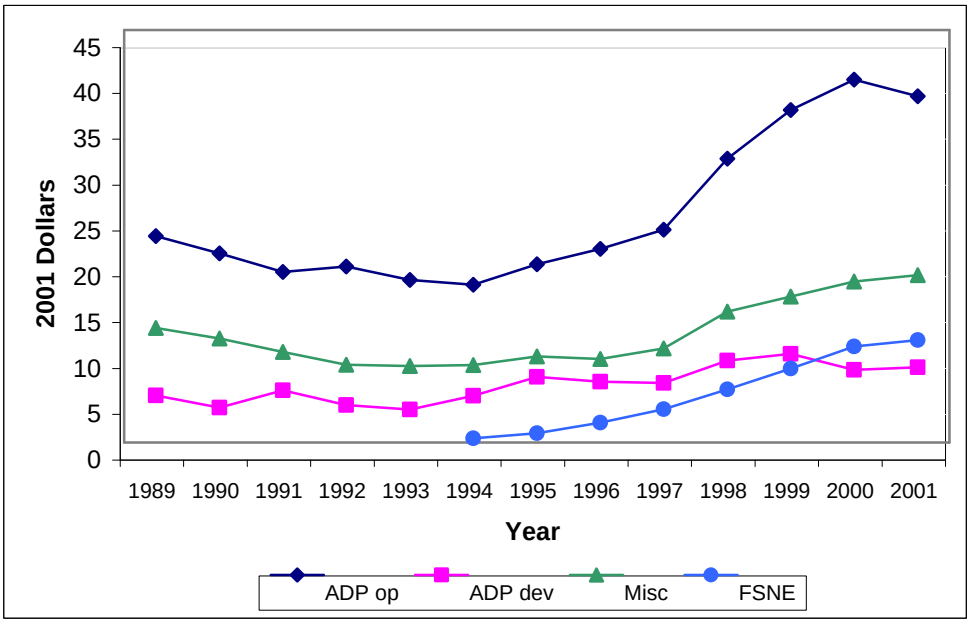
Average Annual FSP Administrative Cost per Household for U.S., 1989-2001: Issuance, Fraud Control, E&T, and Unspecified-Other Costs (in 2001 Dollars)



Note: "Unsp Oth" is unspecified other (costs not reported elsewhere). "Fraud" is fraud control.

Figure 5

Average Annual FSP Administrative Cost per Household for U.S., 1989-2001: ADP Operations, ADP Development, Miscellaneous, and FSNE Costs (in 2001 Dollars)



Note: FSNE=Food Stamp Nutrition Education. Costs for FSNE were first reported in FY1994.

FSP household for ADP operations and miscellaneous expenses generally followed the trend of the total cost per FSP household, though the rate of increase in ADP operations from 1994 to 2000 was much greater than for the total. The ADP development cost per FSP household fluctuated up and down over the period, with a slight long-term trend of increase.[8] The FSNE cost per FSP household increased very dramatically from 1994 (the first year of reporting in this category) to 2001.

The federal share of the costs estimated for this analysis (i.e., the rate of federal financial participation or FFP) varied among the categories of costs for two main reasons. First, the **statutory** rate of FFP varied among cost categories. Prior to April 1994, the Food Stamp Act authorized enhanced FFP for ADP development, fraud control, and the System for Alien Verification of Eligibility (SAVE, part of the miscellaneous category in the analysis). Throughout the period, FNS provided the States a portion of E&T funding in a grant that did not require any non-Federal match (the "100 percent E&T grant").[9]

Although most of the fraud control cost estimated for this analysis had 50 percent FFP or more, this analysis category included the "reinvestment" reporting category, which represents 100 percent non-Federal funds spent on error reduction.[10]

Second, for certification costs, the **actual** rate of FFP could be less than the **statutory** rate. Starting in 1999, most States were required to deduct a specified amount (which varied by State) from the Federal share of certification cost. This deduction represented the portion of the State's TANF grant deemed to be attributable to FSP costs that were previously allocated to the AFDC program.[11] Thus the actual non-Federal share was 50 percent of the total certification cost plus the amount of the adjustment.[12]

Figure 6 illustrates the average Federal and non-Federal shares of the total cost and certification cost per FSP household for the U.S. in 1989-2001. Despite the various forms of enhanced FFP, the Federal share was almost exactly half (50.3%) of the average total cost per FSP household. The Federal share of the certification cost per FSP household was 47.9%, due to the reduced FFP in 1999-2001.

Figure 7 illustrates the average Federal and non-Federal shares of the cost per FSP household in the remaining cost categories for the U.S. in 1989-2001. The cost categories with enhanced FFP were fraud control (54.6% average FFP), ADP development (54.4% average FFP), and E&T (67.8% average FFP). The average FFP over the period for fraud control and ADP development reflects the changing official rate of FFP. For E&T, the average FFP reflected the combination of the 100% FFP in the E&T grants and the 50% FFP in other categories.

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8 The increases in ADP development and operations costs may reflect the use of on-line application processing for the FSP and other means-tested programs. Numerous States switched to this approach in the 1990's, in place of paper application processing followed by key entry and batch processing.

9 Further information on the statutory rate of FFP is provided in Appendix A.

10 States entered into reinvestment agreements with FNS to spend State funds on error reduction in lieu of financial sanctions for excessive error rates, as discussed in Chapter 4.

11 The legal requirement was enacted in the Agricultural Research, Extension, and Education Reform Act of 1997 (P.L. 105-185). The Department of Health and Human Services made the determination of the deductions, based on the estimated portion of TANF grants that included the FSP share of common administrative costs.

12 The researchers used the federal outlays and the statutory FFP to estimate total costs for most categories. This approach eliminated another potential source of variation in the actual rate of FFP. See Appendix A.

Figure 6

Federal and State Shares of FSP Administrative Costs: Total and Certification (in 2001 Dollars)

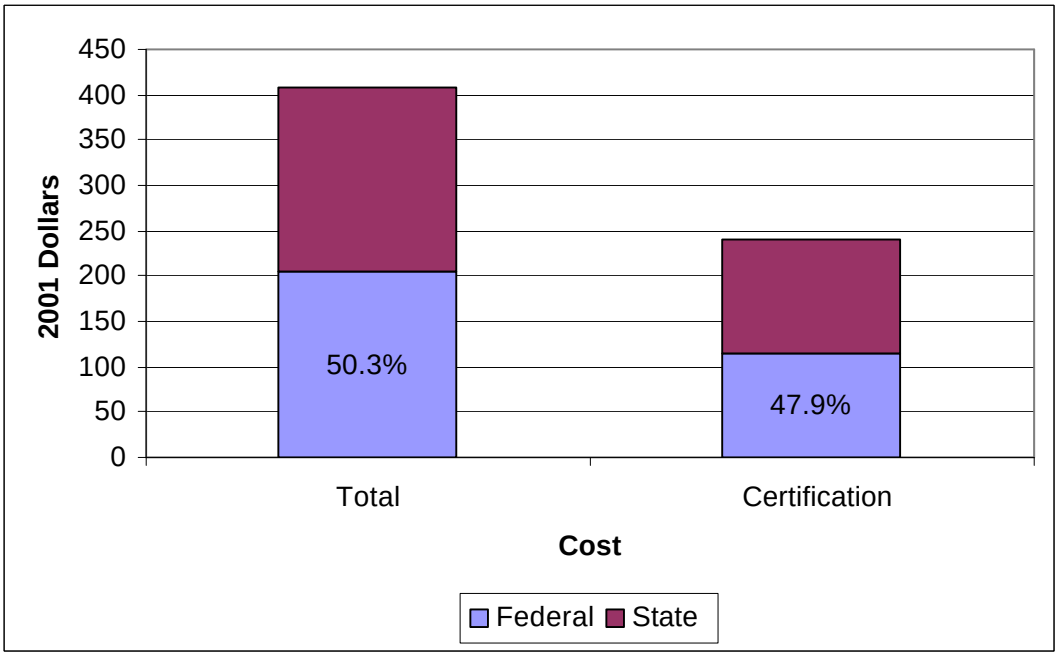
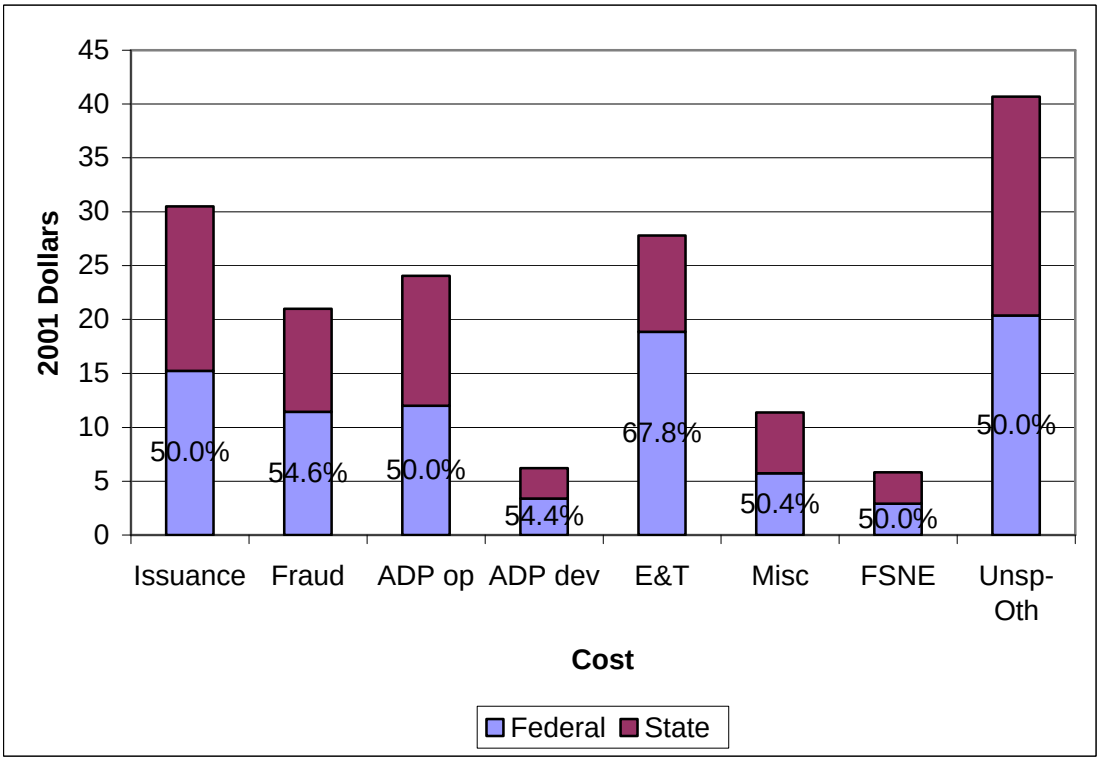


Figure 7

Federal and State Shares of FSP Administrative Cost: Other Components (in 2001 Dollars)



Variation in Costs among States

This section of the chapter describes the variation in the total administrative cost per FSP household and its components among the States. There is intrinsic interest in how much these costs vary among the States. Furthermore, the patterns of variation in administrative costs, particularly certification-related costs, are relevant to their potential contribution to variation in error rates. This section references the weighted national averages from the preceding section, but other statistics on the distribution of costs give each State's data equal weight.

Table 3 presents the average annual cost per FSP household for each State from 1989 to 2001, including the total and its components. Each State's values represent the weighted average, i.e., the total cost for the period in 2001 dollars divided by the sum of the average number of participating households.[13] Thus, the figures represent the average annual amount spent per FSP household over the entire period, and years with higher levels of FSP participation have more weight. The distribution of State weighted averages is summarized at the end of the table, including the 25th, 50th (median), and 75th percentiles, as well as the minimum, the maximum, and the weighted national average (using State FSP caseloads as weights, as in table 2).[14]

This table shows a wide range among the States in the average annual total cost per FSP household, from a minimum of $149 (in West Virginia) to a maximum of $1165 (in Alaska). Half of the States had an average annual total cost between $338 and $468 per FSP household (the range between the 25th and 75th percentiles). The range of average annual certification cost per FSP household was from $86 (in New Hampshire) to $643 (in Alaska), while half of the States had average annual certification costs between $165 and $279 per FSP household. The other cost categories had similarly skewed distributions, with a much greater difference between the maximum and the median than between the median and the minimum. For the total cost and most components, the median State average was within 10 percent of the weighted national average, but there were notable differences in fraud control, E&T, miscellaneous, and unspecified other. More often than not, the weighted national average was greater than the unweighted median, implying that a minority of States with relatively high costs had disproportionate influence on the national average.

[13] Let C_t be the cost in a State during year t and let N_t be the number of households served during that year.

$$AVG = \frac{\sum N_t \frac{C_t}{N_t}}{\sum N_t} = \frac{\sum C_t}{\sum N_t}$$ where the sums are over t.

[14] The parameters representing the distribution are unweighted, because the purpose is to describe the variation among States rather than the nation as a whole.

Table 3

Weighted Average Annual Cost per FSP Household in 2001 Dollars by State, 1989-2001

State	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc.	FSNE	Unsp. Oth.
Alabama	328.55	199.34	26.67	15.50	5.51	0.95	10.88	9.45	9.95	50.29
Alaska	1164.71	643.38	200.51	50.88	183.70	7.69	39.03	39.26	0.00	0.25
Arizona	339.30	191.36	29.44	13.44	17.46	3.19	11.20	11.63	1.98	59.59
Arkansas	351.53	239.62	24.27	18.22	12.41	8.77	16.53	18.60	10.05	3.04
California	572.85	294.19	31.06	45.65	20.42	13.80	31.27	12.87	3.16	120.43
Colorado	335.77	167.57	32.77	21.40	20.16	7.77	41.85	3.65	10.96	29.65
Connecticut	401.16	149.64	27.95	16.02	43.73	3.90	8.35	17.76	11.20	122.62
Delaware	615.60	382.87	27.65	35.47	58.79	43.40	46.87	20.49	0.00	0.05
District of Columbia	463.70	295.81	42.33	14.55	52.86	6.42	13.78	36.92	0.00	1.04
Florida	347.26	246.53	24.70	15.09	18.44	6.03	15.33	5.23	2.69	13.21
Georgia	415.17	267.60	23.51	27.80	38.83	4.28	12.57	3.53	6.19	30.86
Hawaii	397.67	246.04	21.01	26.66	43.70	4.30	26.05	12.72	0.12	17.08
Idaho	472.72	272.95	70.17	10.84	66.55	0.90	27.61	9.77	13.80	0.12
Illinois	339.96	162.89	20.90	5.68	14.57	1.37	43.49	5.09	5.62	80.35
Indiana	399.11	148.03	51.49	4.46	24.62	8.99	70.98	6.06	4.91	79.59
Iowa	322.81	223.40	22.37	12.62	16.53	2.67	10.67	16.07	8.35	10.12
Kansas	291.95	171.83	15.83	2.79	15.00	6.20	17.77	11.91	16.05	34.56
Kentucky	330.83	227.88	23.71	10.30	31.70	0.37	18.46	14.53	0.96	2.92
Louisiana	308.62	237.61	29.70	11.25	5.87	1.93	11.22	7.58	2.20	1.25
Maine	272.36	152.07	15.86	5.34	9.04	8.76	14.18	12.76	24.28	30.07
Maryland	390.90	248.64	62.52	6.47	30.30	25.66	3.60	13.39	0.31	0.00
Massachusetts	421.91	239.42	29.16	30.93	5.91	12.92	35.34	26.53	4.89	36.81
Michigan	337.59	155.92	15.40	15.95	9.87	5.81	24.62	9.21	7.71	93.11
Minnesota	522.22	296.66	36.78	18.72	39.83	7.10	46.52	16.23	35.57	24.82
Mississippi	282.99	170.51	33.82	8.29	19.30	1.18	15.89	9.49	5.53	18.98
Missouri	328.40	244.45	18.91	7.01	9.90	15.63	8.92	9.19	11.50	2.89
Montana	498.55	245.37	25.13	9.85	49.12	12.52	45.10	19.41	11.60	80.47
Nebraska	399.25	208.88	42.78	9.05	54.30	26.37	18.40	15.15	9.71	14.61
Nevada	383.15	278.63	10.64	19.69	6.91	40.27	9.14	15.81	1.78	0.27
New Hampshire	355.70	85.51	30.18	9.46	71.57	34.46	26.71	13.87	19.07	64.86
New Jersey	665.91	405.05	33.65	100.22	71.78	8.35	19.66	19.79	2.33	5.08
New Mexico	404.57	253.09	26.14	8.99	46.27	0.00	35.43	20.89	12.75	1.00
New York	449.18	249.71	38.93	34.30	25.70	0.21	40.33	11.55	3.35	45.09
North Carolina	359.13	238.22	29.95	16.90	19.60	0.44	15.85	7.18	12.17	18.81
North Dakota	525.51	286.06	54.39	4.56	58.98	0.00	10.23	17.27	41.40	52.60
Ohio	360.59	160.46	31.12	23.72	18.47	2.59	39.57	14.24	3.81	66.61
Oklahoma	399.93	292.12	35.53	15.28	23.49	3.78	8.79	11.07	9.48	0.38
Oregon	377.33	113.86	30.78	15.77	25.19	1.55	25.63	14.32	5.65	144.59
Pennsylvania	447.40	309.13	23.94	15.34	29.52	1.18	62.52	3.16	1.50	1.11
Rhode Island	362.54	114.51	33.31	15.01	30.08	5.22	3.46	18.63	1.24	141.09
South Carolina	327.69	204.77	37.10	17.31	5.52	1.32	15.83	8.87	5.07	31.91
South Dakota	536.39	258.25	61.51	7.55	35.23	0.00	35.10	27.61	9.38	101.76

(continued)

Table 3

Average Annual Cost per FSP Household in 2001 Dollars by State for Total and Components, 1989-2001 (continued)

State	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc.	FSNE	Unsp. Oth.
Tennessee	250.62	148.73	22.44	10.15	23.36	6.02	10.48	5.34	5.07	19.03
Texas	390.13	280.01	32.09	6.88	27.52	8.76	20.43	11.71	2.74	0.00
Utah	548.30	385.71	41.49	30.77	17.55	5.69	48.16	13.88	5.04	0.00
Vermont	431.34	86.65	54.10	6.57	14.74	0.39	159.85	37.33	9.78	61.93
Virginia	551.31	419.85	41.39	7.14	34.41	3.51	19.68	16.00	8.28	1.06
Washington	444.91	321.49	31.12	21.16	15.37	13.35	9.72	27.52	4.10	1.08
West Virginia	149.05	91.56	14.39	8.65	10.41	6.26	9.78	6.50	1.50	0.00
Wisconsin	623.40	247.57	55.22	42.42	69.95	11.45	100.38	20.30	39.91	36.20
Wyoming	547.32	146.29	31.29	15.42	113.84	5.47	16.56	33.31	29.83	155.32
U.S. Average (wtd.)	407.95	240.49	30.50	21.00	24.04	6.22	27.81	11.37	5.83	40.70
Unweighted statistics:										
Minimum	149.05	85.51	10.64	2.79	5.51	0.00	3.46	3.16	0.00	0.00
25th Percentile	338.44	165.23	24.10	8.82	15.19	1.46	11.21	9.33	2.51	1.10
Median	397.67	239.62	30.78	15.09	24.62	5.69	18.46	13.87	5.62	19.03
75th Percentile	468.21	279.32	38.01	20.43	43.71	8.77	37.23	18.61	11.08	60.76
Maximum	1164.71	643.38	200.51	100.22	183.70	43.40	159.85	39.26	41.40	155.32

In table 4, the States are listed in order of their average annual total administrative cost per FSP household, from the least to the greatest. The weighted U.S. average is included. As the table shows, three-fifths of the States (31) had average total administrative costs per FSP household below the U.S. average. The five States with the least administrative costs per FSP household were West Virginia, Tennessee, Maine, Mississippi, and Kansas. The greatest administrative costs per FSP household were in Alaska, New Jersey, Wisconsin, Delaware, and California.[15]

[15] The unweighted mean of the State averages in table 4 was $422.45 per FSP household, and the coefficient of variation (CV, the ratio of the standard deviation to the mean) was 0.35. These figures include Alaska, which had an average that was more than 3 standard deviations above the mean of the State averages. Excluding Alaska, the unweighted mean of the State average total costs per FSP household was $407.60 and the CV was .25.

Table 4

States Sorted by Average Annual Total FSP Administrative Cost per Household (in 2001 Dollars), 1989-2001

State	Total Cost
West Virginia	149.05
Tennessee	250.62
Maine	272.36
Mississippi	282.99
Kansas	291.95
Louisiana	308.62
Iowa	322.81
South Carolina	327.69
Missouri	328.40
Alabama	328.55
Kentucky	330.83
Colorado	335.77
Michigan	337.59
Arizona	339.30
Illinois	339.96
Florida	347.26
Arkansas	351.53
New Hampshire	355.70
North Carolina	359.13
Ohio	360.59
Rhode Island	362.54
Oregon	377.33
Nevada	383.15
Texas	390.13
Maryland	390.90
Hawaii	397.67
Indiana	399.11
Nebraska	399.25
Oklahoma	399.93
Connecticut	401.16
New Mexico	404.57
U.S. weighted average	**407.95**
Georgia	415.17
Massachusetts	421.91
Vermont	431.34
Washington	444.91
Pennsylvania	447.40
New York	449.18
District of Columbia	463.70
Idaho	472.72
Montana	498.55
Minnesota	522.22
North Dakota	525.51
South Dakota	536.39
Wyoming	547.32
Utah	548.30
Virginia	551.31
California	572.85
Delaware	615.60
Wisconsin	623.40
New Jersey	665.91
Alaska	1164.71

As shown in table 5, there was a highly significant negative correlation in cross-sectional data between the certification cost per FSP household and the unspecified other cost per FSP household. The values ranged from –0.350 to –0.508, with significance at the 1 percent level in every year. Thus, it is clear that States with high certification costs per FSP household had low costs in the unspecified other category, and vice versa. Because of the "catch-all" nature of the unspecified other category, it is difficult to interpret this relationship. One possible explanation is that some States assigned costs to certification that other States assigned to the unspecified other category. Early in the history of the FSP, many States assigned their indirect costs for all FSP operations to the unspecified other category. Several years before 1989, FNS instructed States to change this practice and allocate indirect costs among the other categories, but there may have been a lag. Regardless of the reason, **this relationship provides a reason for caution about assuming that certification costs from 1989 to 2001 were consistently defined and comparable among States**. For this reason, the multivariate analysis for the study did not focus solely on certification costs, but instead used a more inclusive measure of certification-related costs, as discussed in Chapter 5.

Table 5

Correlation of Certification and Unspecified Other Costs per Household Across States for 1989-2001

Year	Correlation
1989	-0.504***
1990	-0.508***
1991	-0.402***
1992	-0.362***
1993	-0.361***
1994	-0.350**
1995	-0.370**
1996	-0.423***
1997	-0.464***
1998	-0.506***
1999	-0.504***
2000	-0.453***
2001	-0.396***

* Significant at 10% level ** 5% level *** 1% level

FSP Administrative Costs by FNS Region

As shown in table 6, the States in the Mid-Atlantic region had the greatest median annual total cost per FSP household ($464.29) followed closely by the Mountain-Plains region ($447.81) and the West region ($446.36).[16] The smallest median annual total cost per FSP household was in the Southeast region ($321.76), and the second-smallest regional median was in the Northeast ($361.22). The rankings of the regional medians varied among the cost components: for example, the Mid-Atlantic region had the greatest median cost per FSP household for certification and ADP operations, but this region had the least median cost per FSP household for unspecified other and FSNE.[17] The results are purely indicators of the associations between costs and State location; they do not establish that the location actually influenced State costs.

Table 6

Median Annual Cost per Household (in 2001 Dollars) by Region, Total and Components, 1989-2001

Region	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc.	FSNE[a]	Unsp Oth
Northeast	361.22	141.75	28.99	12.46	22.09	0.00	19.26	15.45	11.76	62.14
Mid-Atlantic	464.29	308.20	30.14	13.33	30.89	1.87	14.82	14.64	0.00	0.00
Southeast	321.76	214.39	26.06	13.97	19.90	0.28	12.95	7.27	7.91	18.50
Midwest	396.53	184.45	33.83	14.77	23.26	1.29	45.33	8.49	13.45	51.73
Southwest	371.37	254.59	29.42	11.99	19.35	0.23	16.83	14.58	7.26	0.00
Mountain-Plains	447.81	234.70	27.44	9.08	25.94	0.00	19.63	14.71	18.35	22.03
West	446.36	281.21	25.88	20.44	24.46	0.73	20.48	14.22	2.25	9.56

[a] FSNE median costs are for 1994-2001.

[16] The median for each region and category was computed among all state-years for the region and thus reflects the overall distribution of the cost per FSP household among the States in the region over time. (A state-year is the observation for a State in a given year.) This approach gives equal weight to each observation, whereas the State means in table 3 effectively give more weight to years with greater numbers of FSP households. Table 6 is intended to reflect the distribution of costs among States over time, whereas table 4 is intended to reflect each State's overall level of spending.

[17] As noted in the table, the FSNE median costs were computed using only the data for 1994-2001. This approach yields higher medians than if the years 1989-1993 had been included, because no States had FSNE costs for those years. The median FSNE cost of $0.00 per FSP household in the Mid-Atlantic region indicates that at least half of the state-years in this region had costs of $0 per FSP household, even though only two Mid-Atlantic States had weighted average annual FSNE costs of $0 per FSP household (as shown in table 4).

Chapter 3: FSP Caseload Characteristics and Administrative Actions

This chapter describes the trends and cross-state variations in the characteristics of FSP caseloads, i.e., the collective characteristics of participating FSP households as a group at the national and State levels. In addition, the chapter describes the trends and cross-state variations in administrative actions related to the certification of FSP eligibility. The chapter focuses on caseload characteristics and administrative actions that were considered as potential variables for the multivariate analysis of FSP certification-related effort and errors from 1989-2001. The variables in the final multivariate models of certification effort and errors are discussed in Chapter Five.

The caseload characteristics are mostly outside the direct control of FSP agencies. These include income sources, assets, expenses, and demographics. On the other hand, administrative actions by FSP agencies, including recertification periods and rates of expedited service, reflect national and State policies as they interact with the composition of the caseload. This distinction is not absolute, because FSP policies and practices may indirectly affect caseload characteristics. For example, several authors have provided evidence that short certification periods may tend to reduce FSP participation, particularly among households with earnings, who are most often subject to this practice (Rosenbaum, 2000; Kornfeld, 2002, Kabbani and Wilde 2003).

Data and Methods

The data for this analysis were drawn from the FNS Quality Control (QC) public-use microdata files for 1989 through 2001. Each file provides a random, nationally representative sample of approximately 50,000 active FSP cases selected for QC reviews by State FSP agencies. The sample in each State is drawn to be representative of the State. QC reviewers complete a standardized form using information from case records, household interviews, and third-party sources. The QC files include detailed data on the demographics and economic circumstances of FSP participants, benefit levels, and administrative actions. As discussed in Chapter Four, the QC data also include indicators of errors in determining eligibility and benefits. For each year, the analysis variables were computed at the State and national levels through weighted tabulations of the microdata, using the sampling weights in the microdata.

The QC data used in this chapter come from FSP case records. The data represent only those household members who are identified as members of the FSP case, which is defined as one or more persons who live together, buy food together, and prepare meals together. Thus, some known household members may not be included in the FSP case record, and unreported members are not. For the ease of discussion in this chapter, the terms “FSP household” and “FSP case” are used interchangeably.

The analysis presented in this chapter used two kinds of graphs. First, we constructed bar graphs of national trends in caseload characteristics. The national values in these graphs are weighted averages of the State-level data, using average monthly counts of participating households as weights. Thus, these trends are representative of the nationwide FSP caseload as a whole, giving more weight to larger States than to smaller ones.

Second, we produced graphs to depict the variation in caseload characteristics across States during each of the years 1989-2001. These “box and whisker” graphs identify the minimum, 25th percentile, median,

unweighted mean, 75th percentile, and maximum of the State-level variables. We refer to the difference between the 25th and 75th percentile values as the "interquartile range". These graphs are presented in the chapter for the subset of characteristics that were considered particularly important because of their prevalence and trends over time. In the discussion that follows, we highlight the major patterns observed in the State-level analysis. The State-level data—particularly the extreme values—should be viewed with caution, because they are subject to larger sampling errors than the national estimates.

The descriptive analysis in this chapter is presented because of its relevance to this study, with awareness of its limitations. The QC data provide contextual information on the changes in the FSP caseload during the study period, and on the differences in caseload among the States. Furthermore, this information was used to identify variables for modeling FSP error rates that met two criteria: they were theoretically relevant to a model of errors as a function of certification effort and other factors, and they varied over time and among States in ways that suggested potential explanatory power in such a model.

Sources of Income

As discussed below, there were several notable trends in the sources of income received by the FSP caseload during the study period. These trends are relevant to modeling effort and errors because the likelihood of error for a household depends on the types of income that the household receives. Determinations of earned income may require reviewing several pay stubs and verification data from employers; these data may be incomplete or inaccurately reported. Furthermore, earned income changes as workers' hours and pay rates fluctuate, so income data must be frequently updated to prevent and detect payment errors. In contrast, FSP agencies have computerized access to data on many types of government benefits, including AFDC/TANF and Social Security, so eligibility workers can determine income from these sources with little risk of error.

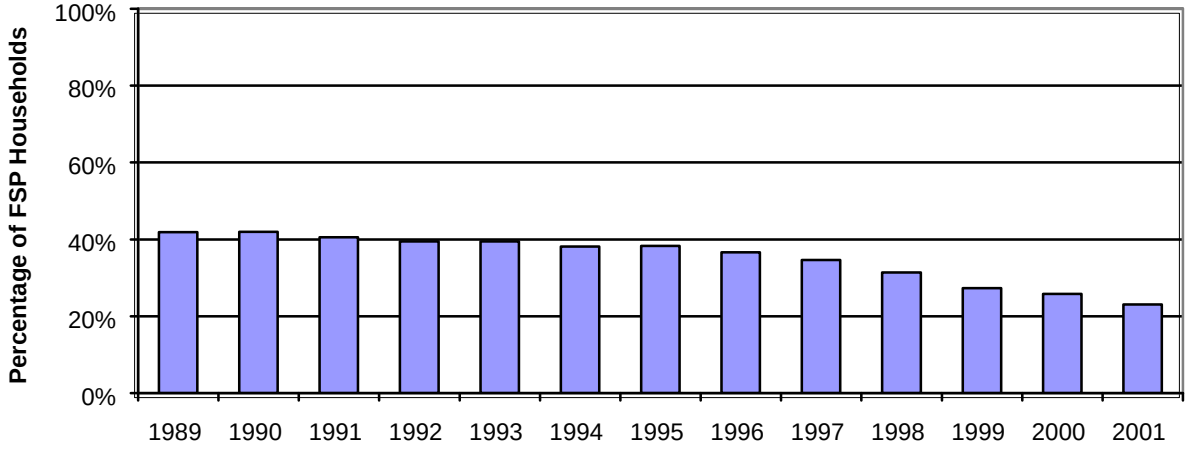
AFDC/TANF Benefits

We hypothesized that, to achieve an acceptable level of accuracy, States may need to spend less FSP resources on households with AFDC or TANF than on households that rely on other sources of income. For AFDC or TANF households, the FSP's share of the effort is reduced through sharing of common effort for certification, data processing, and other functions. In addition, the FSP agency has ready access to exact information on AFDC or TANF benefits, so this type of income is less difficult to determine than others, and thus less effort is required to determine the household's total income with the same degree of accuracy.

As shown in figure 8, the percentage of FSP households receiving AFDC or TANF fell slightly from 41.9 percent in 1989 to 38.3 percent in 1995, and then more rapidly to 23.0 percent in 2001. Thus, the trend was already under way when TANF was adopted in 1996, but it accelerated thereafter. This trend reflects both the absolute decline in AFDC/TANF participation and the impact of other trends on the composition of the FSP caseload.

Figure 8

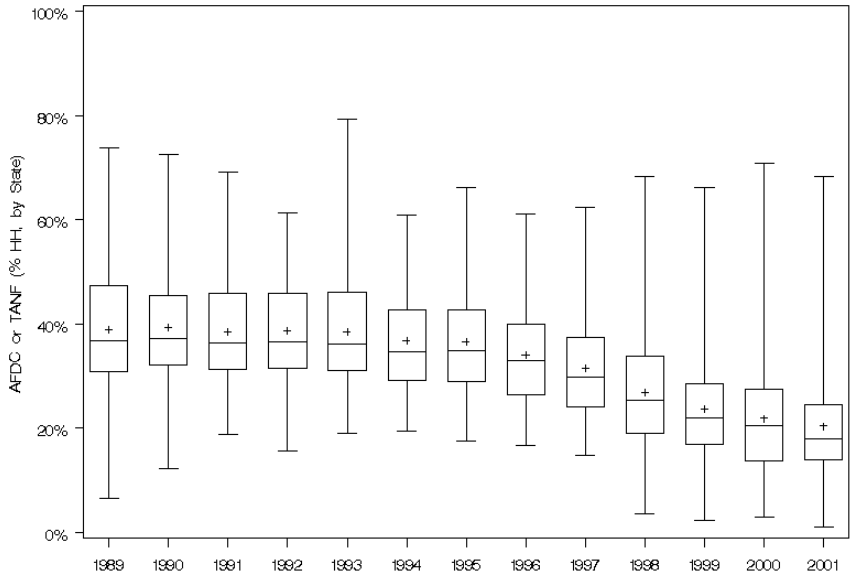
National Percentage of FSP Households with AFDC or TANF



Among the States, the size of the interquartile range between the 25th and 75th percentiles was relatively stable (See figure 9.) The trends in the unweighted mean and median percentage of FSP households receiving AFDC or TANF were the same as that of the national (weighted) average in figure 8. The range of the percentage of FSP households receiving AFDC or TANF was at least 40 percentage points and often more during the period.

Figure 9

Variation in State-Level Percentage of FSP Households with AFDC or TANF



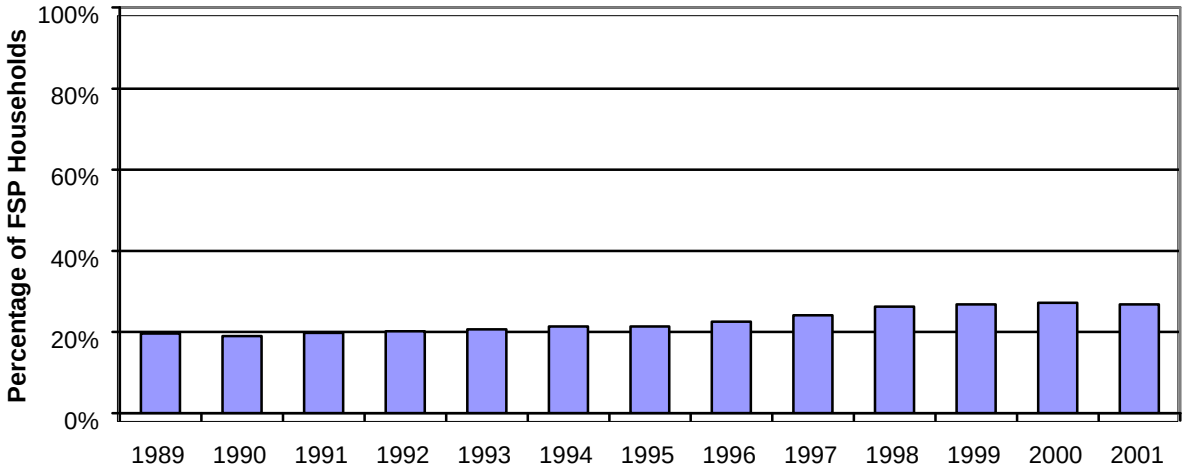
Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Earnings

At the national level, the percentage of FSP households with reported earnings rose from 19.0 percent in 1990 to 27.2 percent in 2000, with the sharpest increase between 1995 and 1998. (See figure 10.) This trend coincided with both the economic boom of 1992-2000 and the implementation of welfare reform, and it marked the continuing shift of the FSP away from its traditional role as an adjunct to cash benefits toward an expanded role as support for low-income workers.

Figure 10

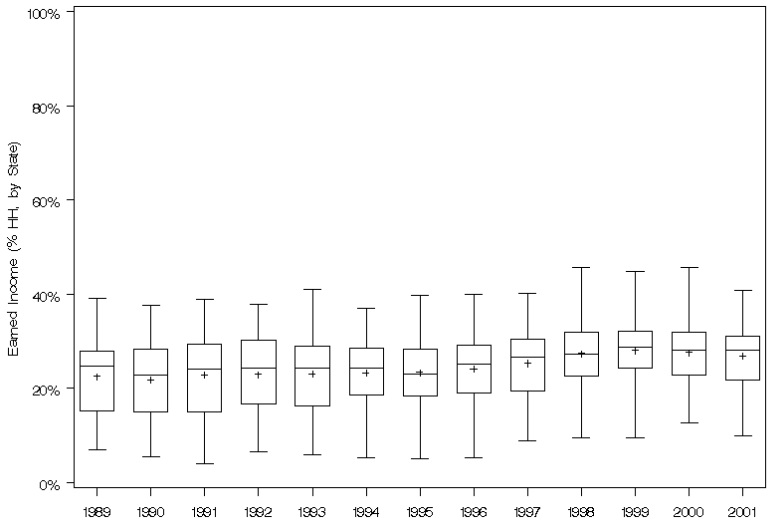
National Percentage of FSP Households with Reported Earned Income



The trends in the unweighted mean and median percent of FSP households with reported earned income across the States matched the national trend. (See figure 11.) The 25th and 75th percentiles fluctuated somewhat relative to the median and mean over the period, with a narrower range in later years. The range between the 75th percentile and maximum was generally similar in size to the range between the 25th percentile and the minimum, and these values generally moved in parallel to the overall trend.

Figure 11

Variation in State-Level Percentage of FSP Households with Earned Income



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Social Security

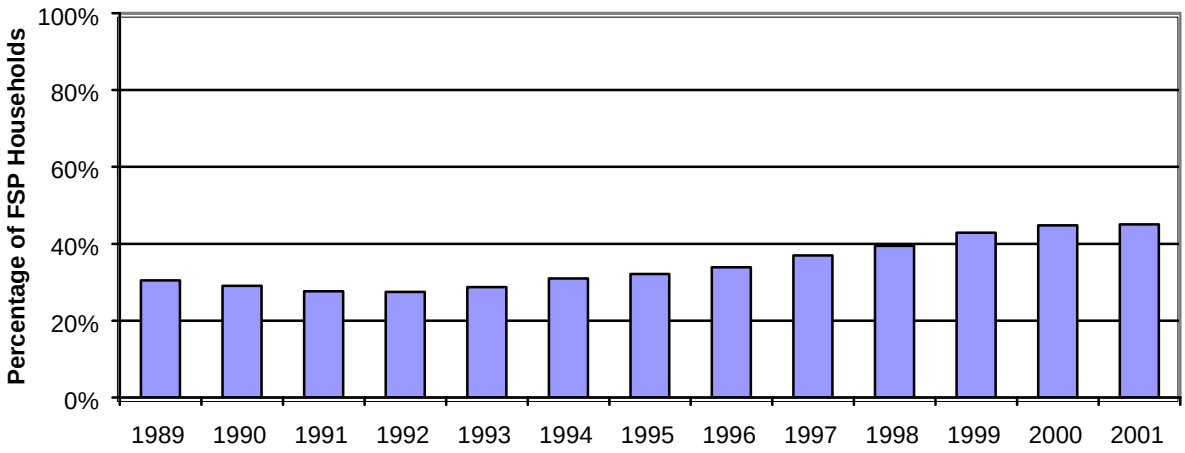
As with AFDC/TANF, we expected that households with income from Social Security benefits (including OASDI and SSI)[1] would be less error-prone than households that did not receive this type of government benefit. Households with elderly or disabled members tend to be more stable in composition and sources of income than other households, and these households are less likely to have unreported sources of income from employment. The presence of Social Security benefits adds little to the potential for error, because benefit changes are infrequent and occur on a standard schedule. Also, information-sharing between Food Stamp Agencies and the Social Security Administration is automated, thus facilitating the verification and updating of information on FSP households receiving Social Security benefits.

There was a clear upward trend in the national percentage of FSP households with Social Security income after 1992. (See figure 12.) The percent of FSP households with Social Security income fell slightly from 30.5% in 1989 to 27.5% in 1992, then rose steadily to 44.8% in 2000 and reached 45.0% in 2001. Thus, Social Security took the place of AFDC/TANF as the most common source of income for FSP households.

[1] OASDI is the acronym for Old Age, Survivors and Disability Insurance. SSI is the Supplemental Security Income program for low-income elderly and disabled individuals.

Figure 12

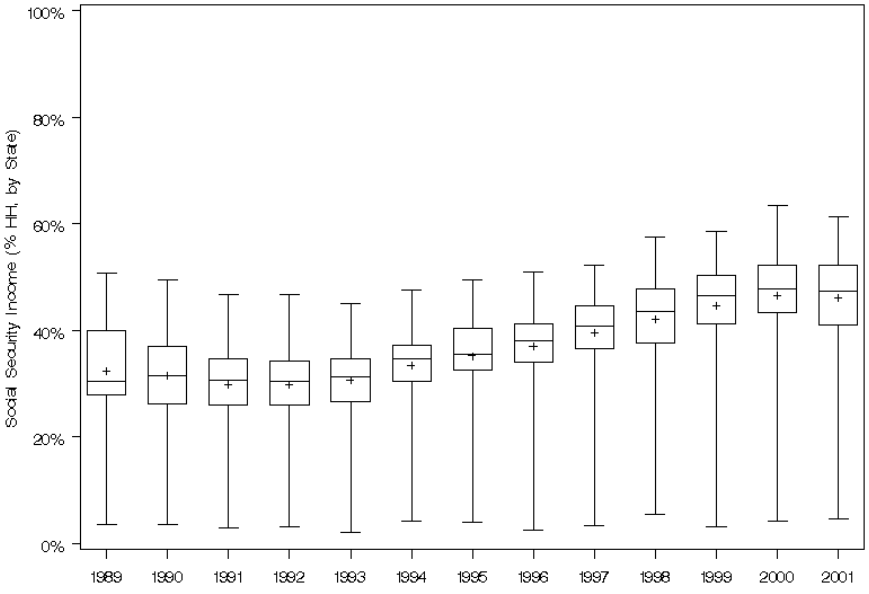
National Percentage of FSP Households with Social Security Income



The trends in the unweighted mean and median State-level percentage of FSP households receiving Social Security income matched the national trend. (See figure 13.) The 25th and 75th percentiles for the States remained relatively close to the median and mean over the period. The minimum was nearly constant, while the maximum rose and fell with the other measures. Thus, there was a greater range among States with relatively low percentages of FSP households receiving Social Security (below the 25th percentile) than among the States with high percentages.

Figure 13

Variation in State-Level Percentage of FSP Households with Social Security Income



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

General Assistance

General Assistance (GA) programs (funded by the States and in some cases local governments) share costs with the FSP for the administration of cases receiving both benefits (GA-FSP cases). Thus, less FSP resources are spent to achieve the same results with these cases. In addition, the eligibility requirements for GA tend to screen out households who are likely to have volatile or unreported income. At the national level, GA receipt steadily declined from 10.6 percent of FSP households in 1990 to 5.4 percent in 2000. Because of the small size of the GA-FSP population, variation in the percentage of FSP households receiving GA was unlikely to have a significant effect on error rates or the effort required to administer the FSP.[2]

Child Support

The national percentage of FSP households receiving reported child support fluctuated between 4.1 and 5.1 percent between 1991 and 1997, then rose steadily to 7.8 percent in 2001. As discussed in Chapter One, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) made important changes in the child support system, which were implemented along with TANF in the period from 1997 to 2001. Nevertheless, given the small percentage of the FSP caseload with reported child support even in 2001, this type of income was not likely to be a significant factor influencing FSP error rates.

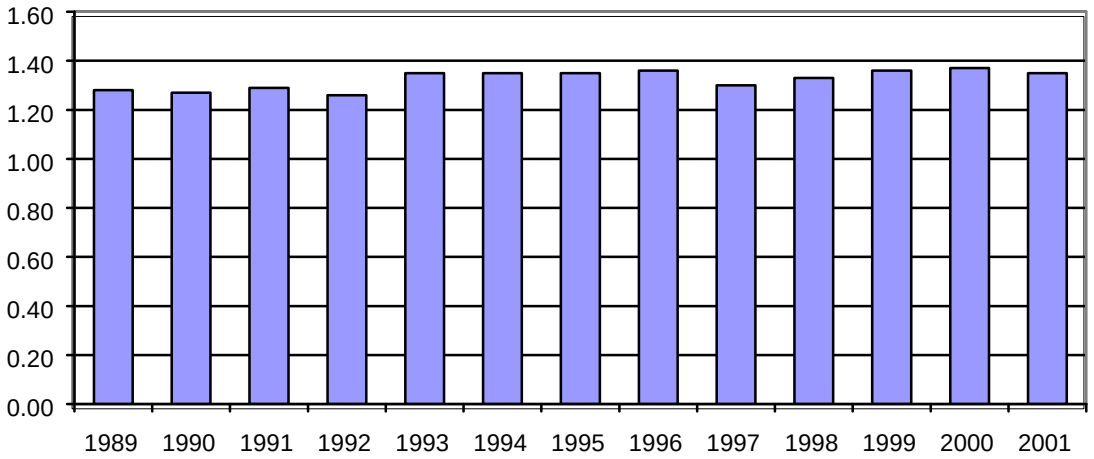
Number of Reported Income Sources

The number of reported income sources is an indicator of the potential for error: the more sources of income a household receives, the more information is needed to determine income and calculate benefits, and the more opportunities exist for error. This measure did not vary much nationally and did not show a consistent trend, as seen in figure 14. The trend in the average number of reported income sources had two slight troughs around 1.3 or fewer (1989-1992 and 1997) and two slight peaks around 1.35 or more (1994-1996 and 1999-2001). The overall range was not very large (1.26 to 1.37). These figures reflected the combination of trends in specific income sources—the declines in AFDC/TANF and GA, and the increases in earnings and Social Security.

[2] Charts are omitted when the maximum national percentage is less than 12 percent.

Figure 14

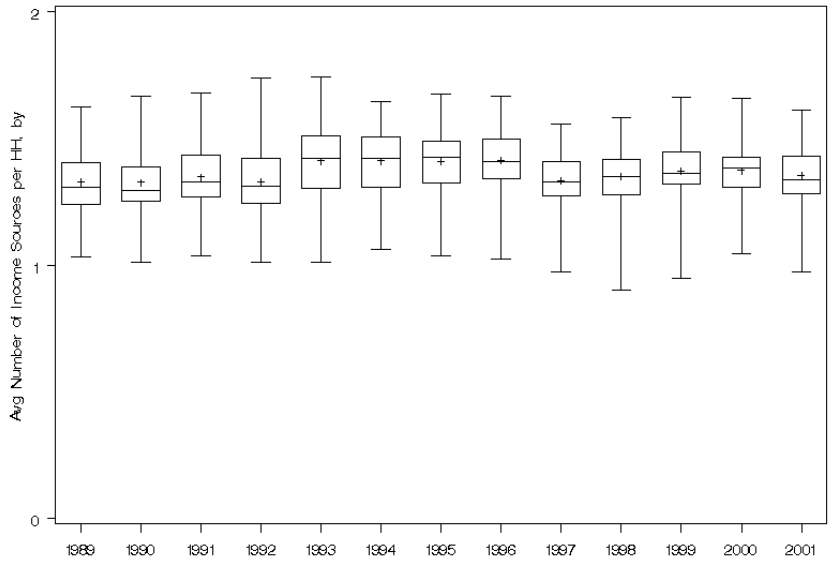
National Average Number of Reported Income Sources Per FSP Household



The weighted mean, unweighted mean, and median for the number of income sources per FSP household did not vary much over the period in the State-level data. (See figure 15.) The minimum hovered around 1.0, and the maximum varied considerably, but the interquartile range was relatively small.

Figure 15

Variation in State-Level Average Number of Reported Income Sources Per FSP Household



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Other FSP Caseload Characteristics

In addition to sources of income, other types of economic and demographic characteristics of the FSP caseload were analyzed to identify national trends over the study period and patterns of cross-state variation. Economic characteristics, including assets and deductions from income, were considered relevant because they entailed additional information requirements and potential for error. The demographic characteristics of the FSP caseload were considered relevant for two reasons. First, to maintain accurate case records, workers may need to obtain and maintain more information on larger and more heterogeneous households (with age and citizenship status being discernible sources of differences among individual household members that are not already captured by data on sources of income). Second, household demographics may be related to the rate of changes in eligibility: for example, elderly-only households are likely to be more stable than other types, especially those with non-elderly adults and children.

Assets

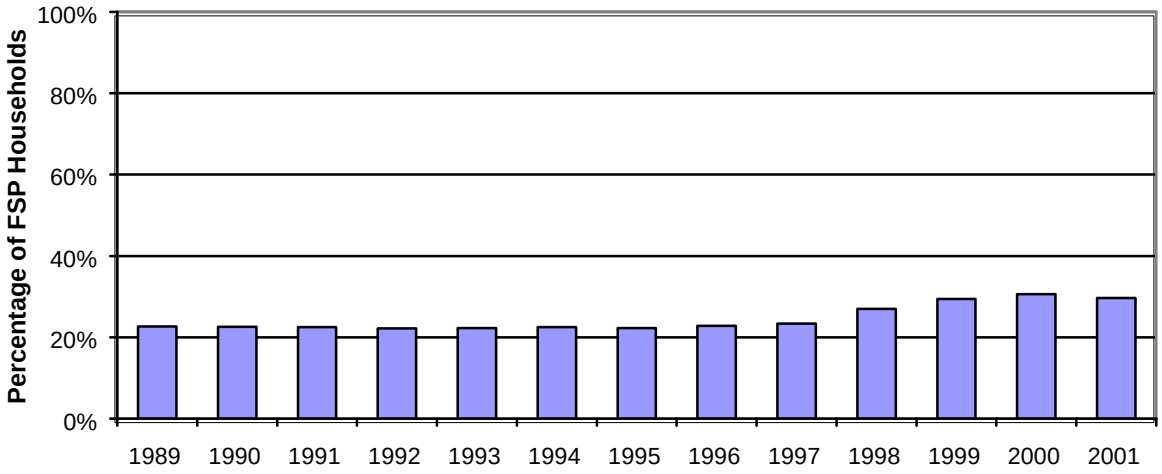
FSP eligibility is affected by the value of the household's liquid assets (bank accounts, savings bonds, and investments that can readily be converted to cash) and motor vehicles, although rules exclude certain assets from being counted, depending on the type of asset and household circumstances. Thus, households with countable liquid assets or vehicles may require more certification effort to achieve a given level of accuracy, because of the need to obtain and verify asset information, and to determine whether assets exceed allowed amounts.

Both liquid assets and non-excluded vehicles became more common among FSP households starting in 1998 and reached peak levels of prevalence in 2000. The trend in liquid assets is stronger because the increase was from around 22 to 23 percent (between 1989 and 1997) to around 30 percent, as shown in figure 16. The presence of non-excluded vehicles rose from less than 3 percent (before 1998) to over 5 percent (in 1999 and 2000) before declining to around 4 percent (in 2001). Thus, this trend affected only a very small proportion of FSP households and would not be expected to have a noticeable effect on administrative effort.[3]

[3] The QC data usually do not contain records of assets for categorically eligible households (e.g., AFDC or TANF households, because these assets are not countable in determining eligibility.

Figure 16

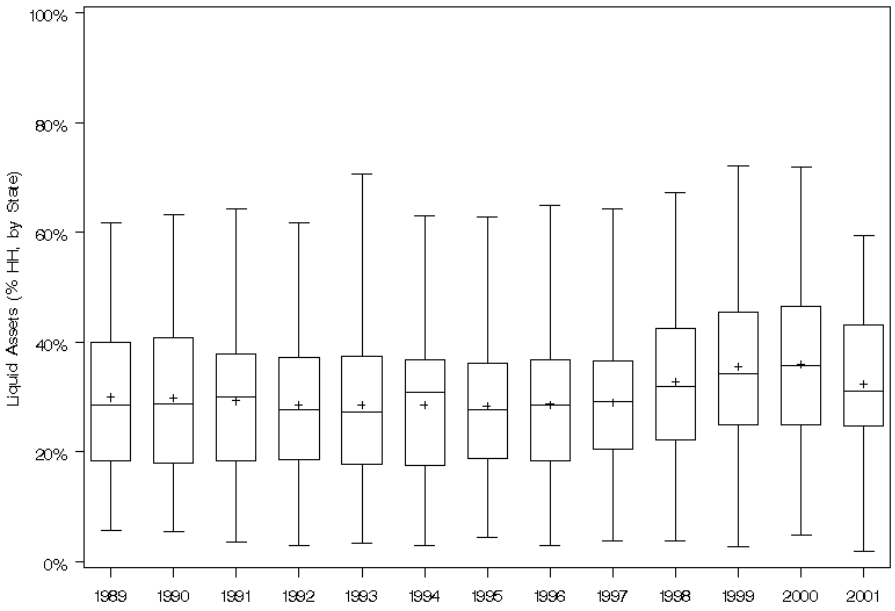
National Percentage of FSP Households with Liquid Assets



At the State level, the range of households with liquid assets between the 25th and 75th percentiles was roughly between 20 and 40 percent from 1989 to 1997. (See Figure 17.) The size of this range remained about the same in 1998 through 2000 when both percentiles shifted upward as the national mean and median increased. There was a very wide range from 1989 through 2001 in the percentage of households with liquid assets, with the minimum below 10 percent and the maximum at 60 percent or more.

Figure 17

Variation in State-Level Percentage of FSP Households with Liquid Assets



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

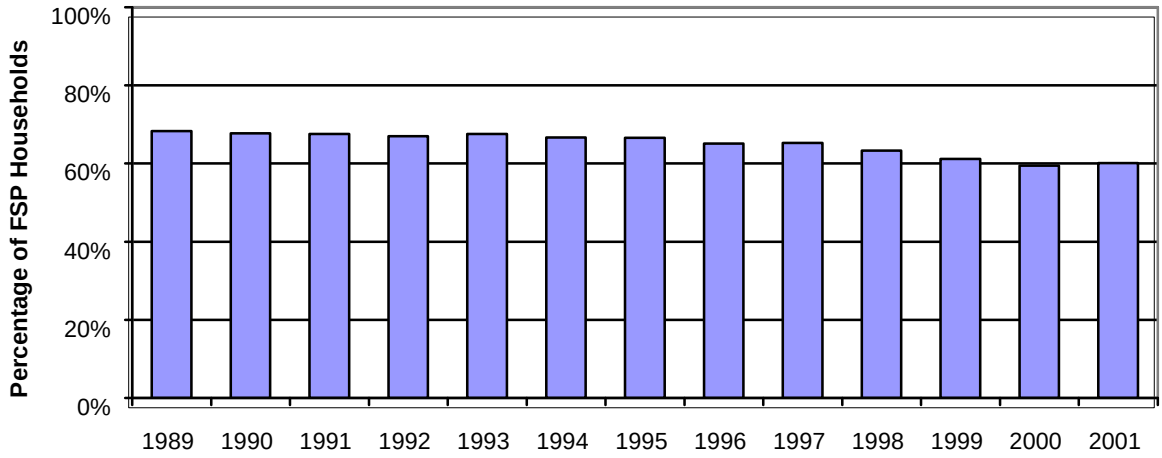
Deductions from Income

In computing net household income, certain expenses may be deducted, including excess shelter costs, dependent care, and medical expenses. An increase in the proportion of FSP households with these deductions from income would be expected to increase the potential for error.

The most common special deduction—for excess shelter costs—became slightly less frequent, but the less common deductions for dependent care and medical expenses became slightly more frequent. (See figure 18.) The excess shelter deduction was most common in 1989, at 68 percent of FSP households, and its prevalence dropped to 59 percent in 2000. PRWORA included restrictions on this deduction.

Figure 18

National Percentage of FSP Households with Excess Shelter Deduction



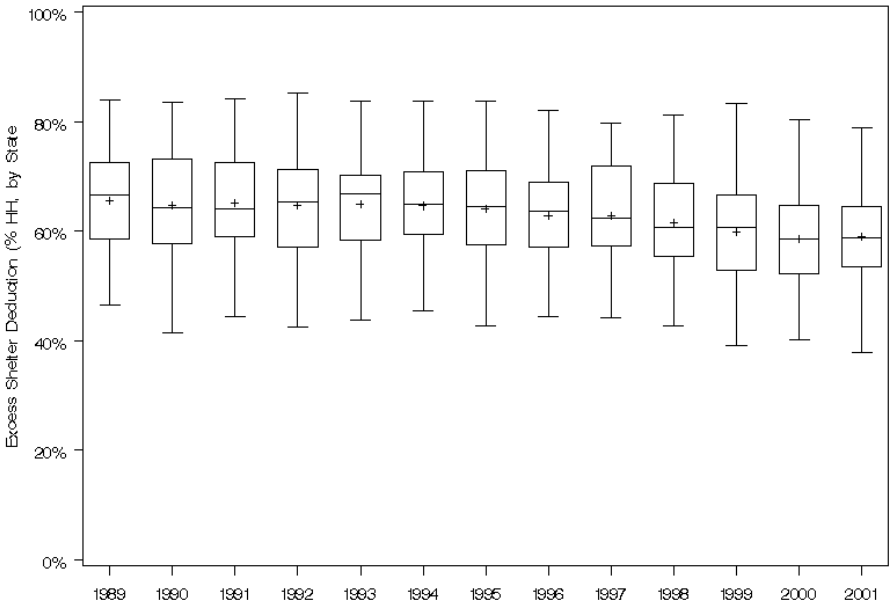
Among the States, the range in the percentage of households with the excess shelter deduction was relatively wide and stable throughout the period, but there was a decline in most States from 1998 through 2001. (See figure 19.) The overall range was generally about 40 percentage points, with the minimum generally between 40 and 45 percent, and the maximum generally between 80 and 85 percent. The 25th and 75th percentiles generally made up about 10 to 15 points of the range and were stable from 1989 through 1997, but these statistics declined in 1998 to 2001.

Size of Household

The average size of a FSP household could affect the potential for error. All else equal, one would expect the likelihood of error to be greater for a larger household. The national average FSP household size (number of persons) declined modestly from 2.6 in 1989 to 2.3 in 2001, a change of 11.5 percent. (See figure 20.) Given the relatively small change and the somewhat tenuous hypothesis of impact on error, this was not considered an important variable for the multivariate analysis.

Figure 19

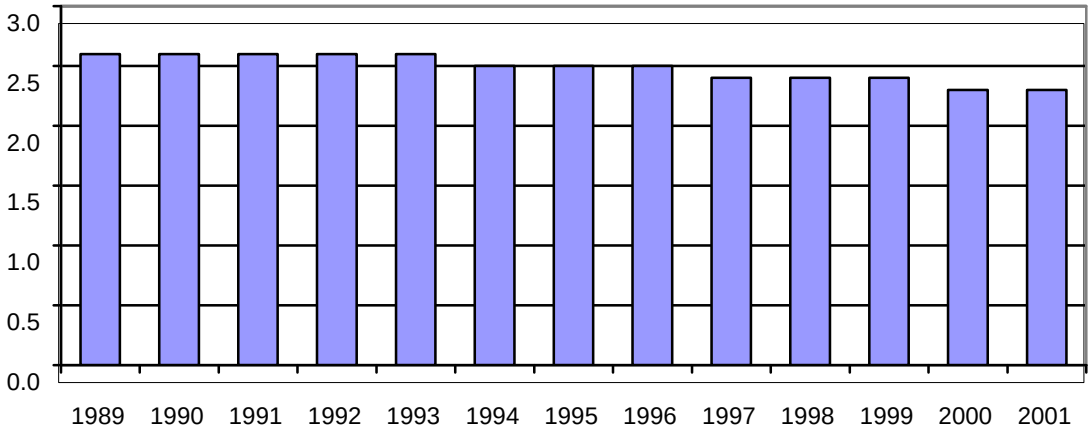
Variation in State-Level Percentage of FSP Households with Excess Shelter Deduction



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Figure 20

National Average Number of Persons per FSP Household

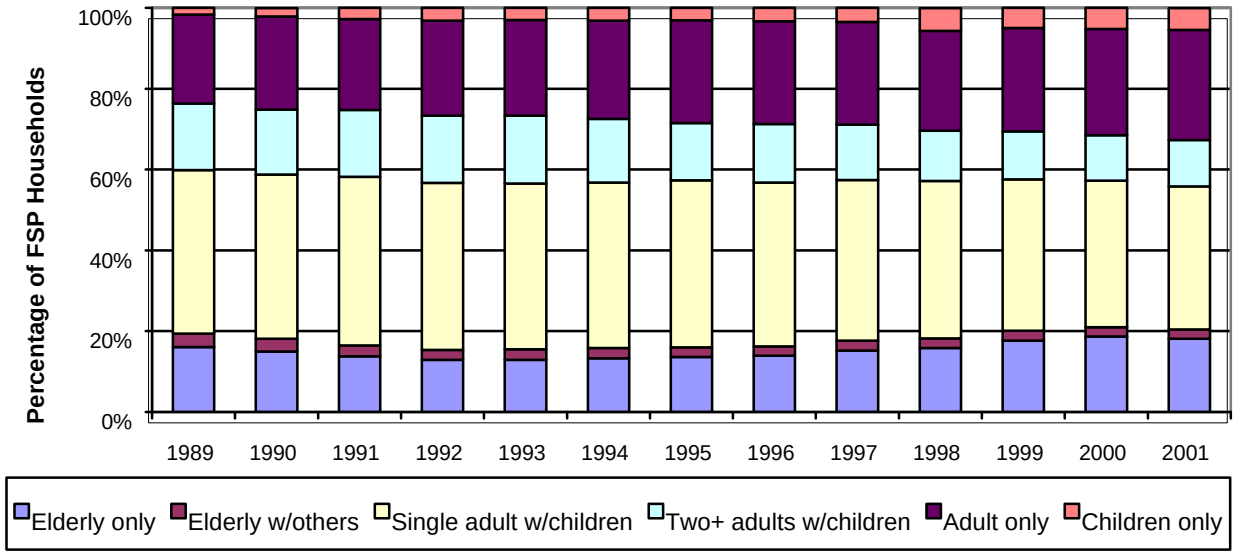


Age of Household Members

The relative prevalence of different types of FSP households by age of members was fairly consistent from 1989-2001, with some slight shifts. (See figure 21.) Single adults with children represented the most common type of household, with the share increasing slightly in the early 1990's and then shrinking slightly after 1995. The opposite trend occurred in households with elderly members. There was a fairly consistent decline in the share of households of two adults with children. Consistent increases occurred in the shares of adult-only households and child-only households. The increased share of adult-only households occurred despite PRWORA's limitation of benefits for able-bodied adults without dependents (ABAWDs). An important consideration was that only a small fraction of all FSP participants—even in the 18 to 50 age group—were subject to the ABAWD rules (Cjaka et al., 2001).

Figure 21

National Percentage of FSP Households by Age of Members

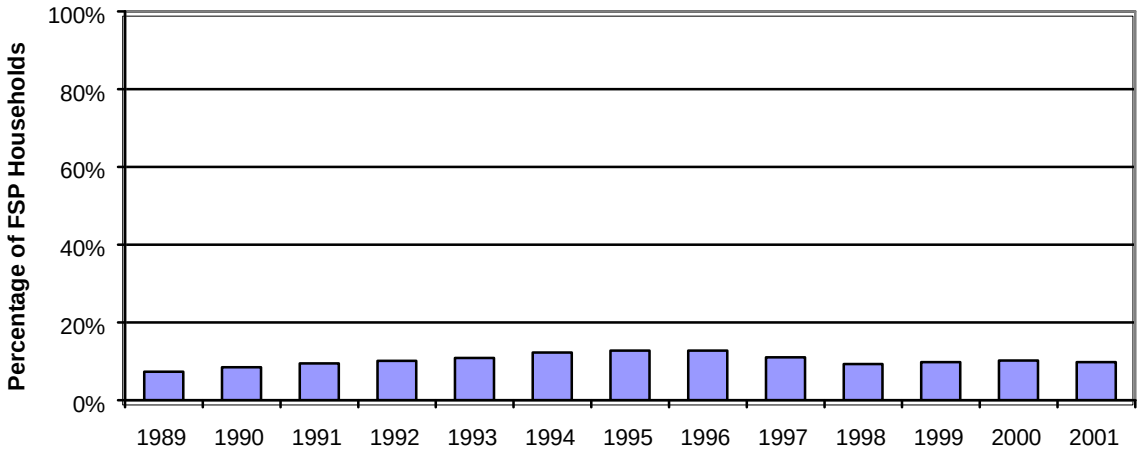


Presence of Non-citizens

The presence of non-citizens in FSP households increases the amount of information needed to determine eligibility, and workers must apply additional (and changing) rules, thus potentially increasing the risk of error. The national percentage of FSP households with reported non-citizens (whether certified or not) rose from 1989 to 1995 and remained near the peak in 1996, then fell in 1997 and 1998 as restrictions on non-citizens' eligibility for food stamps in the PRWORA were implemented. (See figure 22.) The presence of reported non-citizens changed very little in 1999-2001, despite the restoration of eligibility for some non-citizens enacted in 1998. The percentage of non-citizens in FSP households was only 7.4 to 12.8 percent over the entire period, so these households constituted a relatively small minority of FSP cases, and this variable was unlikely to have a significant effect on overall FSP error rates.

Figure 22

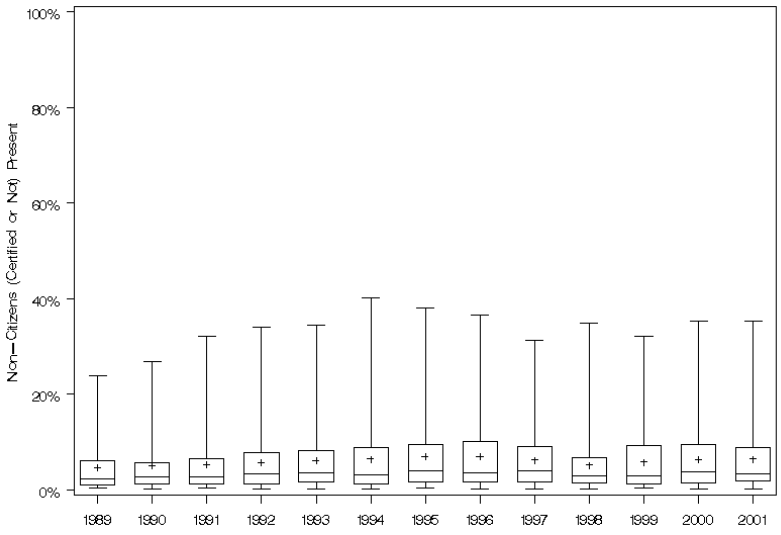
National Percentage of FSP Households with Non-Citizens (Certified or Not)



Examination of the State-level data indicate that most States fell within a relatively narrow and stable range of the percentage of FSP households with non-citizens, but the top 25 percent varied widely. (See figure 23.) The 75th percentile for this measure consistently fell below 10 percent, even when the national mean was above 10 percent. Thus, the national mean reflected the influence of a relatively small number of States with high percentages of non-citizens and large FSP caseloads. With a small number of States having most of the non-citizens, it would be difficult to discern any effect of the presence of non-citizens in a State-level analysis.

Figure 23

Variation in State-Level Percentage of FSP Households with Any Non-Citizen (Certified or Not)



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Administrative Case Actions

When attempting to understand the risk of error and the effort expended to avoid error, the administrative practices of local offices must be considered. While FSP policies are set at the national and State levels, it is widely recognized that the implementation of these policies often varies at the local level. Some studies have examined local office practices at a particular point in time (e.g., Bartlett et al., 2004), but there are no systematic, longitudinal data with nationwide coverage on the practices of local offices. Nevertheless, the QC microdata provide a few measures of case actions that indicate the results of policies and operational practices. We examined data on recertification periods, the most recent case action, and the proportion of expedited cases.

Recertification Period

The length of recertification periods was expected to affect error rates. Shorter recertification periods were expected to provide more timely information on household composition and income. In the late 1990s, many States shortened recertification periods for working households, because month-to-month fluctuations in their earnings contributed to errors in payments. Shorter recertification period periods could also reflect a more general tendency toward more aggressive (and labor-intensive) administrative tactics to reduce error rates.

For the national FSP caseload as a whole, the average recertification period remained fairly steady at levels between 9 and 10 months during the study period. (See figure 24.) This measure reflected the combination of policies for working households and non-working households, and the majority of FSP households received no earnings. State-level data showed similar consistency in the average recertification period, with some increase in the overall range after 1996. (See figure 25.)

Figure 24

National Average Recertification Period in Months

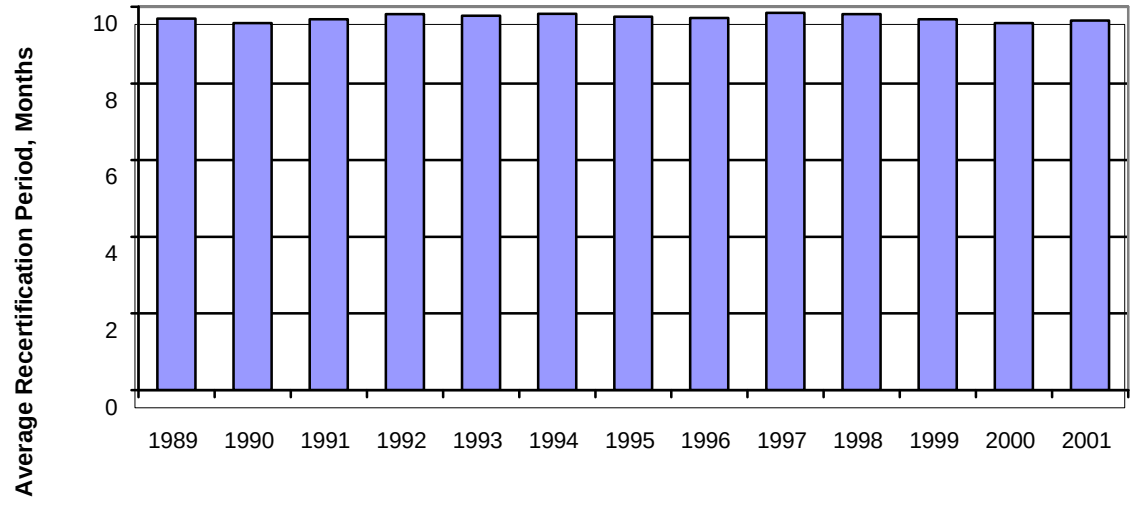
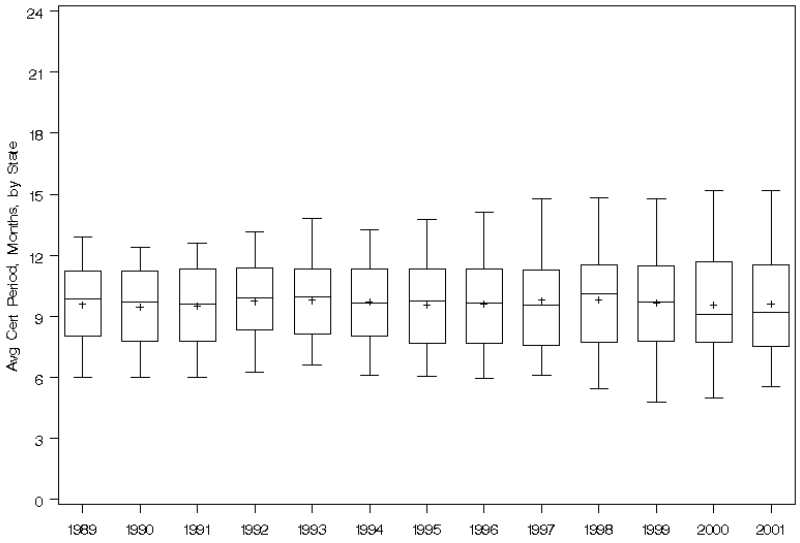


Figure 25

Variation in State-Level Average Recertification Period in Months

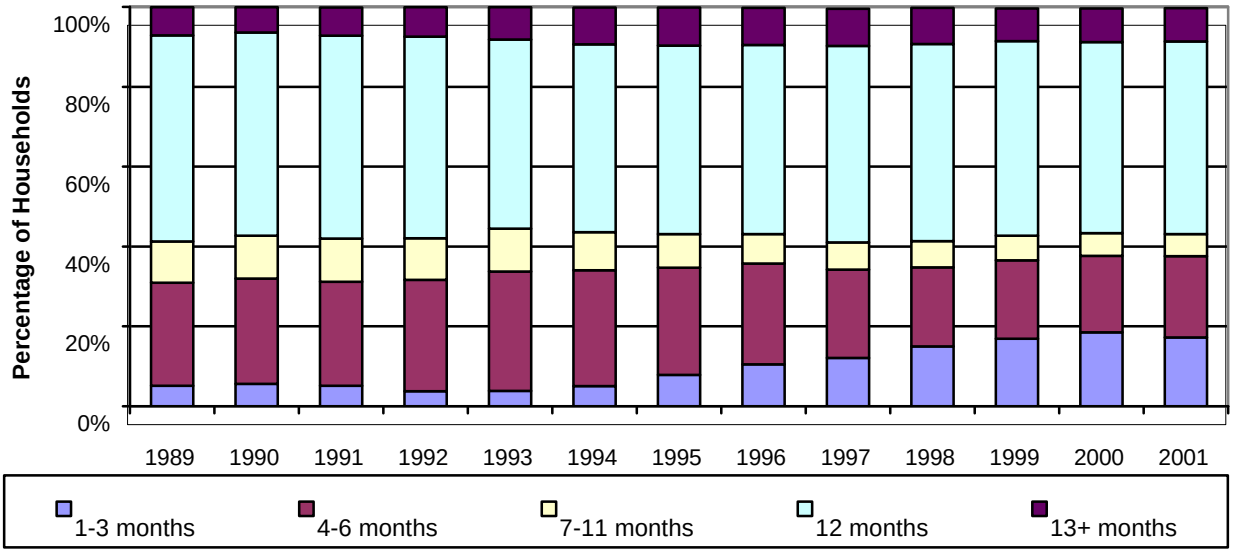


Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

A clearer trend emerged in the distribution of recertification periods over time. The national proportion of all FSP households with very short (1- to 3-month) recertification periods increased steadily from about 5 percent to about 19 percent in the late 1990s, as shown in figure 26. The percentage of households with 4- to 6-month recertification periods declined, as did the percentage with 7- to 11-month recertification periods, while the percentage with longer periods did not noticeably change.

Figure 26

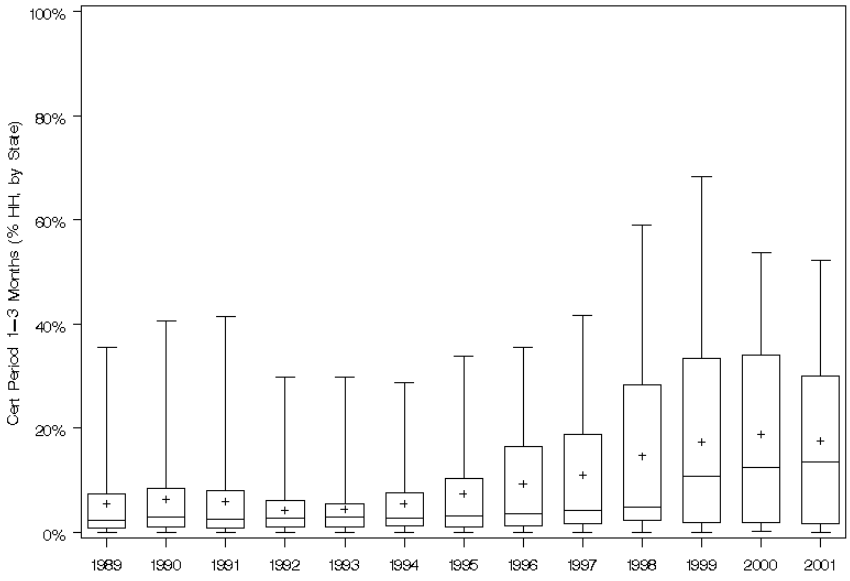
National Percentage of FSP Households by Length of Recertification Period



The percentage of FSP households with 1- to 3-month recertification periods also varied considerably across States during these years. (See figure 27.) In 1999, for example, the interquartile range of this percentage by State extended from under 5 percent to over 30 percent. This large cross-state variation suggested that this variable was particularly important to consider in modeling certification effort and errors.

Figure 27

Variation in State-Level Percentage of FSP Households with Certification Period of 1-3 Months



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The "+" is the unweighted mean. The lines extending from the box indicate the range (minimum and maximum).

Most Recent Action

In the FSP, case actions include initial certification, recertification, interim changes, and processing of monthly reports. One might expect the risk of error to rise with increases in the proportion of FSP households for whom the most recent action is an initial certification. Initial certification generally requires more information and verification than interim changes, monthly reporting, or recertification. The proportion of FSP households for whom the most recent action is initial certification reflects the rate of entry into the FSP (largely a result of exogenous conditions) and the frequency of other actions (principally the rate of recertification, which results from a combination of case characteristics and program rules). A measure of the use of monthly reporting might also be important to modeling certification effort and errors, because this practice has been used as an alternative to frequent recertifications.

Unfortunately, the QC data did not provide a consistent basis for estimating the proportion of FSP households in their initial certification period. The types of "most recent action" reported in the QC data changed during the period. Prior to 1998, States reported when the most recent action was monthly reporting. Thus, a household in its initial certification period could only be identified before the first monthly report. The monthly reporting action category was dropped in 1998, when States began

reporting interim changes as the "most recent action" where applicable. Because of this change in definition, we did not consider this variable to be usable for the study.

Expedited Service

Expedited FSP households could pose more risk of error because of special procedures to ensure timely processing and the need for full certification in the month after approval. The national proportion of FSP households that received expedited service increased from about 4 percent in 1990 to about 6 percent by 2001. This was a large relative increase, but the proportion receiving expedited service remained small, so this variable was not likely to have much impact on FSP error rates.

Chapter 4: FSP Certification Error Trends and Variation

This chapter describes the trends and cross-state variations in FSP certification errors, as a preface to the multivariate analysis of certification effort and errors in the next chapter. As background information for this analysis, we identify the types of certification errors that occur in the FSP, and we describe the quality control (QC) process that produced the public-use QC data used for this study. Next, we present a descriptive analysis of trends and cross-state variations in FSP certification errors during the study period (1989-2001). Last, we summarize previous studies that have sought to identify the factors that affect FSP errors.

Background: FSP Errors and Quality Control

Types and Sources of FSP Errors

FSP rules and performance measures identify four types of errors in the determination of household eligibility and the calculation of benefits:

- Payments to ineligible households
- Overpayments to eligible households
- Underpayments to eligible households
- Negative action errors, i.e. the improper denial or termination of benefits to applicants or participating households.

The certification process[1] includes several types of determinations that may be erroneous.

- Household composition: the certification worker must determine which individuals make up the FSP household according to FSP rules. The worker may fail to include an individual who should be considered part of the FSP household, or fail to exclude an individual who should not be counted.
- Income: the certification worker must determine the total household income from all sources. Errors may arise due to unreported sources of income, misreporting of income, misapplication of rules determining whether income is counted, or incorrect calculation of income.
- Deductions from income: the certification worker must determine the correct amount of deductions from household income to establish the net income. Allowable deductions include a portion of earnings, excess shelter costs, dependent care expenses, child support payments, and medical expenses.

[1] In this discussion, as in FSP terminology, "certification" includes the initial certification of households, recertification of households previously approved for benefits, and processing of periodic reports or interim changes.

- Assets: FSP rules restrict the value of liquid assets and vehicles that eligible households may own. Sources of error include unreported assets, incorrect determination of asset values, and incorrect application of rules regarding the treatment of assets in certification.
- Other eligibility factors: to be eligible, an adult must meet applicable work requirements, which depend on age and responsibility for dependents. FSP rules deny benefits to certain types of non-citizens and convicted felons, and to individuals who have been disqualified from the FSP for program violations.
- Benefit computation: once a household has been determined eligible, the worker must compute the household's monthly food stamp benefit, based on the applicable household size and net income after deductions.

Underpayments, overpayments, and payments to ineligible households can occur in any month that a household is active as an FSP case. Negative action errors can only occur when a worker takes an action that denies benefits to a household—either denying an application for benefits or terminating an active case.

FSP Quality Control

Under FSP rules, States must maintain a quality control (QC) process. Each State must review a sample of active cases and a sample of cases subject to negative actions, in order to determine the annual rates of the four types of errors. FSP rules specify the sample sizes and the procedures for these reviews. For active cases, the QC reviews include examination of electronic and hard-copy case records, household interviews, and collateral contacts (employers, landlords etc.). These reviews identify errors made by the FSP agency and incorrect reporting of eligibility information by FSP households. FNS conducts QC re-reviews of a subsample (one third) of state QC reviews to verify that the QC procedures were followed and the information was used correctly. For the negative action case sample, the State must review the case record, but no other information collection is required. Until FY2000, FNS did not re-review the state negative action QC reviews.

The threshold for a countable error changed during the study period. From FY1989 through FY1999, an error was counted if the monthly benefit was at least $5 too high or low. This threshold was increased to $25 in the FY2000 QC reviews. Therefore, fewer cases were deemed to be in error. For this study, however, the presence of errors was determined by applying the $25 error threshold throughout the period. (The rationale and implications of this decision are discussed later in this chapter.)

There are two ways of computing error rates from the QC data. FNS monitoring has focused on **payment error rates**, i.e., the ratio of the dollar value of underpayments or overpayments to the total amount of authorized benefits. QC data can also be used to compute **case error rates**, i.e., the percent of FSP cases with specified types of errors. Case error rates are available or can be computed for ineligible cases and negative action errors, as well as for eligible cases with underpayments and overpayments. Payment error rates are not available for negative action errors.[2]

[2] In a negative action review, the case record may not contain sufficient information to determine the correct benefit.

States are liable for sanctions (i.e., financial penalties) if they have excessive payment error rates (after adjustments by FNS). In FY1989 through 1997, a State incurred a liability if its combined dollar error rate (underpayments plus overpayments) exceeded the average for all States, with the liability increasing on a sliding scale based on the amount over the national average. Thus, each State had to outperform roughly half of the other States to avoid QC sanctions.

Starting with FY1998, sanctions were determined after the error rates were adjusted for States with above-average percentages of FSP households with earnings or immigrants, and for States with above-average increases in one or both of these percentages. (The base year for increases was 1992 for FY1998 and FY1999; the base year was 1996 for FY2000 and FY2001. The national average error rates for determining performance were not adjusted.) For FY1998-1999, errors under $25 were ignored in computing the adjusted error rates for the purpose of establishing sanctions. During the study period, there were no sanctions for excessive negative action errors.

States can establish agreements with FNS to reinvest the amount of their QC sanctions rather than pay the funds to FNS. As discussed in Chapter Two, States must use reinvested funds to improve their processes for preventing and detecting error through worker training or other methods. FNS has also used its authority to waive a portion of State liabilities if States met specified targets for error reduction.

States can receive additional federal funds if their error rates meet standards for good performance. During the study period, FNS provided enhanced funding to States with combined error rates of 5.9 percent or less.

Use of QC Data for this Report

Error rates analyzed in this chapter and the next used two sources of data. The first source is the QC public use microdata files for 1989 through 2001. These data comprise the active case QC sample, which is representative of all active FSP cases at the state and national levels. Each case record in these files indicates whether the QC review identified an underpayment or overpayment and the amount of the error. The case records also identify cases that were determined ineligible in the QC reviews.

As noted above, from FY1989 through 1999, an underpayment or overpayment of at least $5 per month was identified as an error, while the threshold for identifying errors was $25 per month for FY2000 and FY2001. To make the definition of errors consistent across the whole time period, we have counted only errors of $25 per month in any year.[3] It is important to note, however, that State policy and management decisions regarding error reduction prior to FY2000 were based on the lower threshold of error that was in effect at the time and the error rates that were computed on this basis. It might be objected that States expended more certification-related effort before FY2000 than they would have if the $25 error threshold had been in place. On the other hand, sanctions were based on payment error rates, and errors over $25 had more influence on these rates than those between $5 and $25. Thus, there is some possibility of a distortion of the relationship of error rates to certification-related effort, but this possibility is of less concern than the problem that would arise by using an inconsistent measure of error.

[3] It was not possible to use the $5 threshold for FY2000-2001 because errors of less than $25 were not recorded in the data.

Case error rates –i.e., the ratios of cases with specific types of errors to all active cases—were computed for overpayments, underpayments, and ineligible cases, using these data.

A second data source was used for information on negative action errors. Although microdata are not available on these errors, FNS published summary data on negative action QC reviews. FNS computes the negative action error rate as a percentage of **negative actions**.

For commensurability, both the negative action error rate and the active case error rates needed to be recomputed, because their denominators were different. To facilitate explanation of these computations, table 7 defines the categories of active and negative action cases and assigns each a letter. The computations are described below the table.

Table 7

Components of Case Error Rates

Status	Active (Paid) Cases	Negative Action Cases
Correct	A	G
Overpayment error	B	(not applicable)
Ineligible case error	C	(not applicable)
Underpayment error	D	(not applicable)
Negative action error	(not applicable)	H
Total	(A+B+C+D)=E	(G+H)=I

- Before adjustment, the active case error rates included the following:
  - Overpayment case error rate=B/E
  - Ineligible case error rate=C/E
  - Underpayment case error rate=D/E.
- The active case error rates were adjusted by the ratio of active cases (E) to the sum of active cases and cases subject to negative actions (E+I).
- The published negative action error rate (H/I) was multiplied by the ratio of negative action cases (I) to the sum of active cases and cases subject to negative actions (E+I).

These adjustments assured that the error rates had the same denominator and were fully comparable.

As a result of this adjustment, these rates do not correspond to case error rates published elsewhere. For errors involving active cases, the difference is quite small, because the ratio of negative actions to active cases is very small.

It is important to note that the QC error rates in this chapter represent the proportion of cases with **reported** errors. A QC review may fail to detect an error, or find a case to be in error that is in fact correctly paid. To the extent that QC reviews vary in their effectiveness over time and among States, the reported error rate will vary even if there is no change in the true error rate, i.e., the error rate that would be computed with perfect information.

From the perspective of FSP households' resources, overpayments and certification of ineligible households have a positive impact: the affected households receive more benefits than they would be entitled to. (These benefits may be recovered by the FSP agency if the error is later detected.)

Therefore, these two types of errors are treated as **positive errors** in this and the subsequent chapter, and the sum of the case overpayment rate and the ineligible case rate is the **positive error rate**. On the other hand, underpayments and incorrect denial or termination of benefits have a negative impact on eligible households, so the sum of these case error rates is defined as the **negative error rate.**

Trends and Cross-state Variations in FSP Error Rates

In the discussion that follows, we first describe the trends in the **positive** case error rate for the U.S. and its components (the case overpayment rate and the ineligible case rate) over the study period. We also describe the variation in positive case error rates among the States. Next, we describe the trends in the national **negative** error rate and its components (the case underpayment rate and the negative action error rate) and the variation in negative case error rates among the States.

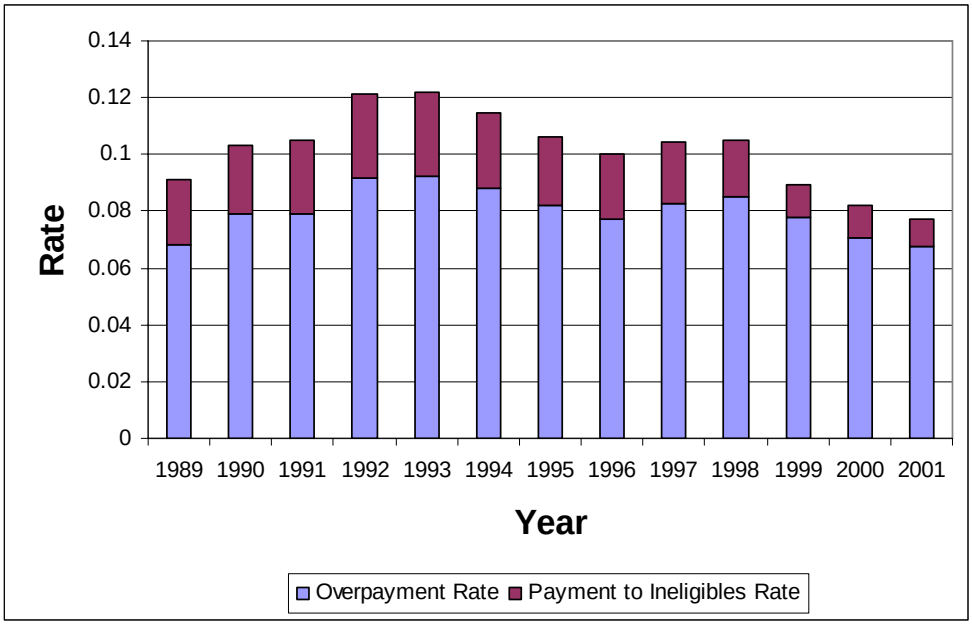
Trends in Positive Case Errors

Figure 28 shows the trends in the total positive case error rate and its components (the case overpayment rate and the ineligible case rate) for the national FSP caseload. The State data were weighted to produce national estimates, so each State's case error rates were weighted by the State's count of FSP households.

The total positive case error rate had two cycles of rising and falling during the study period. The positive error rate rose from 1989 to 1993, then fell through 1996; the positive error rate increased again in 1997 and 1998, then fell in 1999 through 2001 to its lowest levels for the entire period.

Figure 28

Trends in National Positive Case Error Rate and Components, 1989 to 2001



Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

The case overpayment rate and the ineligible case rate displayed similar trends during the period. The share of total positive errors represented by ineligible cases fluctuated, increasing in the peak years and shrinking substantially in 1998-2001.

Several trends in the FSP appear related to the trends in the positive error rate. The first cycle, between 1989 and 1996, corresponded with the rise and fall in the national FSP caseload, except that the positive error rate peaked in 1993 but the caseload peaked in 1994 (see Figure 3 for caseload trends). The rising error rate in 1997 and 1998 coincided with the initial implementation of PRWORA, which required major changes in State and local agencies administering TANF and the FSP. Meanwhile, the percent of FSP cases with very short certification periods of one to three months increased substantially from 1994 to 2000. This was one of several methods used by FNS and the States to increase payment accuracy; others include analysis to identify error-prone types of cases, process improvements, and use of computer matching and other automation tools.

As discussed by a review of QC policy in the 1990's (CBPP, 2001), FNS policies regarding QC sanctions starting in the early 1990's increased the incentives for States to focus on error reduction. Numerous States made "reinvestment" agreements with FNS that allowed the States to spend extra funds on error reduction that would have been otherwise paid to FNS as sanctions. Initially, FNS waived most of the State liabilities and allowed the States to reinvest the rest. In the mid-1990's, FNS began placing some liabilities "at risk" in these agreements, so that States would have to pay the at-risk portion if they did not meet specified targets for error reduction. These changes were implemented gradually and through individual, negotiated agreements, so it is difficult to link them directly with the national trends in error rates. It is clear, however, that the shift in sanctions policy providing increasing motivation for States to adopt policies and operational practices that would reduce their error rates. The adoption of adjustments to error rates for 1998 and later years reduced the liabilities for States with increases in FSP households with earnings or immigrant members, but this retroactive change came very late in the study period and most likely did not affect policies and practices before FY2000.

Changes in caseload composition may have also contributed to the trends in error rates, but this analysis is insufficient to detect such multidimensional effects. The multivariate analysis in the next chapter addresses this possibility.

Variation among States in Positive Case Errors

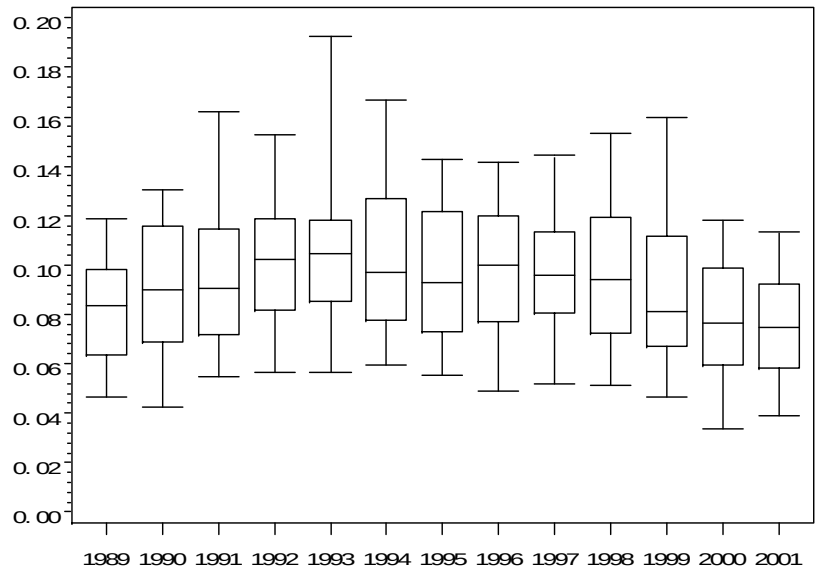
Figure 29 illustrates the variation among States in the total positive case error rate during the study period. The figure uses a "box and whisker" format, in which the range from the 25th to the 75th percentile for each year is represented by a box, and the rest of the range is represented by lines extending up to the maximum and down to the minimum. The figure also shows the median of the State values as a line dividing the "box" of the State values.

The most notable patterns in figure 29 are:

- The median positive case error rate generally had the same general trends as the national (weighted average) rate, except that the median had its second peak in 1996, not 1998.
- The 25th and 75th percentiles generally followed the trend in the median, but there were cycles of increase and decrease in the range between these points.

Figure 29

Variation in State Positive Error Rates, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The lines extending from the box indicate the range (minimum and maximum). Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

Several factors may have contributed to the variability in the total positive case error rate. First, States differed in how and when they undertook measures to reduce error rates and other changes that may have indirectly affected error rates. Second, trends in the total caseload and its composition differed across States. Third, error rates may fluctuate randomly because of sampling error.[4]

Trends in Negative Case Errors

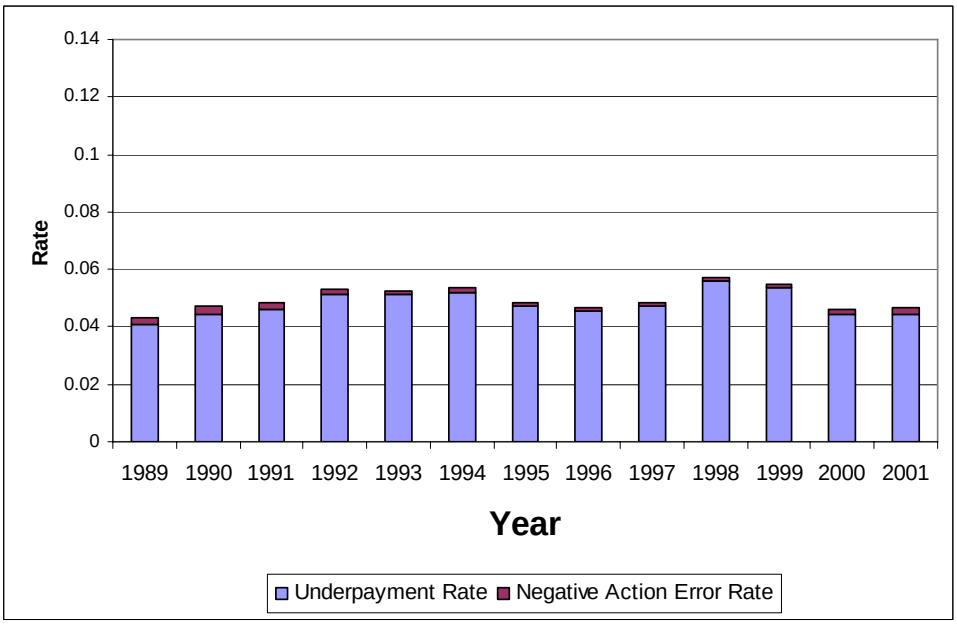
Figure 30 displays the trends in the national negative case error rate and its components, the case underpayment rate and the negative action error rate. As in Figure 28, these are caseload-weighted national averages. The case underpayment rate made up about 96 percent of the total negative case error rate, which averaged 4.97 percent.

The trends in the total negative case error rate were similar to the trends in the national total positive case error rate, but there were some differences. The first peak in the national negative error rate was in 1994, when the positive rate had begun to drop. The negative rate increased more dramatically to its peak for the period in 1998, fell less dramatically in 1999, and rose instead of falling in 2001.

[4] For example, the 95 percent confidence interval of the combined payment error rate in 1998 was plus or minus 1.53 percentage points for Pennsylvania and 2.74 points for New Jersey (Rosenbaum, 2000).

Figure 30

Trends in National Negative Case Error Rate and Components, 1989-2001



Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

Variation among States in Negative Case Errors

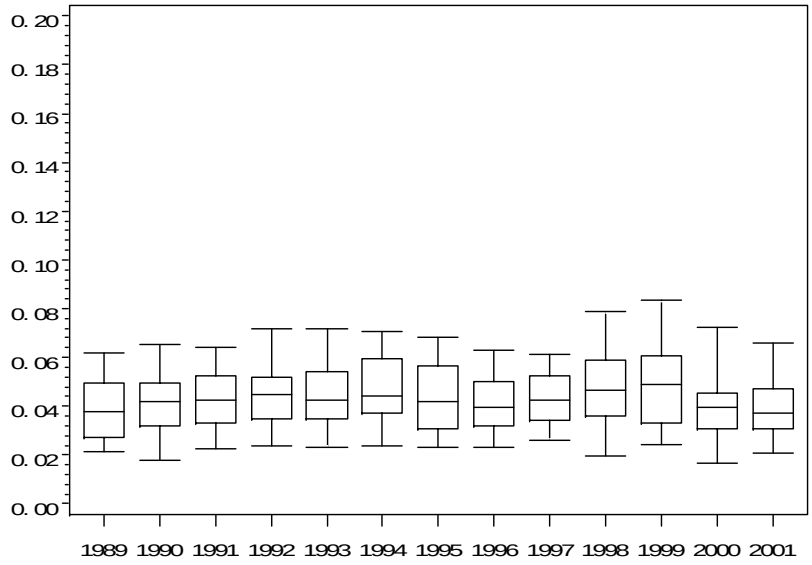
Figure 31 illustrates the variation among States in the total negative case error rate during the study period. The figure uses the "box and whisker" format as in Figure 29. The median state negative case error rate generally followed the trend in the weighted national average, except that the peak occurred in 1999, and the 2001 value was less than in 2000. The interquartile range (between the 25th and 75th percentiles) was noticeably larger in 1994, 1995, 1998, and 1999 than in the other years in the period, i.e., there was more variation in negative case error rates among the States in the middle of the distribution.

Trends in Error Rates and Caseloads

Figure 32 compares the national trends in positive and negative error rates with the trends in the number of FSP households from 1989 to 2001. These trends provide some evidence that error rates tended to be higher when the caseload was high and lower when the caseload was low. The national average positive error rate increased from 1989 to 1993 and generally declined thereafter. It is notable, however, that this rate increased from 1996 to 1998, during the first two years after the enactment of PRWORA, before resuming its downward trend. The national average negative error rate had a similar but less pronounced trend from 1989 to 1996, a more pronounced increase (in relative terms) from 1996 to 1998, a less pronounced drop from 1998 to 2001, and a slight up-tick in 2001.

Figure 31

Variation in State Negative Error Rates, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the 50th percentile (median). The lines extending from the box indicate the range (minimum and maximum). Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

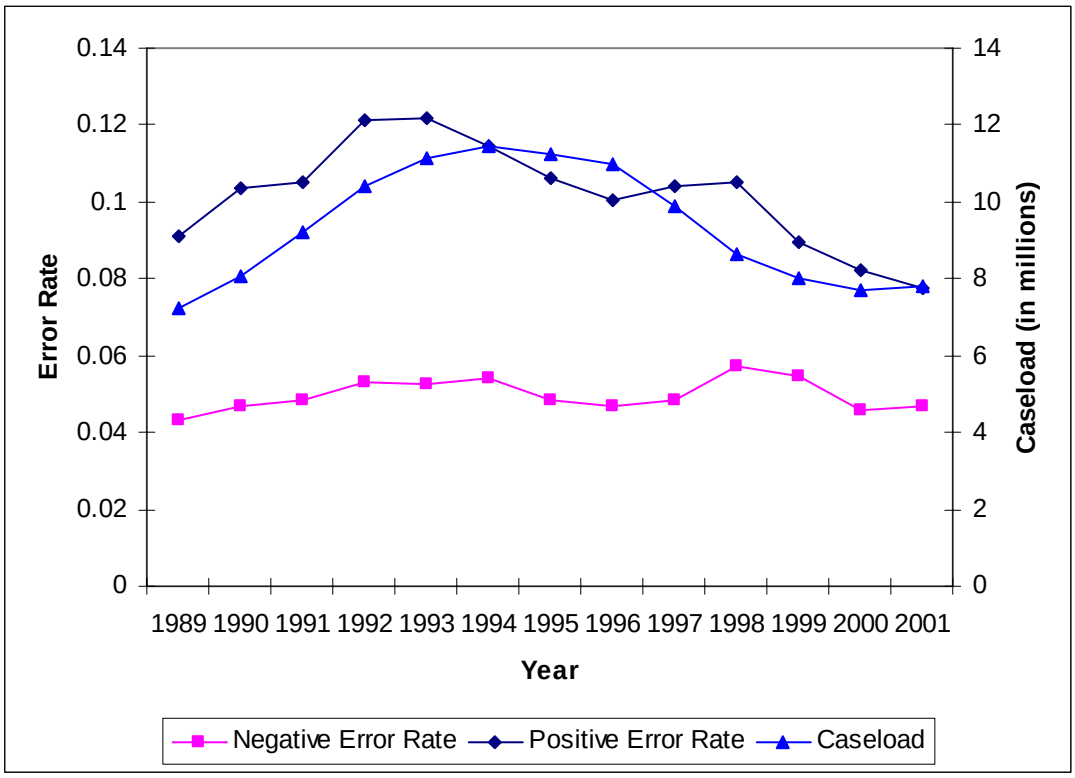
These patterns pose the question of whether there is a relationship between error rates and the size of the FSP caseload. Errors do make a small direct contribution to the level of FSP participation, but the rate of payments to ineligibles averaged only about 2.2 percent of FSP cases over the period, so this contribution is quite modest. Recent studies, as discussed below, have examined the possibility that error-reduction strategies may create barriers to participation, thus leading to a smaller number of participating households than would otherwise be observed. There is a third consideration of particular interest to this study: that rising caseloads may stretch the resources of FSP agencies and thereby contribute to higher levels of error, while falling caseloads free up resources for error reduction. This explanation implies that error rates will fall with or after declines in the FSP caseload, unless resources are added. The analysis for this report addresses this possibility, as discussed in the next chapter.

Literature on Modeling FSP Error Rates

Previous studies offer some empirical evidence on the factors that help explain differences in FSP error rates. Puma and Hoaglin (1987) analyzed two years of QC data (FY1984-1985), with additional population variables from 1980 Census data, and found that the incidence and amount of overpayments were related to household size, sources of reported income, presence of reported assets, number of deductions, and the population density of local office area. Mills (1991) analyzed the relationship between underpayments and overpayments during 1980-1990, and found a positive correlation in cross-sectional data and in year-to-year variation. This finding suggested that at least some error-reduction practices had effects on both types of errors, rather than trading some errors for others.

Figure 32

FSP Households and Error Rates, 1989-2001



Notes: Caseload includes active cases and cases subject to negative action. Negative error rate is percent of caseload with underpayments or negative action errors. Positive error rate is percent of caseload with overpayments or ineligible for benefits. Error rates were computed as a percentage of active FSP cases plus negative actions. A constant error threshold of $25 per month was used in estimating error rates.

More recently, Kabbani and Wilde (2003) conducted a cross-sectional time-series analysis of the total payment error rate from 1990 to 2000. They consistently found that the proportion of FSP households with short certification periods was more strongly associated with their error measure than with any other variable. They also found some caseload characteristics that appeared to influence error rates during the period, including the racial and ethnic composition, the percent elderly, and the percent in working households. They also found that higher error rates were associated with the presence of Democratic Governors or legislatures, after controlling for the possible effects of unemployment rates and poverty levels; there was some evidence that poverty levels were positively associated with error rates. FSP outreach expenditures were included in their models, and one version included a proxy variable for monthly reporting, but neither was significantly associated with error rates. They also did not find a significant effect of AFDC waivers and TANF implementation.

Ziliak, Gunderson and Figlio (2003) found an effect of error on the FSP participation ratio (participants per capita), but this result held only in static estimates, which the authors believe were affected by omitted variable bias. Their dynamic models, which included lagged caseload, unemployment rates, and employment growth rates, showed no significant effect of error in the short term or the long term. This paper used the error rate as a proxy for shortened certification periods and

related policies designed to bring down error rates; the authors did not suggest that error rates directly affect participation.

An important limitation of these studies is that they controlled for few facets of state FSP administration. Kabbani and Wilde provide clear evidence that state policies can be relevant to error rates, confirming the expectations of practitioners who advocate short certification periods and similar error reduction measures. However, there is no longitudinal database of State policies that could be used to account for a broader set of measures.

This study provided an opportunity to approach this problem from a different direction. As discussed in the next chapter, we hypothesized that the level of effort devoted to certification and related activities (normalized for the number of FSP households) is an important variable that has been overlooked and can provide a cumulative measure of a State's relative commitment to accurate certification and error reduction.

Chapter 5: Multivariate Analysis of FSP Certification Costs and Error Rates

The analysis in this chapter seeks to expand the understanding of trends in error rates between 1989 and 2001 by adding a measure of certification cost to the explanatory variables used by previous studies. (In this discussion, "cost" refers to the expenditure of FSP administrative funds.) We first present the analysis objectives and the framework of assumptions about the relationship of costs to error rates. Next, we define the conceptual model for the analysis. In subsequent sections, we describe the data and methods used to model this relationship. The chapter concludes with a discussion of the results. The conclusions and limitations of the study are discussed in Chapter 6. Additional technical information on the methods is presented in Appendix C.

Analysis Objectives and Framework

The primary objective of this analysis was to estimate the impact of FSP certification costs on error rates, while controlling for other variables that affect the likelihood of error (and, therefore, the amount of effort needed to achieve a given level of accuracy).[1] The collection of data on costs, caseload characteristics, and error rates provided the opportunity to undertake this analysis. The framework for the analysis included hypotheses about the relationships of error rates to certification tasks, FSP workforce effort, Federal and State policies, and caseload characteristics.

Relationship of Certification Tasks to Error Rates

The outputs of FSP agencies differ in the accuracy of eligibility decisions, i.e., the positive and negative error rates as measured by the quality control (QC) process. Food stamp eligibility workers make **positive** errors when they approve benefits for ineligible households, or when they approve benefits that are greater than what households are eligible to receive. Workers make **negative** errors when they deny benefits to eligible households or approve benefits that are less than what households are eligible to receive. The appropriate measure of the overall level of accuracy for a FSP agency is a combination of positive and negative error rates.

When the number of households participating in the FSP (the size of the caseload) increases, the State FSP agency's workforce must accomplish more certification tasks. The number of tasks also increases when the caseload becomes more volatile, i.e., there are more entries of participants or more changes in participant circumstances affecting eligibility, relative to the size of the caseload. Each task that workers perform entails the potential for error, as does each change in circumstances to which workers do not respond (tasks that should be performed but are not, due to lack of information or lack of time). Some tasks have more potential for error than others, depending on the amount of information needed, the availability and reliability of the information, and the complexity of the decision rules.

FSP Workforce Time and Error Rates

The time that FSP agency eligibility workers spend on certification tasks is one important factor in determining the level of certification accuracy. For a given amount of time spent, workers with more

[1] We use the term "costs" to refer to expenditures that are allocated to the Food Stamp Program.

certification tasks to accomplish may spend less time on each task and, consequently, make more errors. The likelihood of error for a given amount of worker time is also likely to be greater if workers have a more difficult set of tasks to accomplish. (Difficulty may be a function of the risk of error or the steps required to complete the task.) Conversely, when the volume of tasks or their difficulty is less relative to amount of time spent, workers can devote more time to making sure that each case decision is accurate.

This relationship of certification worker time to accuracy only holds if other factors are held constant, however. When workers have less time available relative to the volume and difficulty of the tasks, they may maintain the same level of accuracy by processing applications on a less timely basis. Additional certification worker hours may be used for purposes other than error reduction, such as to improve timeliness or access (e.g., keeping offices open longer hours or out-stationing workers at locations other than FSP offices).

The amount of front-line eligibility worker hours is not the only human resource that may affect certification accuracy. Additional resources for supervision, training, and promoting worker morale and teamwork may be expected to reduce the level of errors. Quality control, management evaluation, and fair hearings can affect error rates through feedback about process improvements that are needed.

For the purposes of this analysis, we adopted an inclusive definition of "certification-related" costs that included both the certification costs identified in FSP reports and other costs that were expected to have an impact on certification errors. Our definition of certification-related costs included the group of cost reporting categories labeled as "miscellaneous", which consisted primarily of costs for quality control, management evaluation, verification of alien eligibility, and fair hearings.[2] In addition, the "unspecified other" category was included, because at least part of these costs was likely to be related to certification and error-reduction (as discussed in Chapter Two). FSP functions were excluded from the definition of certification-related costs if they were not expected to affect QC errors. Benefit issuance is a separate process with its own measures of accuracy; EBT was implemented in part to reduce errors and fraud in this process. Food Stamp Employment and Training (FSE&T) and Food Stamp Nutrition Education (FSNE) services address program goals other than minimizing error.

Conceptual Model of FSP Administrative Costs and Errors

We began the analysis with the following conceptual model for the relationship of FSP administrative costs to errors:

$$ERROR=f(CERTCOST,X, POLICY,FP) \quad (1)$$

where ERROR is a weighted index combining positive and negative error rates in a State in a fiscal year, CERTCOST is the corresponding certification-related expenditure per FSP household, X is a vector of caseload characteristics, POLICY is a vector of policies determining the actions taken to prevent and detect errors, and FP is a vector of factor prices determining the effective output per dollar of CERTCOST. The factor prices include wage rates, employee benefit prices, and prices for goods and services needed to support certification-related labor.

[2] Outreach and research and demonstration projects were also included in this category, but they were relatively minor components.

The model represented by equation (1) treats the amount of funding that a State allocates to certification activities as exogenous. This seems like a justifiable assumption because State FSP administrative budgets are fixed prior to the start of the fiscal year. Of course, over time, FSP administrative budgets are endogenous because States increase these budgets as workload increases and decrease them as workload falls. Furthermore, agencies have some latitude to augment FSP administrative budgets by reallocating funds from other programs. Nevertheless, treating FSP administrative budgets and the portion allocated to certification activities as fixed in the short run is a useful assumption for the econometric modeling that is not seriously discrepant from the reality of FSP administration.

A possible problem with the model in equation (1) is that the cost per FSP household in one year may be influenced by the error rates in a preceding year, particularly when the State incurs financial sanctions for excessive error rates. We address this possibility by using modeling approaches that allow for a lagged effect of past error rates, as described later in the chapter.[3]

The general conceptual model presented above relates certification-related costs and factor prices to error rates, but for this analysis we used an alternative formulation:

$$ERROR=F(EFFORT,X,POLICY) \qquad (2)$$

where EFFORT is the quantity of administrative resources expended on certification-related activities. (All variables in this equation are State-level annual measures, so State and year subscripts are implied.) Two agencies with the same certification-related cost would have different levels of administrative effort, if one had higher factor prices. The agency with the higher level of administrative effort would be expected to have a lower overall error rate, assuming that other factors affecting error rates were the same. The advantage of this formulation is that it creates a single variable that combines the effects of the certification-related cost and factor price (FP) variables.

Ideally, administrative effort would be measured as a vector of factor costs divided by the prices of those factors, yielding estimates of labor hours, units of computer processing services, square feet of space etc. Such analysis would require much more detailed cost data than are available from FNS, which only receives data on the total cost of each program function.

Therefore, the analysis used a scalar measure of administrative effort:

$$EFFORT=CERTCOST/\ W_{FTE} \qquad (3)$$

where CERTCOST is the annual certification-related cost per FSP household (as in equation 1) and W_{FTE} is the annual public welfare worker wage rate per full-time equivalent employee. (Again, year and State subscripts are implied.) The resulting effort measure was a proxy for the quantity of administrative resources per food stamp household. The cost measure included allocated overhead costs (such as facilities, supplies, non-ADP equipment, and ancillary services). Thus, the effort measure cannot be interpreted as labor alone, but rather labor with a multiplier for overhead costs.[4]

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[3] Past error rates may also influence state-level policies and procedures such as change reporting requirements and certification period lengths.

[4] For example, assume that overhead costs are allocated to the FSP by adding a fixed amount (O) per full-time equivalent worker. Thus, $CERTCOST=FTE*(W_{FTE}+O)$, and $EFFORT=FTE*(1+O/\ W_{FTE})$. Actual cost allocation procedures may be more complex.

Allocation of Certification Costs to the FSP

A complication arises because of the way that certification costs are determined. The total certification cost for a State is the sum of the cost of certifying FSP-only households and the FSP's allocated share of certification costs for FSP households receiving other State-administered benefits, such as AFDC or TANF and General Assistance. The allocated FSP share is determined by each State's cost allocation plan, which may vary from other States but must receive Federal approval. Under cost allocation rules that applied before PRWORA, some shared costs for FSP/AFDC cases were allocated to the AFDC program as the "primary program". Under Public Law 105-185, enacted in 1997, States were required to prorate these costs between TANF and the FSP. Thus, a State's FSP certification effort and cost could increase even if its total certification cost for all programs did not change.[5] The models used in this study controlled for this discontinuity, as discussed later in this chapter.

Automated Data Processing Costs

In addition to human resources, States use automated data processing systems to prevent and detect certification errors. As noted in Chapter Two, the level of cost per FSP household for developing and operating these systems fell from 1989 to 1994 and increased thereafter (although the ADP development cost per FSP household peaked in 1999 and the ADP operations cost per FSP household peaked in FY2000). Thus, a complete model of the impact of FSP resources on error rates should take ADP spending into account.

The computation of the effort measure excluded automated data processing (ADP) costs from CERTCOST, because it was clearly inappropriate to treat the ratio of ADP costs to wages as an estimate of data processing units. Reasoning that factor prices for data processing are largely set in a national (or even international) market, we preferred to treat the ADP cost per FSP household as a separate independent variable.

The models ultimately did not include this variable, however, due to difficulties encountered in the analysis. In the exploratory phase of this analysis, we used several different measures of ADP development and operating costs per FSP household as alternative independent variables. The resulting positive coefficient –implying that increased ADP spending contribute to an increase in the error measure—was contrary to expectations. One possible interpretation was that the ADP cost measures were proxying for an omitted variable; another was that errors increased in the short run with new ADP systems, because of implementation challenges. We also recognized the fundamental problem that ADP development spending represented an investment, and that a State's level of automation could be more closely related to cumulative ADP spending over the history of the FSP than on the spending for a specific period. For example, agencies that invested less in ADP systems during the 1980's might have spent more to catch up with their peers in the 1990's. A further factor that may have affected the observed relationship of ADP spending to error rates was the fact that many States had to test and modify

[5] TANF replaced the open-ended matching of administrative costs and benefits with a block grant. Thus, there was, in theory, an incentive for States to shift costs away from TANF and toward the FSP, which remained an entitlement. Concerns about this possibility were a factor behind the cost allocation provision in P.L. 105-185 (Carmody and Dean, 1998). No evidence of such a shift was gathered for this study, but if it had occurred, it would have further affected the comparability of certification costs between the pre-PRWORA and post-PRWORA periods.

or renovate their ADP systems in preparation for the year 2000. Lacking confidence in the validity of the ADP cost measures for this analysis, we chose to leave them out and rely on other methods discussed below to assure that this omission did not bias the results.

Certification Cost and FSP Agency Performance

While certification accuracy has historically been the primary measure of the performance of State FSP agencies, there are other dimensions of performance that may be affected by the level of certification effort. These dimensions include timeliness and accessibility. As discussed below, these are important dimensions, and States may direct incremental certification effort to improving performance on these dimensions rather than to improving certification accuracy.

The timeliness of application processing has always been an FSP performance indicator. Unlike error rates, the standard of performance is absolute: FSP agencies are required to act on applications within 30 days (with some exceptions). This performance measure was not feasible to analyze, because State-level time series data on the timeliness of all applications, including denied applications, are not published.

In recent years, increased attention has focused on the level of accessibility and customer service. The shortening of certification periods in the late 1990's gave rise to concern that increased burdens on FSP participants were discouraging participation or at least changing participants' views of the relative costs and benefits of participation. For example, Kornfeld (2002) found that the increased proportion of households with short certification periods contributed to the decline in FSP participation among households with earnings. Bartlett and others (2004) identified a number of dimensions of accessibility that were related to the probability that a household would complete an application. Under the 2002 Farm Security and Rural Investment Act, States with high or improved rates of FSP participation can receive bonuses.

If the impact of certification effort on FSP agency performance is multi-dimensional, a model of the impact of certification effort on all dimensions of performance might be desirable, but this approach was not feasible. As noted above, data on the timeliness of applications were not available. We were unable to identify any State-level longitudinal data on FSP policies affecting accessibility for the study period. Furthermore, a model of the effects of certification effort on both error and participation rates would entail simultaneous equations or instrumental variables. Given these issues, and the focus of FSP administration on error rates as the primary measures of performance during the study period, we did not attempt to take accessibility into account. We acknowledge that the analysis represents a simplification of the outputs of the FSP, and that future analyses may need to revisit this problem.

Data

This analysis used a panel of the 50 States and the District of Columbia over the 13 years from 1989 to 2001, in order to examine the relationship between administrative effort per food stamp household and food stamp error rates.

Dependent Variable

The dependent variable used in this analysis was an index of error computed as a weighted sum of annual positive error rates and negative error rates. This approach was consistent with FSP policy, which recognizes the importance of minimizing both types of errors and combines them in the payment error

rate on which sanctions are based. Positive error rates were calculated by aggregating two types of overpayment errors—the percentage of total FSP cases receiving benefits greater than statutorily prescribed levels by at least $25 per month, and the percentage of active FSP cases that were not eligible to receive any benefits under program rules. Negative error rates were calculated by aggregating two types of underpayment errors—the percentage of total FSP cases receiving benefits less than statutorily prescribed levels by at least $25 per month, and the ratio of negative action errors to total caseload. As discussed in the preceding chapter, the denominator for all these rates was the sum of active cases and cases subject to negative action (denial, suspension, or closure).

The error index, ERROR, was calculated as:

$$ERROR = ERROR_p + l\,ERROR_n \qquad (4)$$

where $ERROR_p$ is the positive error rate, $ERROR_n$ is the negative error rate, and λ is a parameter representing the relative difficulty of eliminating negative versus positive errors, estimated via grid search as described in Appendix C. The mean State positive error rate during the period 1989-2001 was 9.3 percent and the mean negative error rate was 4.4 percent.[6] The error index depends on the value of λ. We introduced the parameter λ into the model because while spending more on the administration of food stamps was expected to reduce errors, positive errors may be more or less difficult to affect than negative errors. We estimated that $\lambda = 1.45$ with a standard error of 0.16, implying that the amount of resources required to reduce the positive error rate by 1 percentage point would reduce the negative error rate by 0.69 (=1/1.45) percentage points (assuming that only one rate changes at a time). For example, assume a simple model such that ERROR=A-.001(RESOURCES). Thus, an additional 10 units of resources would reduce ERROR by .01. If $ERROR_n$ stays constant, $ERROR_p$ is reduced by 1 percentage point; if $ERROR_p$ stays constant, $ERROR_n$ is reduced by 0.69 percentage points. Conversely, the amount of resources required to reduce negative error by one percentage point are 1.45 times the resources required to reduce positive error by the same amount (again holding one error rate constant while the other changed).[7]

Figure 33 shows the national trend in the error index in the context of the national trend in FSP households. As the figure shows, the error index increased from 1989 to 1992, and then decreased in 1993 through 1996, increased in 1997 and 1998, then fell in 1999 to 2001. Although the overall trends suggested a positive association between the error index and the number of FSP households, the fluctuations in the error index trends suggest that they were influenced by other factors as well.

Effort

The main focus of this analysis was the impact of a change in administrative effort on the error index. The ideal measure of effort was the ratio of full-time food stamp workers to food stamp households.

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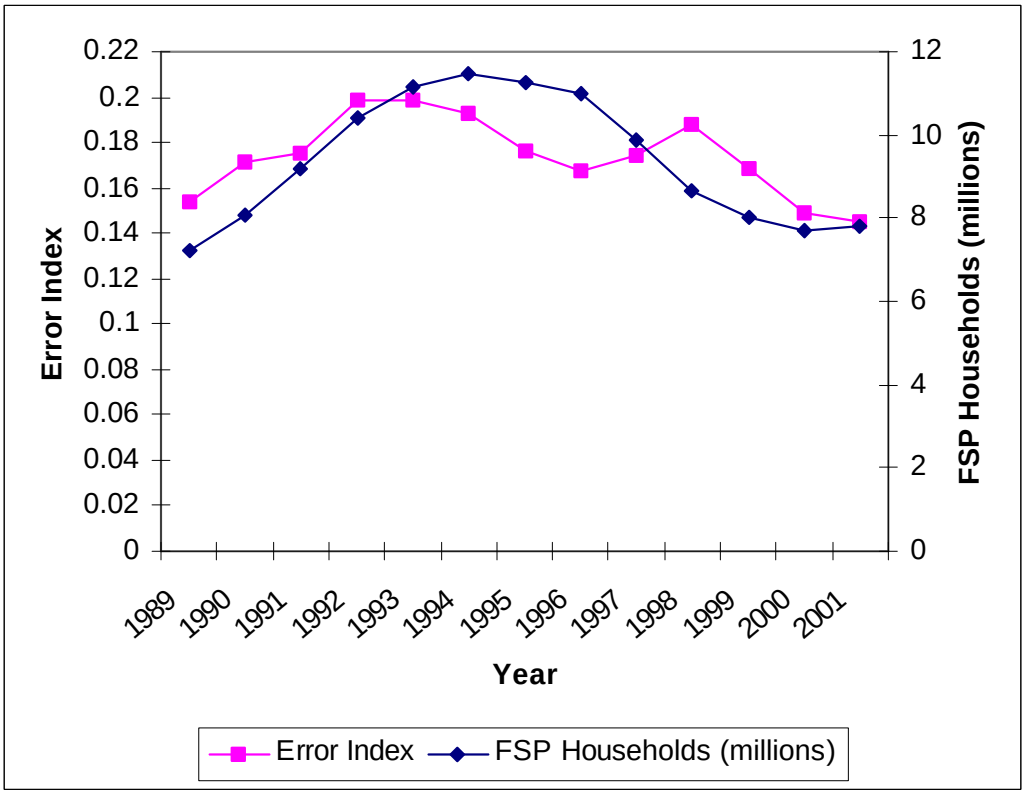
[6] We remind the reader that these do not correspond to published rates, because of our use of a common denominator for all types of errors.

[7] The estimate of λ was robust to choice of model specification, i.e., its value did not change materially when variables were added to or subtracted from the model. The parameter and its standard error were estimated for the fixed effects model described first.

Figure 33
National Trends in Error Index and FSP Households, 1989-2001



Note: See text for definition of error index.

Because we could not observe this variable directly, we used as a proxy effort measure the certification-related cost per FSP household, normalized by dividing the cost by the state wage for a full-time public welfare worker. Thus, the effort measure was computed as in (5) below:

$$EFFORT = \left[\frac{ATC - AADPC - AIC - AFSNEC - AETC}{HH}\right]\left[\frac{1}{W_{FTE}}\right] \qquad (5)$$

where ATC is the annual total FSP cost, AADPC is the annual automated data processing (ADP) cost, AIC is the annual issuance cost, AFSNEC is the annual Food Stamp Nutrition Education cost, AETC is the annual employment and training cost, HH is the number of food stamp households (computed by averaging monthly data) and W_{FTE} is the annual public welfare worker wage rate per full-time equivalent (FTE) employee. All variables are specific to a year within a State, and costs are in 2001 dollars. The first quantity in equation (5) represents CERTCOST (as discussed in the preceding section), with the numerator representing the total costs of certification and other related activities to manage and assure FSP eligibility. Dividing CERTCOST by the public welfare wage rate normalized the effort measure to control for differences in pay rates.

Other Independent Variables

Although the main focus of this analysis was on the impact of effort on the error index, we included other observable covariates in the analysis for two purposes. First, the error index may vary for different case types or under different program conditions (rules etc.), holding resources constant. Second, the level of effort required to process cases with a given level of accuracy may vary by case type or program conditions. Therefore, we introduced control variables intended to control for time-varying differences in caseload characteristics and program conditions.

PRWORA is an indicator for the years when the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) was in effect. We considered two ways that program conditions under PRWORA could affect the level of FSP errors while effort and other factors were held constant (i.e., affect the intercept of the regression line). On the one hand, the implementation of PRWORA had the potential to destabilize operations, because workers might be more focused on learning new rules and on getting clients employed. Furthermore, PRWORA changed the relationship between food stamps and cash assistance to families, so that certification and case management for FSP/public assistance households became more complicated and thus more error-prone. On the other hand, FSP agencies made changes in staff training, management, mission, and incentives for performance with the implementation of PRWORA, and these changes had the potential to improve the accuracy of certifications and other caseworker actions. In our sample, 38.5 percent of observations were from the post-PRWORA period (1997-2001).

PEFFORT was defined as the product of *PRWORA* and *EFFORT*. We included this variable to account for the possibility that changes in the FSP during the post-PRWORA period might alter the effect of effort on error (i.e., a change in the slope of the regression line). As described elsewhere in this report, cost allocation rule changes effectively increased the FSP's share of the costs of serving households receiving both food stamps and cash assistance. As a result, we expected to find that an additional unit of effort was less effective at reducing the error index in the post-PRWORA period.[8] This variable also accounted for the possibility that other changes in FSP operations associated with PRWORA implementation might increase or decrease the impact of a given amount of effort on the error index (e.g., changes in efficiency as a result of adaptation to new rules or re-engineering).

TANF is the percent of food stamp households receiving Aid to Families with Dependent Children (AFDC) or its successor, Temporary Aid for Needy Families (TANF). These households were expected to be less error-prone than other food stamp households, because the food stamp agency is required to have authoritative information on AFDC/TANF benefits, and these households are less likely to have earnings or other sources of income. In addition, the level of error with a given level of effort allocated to the FSP was expected to be less in a State with a high percentage of FSP households receiving AFDC or TANF than in a State with a low percentage of FSP households receiving AFDC or TANF, because of the sharing of costs between the FSP and the AFDC/TANF program, as previously discussed.

PTANF was defined as the interaction of the TANF variable with the PRWORA variable. This variable was included to account for a possible differential impact of PRWORA on FSP operations, depending on the size of the TANF/food stamp caseload relative to the total food stamp caseload. In the pre-PRWORA period, 37.7 percent of food stamp households received AFDC benefits. In the post-PRWORA period,

[8] The PRWORA indicator variable was not expected to capture any of the effect of cost allocation changes, because the effect of those changes would vary according to the level of effort per FSP household.

24.9 percent of food stamp households received TANF benefits. PTANF also had the potential to pick up an indirect effect of changes in cost allocation rules on error: if more of the actual effort for FSP/TANF cases was allocated to the FSP under PRWORA, States with high percentages of FSP households on TANF would tend to have higher levels of error for a given level of reported (i.e., allocated) effort.

EARNINC is the percent of food stamp households with earned income in their case records.[9] Households with reported earnings are likely to have more volatile income and thus be more prone to underpayment or overpayment error. In our sample, the mean percentage of food stamp households with earned income was 24.6 percent.

SSINC is the percent of food stamp households with Social Security Old Age, Disability, and Survivors Insurance (OASDI) or Supplemental Security Income (SSI) benefits. These households were expected to be less error-prone than other food stamp households because the Food Stamp program can easily and definitively verify OASDI and SSI benefits through well-established data exchange systems. These households are also unlikely to have unreported earnings, a potential source of error that is not captured by the reported earnings indicator. The mean was 36.8 percent of food stamp households receiving OASDI or SSI benefits.

SINGLEPAR is the percent of food stamp households with children headed by a single adult. These households were expected to be less error-prone than households with two parents (and thus two potential earners), after controlling for the presence of any reported earnings, because they were less likely to have unreported earnings. The mean percentage of food stamp households with one or more children that had a single adult was 72.3 percent.

PCTEBT is the percent of food stamp households that receive benefits via electronic benefits transfer (EBT). Under the coupon issuance system, food stamp case workers dealt with replacement of lost or stolen coupons, but comparable functions under EBT are mainly handled by separate customer service centers. Therefore, greater use of electronic benefits transfer, relative to coupons, was expected to reduce interruptions that might contribute to case worker error. The first statewide implementation of EBT (in Maryland) was completed in 1993; by 2001 most States had implemented EBT. Over the 13 study years, the mean percentage of food stamp households receiving electronic benefits was 23.3 percent.[10]

FYUN0 is the state-specific unemployment rate. When unemployment rates are low, food stamp recipients are more likely to be employed and therefore subject to error due to fluctuations in employment and earnings. The mean State unemployment rate from 1989 to 2001 was 5.3 percent.[11]

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[9] This variable does not count households with only unreported earnings, so it understates the proportion of households with the potential for erroneous information on earnings.

[10] In most years, PCTEBT was either 0 or 1. Values between 0 and 1 occurred during the transition from coupon to EBT issuance, and when certain States issued a portion of benefits in cash under special waivers.

[11] A related variable, the change in the unemployment rate, was also used in alternate specifications. The results were similar to those presented here. An increase in the unemployment rate could increase error rates, because there would be more first-time, short-term food stamp recipients. These recipients might be more prone to error because of having no history of dealings with welfare workers. The change in unemployment rate was not significant when included with the unemployment rate in the model.

Finally, *CM13* is the percentage of food stamp cases with certification periods of one to three months. Short certification periods were expected to reduce error rates because more frequent reviews of eligibility. Analysis by the Center on Budget and Policy Priorities provided suggestive evidence in support of this hypothesis (CBPP, 2001). The mean percentage of food stamp households that have short certification periods is 9.9 percent.[12]

The means and standards deviations of the dependent variable and the independent variables, along with their definitions, are found in table 8.

Methods

We estimated four models to test the association between effort and the food stamp error index—a simple fixed effects model, a fixed effects model that corrects for first-order autocorrelation and heteroskedasticity, a simple partial adjustment model, and a dynamic model using an Arellano-Bond estimator. The models are described below. Derivations of equations and other details are provided in Appendix C.

Fixed Effects Model

Our data are a panel of 50 States plus the District of Columbia over 13 years. We use a fixed effects model to estimate equation (6):

$$ERROR_{it} = a_i + t_i'd_i + EFFORT'_{it}b_1 + PEFFORT_{it}'b_2 + X_{it}'g + e_{it} \qquad (6)$$

where $ERROR_{it}$ is the error index in State i at time t, α_i is a time-invariant state-effect, t_i is a state-specific linear time trend, δ_i is the state-specific coefficient on that linear time trend, β_1 is the parameter estimate on EFFORT, β_2 is the parameter estimate on PEFFORT, X_{it} is a row vector of control variables, and γ is a column vector of parameters conformable with X.[13]

The time-invariant state effect, α_i, controls for unmeasured static factors that vary across States. For example, urban States may have higher error rates than rural States, in which case α_i would control for urbanicity.[14] If those state effects were excluded and the omitted variables were correlated with EFFORT, the estimate of β_1 would be biased and inconsistent. The time effect, δ_i, controls for state-invariant

[12] It is possible that assigning more cases of one type to shorter certification periods could lead to more errors in other types of cases, particularly when EFFORT is held constant. We did not view this as a zero-sum situation, however, instead expecting that increased use of short certifications was likely to be indicative a broader set of policies intended to reduce errors.

[13] Alternate fixed effects model specifications were considered, including those with non-linear EFFORT terms, a log-linear functional form, and a log-log functional form. We found no evidence that any of these non-linear models provided a better fit for the data than the linear model we present. For example, the inclusion of a squared EFFORT term did not improve the model; the coefficient on this variable was never statistically different from zero. Thus, we concluded that over the range of error rates that we are examining, there exists a linear relationship between EFFORT and ERROR.

[14] In a cross-sectional analysis, Puma and Hoaglin (1987) found that the incidence and amount of overpayments were positively related to a State's population density. This variable was not expected to vary greatly over time within a State, so it was not included as a separate variable in the models.

Table 8

Means and Standard Deviations of Analysis Variables

Variable	Definition	Mean (S.D.)
ERROR	Weighted total error rate	0.157 (0.048)
EFFORT	Certification-related cost per FSP household, normalized by the state wage for a full-time public welfare worker	0.010 (0.004)
PRWORA	Indicator for post-PRWORA period (1997-2001)	0.389 (0.488)
PEFFORT	Interaction between EFFORT and PRWORA	0.005 (0.006)
TANF	Percent of food stamp households receiving AFDC or TANF	0.325 (0.126)
PTANF	Interaction between TANF and PRWORA	0.097 (0.141)
EARNINC	Percent of food stamp households with earned income in case record	0.247 (0.080)
SSINC	Percent of food stamp households with OASDI or SSI benefits	0.370 (0.104)
SINGLEPAR	Percent of food stamp households with children headed by a single adult	0.722 (0.087)
PCTEBT	Percent of food stamp households that receive electronic benefits	0.236 (0.395)
FYUN0	Unemployment rate	0.053 (0.015)
CM13	Percent of food stamp households with 1-3 month certification periods	0.100 (0.129)
n		654[a]

[a] Negative action error data were unavailable for 9 observations.

unmeasured factors that have linear trends over time.[15] For example, unmeasured improvements in data processing technology may affect effort rates over time, and linear time trends take this effect into account. With these two types of fixed effects in the model, the remaining control variables account for variation in error rates attributable to within-state changes in measured factors. Factors that do not vary over time are already taken into account by α_i. Additionally, factors that vary linearly over time are already taken into account by δ_i. The parameters associated with the control variables capture whatever remaining partial correlation exists between error rates and the measured variables.[16]

[15] We also estimated models that included national time effects. These models produced results that were consistent with the findings we present here using state-specific linear time trends. Thus our results are robust to the specification of the time effect.

[16] We considered an alternate specification with random state effects, which would have the advantage of being more efficient if the null hypothesis of no systematic difference between fixed and random effects coefficients were true. We ran a Hausman test, however, and reject the null hypothesis at $p < 0.001$. Thus, a fixed effects specification appears more appropriate.

We assumed that the disturbance term is independently and identically distributed with zero mean and constant variance. Thus, the model described by equation (3) assumes that there is no heteroskedasticity or autocorrelation of residuals. In the following model, we relaxed these assumptions.

Prais-Winsten FGLS Models

Autocorrelation and heteroskedasticity are frequent problems when analyzing panel data. Autocorrelation can arise for two reasons. First, if both past and present values of some explanatory variables affect the dependent variable—and these lagged variables are omitted from the model—then the resulting disturbance term may reflect a systematic pattern due to serial correlation across periods. Second, if the dependent variable in period *t* is not independent of the dependent variable in period *t-1*, then the process itself will have an autocorrelated error structure. Heteroskedasticity can arise because the error rate variable may have a higher variance in some States than in others; for example, the variance could be correlated with the size of the caseload.[17] If ignored, both autocorrelation and heteroskedasticity lead to biased and inconsistent standard errors and, consequently, misleading hypothesis tests and confidence intervals.

The Prais-Winsten estimate is a Feasible Generalized Least Squares (FGLS) estimator that works to "sweep" first-order autocorrelation from the model. The estimator requires two steps. First, using the fixed effects model described in equation (3), the analyst estimates the regression residuals. Since these are consistent measures of the error term (e_{it}), they are used to estimate the autocorrelation coefficient ρ. The estimate of ρ is used to transform the dependent variable and every independent variable, as described in the appendix.

The Prais-Winsten model was estimated in two ways—first, with a common estimate of the ρ parameter across States, and second with a state-specific estimate of ρ. Relative to a Prais-Winsten model using a common ρ, a model using state-specific estimates of ρ may produce less biased estimates if the autocorrelation parameters are not equal across States. It may be less efficient, however, because it requires additional parameter estimates. Because of this trade-off, we present and compare results using both Prais-Winsten models.

Partial Adjustment Model

The previous models treat the availability of resources as exogenous to the error index. A dynamic model, however, might better explain the data generating process. One form of dynamic model that we employed is the partial adjustment model.

The partial adjustment model assumes that States adjust their resources so as to achieve a desired level of errors, but only make these adjustments gradually, closing part of the gap between the actual and target error index each year. Details on the calculation of the parameters and their standard errors are found in Appendix C.

The simple partial adjustment model estimator may have several problems. First, if the residuals are autocorrelated, the estimated standard errors may be inconsistent, leading to misleading hypothesis

[17] QC samples for all States are designed to achieve similar levels of precision, so the level of sampling error not likely to vary by size of State. Larger States, however, may differ from smaller States in other ways (for example, the heterogeneity of the food stamp caseload), which may produce more variability in error rates.

testing. Second, if the time series does not satisfy stationarity, coefficient estimates will be biased and inconsistent. When this model was estimated, however, the process was not found to be autocorrelated, and it was clearly stationary.

More importantly, the partial adjustment model is biased because the lagged value of the dependent variable is necessarily correlated with the error term. The model is consistent as the number of time periods approaches infinity, but with a period of just 13 years, we expect a bias on the order of 1/13 (Baltagi, 1995, p. 126). Although we might be willing to accept this bias, the Arellano-Bond approach provides an alternative.

Arellano-Bond Dynamic Model

Arellano and Bond (1991) used instrumental variables to surmount the problem of bias and inconsistency introduced when using the lagged dependent variable as a regressor. This method uses dependent variables lagged two and three periods as instruments for the one-period lagged dependent variable. The instruments are obtained in a dynamic panel model by using orthogonality conditions between lagged values of ERROR and the disturbances, v_{it} (Baltagi, 1995). The model is estimated via generalized method of moments (GMM) using the STATA command xtabond.[18]

Using the Arellano-Bond model has two benefits. First, the model imposes no distributional assumptions on the residuals, but only requires the absence of serial correlation. Second, it uses an instrumental variable method to account for the fact that one-period lagged values of the dependent variable will be correlated with the residuals. A drawback of the Arellano-Bond estimator, however, is that it requires three years of data to be dropped to utilize the instruments. The loss of information results in less efficient parameter estimates. Consequently, the Arellano-Bond estimator is not clearly preferable to the simple partial adjustment model. The latter may have a smaller mean-squared error.

Each of the four models presented above—the fixed effects model, the Prais-Winsten FGLS model, the partial adjustment model, and the Arellano-Bond model—makes different assumptions about the data generating process. As described above, each of these models has advantages and disadvantages. To the extent that each model provides a similar answer with respect to the impact of effort on food stamp error rates, one may conclude that the estimates are robust with respect to the choice of model.

Elasticities

In order to provide a unit-free measure of the impact of effort on food stamp errors, we calculated effort elasticities with respect to error. The elasticity is equal to the percentage change in ERROR resulting from a one percent increase in EFFORT, holding other variables constant. We calculated effort elasticities for both the pre-PRWORA period (1989-1996) and the post-PRWORA period (1997-2001), because both our expectations and the analysis indicated that the impact of EFFORT on ERROR was different in these two periods. This difference was represented by the PEFFORT variable, which was factored into the post-PRWORA elasticity along with the EFFORT variable. The calculation of elasticities in the pre-and post-PRWORA periods, along with their respective standard errors, which are not straightforward, can be found in Appendix C.

[18] Details of the model are provided in Baltagi (1995) and in Appendix C.

Results

The results of the five model specifications described above are presented in table 9. Each of the columns denotes the model used to generate the estimate, and each row represents a right-hand side variable of interest. In each case, the dependent variable is the error index. Both versions of the Prais-Winsten model are presented: the model estimating state-specific values of ρ (2a) and the model estimating a constant autocorrelation coefficient for all States (ρ) (2b). For the partial adjustment and Arellano-Bond models, the long-run parameter estimates are presented so as to allow direct comparison with the fixed effects and Prais-Winsten models.

Effort

The estimation results present a convincing case that, as expected, there is a strong negative association between the effort level put forth by States and the food stamp error index. The coefficient for EFFORT is estimated with a high degree of confidence (p <0.01) in all models. Thus, the results support the expectation that increased effort (as proxied by EFFORT) reduces error. The estimated coefficient for EFFORT is fairly similar across the models, with most values between –4.64 and –5.73, providing further evidence of the robustness of these results. The Arellano-Bond model does, however show a noticeably higher coefficient than the other models.

Nearly all of the models indicate a positive and significant association between PEFFORT (the interaction of the post-PRWORA period with EFFORT) and ERROR. The magnitude of the long-run effect of PEFFORT is quite similar across the models (2.80 to 3.44). With the exception of the Arellano-Bond model, the coefficient for PEFFORT is significantly greater than zero, with a high level of significance (p < 0.01) for the fixed effects model and both versions of the Prais-Winsten FGLS model. (The Arellano-Bond model generally has larger standard errors due to the limitations discussed in the preceding section.) Taken together with the findings for EFFORT, these results imply *a smaller impact of worker effort on error in the post-PRWORA environment*.

While it is important to confirm that higher levels of effort are associated with a lower error index, it is also important to consider the magnitude of the relationship. We used the model parameters to estimate the size of the relationship, expressed in the form of an elasticity. Table 10 presents the estimates of the elasticity of the error index with respect to effort for the pre- and post-PRWORA periods. The estimated elasticity for the pre-PRWORA period ranged from-0.276 to –0.377. Thus, holding the negative error rate constant, a 10 percent increase in effort reduced the positive error rate by 2.76 to 3.77 percent. Alternatively, with the positive error rate held constant, a 10 percent increase in effort reduced the negative error rate by 1.90 to 2.60 percent (reflecting the weighting in the error index such that an increment of effort that produced 1 percentage point of change in positive error rates would produce 0.69 percentage points' change in the negative error rate).

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Table 9

Models of Association Between Effort and Error Index[a]

	Definition	(1) Fixed Effects	(2a) Prais-Winsten FGLS (ρ_i)[b]	(2b) Prais-Winsten FGLS (ρ)[b]	(3) Partial Adjustment[a]	(4) Arellano-Bond[a]
EFFORT	Certification-related cost per FSP household, normalized by the state wage for a full-time public welfare worker	-5.14*** (0.880)	-4.64*** (1.01)	-5.06*** (0.991)	-5.73*** (1.21)	-7.18*** (2.21)
PRWORA	Indicator for post-PRWORA period (1997-2001)	-0.062*** (0.016)	-0.049*** (0.015)	-0.060*** (0.018)	-0.052** (0.020)	-0.041 (0.035)
PEFFORT	Interaction between EFFORT and PRWORA	3.44*** (0.986)	2.92*** (0.844)	3.23*** (0.941)	2.80** (1.30)	2.78 (2.34)
TANF	Percent of food stamp households receiving AFDC or TANF	-0.023 (0.035)	-0.007 (0.031)	-0.021 (0.063)	-0.044 (0.046)	-0.064 (0.083)
PTANF	Interaction between TANF and PRWORA	0.136*** (0.034)	0.109*** (0.037)	0.128*** (0.041)	0.155*** (0.043)	0.136* (0.076)
EARNINC	Percent of food stamp households with earned income in case record	0.149*** (0.053)	0.200*** (0.052)	0.161*** (0.041)	0.235*** (0.067)	0.440*** (0.120)
SSINC	Percent of food stamp households with OASDI or SSI benefits	-0.112** (0.047)	-0.095** (0.043)	-0.101** (0.047)	-0.140** (0.063)	-0.151 (0.111)
SINGLEPAR	Percent of food stamp households with children headed by a single adult	-0.013 (0.004)	-0.004 (0.036)	0.004 (0.040)	0.012 (0.055)	-0.135 (0.094)
PCTEBT	Percent of food stamp households that receive electronic benefits	0.003 (0.006)	0.001 (0.005)	0.002 (0.005)	0.009 (0.007)	0.007 (0.013)
FYUN0	Unemployment rate	-0.185 (0.160)	-0.097 (0.194)	-0.135 (0.214)	-0.123 (0.218)	0.438 (0.376)
CM13	Percent of food stamp households with 1-3 month certification periods	-0.127*** (0.018)	-0.121*** (0.023)	-0.120*** (0.016)	-0.144*** (0.022)	-0.139*** (0.041)
LAG(ERROR)	Lagged error index (*t* -1)	--	--	--	0.311*** (0.035)	0.431*** (0.062)
N		654	654	654	603	501

[a] Coefficient and standard errors are all long-run effects with the exception of the lagged error. Fixed state effects and state time trends are not shown. Standard errors are in parentheses. See Appendix C for details and calculations.

[b] Model 2a estimates state-specific autocorrelation coefficient. Model 2b estimates a constant autocorrelation coefficient for all States.

For the post-PRWORA period, the estimated effort elasticity ranged from -0.132 to -0.342, with the partial adjustment and Arellano-Bond models showing substantially larger elasticities (in absolute value). Compared with the elasticities for the pre-PRWORA period, the post-PRWORA estimates from the fixed effects and Prais-Winsten models were 51.8 to 56.7 percent smaller (in absolute value), while the estimates from the partial adjustment and Arellano-Bond models were, respectively, 29.8 percent and 9.3 percent smaller (in absolute value). These estimates reflect the combined effects of the EFFORT and PEFFORT variables.[19] Although the post-PRWORA elasticities were less precisely estimated, due largely to the short period (1997-2001) covered by the data, the pre-PRWORA elasticity estimates were statistically different from the post-PRWORA estimates, except for the partial adjustment and Arellano-Bond models. Thus, there is strong and consistent evidence that an increase in effort reduces the error index, and there is also evidence that the magnitude of the effect was probably smaller in the post-PRWORA era (1997-2001)

The model indicates that a combination of changes in the FSP had opposite effects on the elasticity of error with respect to effort. On the one hand, there was a reduction in the absolute value of the slope of the line representing error as a function of effort, thus reducing the absolute value of the elasticity. On the other hand, other factors that reduced the error index (as discussed below) shifted the line down, thus increasing the absolute value of the elasticity (since the same number of units of change in error represented a larger proportional change).[20] The estimates indicate that the effect on the elasticity of error represented by PEFFORT was greater than that of the other effects.

At the national level there was both an increase in effort and a decline in error from 1998 to 2001. During the same period the observed elasticity of error to changes in effort was less in absolute value than before 1996. While we do not have clear evidence of the reasons for these changes, we suggest three alternative explanations below.

One potential explanation is that more effort may have been in fact expended to achieve a given level of accuracy. As noted earlier, we hypothesized that the challenges of implementing PRWORA absorbed staff time that could otherwise have been spent on preventing and detecting errors. It is also plausible that there were lags in the adjustment of staffing to declining FSP caseloads, and that the incremental effort per FSP household was not as focused on error prevention and detection as the previous effort. (This effort was not necessarily wasted, because it might have been focused in improving timeliness or access.) The combination of increased effort without a corresponding reduction in error would help explain the observed decline in the elasticity of error with respect to effort.

An second, alternative explanation is that more of the actual effort may have been charged to the FSP in the post-PRWORA period, so that the observed level of effort for a given level of error was greater. As discussed in an earlier section of this chapter, changes in cost allocation rules resulted in more shared costs for FS/TANF cases being allocated to the FSP, and so States had to spend more FSP dollars per

[19] Our estimates of post-PRWORA elasticities were less precise, but all models yielded estimates that were statistically different from zero (p <.1 or less).

[20] The estimated elasticity was inversely proportional to the average observed error index for the period for which it was estimated. Thus, all variables that contributed to the reduction in the error index in the post-PRWORA period had the effect of increasing the absolute value of the elasticity.

Table 10

Effort Elasticities in the Pre and Post-PRWORA Periods[a]

	(1) Fixed Effects	(2a) Prais-Winsten (r_i)	(2b) Prais-Winsten (r)	(3) Partial - Adjustment[b]	(4) Arellano Bond[b]
Pre-PRWORA Elasticity	-0.305 (0.052)	-0.276 (0.060)	-0.300 (0.059)	-0.325 (0.069)	-0.377 (0.116)
Post-PRWORA Elasticity	-0.132 (0.062)	-0.133 (0.069)	-0.142 (0.078)	-0.228 (0.080)	-0.342 (0.147)
N	654	654	654	603	501

[a] Standard errors are found in parentheses.
[b] Long-run effects were estimated for models using lagged error.

household (in real terms) to produce the same output. Thus, the changes in cost allocation reduced the elasticity of error with respect to effort.

Although our analysis did not find clear support for a non-linear model of effort and error, we do not entirely reject this third alternative explanation. It is reasonable to suppose that there is some lower bound to error rates that are realistically attainable, and that decreases in error rates below a certain level require more effort. It is possible that the inclusion of additional years of data would make such a non-linear relationship more apparent.

Factors other than the increase in the measure of effort may have been responsible for the decline in error in the post-PRWORA period. Below, we discuss the relationship of other known covariates to error and the factors that may have contributed to this trend. We also discuss the possibility that the decline in error was partly due to unobservable factors not captured by the known covariates. These factors may have been at least partially incorporated in the fixed state effects or the state time trends.

In the following discussion, we further consider the possible reasons for the change in the relationship of effort to error that is indicated by the model parameters and the elasticity estimates. The interpretations are somewhat speculative because of the limited information and the many factors that may have influenced the trends in error rates. It is important to note that the estimated effect of effort before and after PRWORA is conditional on the other variables in the models, so their effects must be noted when evaluating the estimated effects of effort.

Welfare Reform (PRWORA)

The models show the effects associated with the enactment and implementation of PRWORA in three parts: through the interacted variables PEFFORT and PTANF, and through the PRWORA indicator.

- As previously described, the positive value of PEFFORT means that a given level of certification effort had a reduced effect on the error index in the post-PRWORA period.
- The positive value of PTANF means that States with more FSP households receiving TANF had relatively higher error indexes in the post-PRWORA period.

- The coefficient on the PRWORA indicator is not meaningful in itself because it shows only what the effect of PRWORA would be in a state in which both the fraction of cases on TANF and effort were zero.

To calculate the full effect of PRWORA for any combination of certification effort and TANF participation, one must sum the negative value of the coefficient of the PRWORA indicator and the State-specific effects related to the interaction terms

Percent of FSP Households with AFDC/TANF

Contrary to expectations, the models generally indicated that, before PRWORA, the percent of FSP cases receiving AFDC did not have a significant relationship to the error index. This result was somewhat surprising, because we hypothesized that FSP agencies had an advantage in processing AFDC or TANF cases. The rationale was that the AFDC/TANF benefit was known with certainty, so the potential error in the estimate of total income was less than for households where less readily-determined sources of income made up more of the total. The lack of an effect for the TANF variable was also contrary to our hypothesis that the sharing of costs between the FSP and the AFDC/TANF program might reduce the amount of error with a given level of effort allocated to the FSP.

On the other hand, the interaction of PRWORA with the percentage receiving TANF (the PTANF variable) was significantly and positively associated with the error index, i.e., States with more FSP households receiving TANF had higher error indexes in the post-PRWORA period. The fixed state effects were expected to control for persistent differences among States commonly associated with high AFDC/TANF participation, such as relative levels of urbanization and median income. Thus, the fixed state effects reduced the likelihood that such underlying differences among States confounded the effect of PTANF.

Combined Effect of Variables Related to PRWORA

The net effect of PRWORA was identified as the combined effect of three variables in the models: PEFFORT, PTANF, and the PRWORA indicator. Thus, the net effect of PRWORA depended on a State's level of EFFORT and TANF during the post-PRWORA period—greater for some States than for others. At the mean values of EFFORT and TANF in the post-PRWORA period, the net effect of PRWORA was an increase of 1.6 percentage points in the error index, relative to what it would have been in the absence of PRWORA. The algebraic effect of PRWORA on the error index was smaller for States with a below-average percentage of FSP households receiving TANF or a below-average level of certification-related effort. In fact, for States with the percentage receiving TANF at less than 50 percent of the mean for the post-PRWORA period (i.e. around 12.5 percent) and an average level of certification effort, the net effect of PRWORA on the error index turned negative. Relatively few States reached this level; among the States, the lowest value for the unweighted mean percent with TANF was 20 percent in 2001. For States with the TANF percentage at 50 percent above the mean for the period (about 37.5 percent), the net effect of PRWORA was an increase in the error index of 3.3 percent, more than twice the effect at the mean value.[21] This net effect was, however, smaller than what would be predicted solely on the basis of the effect associated with the PTANF variable.

[21] In the Arellano-Bond model, the PRWORA variable had a similar but non-significant long-run effect. This model is the least efficient due to the loss of information and use of instrumental variables, but it is has the strongest controls against bias in parameter estimates due to effects of lagged error.

It is important to note that, as a group, States experienced a substantial decline in the percent of FSP households receiving TANF. Therefore, the positive effect of PRWORA on the error index through this variable diminished over time. More generally, for each State, the balance of effects of PRWORA on the error index varied from year to year, depending on the values of the TANF and EFFORT variables.

The results may be interpreted as showing that some changes in FSP operations associated with PRWORA implementation had the effect of reducing the level of error, while other changes had the opposite effect. Below, we discuss the potential explanations for these offsetting effects.

Explanations for Effects Related to PRWORA

There are two potential explanations for the post-PRWORA association of a higher percentage of FSP households receiving TANF with a higher error index (i.e., the positive coefficient for PTANF). First, one or more factors in the post-PRWORA environment may have made FSP-TANF cases more prone to FSP errors than other FSP cases. This interpretation is consistent with a hypothesis that implementation of TANF was more disruptive to FSP operations in States with high percentages of FSP cases receiving TANF. A variant of this interpretation is that changes in TANF rules, which often were not matched by changes in FSP rules, had the effect of introducing new possibilities for FSP errors for FS-TANF cases. These two variants are not mutually exclusive.

A second interpretation is that States with the largest decreases in AFDC/TANF caseload also undertook aggressive measures to reduce FSP errors than other States, i.e., that PTANF was negatively correlated with the error rate but proxied for one or more omitted variables. The models controlled for differences in the level of certification-related effort and in the assignment of certification periods. As discussed in more detail below, we did not have data that would explicitly control for other ways in which States may have changed their FSP operations to increase certification accuracy. Thus, we cannot rule out this interpretation.[22]

Turning to the negative component of the PRWORA effect on the error index, there are two potential explanations. The first explanation focuses on the possible effects of PRWORA, while the second explanation involves FSP changes that coincided with PRWORA.

One possible explanation for a negative effect on the error index is that, contrary to some fears at the time, PRWORA implementation had a positive impact on public welfare workers' effectiveness in preventing and detecting errors. During this period, public welfare agencies made a variety of changes in staff training, management, definition of agency mission, and incentives for worker performance. Although many of the changes were driven by PRWORA's goals of increasing clients' rates of employment and reducing their dependence on government assistance, these changes may

[22] It is conceivable that the changes in cost allocation practices after 1996 may have affected the relationship of the percentage of FSP households with TANF to the error index. After PRWORA, States were required to allocate shared costs to all benefiting programs, so the percent of FSP households receiving TANF had less impact on the effective output of a given level of effort allocated to the FSP. This interpretation implies that PTANF, not PEFFORT, captures the effect of the post-PRWORA changes in cost allocation. It is more plausible, however, that the effect of cost allocation changes is captured by PEFFORT, because the magnitude of the change in cost allocation varied across States and was not necessarily related to the percent of FSP cases with TANF. The lack of effect for the TANF variable supports this argument.

have had a beneficial effect on workers' morale and productivity. Declining TANF and FSP caseloads also gave FSP managers an opportunity to increase the emphasis on error reduction.

Another explanation is that the implementation of PRWORA coincided with changes in FNS and State FSP policies and practices that were intended to reduce errors. As noted in Chapter Four, FNS strengthened the financial incentives for States to reduce error rates in a series of steps, starting with settlements regarding outstanding liabilities in 1993. In response to these incentives, States changed their rules regarding reporting and recertification in ways that reduced the likelihood that a QC review would find an error. We have controlled for one widely recognized practice, the use of short certification periods of one to three months (CM13). During the post-PRWORA period, however, a variety of other options were introduced through waivers and rule changes. As described by Rosenbaum (2000), options such as quarterly reporting had the effect of reducing the likelihood of a QC error by narrowing the scope of recipients' responsibilities to report changes. Even if a household's income has changed and the benefit level does not match the current income, there is no error if the household is not required to report the change in the month that is reviewed.[23]

Ideally, the models of error would include variables for quarterly reporting and other practices that reduced the State's exposure to QC errors. No annual data on State adoption of these practices were available, however. Furthermore, some error reduction practices did not require rule changes (e.g., increased monitoring of error rates at the local office level or even the worker level, as described by CBPP, 2001). Thus, we cannot separate the effect of these error reduction practices from other changes occurring after the adoption of PRWORA. [24]

To summarize the preceding discussion, the models capture three distinct effects on error associated with PRWORA.

- During the post-PRWORA period, there was a reduction in the elasticity of error with respect to reported effort.
- The post-PRWORA period also had a pattern in which States with higher percentages of FSP households receiving TANF had higher error rates (all else equal).
- The net effect of PRWORA on the error index was smaller than these effects alone would predict.

The effects associated with PRWORA may have resulted from three types of changes in the FSP and in the operations of public welfare agencies during this period:

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[23] Rules permitting this form of quarterly reporting were issued in July 1999.

[24] We explored but eventually rejected models that included policies that PRWORA or previous waivers from AFDC policy permitted States to adopt, such as time limits for AFDC/TANF receipt, earnings disregards, and sanctions policies for violations of AFDC/TANF work requirements. These policies were shown by Kornfeld (2002) to affect FSP participation and, therefore, might affect the composition of the FSP caseload in ways that the available data would not identify. Since these policies were generally intended to increase work or reduce the duration of AFDC/TANF participation, we did not have clear theoretical rationale for how they would affect error rates independently of the percent of FSP households with earnings and the percent with AFDC/TANF, both of which were variables in the model. If such policies did have an additional effect on error rates, their effect may be part of the overall effect of PRWORA that we observed.

- The transition from AFDC to TANF, which entailed changes in both the rules for cash assistance and the environment in which public welfare workers operated
- FNS and State initiatives to reduce FSP errors, through changes in rules and program operations
- The changes in cost allocation rules and practices that resulted in varying increases in the FSP's share of common certification costs for FSP cash assistance households.

The available data were insufficient to determine the relative influence of these three types of changes, each of which had multiple dimensions. As discussed above, we believe that the most convincing explanation for the change in the response of error to reported effort is that it was related to changes in cost allocation rules, though other factors may have contributed. We also believe that the negative component of the effect on error index is at least in part attributable to FSP error-reduction policies other than the shortening of certification periods (represented by the percent of FSP households with 1 to 3-month certification periods, i.e., CM13). We cannot determine from the available data whether the transition from AFDC to TANF had positive or negative effects on FSP errors.

Caseload Characteristics

The preceding results were obtained after controlling for the effects of several important characteristics of FSP households on error rates. These variables were EARNINC, SSINC, and SINGLEPAR. We found the following results for these variables:

- The percent of FSP households reporting earned income (EARNINC) had a positive and highly significant effect on the error index, as expected, with a larger estimated effect from the Arellano-Bond model than the others. Thus, the decline in the error index in the late 1990's was achieved despite the fact that increasing work force participation among FSP recipients exerted upward pressure on the error index.
- The percent of FSP households with Social Security or SSI income (SSINC) had a negative effect on the error index, as expected, and the coefficient was significant in all models except the Arellano-Bond model. This proportion grew during the late 1990's, so this was another factor underlying the decline in the error index.
- The percent of FSP households with children headed by a single adult (SINGLEPAR) had a negative effect on the error index, as expected, but the coefficient was not significant. Thus, it did not appear that the number of adults in the household had an effect on the probability of error, after controlling for receipt of AFDC/TANF, Social Security/SSI income, and earnings.[25]

[25] While it was typical for single-parent FSP households to receive AFDC during the pre-PRWORA period, this association was weaker in the post-PRWORA period, so it is not likely that colinearity is the reason for not finding a significant effect for SINGLEPAR.

Other Independent Variables

Among the other independent variables in the model, only the percentage of FSP households with one to three-month certification periods (CM13) had a significant effect on the error index. The highly significant negative effect of short certifications confirmed the rationale for this practice and the findings of other studies (Kabbani and Wilde, 2003). Neither the percentage of FSP households using EBT (PCTEBT) nor the unemployment rate (FYUN0) had a significant effect on the error index, even after adjusting for the effect of the lagged error index. Kabbani and Wilde (2003) also did not find significant effects for these variables but considered them necessary parts of their model of payment error rates.

Lagged Error Index

The results indicate a highly significant, positive relationship between the lagged error index and the current error index. This finding suggests that, when choosing among the models, the models that incorporate this variable are preferable.

Nevertheless, there is little evidence that the controlling for the effects of lagged error had any significant effect on other parameter estimates, with some exceptions. Comparison of the results across the models indicates a very high degree of consistency in the results. The partial adjustment model yielded very similar results to the models lacking the lagged error variable, with the same variables showing significant effects and parameter estimates generally within one standard error of those of the other models. Most of the parameter estimates from the Arellano-Bond model were also within one standard error of those of all other models, but there were two exceptions. First, the Arellano-Bond model estimated a larger effect of effort on error (in absolute terms), and the difference in estimates between the Arellano-Bond and the Prais-Winsten model was more than one standard error of the former (though less than the sum of the standard errors of the two). This difference is not large enough to affect the overall conclusions or give more credibility to the Arellano-Bond model than any of the others. Second, the Arellano-Bond model yielded an estimate of the effect of percent with earned income (EARNINC) that was two standard errors larger than the estimates from the three models that did not control for lagged error. Since the partial adjustment model also yielded a larger estimated effect for EARNINC than the three models without lagged error, it seems likely that these three models understate the effect of this variable.

Thus, we do not see a convincing reason for preferring the estimates of the Arellano-Bond model to those of the other, more similar models. On balance, given the overall similarity of results, we conclude that the statistical inefficiency of the Arellano-Bond model was most likely the reason that this model did not yield a significant effect for PRWORA or a significant difference in the elasticity of error with respect to effort between the two periods.

Chapter Six: Conclusions and Discussion

Principal Findings

This analysis provides strong evidence that the increase in reported certification-related costs per FSP household, which began in 1995, contributed to the reduction in the error index, i.e., in the weighted sum of positive and negative case error rates. This contribution was not recognized by the previous study of factors affecting payment error rates in the 1990's (Kabbani and Wilde, 2003), which focused on short certification periods, economic conditions, and political conditions. Our results confirm the conclusion of Kabbani and Wilde, and the widespread view in the FSP policy community (e.g., Rosenbaum, 2000), that increase in use of short certification periods also contributed to the downward trend in error rates.

We also find evidence that other changes in the FSP associated substantively or temporally with PRWORA had different effects on States. For the average State, these changes had the effect of increasing the error index, as a result of the reduction in the effect of reported effort on the error index and the introduction of an increase in error rates with the proportion of FSP households receiving TANF. The effect was larger where the percentage receiving TANF was above average and smaller (or even negative) where this percentage was below average. Given the many changes in the FSP and TANF policies and operations of State FSP agencies after the enactment of PRWORA and the lack of State and year-specific data on these changes, we cannot determine whether these effects resulted from PRWORA implementation, FSP error-reduction initiatives, cost allocation changes, or a combination of these factors.

These results imply that, in the post-PRWORA period, States had to spend more effort on certification-related activities than in previous years to achieve a given level of accuracy (relative to the expected level absent a change in effort). Before PRWORA, a 10 percent increase in certification-related effort per FSP household would yield an estimated reduction of 2.76 to 3.77 percent in the positive case error rate, depending on the model used; after PRWORA, the estimated reduction would be 1.32 to 3.42 percentage points. If this is true, it provides a retrospective justification for the dramatic increase in the reported certification-related cost per FSP household between 1994 and 2001. Whether this was in fact the motivation for the trend would require an investigation into budget and management processes beyond the scope of this study.

The results also raise the question of whether States approached a point of diminishing returns in the expenditure of effort to reduce error rates. While the study did not provide clear evidence of this (i.e., a non-linear model did not explain the data better than the linear model), it suggests a need for attention to this possibility. A recent report from the Government Accountability Office shows that payment error rates continued to decline after 2001. On the other hand, the States interviewed for the report described several challenges to error reduction, including the complexity of eligibility rules, the difficulty of preventing and detecting reporting errors by participants, and resource constraints due to States' budget cuts and competing demands on personnel (GAO, 2005).

Limitations of the Study

Perhaps the most important limitation of the study is that reported FSP administrative costs, and thus the measure of effort, are subject to variation in definition and measurement, both over time and among States. Thus, there is some uncertainty about how much of the increase in reported certification-related costs per FSP household during the study period represented an actual increase in resources, both in general and specifically with respect to efforts to prevent and detect errors. A more consistent measure would require the availability of periodic time studies, so that the same activities were measured in the same way throughout the data. It is reasonable to expect, however, that ongoing efforts by FNS and other agencies (such as the USDA Office of Inspector General) have the effect over time of narrowing the differences in measurement of FSP administrative costs among States.

Another key limitation is the lack of data on State FSP policies that might affect error rates. FNS has recently begun publishing data on State choices among the numerous certification policy options (e.g., FNS, 2003). If a sufficient series of these reports became available, it might help identify important policies other than certification period length that affect error rates and the results to be expected with a given level of effort.

The time period covered by the study also limits the conclusions that can be drawn. First, the post-PRWORA period may not have been long enough to differentiate between the transitional effects of PRWORA and FSP changes in the mid-1990's and their long-term effects. Second, changes introduced late in the study period (such as quarterly reporting and adjusted error rates) may not have been implemented long enough to have a discernible impact. Data from later years might help overcome these limitations, but further changes introduced in the 2002 Farm Bill would need to be taken into account as well.

As discussed in Chapter Five, the degree of automation would be expected to affect the relationship of certification effort to the error index, but the study was not able to model this effect. Using the available data on spending for data processing system development and operations, we were unable to establish a clear and plausible empirical relationship to the error index. It is possible, however, that a portion of the effect attributed to certification effort is in fact due to increased automation. If so, then the elasticity of error with respect to effort would overstate the actual reduction in error that a State would achieve by increasing certification effort alone without also increasing the level of automation.

In Chapter Four, it was noted that, at the national level, positive and negative error rates tended to be higher when the number of participating households was higher. Some authors have examined the possibility that error rates affect FSP participation in subsequent periods. Such a relationship would pose an endogeneity problem for the models of error as a function of certification effort.

A review of the relevant findings shows very little evidence that error rates could have any notable effect on the ratio of certification effort to FSP caseload. Ziliak, Gunderson and Figlio (2003) found an effect of the combined payment error rate on the FSP participation ratio (participants per capita) only in static estimates, which they believe were affected by omitted variable bias. Their dynamic models (including lagged caseload, unemployment rates, and employment growth rates) showed no significant effect of error on the participation ratio in the short term or the long term. Furthermore, this paper used the error rate as a proxy for shortened certification periods and related policies

designed to bring down error rates, so the authors did not actually hypothesize that error rates affect participation. Kabbani and Wilde (2003) did hypothesize this effect and control for both the combined payment error rate and certification periods in modeling the FSP participation ratio. They found an effect of the lagged error rate on the FSP participation ratio, but the error rate was not part of their preferred specification. In the model, the coefficient for lagged error rate was 0.0537. This means an increase of 1 percentage point in the total error rate—a substantial amount--produced about a very small increase of 0.05 percentage points in the participation ratio, which averaged 8.5 percent.

The established relationship between reported effort and error rates suggests another interpretation of the correlation of error rates with the FSP participation ratio. If a State's total budget is fixed and the number of FSP households increases, the effort per FSP household falls. The models estimated in this study predict that this change will lead to a rise in the error index, all other things equal.

Another possible objection to the models of reported effort and error is that increased use of short certification periods could affect a State's measured effort per FSP household by reducing the number of participating households. Hanratty (2005) examined the relationship of certification periods and other policies to the probability that income-eligible families participated in the FSP, using Survey of Income and Program Participation (SIPP) data from the 1996 and 2001 panels. The results indicate little reason for concern about the validity of the effort measure. The estimated impacts of short certification periods on participation rates were rather small: an increase of 10 percentage points in the short certification rate for earners would decrease participation rates among eligible families by less than 1 percentage point. (The mean participation rate was 46.8 percent for eligible single-parent families and 21.8 percent for eligible two-parent families.) Furthermore, this relationship does not pose a problem, because we control for the effect of short certification periods in the model. As noted above, this means that the effect of reported effort is conditional on the certification period.

Issues for Future Research

The preceding discussion points to a number of uncertainties that could be addressed through extension of this research to additional years after 2001.

- Additional years of data would help determine whether the affects associated with PRWORA were transient or more long-term.
- Data for later years might allow deeper investigation of the effects of changes that occurred late in the study period (such as adjusting error rates for growth in employed and immigrant FSP households, and reporting options that affect whether an undetected change in circumstances is considered an error).
- Data for 2003 and later years might provide insights into the effects of the quality control reforms enacted in 2002 and the new emphasis on program access.
- Last but not least, analysis of reported costs, effort and errors in 2002 and later years would test whether the patterns of the late 1990's persisted as the FSP caseload increased.

Another, complementary approach to extending this research would be a series of case studies examining the spending, policies, operational challenges, and results of specific States. This approach would provide insights into the relationship of PRWORA implementation, FSP error reduction, process automation, and cost allocation practices.

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Appendix A

Sources and Methods for Analysis of FSP Administrative Costs

Appendix A: Sources and Methods for Analysis of FSP Administrative Costs

Data Sources

For this study, FNS provided the FSP administrative cost data for 1989-2001 in a series of extracts from the agency's National Data Bank. This data warehouse contains FSP administrative costs and other data reported by the States to FNS.[1] The States submit quarterly and annual reports of FSP administrative expenses to FNS on the SF-269 report. FNS enters these data into its Food Stamp Program Integrated Information System (FSPIIS) and periodically extracts the data to the National Data Bank. FNS provided the data extracts for this report from Version 8 of the National Data Bank in November 2003. We verified the national totals for each year against reports provided by FNS from the FSPIIS in July 2004.

On the SF-269 report, States break down their FSP administrative costs in two ways. The report is organized in columns representing specific program functions, such as certification, benefit issuance, and automated data processing. For each column, the State report identifies Federal and non-Federal shares of outlays. Depending on the function, the Federal share (also known as Federal Financial Participation, or FFP) is set by law at 50 to 100 percent of reimbursable expenses (except for one category, Reinvestment, for which the States do not receive Federal reimbursement). Over the period covered by the data, the Federal share for some expenses was reduced from 75 percent to 63 or 50 percent. (The reporting categories and associated statutory FFP rates are presented later in this section.)

States also report Federal and non-Federal shares of unliquidated obligations on the SF-269. Unliquidated obligations represent commitments of funds that have not been formally expended (i.e., liquidated). The liquidation of obligations is part of the process of finalizing expenditures for a fiscal year. In consultation with FNS, we determined that States could no longer liquidate the unliquidated obligations for this period, so these obligations were not counted in the analysis.

Estimation of Total Costs for Analysis Categories

Preliminary analysis indicated that the actual Federal share (i.e., the Federal outlay divided by the sum of the Federal and non-Federal outlays) frequently was different from the statutory FFP rate. Most often, the actual Federal share was less than 50 percent when the statutory FFP rate was 50 percent. FNS officials indicated to us that in these situations, the Federal outlay was more reliable than the non-Federal outlay, because FNS reviews and confirms the allowable Federal cost during the cost reporting and reimbursement process.[2]

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[1] The State Agencies include the 50 States and the District of Columbia. FSP costs for Guam and the U.S. Virgin Islands are not included in this analysis. Puerto Rico does not operate the FSP.

[2] FNS officials indicated that when a Federal outlay is revised due to identification of an error or unallowable costs, the corresponding non-Federal outlay may not be revised by the State, and FNS does not attempt to make this correction. Also, in some cases States have included unallowable costs in their reported non-Federal outlays, even though they claimed Federal reimbursement only for allowable costs.

Therefore, the costs presented in this report, with some exceptions, were estimated by dividing the statutory FFP rate into the Federal outlays (in dollars) as reported on the SF-269. For example, a Federal outlay of $1000 in a category with a statutory FFP rate of 50 percent would yield an estimated total of $2000, (i.e., 1000/0.5=2000). In a few minor categories, however, this approach was not feasible (due to their being no Federal share) or yielded clearly unacceptable results, so the actual total was used (Federal outlay plus non-Federal outlay).[3] In all cases, the intent was to use the best estimate of the total allowable cost.

Table A-1 shows how the numerous cost reporting categories were grouped into the categories used for the analysis. The largest categories were generally kept separate. The various issuance-related costs were combined, however, to allow for better comparisons over the study period, when most States replaced their coupon issuance systems with electronic benefit transfer (EBT) systems.[4] The various levels of funding for ADP development and fraud control were combined, as were the components of employment and training (E&T).

The SF-269 functional reporting categories correspond to the FSP functions described in Chapter One. Throughout the study period, each SF-269 category was generally intended to include the direct costs of the function and the indirect costs that are allocated to the FSP as a result of those direct costs.[5] For example, the reported certification cost is expected to include both the direct costs of certification (such as certification worker salaries and travel) and the indirect costs allocated on the basis of direct worker time or costs (such as shares of local office management, equipment and occupancy, and state-level oversight). For issuance costs, however, States are required to report indirect costs separately from direct costs for EBT or coupon issuance.

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[3] The actual costs were used for: E&T 100 percent grant, ADP development, Reinvestment, Systematic Alien Verification of Eligibility (SAVE), Research and Demonstration Evaluation Projects, and State/Local Demonstration Projects. SAVE costs are for obtaining alien status information from the Immigration and Naturalization Service.

[4] The conversion from coupon issuance to EBT was usually a gradual process over a year or more. During this period, States incurred a combination of costs in the various issuance categories, with some portions of the FSP caseload receiving coupons while others received benefits via EBT. Thus, it was most useful to compare States' total issuance costs, with the recognition that they reflected a mix of issuance systems. This mix can be quantified for modeling through the use of data on the number of FSP households receiving benefits via coupons, EBT, and cash (which was used for some SSI recipients and participants in demonstration projects).

[5] Indirect costs are expenditures that cannot be efficiently attributed to a specific program or activity. States must have approved cost allocation plans in order to claim Federal reimbursement for indirect costs. These plans may allocate both personnel and non-personnel costs. Indirect personnel costs typically include supervisors and support staff who serve multiple programs and whose time on individual programs cannot be efficiently measured. Typical indirect non-personnel costs include general-purpose supplies, telecommunications, facilities, equipment, and contracted services.

Table A-1

Cost Categories, Federal Financial Participation Rates, and Basis for Estimating Total Outlays for Analysis

Analysis Category and Included Reporting Categories	Statutory Federal Financial Participation (FFP) Rate	Basis for Estimating Total Outlays
Certification	50%	Federal total
Issuance		
Coupon Issuance	50%	Federal total
EBT Issuance	50%, capped on the basis of prior issuance costs	Federal total
Issuance Indirect	50%	Federal total
EBT Startup	50%	Federal total
Fraud Control[1]		
75% Funding Fraud Control	75%	Federal total
50% Funding Fraud Control	50%	Federal total
Reinvestment (100% Non-Federal)	0%	Federal plus Non-Federal
Automated Data Processing (ADP) Operations	50%	Federal total
ADP Development[2]		
75% Funding ADP Development	75%	Federal plus Non-Federal
63% Funding ADP Development	63%	Federal plus Non-Federal
50% Funding ADP Development	50%	Federal plus Non-Federal
Employment and Training (E&T)		
E&T 100% Grant	100%	Federal plus Non-Federal
E&T 50% Grant	50%	Federal total
E&T Dependent Care	50%, with per-participant cap	Federal total
E&T Transportation/Other	50%, with per-participant cap	Federal total
Optional Workfare	50%	Federal total
E&T ABAWD[3] Grant	50%	Federal total
Food Stamp Nutrition Education (FSNE)	50%	Federal total
Unspecified Other (Direct and indirect costs not included elsewhere)	50%	Federal total
Miscellaneous		
Quality Control	50%	Federal total
Fair Hearing	50%	Federal total
SAVE[4]	100%	Federal plus Non-Federal
Outreach	50%	Federal total
Management Evaluation	50%	Federal total
Research and Demonstration Evaluation Projects[5]	(varies)	Federal plus Non-Federal
State/Local Demonstration Projects[5]	(varies)	Federal plus Non-Federal

Table A-1 (Continued)

Cost Categories, Federal Financial Participation Rates, and Basis for Estimating Total Outlays for Analysis

Note: Some categories do not appear in all years' cost data.

[1] The FFP rate for Fraud Control switched to 50% as of April 1, 1994, as mandated by the Mickey Leland Hunger Relief Act of 1993.

[2] ADP development was funded at the 75% FFP rate for approved projects in FY1989-1991. The rate of FFP was 63% from October 1991 through March 1994, and 50% thereafter, as mandated by the Mickey Leland Hunger Relief Act of 1993.

[3] ABAWD=Able-Bodied Adult Without Dependents. Some States received special grants for serving this portion of the FSP recipient population.

[4] SAVE=Systematic Alien Verification of Eligibility (costs for obtaining alien status information from Immigration and Naturalization Service). The official rate of FFP for SAVE expenses was 100% until April 1, 1994, and 50% thereafter, as mandated by the Mickey Leland Hunger Relief Act of 1993. The actual rate of FFP differed from the official rate in some years for unknown reasons.

[5] The FFP rate for Research and Demonstration Evaluation Projects and State/Local Demonstration Projects was determined by individual project budgets set by agreement between FNS and the State or local agency.

The "unspecified other" category is used for reporting costs not specifically identified elsewhere on the SF-269. According to FNS, this category may include both direct and indirect costs.[6] For example, the "unspecified other" cost may include state FSP staff whose time is not identified as spent on one or more specific program functions. Indirect costs are included in this category if they are not associated with a specific program funding stream. Early in the history of the FSP, many States assigned their indirect costs for all FSP operations to the unspecified other category. Before the study period, FNS instructed the States to change this practice and allocate indirect costs among the other categories. However, there may be differences among States and within States over time in the extent to which indirect costs are reported as "unspecified other costs" and not assigned to specific categories such as certification. Thus, the costs reported in a specific category in two different States may not be entirely comparable, because one State may have included all related indirect costs while the other did not.[7]

Although most of the FNS reporting categories represent recurring operational costs, there are several categories that are non-recurring and may be considered investments. In particular, EBT start-up and ADP development may be considered investments, because they are one-time costs that are intended to produce program improvements over a period of several years. Demonstration and evaluation costs may be considered an investment in knowledge. We did not attempt to amortize these non-recurring costs, however, for two reasons. First, there was no clear basis for determining the appropriate amortization period, both because of the nature of these expenditures and because of the timing of when they are reported. Although there is no national database of detailed information on EBT start-up, ADP development, and demonstration and evaluation costs, the authors' past experience suggests that the largest components of these costs are state (or local) personnel and contractor services. Unlike equipment costs, which are usually spread over time through leases or

[6] This information was provided through personal communications with several FNS staff over the course of the study.

[7] The methods used to attribute direct costs to FSP reporting categories may also vary both among States and over time. For example, methods for attributing ADP costs to the FSP vary depending on system design and other factors.

explicit depreciation charges, the state/local personnel and contractor service costs do not have a standard "useful life" that would be suitable as an amortization period. Furthermore, costs of this type may be incurred in one year and reported in a subsequent year. The second reason for not amortizing the non-recurring costs was that, as shown in the results, we believed that the relatively modest share of costs in these categories did not justify the additional effort that would be required to develop and apply an appropriate methodology, particularly if the assignment of the useful life would be arbitrary.

Normalizing Costs for Comparisons

We normalized FSP administrative costs for comparisons of costs among States and over time. First, the total estimated cost for each category in each State and year was divided by the monthly average number of households participating in the FSP; thus the basic unit of measurement is the cost per case-year. Second, to compensate for the impact of inflation on comparisons over time, all costs were adjusted to 2001 dollars, using the price deflator for the Gross Domestic Product (GDP).[8]

[8] The GDP price deflator was used because it reflects the overall rate of inflation in the domestic economy, and because it has been used by FNS for setting EBT cost reimbursement limits. The Bureau of Economic Analysis (BEA) has a specific price deflator for state and local income security expenses. Use of the BEA deflator would have resulted in slightly higher normalized costs for years prior to 2001, with the greatest difference in the earliest years.

Appendix B

Variation of State FSP Administrative Costs per FSP Household and Potential for Modeling

Appendix B: Variation of State FSP Administrative Costs per FSP Household and Potential for Modeling

This appendix provides supplementary information on the variability of State FSP administrative costs, focusing on the cost per FSP household. In addition, the appendix discusses the difficulty of conducting econometric analysis of FSP administrative costs.

Variation of State FSP Administrative Costs per FSP Household

Table B-1 shows the coefficient of variation (CV) for the total administrative cost per FSP household and each component by year, indicating the relative variability of costs among States in each year. The mean CV for the components ranged from 0.46 for certification to 2.2 for ADP development. For most components, the CV did not show a clear trend over time, but the CV for issuance declined substantially while the CV for unspecified other costs increased. The CV for FSNE increased from 1994 to 1999, as FSNE expanded to more States and grew within participating States, then dropped in 2000-2001.

Table B-1

Coefficient of Variation of Annual Cost per Household for Total FSP Administrative Cost for Total and Components (in 2001 Dollars), 1989-2001

Fiscal Year	Total Cost	Cert	Issuance	Fraud	ADP op	ADP dev	E&T	Misc.	FSNE[a]	Unsp Oth
1989	0.42	0.47	1.13	1.12	1.33	1.95	0.97	0.68	.	1.07
1990	0.45	0.51	1.12	1.05	1.37	2.29	1.05	0.63	.	1.06
1991	0.48	0.53	1.04	0.99	1.51	2.50	0.70	0.62	.	1.10
1992	0.47	0.52	1.22	0.94	1.21	2.16	0.74	0.62	.	1.16
1993	0.44	0.48	1.08	0.97	1.10	1.94	0.86	0.77	.	1.12
1994	0.40	0.43	0.97	0.97	1.23	1.95	0.97	0.66	0.31	1.32
1995	0.41	0.42	0.96	0.98	1.04	2.26	1.55	0.66	0.42	1.43
1996	0.40	0.42	0.98	0.95	1.01	1.97	1.70	0.64	0.61	1.34
1997	0.38	0.48	0.92	0.88	0.90	2.06	1.17	0.71	0.71	1.42
1998	0.33	0.40	0.87	0.90	0.89	2.75	1.23	0.69	0.83	1.37
1999	0.32	0.42	0.76	0.87	0.87	2.36	1.22	0.66	0.96	1.36
2000	0.34	0.44	0.61	0.98	0.99	2.36	1.24	0.64	0.92	1.36
2001	0.36	0.47	0.50	1.07	0.91	2.11	1.18	0.66	0.88	1.40
Mean	0.40	0.46	0.94	0.97	1.10	2.20	1.12	0.67	0.71	1.27

[a] Mean for FSNE is for 1994-2001.

Figures B-1 through B-10 illustrate the variability of the each measure of administrative cost per FSP household, including the total and each category, among States in each year from 1989-2001. For each year, these "box and whisker" charts represent the range of costs from the 5th percentile to the 95th percentile (encompassing 90 percent of States), the range from the 25th to 75th percentile (known as the interquartile range), and the median. The values below the 5th percentile and above the 95th percentile are not shown, in order to focus on the variation among States without extreme values.

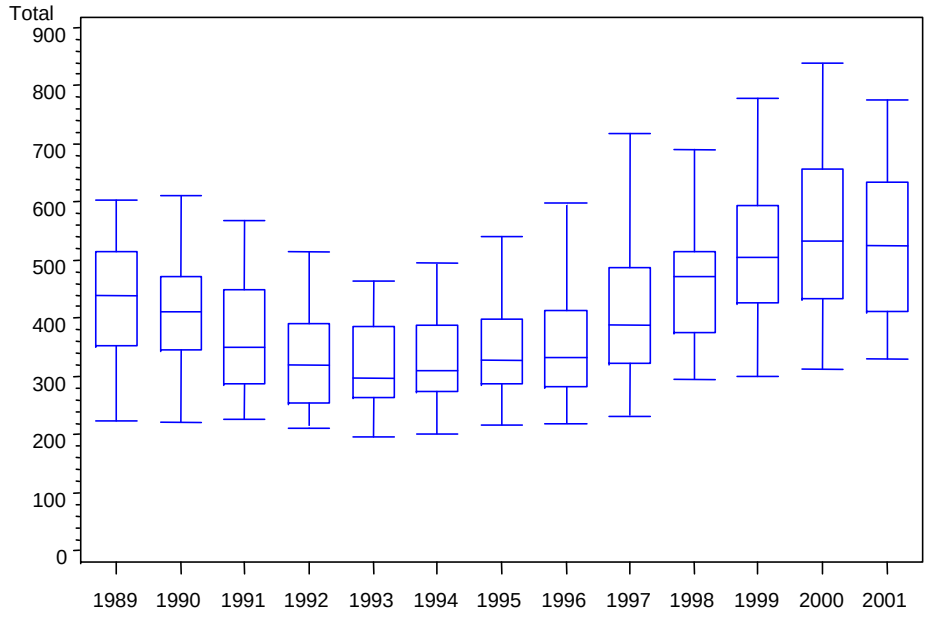
Two common patterns emerged from these charts:

- Most categories of costs had substantially skewed distributions, with much larger ranges from the median (the dividing line in the box) to the 95th percentile than from the median to the 5th percentile. Unspecified other, issuance, fraud control, ADP development, miscellaneous, E&T, and FSNE had notably skewed costs. Thus, most of the variation in these costs was in States with high costs (above the median).
- The interquartile range (the box in the charts) varied in size from year to year in each chart, with later years (after 1996) tending to have a wider interquartile range.

We produced alternate versions of figures B-1 through B-10 that included the outlier values. The range below the 5th percentile was generally quite small, but the range above the 95th percentile was sometimes very large. Alaska contributed many of the extremely high values.

Figure B-1

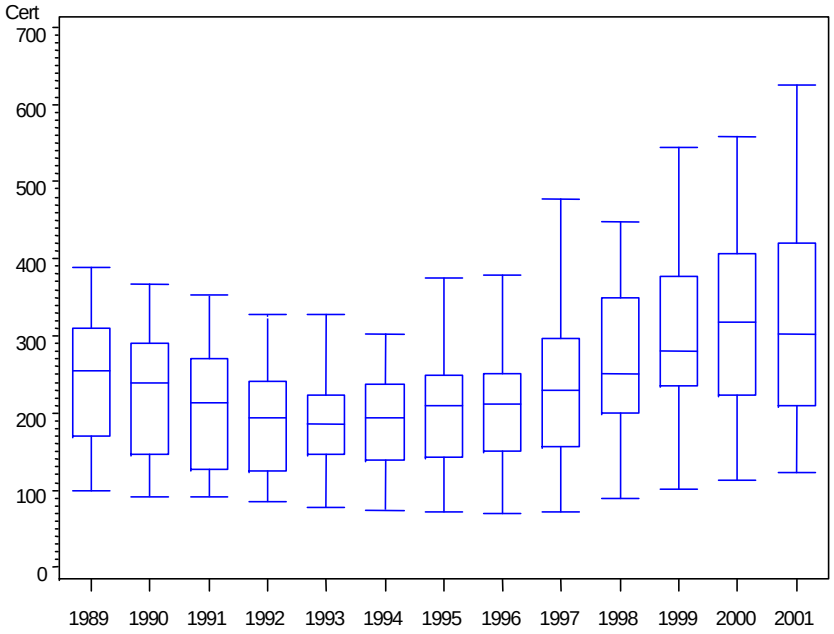
Distribution of State Total Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-2

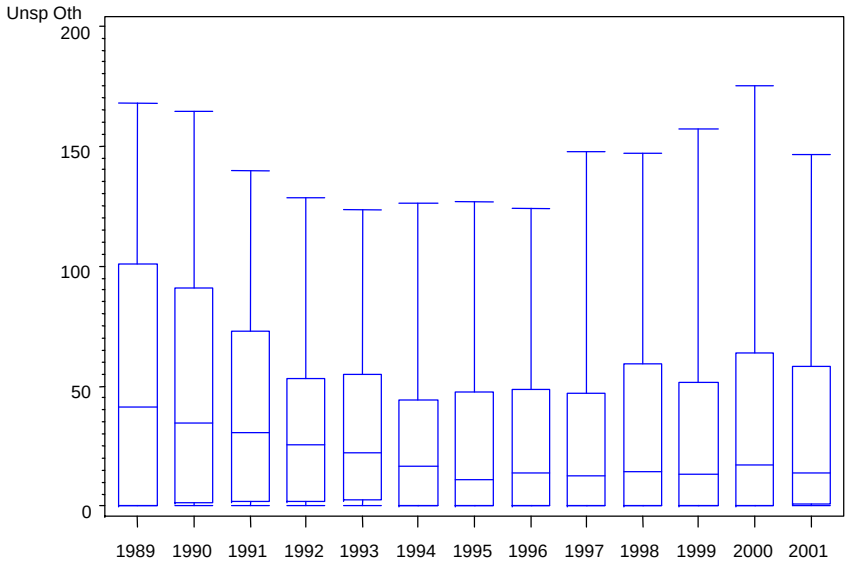
Distribution of State Certification Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-3

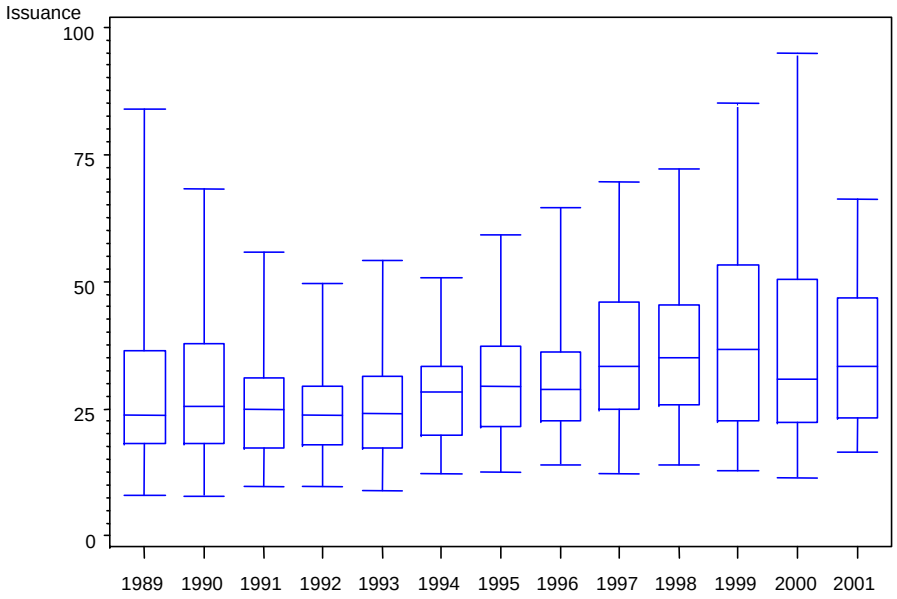
Distribution of State Unspecified Other Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-4

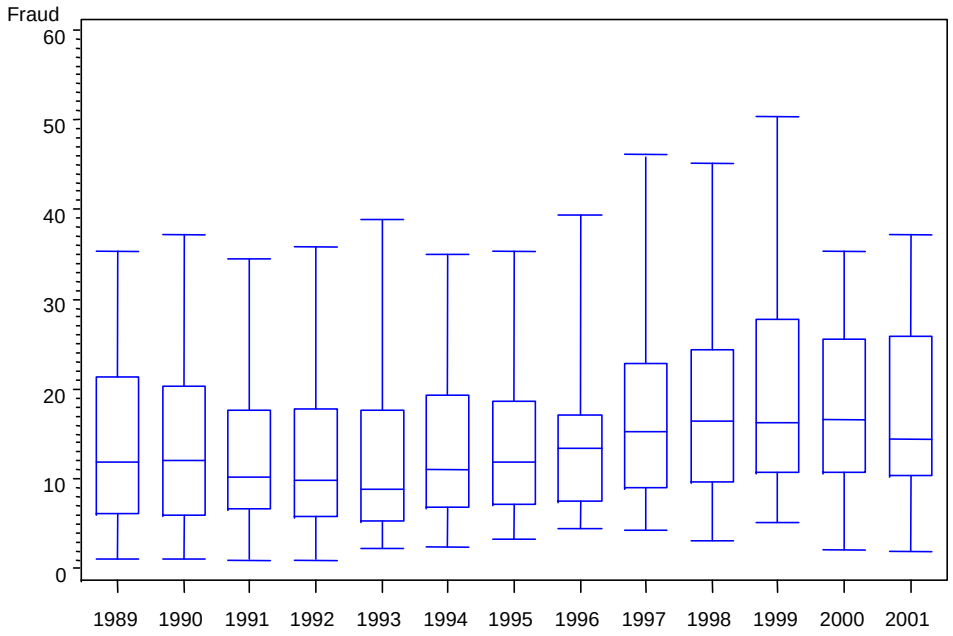
Distribution of State Issuance Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-5

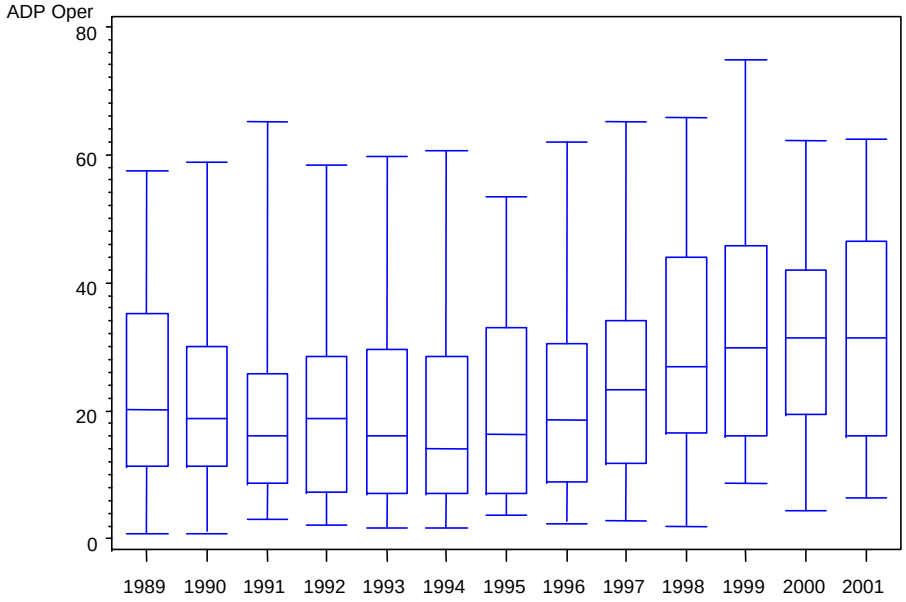
Distribution of State Fraud Control Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-6

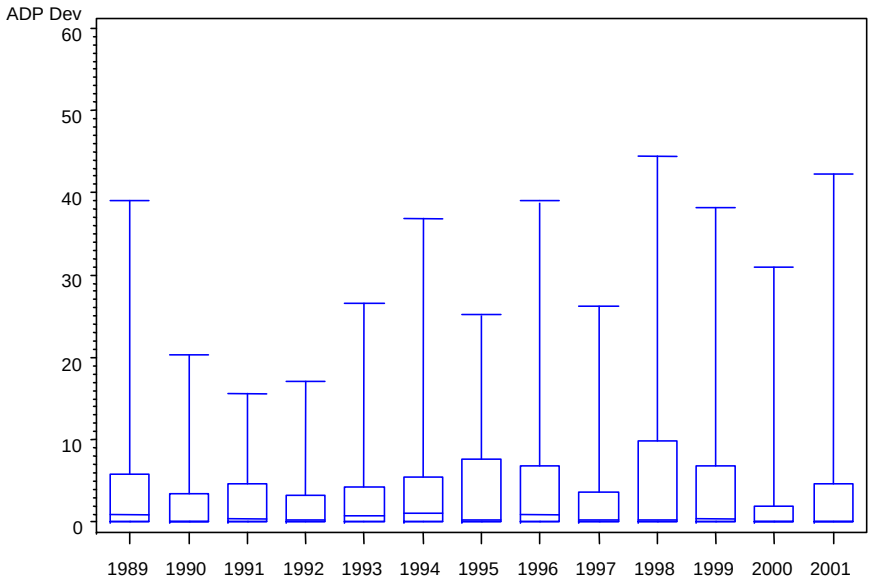
Distribution of State ADP Operations Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-7

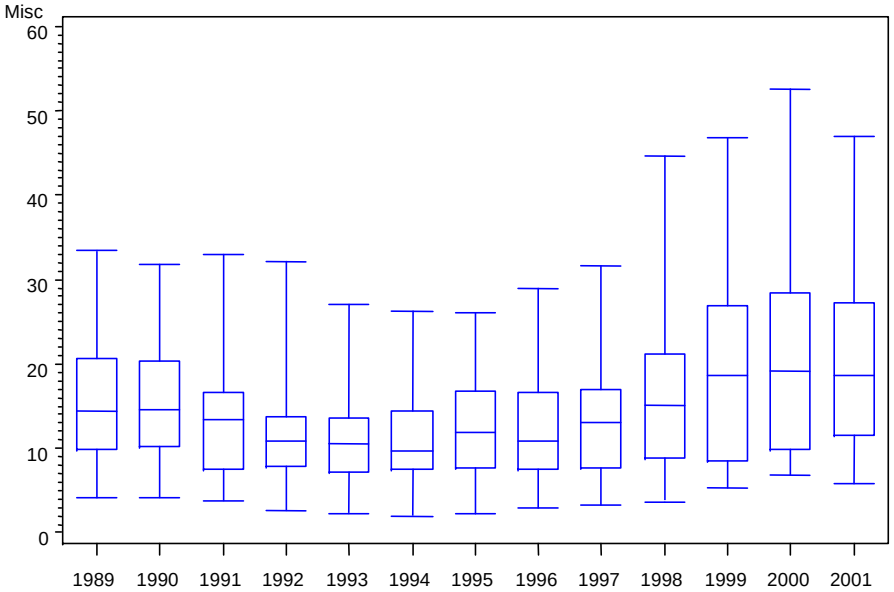
Distribution of State ADP Development Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-8

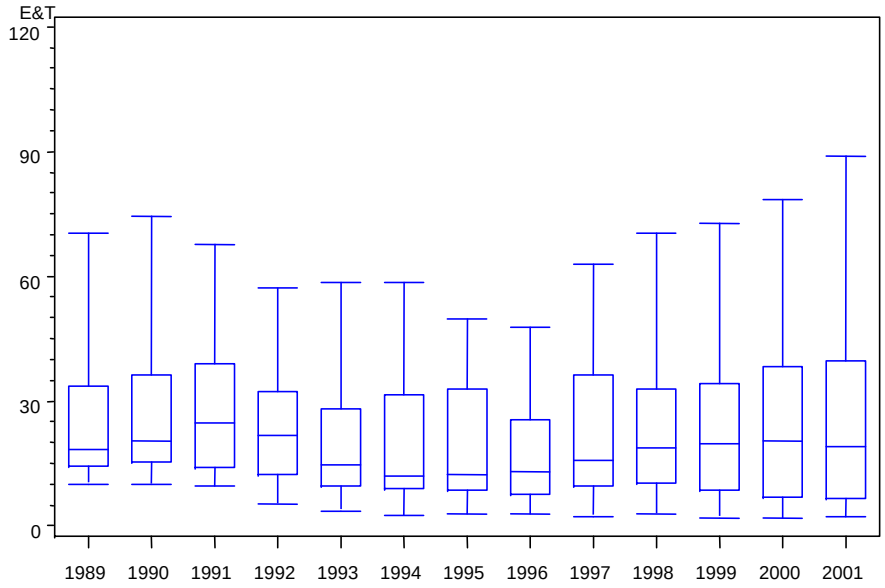
Distribution of State Miscellaneous Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-9

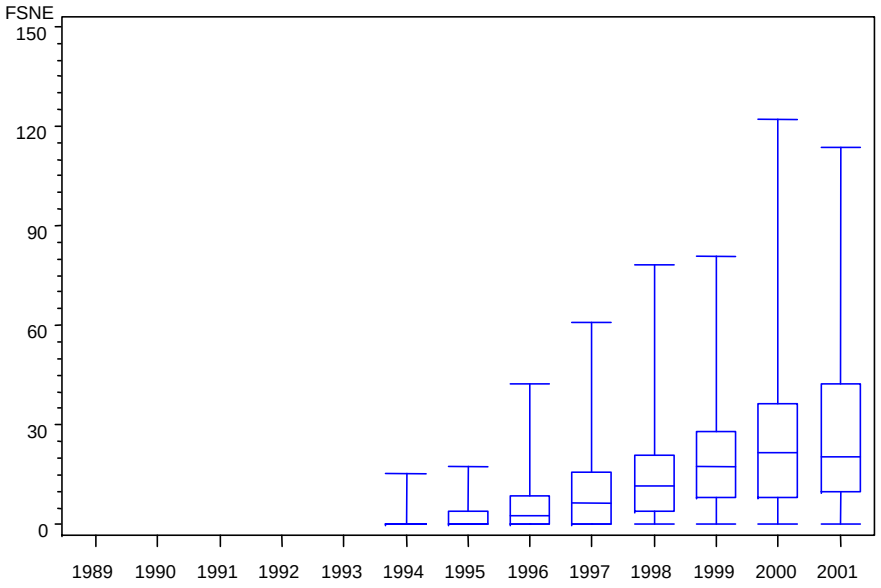
Distribution of State E&T Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Figure B-10

Distribution of State FSNE Cost per FSP Household in 2001 Dollars by Year, 1989-2001



Note: For each year, the vertical box represents the range from the 25th percentile to the 75th percentile. The line dividing the box is the median. The lines extending from the box indicate the range from the 5th percentile to the 95th percentile.

Correlation of FSP Administrative Costs to State Caseload Characteristics

At the State level, the total administrative cost per FSP household had a highly significant negative correlation with the size of the FSP caseload (average number of participating households), as indicated in table B-2. Thus, larger States tended to have lower total costs per FSP household, a result that is consistent with the national trends over time (falling cost per FSP household with rising participation and vice versa. There was a negative correlation between State FSP caseload and certification cost per FSP household, but it was not significant, despite the apparent relationship in the national trends. The issuance cost was negatively correlated with FSP caseload, and this correlation was highly significant.

Table B-2 also shows a significant positive correlation between the percent of FSP households with earnings and the total administrative cost per FSP household; this State characteristic was also positively correlated at the 5 percent significance level with certification costs and issuance costs. [1]

Table B-2

Correlation of Selected Components of FSP Administrative Costs and Program Environment/Operations Variables

All States	Total Cost	Cert	Unsp Oth	Issuance
FSP Caseload	-0.127***	-0.035	0.045	-0.150***
% FSP Households with AFDC/TANF	0.079**	-0.620	0.150***	0.094***
% FSP Households with Earnings	0.090**	0.087**	-0.039	0.089**
Case Error Rate	0.054	0.062	-0.067*	-0.007
Case Overpayment Rate	0.033	0.030	-0.033	-0.016
Excluding Alaska	**Total Cost**	**Cert**	**Unsp Oth**	**Issuance**
FSP Caseload	-0.078**	0.022	0.033	-0.123***
% FSP Households with AFDC/TANF	-0.006	-0.104**	0.172***	-0.042
% FSP Households with Earnings	0.077**	0.068*	-0.035	0.137***
Case Error Rate	0.028	0.022	-0.063*	-0.032
Case Overpayment Rate	-0.005	-0.018	-0.029	0.001

*** Denotes significant correlation at 1% level ** 5% level * 10% level

[1] With the exception of the total FSP caseload, the variables correlated with cost measures in table B-2 were computed by using the quality control (QC) sample data. .

An explanation of this correlation is that States with higher employment rates among FSP participants also had higher wage levels for FSP administrative personnel. This association, which would be a natural result of a tight labor market, would provide a plausible explanation for the significant correlation between issuance costs and the percent of FSP households with earnings. There is no reason to expect a direct relationship between these variables, but high pay rates could drive up both the cost of benefit issuance and the rate of employment among FSP participants. (The role of worker pay rates was explored in the analysis, as discussed later in this section.)

The correlation analysis indicates a relationship of FSP administrative costs to the proportion of FSP households receiving AFDC or TANF, but the results are counterintuitive. Costs are shared when FSP households receive cash assistance, so one would expect a negative relationship between the cost per FSP household and the proportion of FSP households receiving cash assistance. Table B-2 shows, however, that this correlation was positive and significant for total costs, unspecified other, and issuance.

Further analysis indicated that the Alaska data had a large influence on these correlations. (We investigated the potential influence of Alaska because of its very high total and certification costs per FSP household.) When Alaska was excluded from the analysis, the correlations of the percent receiving AFDC/TANF with total cost and issuance cost became negative but not significant, and the correlation with certification cost became negative and significant. The highly significant positive correlation of unspecified other cost with the percent receiving TANF persisted when Alaska was excluded. This apparently anomalous result illustrates the limitations of bivariate analysis.

To explore the possible relationship between FSP administrative costs and the accuracy of case determinations, we computed the correlation between the cost measures in table B-2 and two measures of certification accuracy: the case error rate (percent of cases with an overpayment or underpayment) and the case overpayment rate (percent of cases with an overpayment). [2] The only significant finding was the negative correlation of the unspecified other cost per FSP household with the case error rate. Subsequent multivariate analysis did, however, establish a strong relationship between certification effort and the error index.

FSP Administrative Costs and Welfare Worker Pay

We obtained data on the rate of pay for public welfare workers as a possible way of adjusting administrative costs for labor market differences. As defined by the Census Bureau, this class of workers includes workers who administer the FSP, AFDC/TANF, medical assistance, and other forms of public aid or services typically targeted to low-income populations.[3] The Census Bureau annually collects payroll data for this occupation from States and a sample of local governments. These data were used to compute the average monthly cost per full-time-equivalent worker (FTE) for 1993-1995 and 1997-2001.[4] The pay rates were converted to 2001 dollars using the same methodology as was used for the costs.

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[2] Both measures treat a case as in error if the difference between the actual benefit and the correct benefit was at least $25. In official error rates, the error threshold was $5 until 2000.

[3] See www.census.gov/govs/www/classfunc79.html for full definition and examples.

[4] Data for other years were obtained for the analysis in Chapter Five. The number of hours per month representing an FTE is defined by each State.

Table B-3 shows the States sorted by their average monthly pay rate per FTE for public welfare workers in the available years. The median of the State averages was $2,535.84 per month, and the range was from $1,696.82 per month in West Virginia to $3,634.53 per month in Rhode Island. Other States with low pay rates for public welfare workers include Missouri, Mississippi, Oklahoma, and Indiana; other States with high pay rates include Washington, Michigan, Alaska and Connecticut.

It is important to note that the public welfare pay measure is a weighted average over all types of State and local public welfare workers, so it reflects the actual labor mix employed by public welfare agencies and their specific wage-setting practices, as well as the labor market from which these workers are hired. Public welfare agencies, including FSP agencies, have some flexibility to offset high wages in the labor market by hiring less-skilled workers. In addition, the scope of the services provided by public welfare workers varies among States and over time. Thus, the average pay rate reflects a heterogeneous mix of workers and jobs.

Table B-4 provides evidence of a highly significant, positive, and not surprising correlation between public welfare pay rates and FSP administrative costs. This correlation was significant at the 5 percent level for total costs and at the 1 percent level for certification, unspecified other, and issuance costs per FSP household. Omitting Alaska increased the significance level to 1 percent for total costs but left an insignificant correlation for issuance costs. It is important to note that all States contract out most or all of their EBT issuance process, and coupon issuance was frequently contracted out. Thus, issuance costs would be expected to have a weaker relationship to public welfare pay rates than other categories of FSP administrative costs. [5]

[5] FSNE and E&T are usually contracted out by the State Food Stamp Agency to other State agencies or to private non-profit organizations. Thus, public welfare worker pay rates might have a weaker impact on these categories.

Table B-3

States Sorted by Average Monthly Public Welfare Pay Rates Per FTE Worker (in 2001 Dollars), 1993-1995, 1997-2001

State	Monthly Pay per FTE
West Virginia	1696.82
Missouri	1920.29
Mississippi	1987.69
Oklahoma	2010.71
Indiana	2030.99
North Dakota	2091.31
South Dakota	2128.54
Arkansas	2172.26
Wyoming	2183.69
Nebraska	2204.91
Florida	2216.32
Montana	2224.51
Arizona	2231.82
New Mexico	2261.28
Texas	2282.94
South Carolina	2283.47
North Carolina	2296.84
Tennessee	2312.28
Georgia	2349.28
New Hampshire	2357.88
Alabama	2380.82
Kentucky	2407.97
Louisiana	2474.00
Idaho	2507.55
Ohio	2517.32
Wisconsin	2535.84
Kansas	2558.98
Maine	2582.41
Utah	2587.86
Pennsylvania	2593.65
Maryland	2639.35
Vermont	2644.18
Delaware	2650.26
Iowa	2664.55
Virginia	2712.44
Hawaii	2764.02
Colorado	2837.34
New York	2856.25
Illinois	2891.84
Minnesota	2921.80
Oregon	2950.73
Nevada	3015.83
Massachusetts	3152.44
California	3160.27
District of Columbia	3211.63
New Jersey	3256.18

(continued)

Table B-3

States Sorted by Average Monthly Public Welfare Pay Rates Per FTE Worker (in 2001 Dollars), 1993-1995, 1997-2001 (continued)

State	Monthly Pay per FTE
Washington	3,298.03
Michigan	3,306.37
Alaska	3,343.18
Connecticut	3,411.79
Rhode Island	3,634.53
Minimum	1,696.82
25th Percentile	2,246.55
Median	2,535.84
75th Percentile	2,874.05
Maximum	3,634.53

Source: U.S. Census Bureau, Annual Survey of Government Employment

Table B-4

Correlation of Selected Components of FSP Administrative Costs and Public Welfare Pay Rates, 1993-1995, 1997-2001

	Total Cost	Cert	Unsp Oth	Issuance
Public Welfare Pay Rates (All States)	0.400**	0.309***	0.198***	0.170***
Public Welfare Pay Rates (Alaska Omitted)	0.341***	0.254***	0.231***	0.038

* Significant at 10% level ** 5% level *** 1% level

Barriers to Econometric Analysis of FSP Certification Costs

The descriptive analysis of FSP certification costs for this study might have been extended to an econometric analysis to model those costs as a function of caseload characteristics and other factors that shape the workload of FSP agencies. Under this econometric approach, the dependent variable would be the observed certification cost for a state for a year. The principal independent variable would be the number of food stamp cases for that state/year, and the slope coefficient could be interpreted as the marginal cost of certifying a food stamp case. The model would include control variables with respect to caseload composition and program polices, because some types of cases require more effort than do others, and some polices are more demanding of certification worker time than are other policies.

We chose to model error rates as a function of FSP certification effort, caseload characteristics, and policies, rather than attempting to model FSP certification costs, because of several considerations, as discussed below.

Budget Process

State and local agencies allocate resources to FSP administration through a budget process that **largely fixes the total cost in advance for the fiscal year**. The anticipated level of FSP participation may be one factor, but available resources and competing demands for resources are also important. Certification costs represent the largest component of these budgets, and the primary component of certification costs is the payroll of local office workers.

Administrators have some flexibility to reallocate resources during the year, but changes in resources for FSP administration are likely to be relatively modest. There are lags in the processes to acquire or reallocate resources (e.g., hiring and training new staff, transferring existing staff, procuring additional equipment or facilities, etc.). Furthermore, taking resources away from the FSP or any other program can be unpopular with both internal and external constituencies, and managers may be reluctant or unable to make such changes mid-year. Finally, conditions that are likely to create demand for more resources for FSP administration—such as rising unemployment or poverty—place other strains on State budgets.

FSP Certification Cost per Household

The average certification cost per FSP household is essentially the FSP certification budget divided by the size of the caseload. Within the same State, this average may vary widely over time because of exogenous changes in the budget process that have little if anything to do with the intrinsic burden of administering the average food stamp case. Similarly, differences among States in the average certification cost per FSP household in any given year have limitations as a measure of performance, because State FSP agencies have limited control over this measure in the short run.

If the total FSP budget is fixed or can only adjust partially in the short run, the certification cost per household will decline as the caseload rises, and it will rise as the caseload falls. The national trends in FSP certification costs from 1989 to 1993 (adjusted for inflation) followed this predicted pattern: the certification cost per FSP household declined as the number of participating households rose. From 1994 to 2000, the number of FSP households fell, while the certification cost per FSP household increased. The national total certification cost rose throughout this period, providing further evidence in support of the view that total FSP budgets were not closely tied to participation levels during the study period.

FSP Certification Cost and Workload

Furthermore, the output of serving a FSP household is not a standardized product, so the cost per FSP household is not fully comparable across agencies or over time. The optimal amount of certification time (and thus cost) per FSP household is a function of the average workload per FSP household, i.e., the quantity and difficulty of actions required, as determined by FSP rules and the circumstances of the average FSP household. If funds were optimally allocated to match workloads, agencies that perform more frequent or complex certification tasks would be expected to have higher costs per FSP household than others. Thus a model of certification costs would have to adjust for the factors that affect the workload per FSP household, i.e., the economic and demographic conditions, and FSP policies that affect the composition of the caseload and the frequency and ease (or difficulty) of the tasks that must be performed.

On the other hand, if funds are not responsive to workloads, then one would not expect a consistent relationship between the certification cost and the factors that determine the workload. As discussed above, there are both conceptual and empirical reasons for doubting that funding for FSP certification is responsive to the workload, at least in the short run.[6]

Impact of Budget and Workload on Error Rates

As noted in Chapter Five, the outputs of FSP agencies differ in the accuracy of eligibility decisions, i.e., the positive and negative error rates as measured by the quality control (QC) process. Two agencies may perform the same set of services for the same number of households at the same cost, but one agency may perform those services with lower error rates. This agency is more efficient, in the sense that it produces a better output with the same inputs and conditions.

An econometric model of FSP costs might recognize the trade-off between costs and errors by including the error rate as a control variable. As the independent variable (error rates) goes up, the dependent variable (program costs) goes down, holding constant the number of cases, their composition and program policies.

This may seem like a reasonable approach, but estimation of this model poses both logical and statistical problems.[7] As discussed in Chapter Five, there is a relationship between the size of the FSP caseload, the quantity of certification tasks, and the amount of worker time, and the error rates. If the budget for FSP certification is fixed for a given year, then the amount of worker time per FSP household will fall as the caseload rises, and the error rate will rise. Thus, the budget drives the error rate, at least in the short run. For this reason, this study focuses on the combined error rate as the dependent variable and treated the level of certification effort per FSP household as an independent variable.

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[6] The discussion simplifies the processes determining the total FSP cost, because agency budgets include many other programs that share workers and other resources. Because the mix of cases and worker activities among programs is also subject to change after overall budgets are set, the same expectation remains: managers do not adjust the cost per case in response to the workload.

[7] The statistical problem is that the error rate is an endogenous variable when used on the right-hand-side of the regression. Parameter estimates will be biased and inconsistent.

Appendix C

Additional Explanation of Multivariate Analysis

Appendix C: Additional Explanation of Multivariate Analysis

Fixed Effects Model

The fixed effects model in equation (6) in the text could be expressed more fully by substituting equation (1) into equation (3), yielding:

$$ERROR_{p,it} + lERROR_{n,it} = a_i + t_i'd_i + EFFORT'_{it}b_1 + PEFFORT_{it}'b_2 + X_{it}'g + e_{it} \qquad \text{(C-1)}$$

where the parameter λ was estimated via grid search by maximizing the log-likelihood function. The estimated value of λ was estimated at 1.45 in the fixed effects model. This estimate was robust to changes in the specification of the model, i.e., the inclusion or exclusion of variables and changes in functional form.

We optimized λ by choosing a value for λ, computing a new error measure (equal to positive error +(λ*negative error)), running a regression with the new error measure, and retaining both the value for λ and the log-likelihood. The regression with the largest log-likelihood indicated which value for λ was best. The lower bound for λ was -1, and the upper bound was 1.

Prais-Winsten FGLS Model

Allowing for first-order autocorrelation and heteroskedasticity in the fixed effects model described in (C-1), the residuals are given by:

$$e_{it} = re_{it-1} + e_{it} \qquad \text{(C-2)}$$

$$e_{it} \sim N(0, s_i^2) \qquad \text{(C-3)}$$

where ρ is the autocorrelation coefficient.

For periods $t > 1$, the Prais-Winsten model is expressed as:

$$ERROR_{it}* = a_i* + t_i*'d_i + EFFORT_{it}*'b_1 + PEFFORT_{it}*'b_2 + X_{it}*'g + e_{it}* \qquad \text{(C-4)}$$

where the asterisks on each of the independent variables and the dependent variable denote the transformation given by:

$$V*_t = V_t - \rho V_{t-1} \qquad \text{(C-5)}$$

and the error structure is given by:

$$e*_{it} = \varepsilon_{it} \qquad \text{(C-6)}$$

Note that equation (C-5) requires subtracting a weighted lagged-value of an observation from that same variable's current period value. This cannot be done for the first observation, which might be discarded from the estimation, as in the Cochrane-Orcutt method. Prais-Winsten provide an alternative transformation for the first time period information. We employ the Prais-Winsten

method of weighting the first-year's observations by $(1-\rho^2)^{1/2}$. Thus, we rewrite equation (C-5) for $t = 1$ as:

$$V^*_1 = (1-\rho^2)^{1/2} V_1 \quad \text{(C-7)}$$

and the error term in period 1 is given by:

$$e^*_{it} = (1-\rho^2)^{1/2} \varepsilon_{it} \quad \text{(C-8)}$$

After transforming the data, the regression for estimation can be written for all t as:

$$ERROR_{it}^* = a_i^* + t_i^{*\prime} d_i + EFFORT_{it}^{*\prime} b_1 + PEFFORT_{it}^{*\prime} b_2 + X_{it}^{*\prime} g + e_{it}^* \quad \text{(C-9)}$$

The model described by equation (C-9) is a special case of a more general model where the autocorrelation is expressed as:

$$e_{it} = r_i e_{it-1} + e_{it} \quad \text{(C-10)}$$

where ρ is subscripted by state i. That is, state-specific autocorrelation parameters are estimated, allowing there to be differences in autocorrelation across states. Equation (C-9) is then estimated as above, using a state-specific autocorrelation parameter.

Relative to the Prais-Winsten model using a common ρ, the model using a state-specific estimate of ρ may produce less biased estimates if the autocorrelation parameters are not equal across states. It may be less efficient, however, because it requires additional parameter estimates. Thus, the estimates using a common ρ will be consistent and efficient if the autocorrelation coefficient does not vary across states, while the estimates using state-specific values of ρ will be consistent when the autocorrelation coefficient does vary across states, but will be inefficient if it does not.

Partial Adjustment Model

The partial adjustment model assumes that states adjust their resources so as to achieve a desired level of errors, but only make these adjustments gradually. That is, we assume:

$$ERROR_{it} - ERROR_{it-1} = (1-y)\left(ERROR^*_{it} - ERROR_{it-1}\right) \quad \text{(C-11)}$$

where ψ is the fraction of the gap that is closed within a year and $ERROR_{it}^*$ is the desired error rate of state i at time t. Then, rewriting equation (6) in the text as the target level of ERROR, we have:

$$ERROR^*_{it} = a_i + t_i' d_i + EFFORT'_{it} b_1 + PEFFORT_{it}' b_2 + X_{it}' g + e_{it} \quad \text{(C-12)}$$

Because we cannot observe the targeted level of error, however, we substitute equation (C-11) into (C-12) and solve for the observed error rate:

$$ERROR_{it} = \tilde{a}_i + t_i' \tilde{d}_i + y e_{it-1} + EFFORT'_{it} \tilde{b}_1 + PEFFORT_{it}' \tilde{b}_2 + X_{it}' \tilde{g} + n_{it} \quad \text{(C-13)}$$

where the above coefficients with the tildes (such as $\tilde{b}_1$) relate to the original coefficients in equation (6) in the text by a factor of (1/1-ψ), with $|\psi|<1$. The long-run effect of EFFORT in the pre-PRWORA period is then given by the following relationship:

$$b_1 = \frac{\tilde{b}_1}{1-y} \tag{C-14}$$

The variances for the long-run estimates are calculated via the delta method. Using a linear expansion, $Var(b_1)$ is given as dVd' where:

$$d \approx \left[\frac{1}{1-y} \quad \frac{\tilde{b}_1}{(1-y)^2} \right] \tag{C-15}$$

is a row vector, approximated with estimates of ψ and $\tilde{b}_1$, and V is a 2×2 matrix whose elements are the estimated sampling variances and covariances for $\tilde{b}_1$ and $\hat{y}$. The calculation of parameter estimates and sampling variances of long-run effects of other covariates are analogous to that described in equation (C-14) and equation (C-15) above.

Arellano-Bond Model

The Arellano-Bond model is based on a method of instrumental variables to surmount the problem of bias and inconsistency introduced when using the lagged dependent variable as a regressor. The model is based on equation (C-13). The disturbances, ν_{it}, are assumed to have finite moments with $E(\nu_{it}) = E(\nu_{is}\nu_{it}) = 0$ for $s \neq t$. This assumption assumes that there is no serial correlation, but does not require independence over time.

Under these assumptions, values of the dependent variable, ERROR, lagged two periods can be used as valid instruments. For simplicity, we re-write equation (C-13) as:

$$ERROR_{it} = \tilde{a}_i + y\,ERROR_{it-1} + W'_{it}p + n_{it} \tag{C-16}$$

The equation in (C-16) is then first-differenced, thus removing $\tilde{a}_i$ and producing an equation that is estimable via instrumental variables, using two-period lagged values of $ERROR_{it}$. Arellano and Bond (1991) note that for panels with at least three time periods, the model implies m = (T-2)(T-1)/2 linear moment restrictions:

$$E\left[\left(\overline{ERROR}_{it} - y\,\overline{ERROR}_{it-1} - \overline{W}'_{it}p\right)\nu_{it-j}\right] = 0 \qquad j = 2,...,(t-1); \quad t = 3,....,T \tag{C-17}$$

where $\overline{ERROR}_{it} = ERROR_{it} - ERROR_{it-1}$. The estimates of the coefficients in (C-16) are obtained via generalized methods of moments (GMM). For further simplicity, including the lagged values of $ERROR_{it}$ as instruments, we rewrite equation (C-16) as:

$$ERROR_{it} = K'_{it}k + n_{it} \quad \text{(C-18)}$$

Then, following Arellano and Bond (1991), the GMM estimator $\hat{k}$ is given by the following kx1 coefficient vector:

$$\hat{k} = \left(\vec{K}'ZA_N Z'\vec{K}\right)^{-1}\vec{K}'ZA_N Z'\vec{e} \quad \text{(C-19)}$$

where $\vec{K}$ is a stacked (T-2)Nxk matrix of observations on $\overline{ERROR}$, Z_i = diag ($ERROR_{i1}$,…,$ERROR_{is}$, K_{i1},….,K_{is}) for s=1,…,T-2, and A_N is given by $V^{-1}{}_N$, where:

$$\hat{V}_N = N^{-1}\sum_i Z_i'\hat{\vec{n}}_i\hat{\vec{n}}_i'Z_i \quad \text{(C-20)}$$

The long-run estimate of the effect of effort on error is computed analogously to equation (C-14) above, where ψ is now the parameter estimate associated with the instrument. The standard error associated with the long-run estimate is calculated via the delta method, analogously to equation (C-15).

Elasticities

In the pre-PRWORA period, the effort elasticity, η_{PRE}, is calculated as:

$$h_{PRE} = \left[\frac{\partial\, ERROR}{\partial\, EFFORT}\right]\left[\frac{\overline{EFFORT}_{PRE}}{\overline{ERROR}_{PRE}}\right] = b_1\left[\frac{\overline{EFFORT}_{PRE}}{\overline{ERROR}_{PRE}}\right] \quad \text{(C-21)}$$

Note that for the simple partial adjustment model and the Arellano-Bond model, we use the long-run estimate of the effect of effort on error rates so as to make the elasticities comparable across models. The variance of the pre-PRWORA elasticity is then given by:

$$Var\,(h_{PRE}) = \left[\frac{\overline{EFFORT}_{PRE}}{\overline{ERROR}_{PRE}}\right]^2 Var\,(b_1) \quad \text{(C-22)}$$

Note again that calculating Var (β_1) for the partial adjustment and Arellano-Bond models requires the approximation described by equation (C-15).

For the post-PRWORA period, elasticity calculations become slightly more complicated because of the inclusion of the PEFFORT variable in the model. The post-PRWORA effort elasticity, η_{POST}, is calculated as:

$$h_{POST} = \left[\left(\frac{\partial ERROR}{\partial EFFORT} + \frac{\partial ERROR}{\partial PEFFORT}\right)\right]\left[\frac{\overline{EFFORT}_{POST}}{\overline{ERROR}_{POST}}\right] = \left(b_1 + b_2\right)\left[\frac{\overline{EFFORT}_{POST}}{\overline{ERROR}_{POST}}\right] \quad \text{(C-23)}$$

where, again, for the partial adjustment model and the Arellano-Bond model, the long-run estimates of the βs are used. The calculation of the variances of the elasticities differs slightly across the models. For the fixed effects and Prais-Winsten FGLS models, the variance of the post-PRWORA effort elasticity is given by:

$$Var(h_{POST}) = \left[\frac{\overline{EFFORT}_{POST}}{\overline{ERROR}_{POST}}\right]^2 \left[Var(b_1) + Var(b_2) + 2Cov(b_1 b_2)\right] \quad \text{(C-24)}$$

For the partial adjustment model and the Arellano-Bond model, we must calculate:

$$Var(h_{POST}) = \left[\frac{\overline{EFFORT}_{POST}}{\overline{ERROR}_{POST}}\right]^2 Var\left(\frac{\tilde{b}_1}{1-y} + \frac{\tilde{b}_2}{1-y}\right) \quad \text{(C-25)}$$

The second term in equation (C-25) is approximated as V'CV, where V is a column vector containing three elements:

$$V = \begin{bmatrix} \frac{1}{1-y} \\ \frac{1}{1-y} \\ \frac{\tilde{b}_1 + \tilde{b}_2}{(1-y)^2} \end{bmatrix} \quad \text{(C-26)}$$

and C is the 3x3 variance-covariance matrix of the three elements, $\tilde{b}_1$, $\tilde{b}_2$, and ψ. Thus, the diagonal is given by $Var(\tilde{b}_1), Var(\tilde{b}_2)$, and $Var(y)$.